EAST RIVER PLAZA
MANHATTAN, NEW YORK

Site Management Plan
Appendix T of Final Engineering Report

NYSDEC Site Number: C231045

Prepared for:

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Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date
001	August 18, 2009	Added low-flow sampling procedures to Section 3.0. Revised Attachments 6 and 8.	September 2009
002	May 13, 2010	Reduced the number of monitoring wells.	August 20, 2010
003	July 28, 2011	Termination of groundwater monitoring, implementation and completion of vapor barrier system monitoring, implementation of annual well inspections.	August 18, 2011

AUGUST 2011

SITE MANAGEMENT PLAN

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LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
ASP	Analytical Services Protocol
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
CAMP	Community Air Monitoring Program
COC	Certification of Completion
CoC	chain-of-custody
CPP	Citizen Participation Plan
ECs/ICs	Engineering and Institutional Controls
ELAP	Environmental Laboratory Approval Program
ESA	Environmental Site Assessment
FDNY	City of New York Fire Department
FEMA	Federal Emergency Management Agency
FER	Final Engineering Report
FPM	FPM Group, Ltd.
HASP	Health and Safety Plan
LUST	Leaking Underground Storage Tank
MS/MSD	Matrix spike/matrix spike duplicate
MSL	mean sea level
NYCDEP	New York City Department of Environmental Protection
NYCRR	New York Code of Rules and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCE	Tetrachloroethene
PE	Professional Engineer
PID	Photoionization detector
ppm	Parts per million
QA/QC	Quality Assurance/Quality Control
RAO	Remedial Action Objective
RCA	Recycled concrete aggregate
SCGs	Standards, Criteria and Guidance
SCOs	Site-specific Cleanup Objectives
SMP	Site Management Plan
SoMP	Soil Management Plan
SPDES	State Pollutant Discharge Elimination System
SVOCs	semivolatile organic compounds

Acronym	Definition
SWPPP	Stormwater Pollution Prevention Plan
TAGM	Technical Administrative Guidance Memorandum
TAL	Target Analyte List
TCE	Trichloroethene
TCL	Target Compound List
USEPA	United States Environmental Protection Agency
USGS	United States Geologic Survey
USTs	Underground Storage Tanks
VOCs	volatile organic compounds

SITE MANAGEMENT PLAN

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document is required for fulfillment of Remedial Action at East River Plaza (hereafter 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 the Brownfield Cleanup Agreement (BCA) Index# W2-1068-05-06, Site No. C231045, which was issued on June 15, 2005.

1.1.1 General

Tiago Holdings, LLC, Tiago Parking Holdings, LLC and Tiago Development, LLC (Tiago) entered into a BCA with the NYSDEC to develop a 4.5-acre property located in East Harlem, Manhattan, New York into a commercial and residential development. This BCA required Tiago to investigate and remediate contaminated media at the Site. The boundary of this 4.5-acre BCP Site is more fully described in Appendix B – Metes and Bounds. A map of the Site location is shown in Figure 1.1.1. The Site boundary is shown in Figure 1.1.2.

After completion of the remedial work described in the Remedial Work Plan, some contamination was left in the subsurface at this Site, which is hereafter referred to as 'residual contamination.' This Site Management Plan (SMP) was prepared to manage residual contamination at the Site in perpetuity or until extinguishment of the Environmental Easement in accordance with 6 NYCRR Part 375. Remedial Action work on the Site began in November 2005 and was completed in December 2006. All reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by FPM Group, Ltd. (FPM), on behalf of Tiago, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated December 2002 and the guidelines provided by NYSDEC. This SMP addresses the means for implementation of Institutional Controls (ICs) and Engineering Controls (ECs), which are required by the Environmental Easement for the Site.

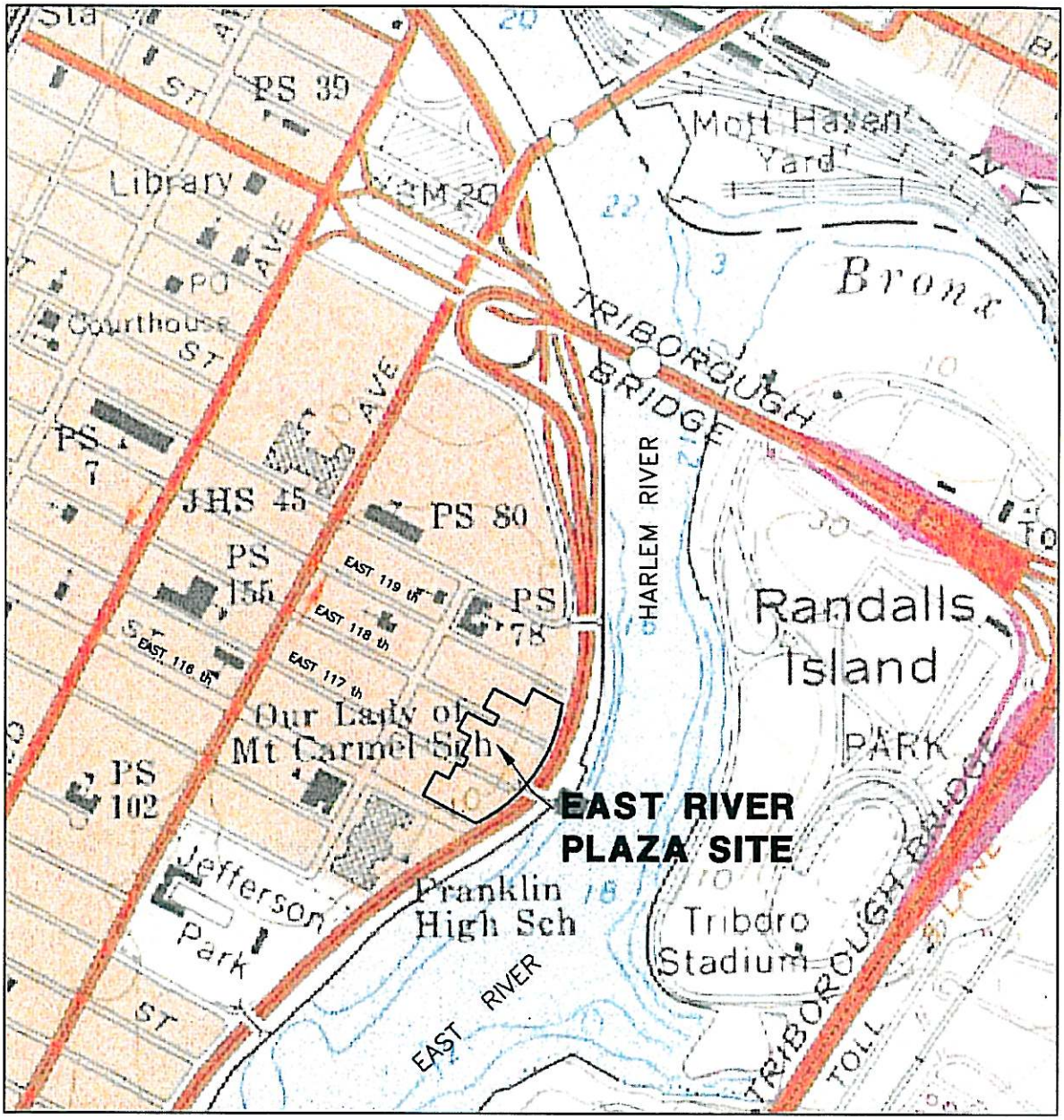

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FIGURE 1.1.1 SITE LOCATION EAST RIVER PLAZA SITE NEW YORK, N.Y.		
Drawn By:H.C.	Checked By: S.D.	Date:11/20/06

PLEASANT AVENUE

BLOCK 1715

BLOCK 1716

BLOCK 1815

EAST 116th STREET

EAST 117th STREET

EAST 118th STREET

EAST 119th STREET

LOT 22
(517–544 E. 116th ST.)

P/O LOT 19
(512–522 E. 118th ST.)

P/O LOT 19
(539–555 E. 117th ST.)

LOT 23
(527–549
E. 118th ST.)

LOT 31
(540–546
E. 119th ST.)

FRANKLIN D. ROOSEVELT DRIVE (EAST RIVER DRIVE)

LEGEND:

BOUNDARY OF FORMER WASHBURN WIRE PROPERTY/BROWNFIELD SITE

EAST RIVER PLAZA SITE DEVELOPMENT BOUNDARY

APPROX. SCALE: 0 40' 80'

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FIGURE 1.1.2
SITE PLAN
EAST RIVER PLAZA SITE
NEW YORK, N.Y.

Drawn By: H.C. | Checked By: S.D. | Date: 11/20/06

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1.1.2 Purpose

The Site contains residual contamination left after completion of the Remedial Action performed under the BCP. ECs have been incorporated into the Site remedy to provide proper management of residual contamination in the future to ensure protection of public health and the environment. A Site-specific Environmental Easement has been recorded with the New York County Clerk that provides an enforceable means to ensure the continued and proper management of residual contamination and protection of public health and the environment. It requires strict adherence to all Engineering Controls and all Institutional Controls placed on this Site by NYSDEC by the grantor of the Environmental Easement and any and all successors and assigns of the grantor. ICs provide restrictions on Site usage and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP includes all methods necessary ensure compliance with all ECs and ICs required by the Environmental Easement for residual contamination at the Site. The SMP has been approved by the NYSDEC, and compliance with this Plan is required by the grantor of the Environmental Easement and grantor's successors and assigns. This plan is subject to change by NYSDEC.

Site management is the last phase of the remedial process and is triggered by the approval of the Final Engineering Report and issuance of the Certificate of Completion (COC) by NYSDEC. The SMP continues in perpetuity or until extinguished in accordance with 6NYCRR Part 375. It is the responsibility of the Environmental Easement grantor, and its successors and assigns to ensure that all Site Management responsibilities under this plan are performed.

The SMP provides a detailed description of all procedures required to manage residual contamination at the Site following the completion of the Remedial Action in accordance with the NYS BCA with the NYSDEC. This includes: (1) development, implementation, and management of all Engineering and Institutional Controls; (2) development and implementation of monitoring systems and a Monitoring Plan; (3) development of a plan to operate and maintain all treatment, collection, containment, or recovery systems (including, where appropriate, preparation of an Operation and Maintenance Manual); (4) submittal of Site Management Reports, performance of inspections and certification of results, and demonstration of proper communication of Site information to NYSDEC; and (5) defining criteria for termination of treatment system operation.

To address these needs, this SMP includes four 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; and (4) a

Site Management Reporting Plan for submittal of data, information, recommendations, and certifications to NYSDEC.

Site Management activities, reporting, and EC/IC certification will be scheduled on a certification period basis. The certification period will be annually.

Important notes regarding this SMP are as follows:

- This SMP defines Site-specific implementation procedures as required by the Environmental Easement. The penalty for failure to implement the SMP is revocation of the COC;
- The Brownfield Cleanup Agreement (Index # W2-1068-06-05, Site No. C231045) for the Site requires conformance with this SMP, and therefore, serves as a contractual binding authority under which this SMP is to be implemented. The BCP law itself also requires the preparation of a SMP (formerly known as an Operation, Maintenance and Monitoring Plan) in ECL 27-1415 and 27-1419. Therefore, the BCA is a binding contract and the BCP law is statutory authority under which this SMP is required and is to be implemented.
- At the time this report was prepared, the SMP and all Site documents related to Remedial Investigation and Remedial Action are maintained at the NYSDEC Region 2 offices in Long Island City. At the time of SMP submission (December 2007), the Site documents can also be found in the repositories established for this project, including:

NYSDEC Region II Office
Hunters Point Plaza, 47-40 21st Street
Long Island City, New York 11101
Call in advance (718) 482-4909
Hours: M to F, 9 AM to 3 PM

Aguilar Public Library
174 110th Street
New York, New York 10029
(212) 534-2930

1.2 SITE BACKGROUND

1.2.1 Site Location and Description

The Site is located in the County of New York, East Harlem, New York and is identified as 517-544 East 116th Street (Block 1715, Lot 22), 539-555 East 117th Street (Block 1716, p/o Lot 19), 512-522 East 118th Street (Block 1716, p/o Lot 19), 527-549 East 118th Street (Block 1815, Lot 23) and 540-546 East 119th Street (Block 1815, Lot 31) on the New York City Tax Map. These addresses and tax lots are shown in Table 1.1.1 below.

TABLE 1.1.1
ADDRESSES AND TAX LOTS
EAST RIVER PLAZA SITE
EAST HARLEM, NEW YORK

Address	Tax Lot
517-544 East 116th Street	Block 1715, Lot 22
539-555 East 117th Street	Block 1716, p/o Lot 19
512-522 East 118th Street	Block 1716, p/o Lot 19
527-549 East 118th Street	Block 1815, Lot 23
540-546 East 119th Street	Block 1815, Lot 31

The Site is an approximately 4.5-acre area bounded by East 119th Street to the north, East 116th Street to the south, FDR Drive to the east, and adjoining portions of the East River Plaza project site and adjoining commercial and residential properties to the west (see Figure 1.1.2). The boundary of the Site is more fully described in Appendix B – Metes and Bounds.

1.2.2 Site History

The Site was initially developed by R.H. Woolf & Company prior to 1896 and was occupied prior to 1911 by the Washburn Wire Company. The Washburn Wire Company engaged in manufacturing of wire up until its closure in the 1980s. The Site was abandoned from the 1980s until remedial activities commenced in 2005. Prior to remediation, the parcels comprising the Site were purchased by Tiago, which is the current owner of the Site and the BCP Volunteer Applicant. Following purchase of the Site, the previous buildings were demolished.

Phase I ESAs and Phase II subsurface investigations have been performed on several occasions between 1995 and 2004. Impacted soil was identified at several onsite locations. An

area of petroleum-contaminated soil (soil exhibiting visible indications of petroleum impact, including staining and/or odors) was present on the east side of the Site between East 118th and East 119th Streets. This soil appeared to be associated with former subsurface concrete vaults containing heating oil tanks that adjoined the north side of East 118th Street. A smaller area of petroleum-impacted soil was identified on the west side of the portion of the Site between East 118th and East 119th Streets. An area of metal-contaminated soil was identified on the east side of the Site between East 116th and East 117th Streets in an area where acid tanks were formerly present.

Floating product was formerly present in the area where heating oil tank vaults were historically present. Floating product was addressed during the remedial action.

Several metals, including iron, magnesium, manganese and sodium, were historically found at slightly elevated concentrations in both upgradient and downgradient groundwater monitoring wells at the Site. Low levels of VOCs and SVOCs were also found. The historic detections were suspected to be indicative of ambient groundwater conditions in the Site vicinity and were not concluded to be necessarily Site-related.

All Sanborn maps available for the Site were reviewed. Identified structures of potential environmental significance included a machine shop, a wire dipping area, and large acid tanks located between East 116th and East 117th Streets, three annealing houses and a boiler and engine room between East 117th and East 118th Streets, and a laboratory building and annealing house between East 118th and East 119th Streets. Soil and/or groundwater sampling has been performed in each of these areas. Metals-impacted soil had been identified in the former area of the large acid tanks and petroleum-impacted soil had been identified in the vicinity of the former laboratory building, which also contained the petroleum tank vaults.

1.2.3 Geological Conditions

The Site subsurface conditions were evaluated during several investigations and were previously described in the Final Investigation Report and Remedial Work Plan (FPM, September 2005). The topographic elevation of the Site, prior to remediation, was generally between 7 and 12 feet above mean sea level (MSL) and had been previously significantly modified from its original grade by placement of fill, presumably in conjunction with historic development. The remedial action has lowered most of the former Washburn Wire Property to an elevation of approximately one foot above the existing water table. In general, the historic Site surface sloped gradually to the southeast, towards the Harlem River and was modified by excavation during remedial activities.

Groundwater at the Site is found at a depth of approximately 10 feet below the pre-redevelopment grade. The regional groundwater flow direction in the area of the Site is to the southeast, toward the Harlem River. A groundwater flow map is shown in Figure 1.2.3.1.

Bedrock (Manhattan Schist) is located within one hundred feet of the ground surface and is overlain by sand and gravel deposits presumably associated with a former channel of the Harlem River. Peat is present in several locations beneath the northern portion of the Site. Fill material was formerly present over much of the Site and was presumably placed in association with historic development activities. Much of this fill has now been removed during the remedial actions. Generalized cross-sections of the Site showing the post-excavation grade and remaining stratigraphy are presented in Figure 1.2.3.1.

1.3 DESCRIPTION OF INVESTIGATION FINDINGS

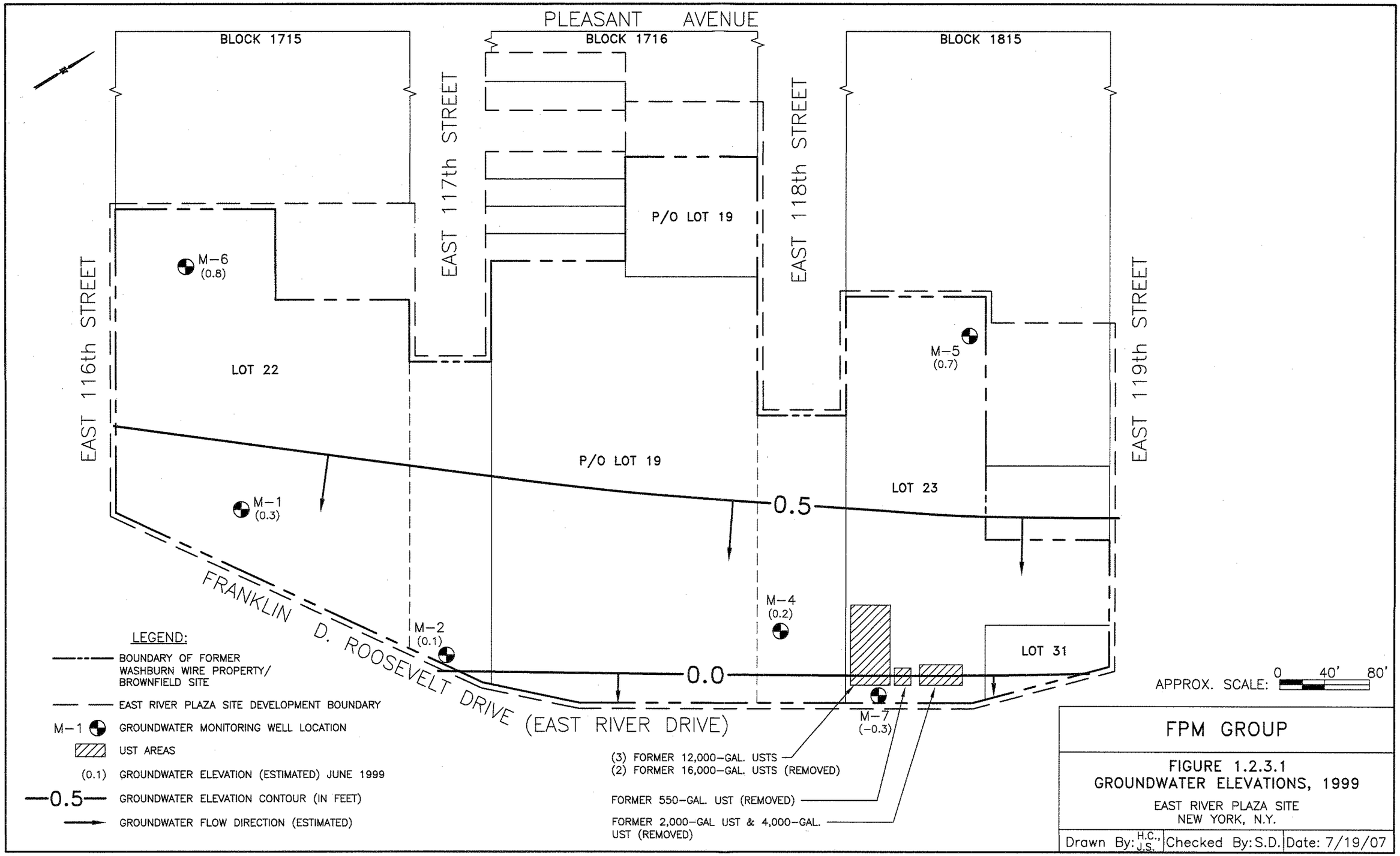
The SMP and all Site documents, including the Final Investigation Report and Remedial Work Plan, are maintained by the NYSDEC (or successor agency). At the time of publication, these reports could be found at the Region 2 NYSDEC offices in Long Island City, New York.

1.3.1 Summary of Remedial Investigation Findings

The Site subsurface conditions were evaluated during the previous investigations described in the Final Investigation Report and Remedial Work Plan (FPM, September 2005).

The existing Site information was used to develop a conceptual site model of the contaminant sources, distribution and behavior. The Site consists of a former industrial property used for various processes related to the manufacturing of wire from prior to 1911 until the 1980s when it became vacant. The Site was underlain by variable materials, primarily fill placed during historic development. The Site is located on the northeastern edge of the island of Manhattan in New York. Groundwater is found at a depth of approximately 10 feet below grade (prior to remediation). The regional groundwater flow direction is to the southeast, toward the Harlem River.

Soil exhibiting visible indications of petroleum impact (staining, odors) was present in the subsurface in portions of the area between East 118th and East 119th Streets. Some of this soil was associated with subsurface concrete vaults formerly containing heating oil tanks that adjoined the north side of East 118th Street. Petroleum-related compounds are not anticipated to migrate significantly to groundwater or to impact human health. Since the petroleum compounds are subject to degradation over time, it is anticipated that if this material had been left onsite the concentrations would gradually decrease. However, since much of this soil was removed during the redevelopment activities, the potential for impact from this soil was substantially reduced.



FPM GROUP

FIGURE 1.2.3.1
GROUNDWATER ELEVATIONS, 1999

EAST RIVER PLAZA SITE
NEW YORK, N.Y.

Drawn By: H.C., J.S.	Checked By: S.D.	Date: 7/19/07

C:\Draw\BDG\EAST RIVER PLAZA SITE\FIG 2-4-1A.dwg, 7/23/2007 12:29:03 PM, 1:80

Floating product was encountered in the area of the former heating oil tank vaults and had been removed under the oversight of the NYSDEC prior to site-wide remediation. It was possible that some floating product remained present in the area of the former tank vaults. Although floating product will degrade over time through natural processes, it had the potential to impact soil and groundwater quality. It could also migrate downgradient under favorable conditions, although the presence of foundations that extend below the water table along the FDR Drive likely confined any remaining product to the Site. Floating product removal was performed during remediation activities. Groundwater monitoring was also performed in this area following remedial activity to confirm the absence of floating product.

Several metals, including iron, magnesium, manganese and sodium, were found at slightly elevated concentrations in both upgradient and downgradient wells at the Site. These detections were thought to be indicative of ambient groundwater conditions in the Site vicinity and not necessarily Site-related. However, the metals-impacted soil at the Site had the potential to impact groundwater quality. Therefore, groundwater monitoring was performed following the removal of metals-impacted soil.

The Site is undergoing redevelopment; remediation included excavation of the majority of the Site to between six and nine feet below grade elevation. The excavated soil was removed from the Site and disposed. This excavation removed much of the contaminated soil from the Site. The remaining soil and groundwater is isolated from human contact by the current cover and will be further isolated following construction of the proposed buildings and associated paved areas.

Two general Areas of Concern (AOCs) were identified for the Site, including petroleum-impacted soil and metals-impacted soil. The metals-impacted soil was located on the eastern portion of the Site between East 116th and East 117th Street. The petroleum–impacted soil was present in two areas of the Site, between East 118th and East 119th Streets. The free-phase petroleum and former petroleum tanks were formerly associated with the eastern area of petroleum-impacted soil.

The findings of previous investigations are summarized in the following sections.

1.3.1.1 Soil

Site soil conditions prior to the remedy were described in the Final Investigation Report. Impacted soil was identified at several onsite locations. An area of petroleum-contaminated soil (soil exhibiting visible indications of petroleum impact, including staining and/or odors) was present on the east side of the Site between East 118th and East 119th Streets. This soil appeared to be associated with former subsurface concrete vaults containing heating oil tanks that adjoined

the north side of East 118th Street. A smaller area of petroleum-impacted soil was identified on the west side of the portion of the Site between East 118th and East 119th Streets. An area of metal-contaminated soil was identified on the east side of the Site between East 116th and East 117th Streets in an area where acid tanks were formerly present.

Concentration ranges of contaminants of concern formerly present in the onsite soil prior to remediation are shown in Table 1.3.1.1.1 and were compared with the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives. The primary contaminants of concern were SVOCs and metals. The SVOCs were petroleum-related and were primarily associated with the area of petroleum impact in the vicinity of the former petroleum tank vaults. These SVOCs included benzo(a)anthracene at up to 4,800 micrograms per kilogram (ug/kg), chrysene at up to 5,200 ug/kg, benzo(b)fluoranthene at up to 6,000 ug/kg, benzo(k)fluoranthene at up to 2,400 ug/kg, benzo(a)pyrene at up to 4,600 ug/kg, and dibenz(a,h)anthracene at up to 590 ug/kg.

The metals appear to have been related to the former wire manufacturing use of the property and were primarily associated with the former acid tank area on the southeastern portion of the Site. These metals included arsenic at up to 20 milligrams per kilogram (mg/kg), barium at up to 494 mg/kg, beryllium at up to 1.84 mg/kg, cobalt at up to 34.9 mg/kg, copper at up to 69.8 mg/kg, lead at up to 900 mg/kg, mercury at up to 0.57 mg/kg, nickel at up to 44 mg/kg and zinc at up to 1.825 mg/kg. The remedial action resulted in the removal of the majority of the impacted soil from the Site. The remaining soil does not exceed Track 4 site-specific soil cleanup objectives (SCOs).

1.3.1.2 Groundwater

Floating product was formerly present in the area where heating oil tank vaults were historically located and was addressed during the remedial action. Following remediation, groundwater monitoring has not detected any floating product at the site.

Several metals, including iron, magnesium, manganese and sodium, were historically found at slightly elevated concentrations in both upgradient and downgradient wells at the Site. Low levels of VOCs and SVOCs were also found. Following remediation, the concentrations of metals, VOCs and SVOCs have been reduced.

Concentration ranges of contaminants previously detected in the onsite groundwater prior to the remedy are shown in Table 1.3.1.2.1 and are compared with the NYSDEC Class GA Ambient Water Quality Standards. A spider map that indicates the locations of and summarizes exceedances from GA groundwater standards prior to the remedy is shown in Figure 1.3.1.2.1.

TABLE 1.3.1.1.1
SUMMARY OF DETECTIONS - SITE SOIL
EAST RIVER PLAZA SITE, NEW YORK, NEW YORK

Analyte	Range of Detections		NYSDEC Recommended Soil Cleanup Objective
	Low	High	
Volatile Organic Compounds in micrograms per kilogram			
n-butylbenzene	ND	620	10,000
sec-butylbenzene	ND	910	10,000
n-propylbenzene	ND	660	3,700
Benzene	ND	6	60
Ethylbenzene	ND	210	5,500
Toluene	ND	36	1,500
Total xylenes	ND	110	1,200
isopropylbenzene (cumene)	ND	370	2,300
1,2,4-trimethlybenzene	ND	560	10,000
1,3,5-trimethylbenzene	ND	190	3,300
tert-butylbenzene	ND	44	10,000
MTBE	ND	66	120
Semivolatile Organic Compounds in micrograms per kilogram			
Acenaphthalene	ND	1,000	41,000
Acenaphthene	ND	1,000	50,000
Fluorene	ND	980	50,000
Phenanthrene	ND	1,200	50,000
Anthracene	ND	1,900	50,000
Di-n-butylphthalate	ND	64	8,100
Fluoranthene	ND	8,200	50,000
Pyrene	ND	8,100	50,000
Benzo(a)anthracene	ND	**4,800**	224
Chrysene	ND	**5,200**	400
Bis(2-ethylhexyl)phthalate	ND	570	50,000
Benzo(g,h,i)perylene	ND	1,800	50,000
Benzo(b)fluoranthene	ND	**6,000**	224
Benzo(k)fluoranthene	ND	**2,400**	224
Benzo(a)pyrene	ND	**4,600**	61
Dibenz(a,h)anthracene	ND	**590**	14
Indeno(1,2,3-cd)pyrene	ND	1,700	3,200
Naphthalene	ND	760	13,000
2-Methylnaphthalene	ND	1,700	36,400
Dibenzofuran	ND	640	6,200
Diethylphthalate	ND	55	7,100
3,3'-dichlorobenzidine	ND	3,200	NA
PCBs in milligrams per kilogram	ND	ND	1.0 (surface) 10.0 (subsurface)

Notes:

ND = Not detected.
NA = Not applicable.
SB = Site background.
- = Not established.
* = Average lead levels in metropolitan or suburban areas near highways typically range from 200 to 500 ppm.
Bold values exceed NYSDEC Recommended Soil Cleanup Objectives.

TABLE 1.3.1.1.1 (CONTINUED)
SUMMARY OF DETECTIONS - SITE SOIL
EAST RIVER PLAZA SITE, NEW YORK, NEW YORK

Analyte	Range of Detections		NYSDEC Recommended Soil Cleanup Objective
	Low	High	
Metals in milligrams per kilogram			
Aluminum	1,890	8,560	SB
Antimony	ND	1.6	SB
Arsenic	ND	**20**	7.5
Barium	ND	**494**	300
Beryllium	ND	**1.84**	0.16
Cadmium	ND	2.45	10
Calcium	ND	63,800	SB
Chromium	6.51	28.7	50
Cobalt	ND	**34.9**	30
Copper	13.2	**69.8**	25
Iron	4,318	**81,743**	2,000
Lead	4.86	**900**	200-500*
Magnesium	500	9,830	SB
Manganese	154	1,311	SB
Mercury	ND	**0.57**	0.1
Nickel	ND	**44**	1.3
Potassium	260	2,270	SB
Silver	ND	1.2	SB
Sodium	106	523	SB
Vanadium	ND	56.7	150
Zinc	16.2	**1,825**	20
Selenium	ND	1.9	2
Thallium	ND	0.81	SB

Notes:

ND = Not detected.
NA = Not applicable.
SB = Site background.
- = Not established.
* = Average lead levels in metropolitan or suburban areas near highways typically range from 200 to 500 ppm.
Bold values exceed NYSDEC Recommended Soil Cleanup Objectives.

TABLE 1.3.1.2.1
SUMMARY OF DETECTIONS - SITE GROUNDWATER
EAST RIVER PLAZA SITE, NEW YORK, NEW YORK

Analyte	Range of Detections		NYSDEC Class GA Ambient Water Quality Standards
	Low	High	
Volatile Organic Compounds in micrograms per liter			
Dichloroemethane	ND	4	50
Toluene	ND	**160**	5
Xylenes	ND	**1,980**	5
Benzene	ND	**5**	1
Ethylbenzene	ND	3	5
Isopropylbenzene	ND	**8**	5
n-propylbenzene	ND	**12**	5
1,2,4-trimethylbenzene	ND	2	5
n-butylbenzene	ND	5	5
sec-butylbenzene	ND	**7**	5
MTBE	ND	**270**	50
Semivolatile Organic Compounds in micrograms per liter			
Di-n-butylphthalate	ND	2	50
Fluoranthene	ND	1	50
Pyrene	ND	2	50
Benzo(a)anthracene	ND	**1**	0.002
Chrysene	ND	**1**	0.002
Bis(2-ethylhexyl)phthalate	ND	3	5
Diethylphthalate	ND	2	50
Phenanthrene	ND	**97**	50
Naphthalene	ND	**18**	10
Fluorene	ND	**52**	50
PCBs in micrograms per liter	ND	ND	0.09
Dissolved Metals in micrograms per liter*			
Aluminum	ND	2,690	-
Barium	ND	476	1,000
Calcium	29,500	271,000	-
Cobalt	ND	20.3	-
Copper	ND	30.5	200
Iron	**341**	**5,540**	300
Lead	ND	3.6	25
Magnesium	7,320	**104,000**	35,000
Manganese	22.7	**6,760**	300
Mercury	ND	0.20	0.7
Nickel	ND	13.9	100
Potassium	11,100	15,900	-
Silver	ND	1.2	50
Sodium	8,330	**613,000**	20,000
Vanadium	ND	9.9	-
Zinc	20.4	113	2,000

Notes:

ND = Not detected.

* = Most recent analytical data used for each well.

- = Not established.

Bold values exceed NYSDEC Class GA Ambient Water Quality Standard or Guidance Value.

PLEASANT AVENUE

BLOCK 1715

BLOCK 1716

BLOCK 1815

EAST 116th STREET

EAST 117th STREET

EAST 118th STREET

EAST 119th STREET

M-6

MANGANESE 5,940 ug/l
SODIUM 59,200 ug/l

LOT 22

P/O LOT 19

M-3

MANGANESE 1,970 ug/l
SODIUM 171,000 ug/l

P/O LOT 19

IRON 613 ug/l
MANGANESE 6,760 ug/l
SODIUM 57,700 ug/l

M-5

LOT 23

BENZENE 4 ug/l
ISOPROPYLBENZENE 8 ug/l
n-PROPYLBENZENE 12 ug/l
sec-BUTYLBENZENE 7 ug/l
TOLUENE 27 ug/l
XYLENES 15 ug/l
MTBE 110 ug/l
PHENANTHRENE 97 ug/l
FLUORENE 52 ug/l

PHENANTHRENE 51 ug/l

BENZENE 1 ug/l
TOLUENE 19 ug/l
XYLENES 15 ug/l
MTBE 98 ug/l

SB-1

M-1

SODIUM 11,300 ug/m^3

IRON 5,540 ug/l
MAGNESIUM 104,000 ug/l
MANGANESE 1,580 ug/l
SODIUM 613,000 ug/l

SB-6

M-4

SB-8

BENZENE 2 ug/l
TOLUENE 12 ug/l
XYLENES 12 ug/l
MTBE 270 ug/l
NAPHTHALENE 18 ug/l

BENZENE 5 ug/l
TOLUENE 37 ug/l
XYLENES 17 ug/l
MTBE 160 ug/l

SB-5

LOT 31

SB-4

M-7

M-2

FRANKLIN D. ROOSEVELT DRIVE (EAST RIVER DRIVE)

APPROX. SCALE: 0 40' 80'

BENZO(a)ANTHRACENE 1ug/l
CHRYSENE 1ug/l
MANGANESE 726 ug/l
SODIUM 326,000 ug/l

(3) FORMER 12,000-GAL. USTS
(2) FORMER 16,000-GAL. USTS (REMOVED)

FORMER 550-GAL. UST (REMOVED)

FORMER 2,000-GAL UST & 4,000-GAL. UST (REMOVED)

TOLUENE 160 ug/l
XYLENES (m,p) 1,200 ug/l
XYLENES (o) 780 ug/l
IRON 3,180 ug/l
MANGANESE 614 ug/l
SODIUM 68,300 ug/l

LEGEND:

- BOUNDARY OF FORMER WASHBURN WIRE PROPERTY/ BROWNFIELD SITE
- EAST RIVER PLAZA SITE DEVELOPMENT BOUNDARY
- M-1 GROUNDWATER MONITORING WELL LOCATION
- SB-7 SOIL BORING/GROUNDWATER SAMPLING LOCATION
- UST AREAS

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FIGURE 1.3.1.2.1
PRE-REMEDIATION GROUNDWATER CONDITIONS
EAST RIVER PLAZA SITE
NEW YORK, N.Y.

Drawn By: H.C., J.S. | Checked By: S.D. | Date: 7/19/07

H:\BDG\EAST RIVER PLAZA SITE\fig 1-3-1-2-1.dwg, 10/30/2007 2:15:30 PM, MinoltaBW

The VOC and SVOC exceedances were all petroleum-related and were nearly all associated with the groundwater in the vicinity of the former petroleum tank area. The exceedances noted for VOCs included benzene at up to 5 ug/l, toluene at up to 160 ug/l, xylenes at up to 1,980 ug/l, isopropylbenzene at up to 8 ug/l, n-propylbenzene at up to 12 ug/l, sec-butylbenzene at up to 7 ug/l and MTBE at up to 270 ug/l. The exceedances noted for SVOCs included benzo(a)anthracene and chrysene each at up to 1 ug/l, phenanthrene at up to 97 ug/l, naphthalene at up to 18 ug/l, and fluorene at up to 52 ug/l. The metals exceedances were not spatially associated with any particular area of the site and appear to be indicative of general groundwater conditions in the Site vicinity. These exceedances included iron at up to 5,540 ug/l, magnesium at up to 104,000 ug/l, manganese at up to 6,760 ug/l, and sodium at up to 613,000 ug/l. The sodium detections appear to be associated with the Site's proximity to the Harlem River, which is a saltwater surface water body.

Groundwater monitoring was performed following the remedial activities at the Site to further evaluate groundwater quality and assess the anticipated decrease in groundwater impact following the removal of impacted Site soil. However, historic groundwater monitoring wells M-1 through M-7 were lost prior to or during the building demolition process and were no longer available for sampling. Therefore, additional groundwater monitoring wells M-8 through M-14 were installed and monitored during the remedial action.

The data from the November 2006 sampling event are summarized in Table 1.3.1.2.2. A site plan showing the exceedances of the SCGs is presented in Figure 1.3.1.2.2. The upgradient wells M-8 through M-10 did not exhibit any exceedances of the NYSDEC Standards for VOCs or SVOCs. However, several metals, including iron, manganese and/or sodium did exhibit exceedances of the NYSDEC Standards in the upgradient wells. Iron was detected at up to 2,830 ug/l, manganese was detected at up to 8,310 ug/l, and sodium was detected at up to 120,000 ug/l. These are considered to be representative of ambient groundwater quality in the Site vicinity.

Wells M-11 and M-12, located downgradient of the former metals-impacted area, did not exhibit any exceedances of the NYSDEC Standards for VOCs or SVOCs. However, iron, lead, and/or sodium were noted to exceed the NYSDEC Standards. The iron (up to 3,680 ug/l) and sodium (up to 77,700 ug/l) detections are likely related to ambient groundwater quality in the Site vicinity. Lead was detected at 74.1 ug/l in well M-11 and may be related to sample turbidity. This sample was not filtered and exhibited a turbidity of 41 NTU, which is within acceptance criteria, but indicates that some turbidity is present.

TABLE 1.3.1.2.2
GROUNDWATER SAMPLING DATA
NOVEMBER 2006
EAST RIVER PLAZA, NEW YORK, NEW YORK

	Upgradient Wells			Downgradient Wells				NYSDEC Class GA Ambient Water Quality Standards
Sample Location	**M-8**	**M-9**	**M-10**	**M-11**	**M-12**	**M-13**	**M-14**	
Sample Date	**11/28/06**	**11/28/06**	**11/28/06**	**11/28/06**	**11/28/06**	**11/28/06, 11/29/06**	**11/28/06**	
Parameter								
TCL Volatile Organic Compounds in ug/l								
Acetone	1.6 J	2.1 J	ND	5.2 J	7 J	**62**	12	50
Toluene	ND	0.34 J	ND	ND	ND	2.8 J	0.38 J	5
Benzene	ND	ND	ND	ND	ND	**9.7**	ND	1
2-Butanone (MEK)	ND	ND	ND	ND	ND	15	ND	50
Xylenes (total)	ND	ND	ND	ND	ND	1.1 J	ND	5
TCL Semivolatile Organic Compounds in ug/l								
Phenol	ND	ND	ND	ND	ND	**40**	**2 J**	1
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	0.9 J	1
2-Methylnaphthalene	ND	ND	ND	ND	ND	3 J	2 J	-
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	2 J	10
Acenaphthene	ND	ND	ND	ND	ND	0.9 J	4 J	20
Fluorene	ND	ND	ND	ND	ND	1 J	3 J	50
Naphthalene	ND	ND	ND	ND	ND	2 J	ND	10
2,4-Dimethylphenol	ND	ND	ND	ND	ND	1 J	ND	1
Pyrene	ND	ND	ND	ND	ND	1 J	ND	50
Bis(2-ethylhexyl)phthalate	ND	ND	ND	ND	ND	2 J	ND	5
Phenanthrene	ND	ND	ND	ND	ND	2 J	ND	50
4-Methylphenol	ND	ND	ND	ND	ND	**3 J**	ND	1
TAL Metals in ug/l								
Aluminum	2,490	514	1,710	4,130	3,260	2,110	744	-
Arsenic	ND	ND	ND	ND	ND	4.8 B	6.2 B	25
Barium	33.9	80.9	328	66.8	43.7	159	172	1,000
Beryllium	ND	ND	0.3 B	ND	ND	ND	ND	-
Cadmium	ND	ND	5 B	ND	ND	ND	ND	5
Calcium	23,200	146,000	127,000	103,000	105,000	485,000	161,000	-
Chromium	19.4	ND	5 B	39.3	48.2	5.6 B	2.3 B	50
Cobalt	1.7 B	3.3 B	14.7	3.4 B	1.6 B	ND	1.9 B	-
Copper	12.9	7.2 B	13.1	36.6	16.3	140	5.1 B	200
Iron	**632**	**700**	**2,830**	**3,680**	**444**	**339**	**914**	300
Lead	ND	3.3 B	10.2	**74.1**	17.4	10.3	18.1	25
Magnesium	959	43,600	30,900	753	159	181	34,000	-
Manganese	108	**4,980**	**8,310**	92.4	14.8 B	6.6 B	**594**	300
Nickel	2 B	6 B	56.9	6.3 B	3.6 B	11.2	5.4 B	100
Potassium	13,900	38,900	12,800	35,600	40,800	98,300	86,300	-
Selenium	ND	9.1 B	ND	ND	ND	ND	ND	10
Sodium	**49,700**	**120,000**	**70,000**	**77,700**	**71,800**	**246,000**	**205,000**	20,000
Vanadium	29.2	3 B	6.3	15.8	7.5	9.9	10.9	-
Zinc	ND	ND	5,000	49.2 B	ND	ND	22.7 B	-

Notes:

Only compounds detected in one or more samples are reported. See laboratory report for complete data.
ND = Not detected.
* = Applies to the sum of these substances.
B = Analyte result is between IDL and contract - required detection limit.
J = Concentration is an estimated value which is less than the IDL but is greater than zero.
- = Not established
ug/l = micrograms per liter

PLEASANT AVENUE

BLOCK 1715

BLOCK 1716

BLOCK 1815

EAST 116th STREET

EAST 117th STREET

EAST 118th STREET

EAST 119th STREET

M-8

IRON 632 ug/l
SODIUM 49,700 ug/l

LOT 22

P/O LOT 19

M-9

IRON 700 ug/l
MANGANESE 4,980 ug/l
SODIUM 120,000 ug/l

P/O LOT 19

IRON 2,830 ug/l
MANGANESE 8,310 ug/l
SODIUM 70,000 ug/l

M-10

LOT 23

IRON 3,680 ug/l
LEAD 74.1 ug/l
SODIUM 77,700 ug/l

M-11

M-12

FRANKLIN D. ROOSEVELT DRIVE (EAST RIVER DRIVE)

ACETONE 62 ug/l
BENZENE 9.7 ug/l
PHENOL 40 ug/l
4-METHYLPHENOL 3 ug/l
IRON 339 ug/l
SODIUM 246,000 ug/l

IRON 914 ug/l
MANGANESE 594 ug/l
SODIUM 205,000 ug/l
PHENOL 2 ug/l

LOT 31

IRON 444 ug/l
SODIUM 71,800 ug/l

M-13

M-14

APPROX. SCALE: 0 40' 80'

LEGEND:

BOUNDARY OF FORMER WASHBURN WIRE PROPERTY/ BROWNFIELD SITE

EAST RIVER PLAZA SITE DEVELOPMENT BOUNDARY

M-1 GROUNDWATER MONITORING WELL LOCATION

FPM GROUP

FIGURE 1.3.1.2.2
POST-REMEDIATION GROUNDWATER RESULTS, NOVEMBER 2006
EAST RIVER PLAZA SITE
NEW YORK, N.Y.

Drawn By: H.C., J.S. | Checked By: S.D. | Date: 7/19/07

C:\Draw\BDG\EAST RIVER PLAZA SITE\FIG 1-3-1-2-2.dwg, 7/23/2007 2:17:48 PM, 1:80

Wells M-13 and M-14, located downgradient of the former petroleum tank vaults, exhibited some exceedances of the NYSDEC Standards for VOCs and SVOCs. Benzene was noted in one sample at 9.7 ug/l, acetone was noted in one sample at 62 ug/l, phenol was noted in both samples at up to 40 ug/l, and 4-methylphenol was noted in one sample at 3 ug/l. Petroleum-related VOC and SVOC detections were lower than pre-remediation conditions. Iron, manganese, and/or sodium levels exceeding NYSDEC Standards were also noted. Iron was noted at up to 914 ug/l, manganese was found in one sample at 594 ug/l, and sodium was noted at up to 246,000 ug/l. These detections are likely related to ambient groundwater quality in the Site vicinity.

In summary, November 2006 groundwater monitoring results are similar to historic groundwater monitoring results for the Site. No free-phase petroleum was present and none of the detected constituents was particularly elevated.

Groundwater monitoring will be conducted following remediation in accordance with the procedures described herein.

1.3.1.3 Soil Vapor

Soil vapor sampling was performed at six onsite locations (SV-1 though SV-6) on December 15, 2005 during the initial period of excavation before the sampled areas were disturbed by remedial activities. Several VOCs were detected in these samples, as shown in Table 1.3.1.3.1. These VOCs include low levels of several petroleum compounds (benzene at 2.5 ug/m^3, o-xylene at 1.0 ug/m^3, toluene at up to 6.0 ug/m^3, 1,2,4-trimethylbenzene at up to 7.4 ug/m^3 and 1,3,5-trimethylbenzene at up to 360 ug/m^3). Low levels of several chlorinated solvents were also noted at locations on the upgradient side of the site (1,1,1-trichloroethene at 13 ug/m^3 and tetrachloroethene at 120 ug/m^3 in SV-1,and tetrachloroethene at 7.5 ug/m^3 and trichloroethene at 7.5 ug/m^3 in SV-3. A spider map that indicates the locations of and summarizes soil vapor data prior to the remedy is shown in Figure 1.3.1.3.1.

The soil vapor results were compared to the SCGs, where available, and were also evaluated with respect to the soil and groundwater chemical analytical data for the Site, in accordance with NYSDOH guidance.

Two VOCs, tetrachloroethene (PCE) and trichloroethene (TCE), were noted to slightly exceed their SCGs. The sampling locations for these detections (SV-1 and SV-3, respectively) adjoin the western edge of the Site. It was also noted that no chlorinated VOCs have been detected in onsite soil or groundwater samples. Therefore, these VOCs observed in the soil vapor likely originated from an offsite source.

TABLE 1.3.1.3.1
SOIL VAPOR ANALYTICAL DATA - PRE-REMEDIATION
EAST RIVER PLAZA
NEW YORK, NEW YORK

Sample Location	SV-1	SV-2	SV-3	SV-4	SV-5	SV-6	NYSDOH Sub-Slab Vapor Concentration
Sample Date	12/15/05	12/15/05	12/15/05	12/15/05	12/15/05	12/15/05	
Volatile Organic Compounds in micrograms per cubic meter							
1,1,1-Trichloroethane	13	ND	ND	ND	ND	ND	100
1,2,4-Trimethylbenzene	7.4	ND	ND	4.9	ND	ND	-
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	360	-
2,2,4-Trimethylpentane	ND	ND	ND	ND	2.9	8,900	-
Acetone	21	ND	ND	43	180	ND	-
Benzene	ND	ND	ND	ND	2.5	ND	-
Chloroform	4.5	ND	ND	ND	ND	ND	-
Cyclohexane	ND	ND	ND	ND	3.2	8,300	-
Dichlorodifluoromethane	28	2,100	ND	7.4	ND	ND	-
Methyl Ethyl Ketone	ND	ND	ND	2.3	7.1	ND	-
Methyl Butyl Ketone	2.9	ND	ND	ND	ND	ND	-
o-Xylene	ND	ND	ND	1.0	ND	ND	-
Tetrachloroethene	120	ND	7.5	ND	ND	ND	100
Toluene	ND	ND	3.0	0.75	6.0	ND	-
Trichloroethene	ND	ND	7.5	6.4	ND	ND	5
Trichlorofluoromethane	1.6	ND	ND	120	ND	ND	-

Notes:

Only compounds detected in one or more samples are reported. See laboratory report for complete data.
ND = Not detected.

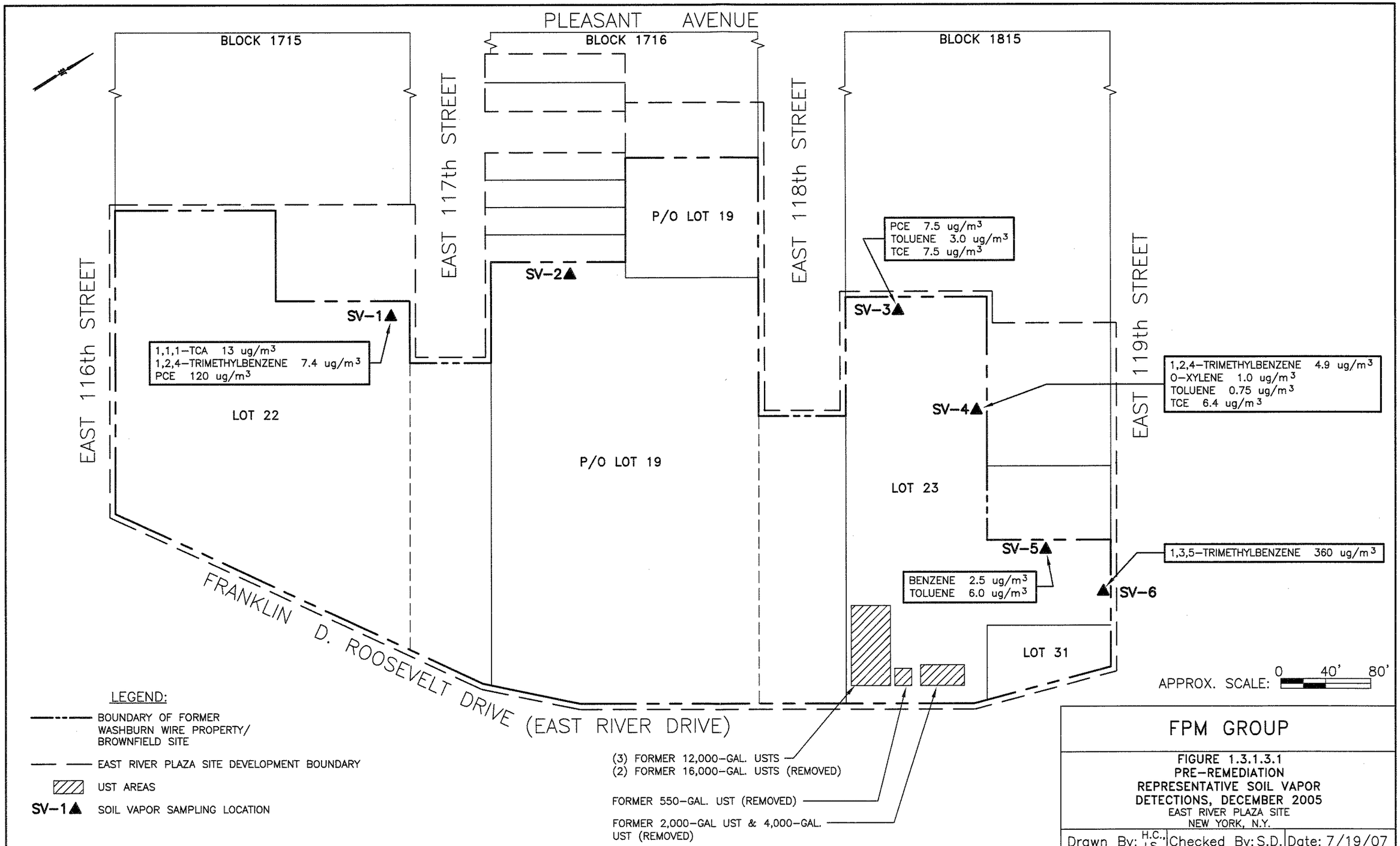

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FIGURE 1.3.1.3.1
PRE-REMEDIATION
REPRESENTATIVE SOIL VAPOR
DETECTIONS, DECEMBER 2005
EAST RIVER PLAZA SITE
NEW YORK, N.Y.

Drawn By: H.C., J.S. | Checked By: S.D. | Date: 7/19/07

C:\Draw\BDG\EAST RIVER PLAZA SITE\FIG 1-3-1-3-1.dwg, 7/23/2007 2:20:28 PM, 1:80

Low levels of several petroleum-related VOCs have been detected in site soil and groundwater and were also found in the soil vapor samples. None of these detections were elevated and no SCGs have been established for these VOCs. These detections do not present a significant concern as no significant vadose zone will be present beneath the building and development plans include placement of a full-foundation waterproofing membrane (vapor barrier) and the use of seals for foundation penetrations, as further described in Section 2.2.1.2 below.

1.3.1.4 Underground Storage Tanks

Two USTs were identified in 1998 to the east of the building between East 118th and East 119th Streets, including a 2,500-gallon steel UST and a 4,000-gallon steel UST both of which reportedly contained lubricating oil. The USTs were emptied, removed, cleaned and disposed in 1998.

The remaining tanks at the Site included three 12,000-gallon and two 16,000-gallon #6 or #5 heating oil tanks contained in concrete vaults beneath the floor of the building on the north side of East 118th Street and a suspected 550-gallon gasoline UST to the east of the building between East 118th and East 119th Streets. In January 2000 the contents of the five heating oil tanks were pumped out to the extent feasible. Removal of the three 12,000-gallon and two 16,000-gallon tanks and associated petroleum occurred in May 2003 following building demolition. The tank vaults were removed during remedial activities, as described below.

The suspected 550-gallon UST was located and removed in December 2003. Free-phase product removal began in July 2003 and was completed in October 2003. The associated petroleum spill (#90-12286) was closed on December 28, 2005.

1.4 DESCRIPTION OF REMEDIAL ACTIONS

The Site was remediated in accordance with the scope of work presented in the NYSDEC-approved Remedial Work Plan dated September 2005 and Stipulations in a letter dated October 27, 2005 and approved by the NYSDEC.

These approved BCP documents are cited as follows:

Final Investigation Report and Remedial Work Plan, East River Plaza Under NYSDEC Brownfield Cleanup Program, NYSDEC #C231045, FPM Group, September 2005

Remedial Work Plan (RWP) Addendum (Stipulation List), October 27, 2005 correspondence from FPM Group to NYSDEC.

Below is a summary of the Remedial Actions required and implemented at the Site under the NYSDEC-approved Remedial Work Plan. In general, the remedial actions include excavation and disposal of soil, placement of a cover over residual soil, installation of a vapor barrier, and groundwater and soil vapor monitoring. Remedial elements are generally listed as follows:

1. Excavation of soil exceeding Track 4 SCOs listed in Table 1.4.1.2;
2. Construction and maintenance of an engineered composite cover consisting of concrete, asphalt and/or gravel to prevent human exposure to residual contaminated soils remaining under the Site;
3. Recording of an Environmental Easement, including Institutional Controls, to prevent future exposure to any residual contamination remaining at the Site (a copy of the Environmental Easement is provided in Appendix F);
4. Removal of tank vaults and other subsurface systems;
5. Proper disposal of dewatering fluids;
6. Removal and proper disposal of residual free-phase petroleum;
7. Sampling of soil vapor and groundwater in accordance with the approved Remedial Work Plan;
8. Implementation of Institutional Controls, including limitations of property use to commercial and restricted residential, restriction of residential habitation to above the first floor, prohibition of vegetable gardens, implementation of an SMP, prohibition of groundwater use, protection/replacement of groundwater monitoring wells, and annual certification;
9. Publication of an SMP for long term management of residual contamination as required by the Environmental Easement, including plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting;
10. Screening for indications of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive Site work;
11. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attainment of Track 4 SCOs;
12. 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;

13. Import of materials to be used for backfill and cover in compliance with: (1) chemical limits and other specifications included in Table 375-6.8(b) of 6 NYCRR Subpart 375; (2) all Federal, State and local rules and regulations for handling and transport of material; and

14. All responsibilities associated with the Remedial Action, including permitting requirements and pretreatment requirements, addressed in accordance with all applicable Federal, State and local rules and regulations.

The remedial actions performed are described more fully in the following sections.

Remedial activities completed at the Site were conducted in accordance with the NYSDEC-approved Remedial Work Plan for East River Plaza (September 2005). The approved Remedial Work Plan is included in Appendix A; this is the digital file of the Remedial Work Plan. All deviations from the Remedial Work Plan are noted in Section 1.4.1.

1.4.1 Removal of Contaminated Materials from the Site

Contaminated materials removed from the Site included soil and dewatering fluids (groundwater). Associated materials removed included concrete tank vaults and subsurface utility systems. Soil was removed by excavation, which was conducted to the targeted depth in all areas of the Site. A map of the location of original sources and areas where excavation was performed is shown in Appendix N.

All excavated soil was transported off Site by licensed waste haulers and delivered to permitted waste disposal facilities. A total of 86,516.19 tons of material (3,161 truck loads) was excavated and properly disposed offsite. Table 1.4.1.1 shows the total quantities of each class of material removed from the Site and the disposal locations.

A list of the Track 4 SCOs for this project is shown in Table 1.4.1.2.

Dewatering was routinely performed at the Site to allow access to submerged infrastructure to be removed for Site redevelopment. Stormwater accumulations were also removed as necessary.

All removed fluids were pumped to an approximately 18,000-gallon fractionation tank to allow for settling of particulates prior to discharge to the New York City combined sewer system. All discharges to the sewer were in accordance with a NYCDEP sewer discharge permit, a copy of which is included in Appendix I. A total of 2,470,652 gallons was discharged to the sewer during the excavation work.

TABLE 1.4.1.1
SOIL DISPOSAL SUMMARY
EAST RIVER PLAZA, NEW YORK, NY

Facility	Tonnage
Clean Earth North Jersey: Non-Hazardous Waste	7,072.10
Clean Earth North Jersey: Hazardous Waste	9,629.70
Clean Earth/Catellus Elizabeth (non-hazardous waste)	29,338.24
Clean Earth/Catellus Port Reading (non-hazardous waste)	5,978.84
Waste Management GROWS Facility (non-hazardous waste)	4,201.33
Middlesex County Landfill (non-hazardous waste)	26,601.66
Clean Earth/Catellus FDP (concrete)	1,856.78
Michigan Waste Treatment Disposal Facility (hazardous waste)	1,837.54
Total	**86,516.19**

TABLE 1.4.1.2
EAST RIVER PLAZA SITE SCOs

Analyte	SCO (in milligrams per kilogram)
Total SVOCs	100
Arsenic	20
Barium	400
Chromium	43
Copper	100
Lead	800
Nickel	40
Zinc	200
Mercury	1.5

During excavation, a concrete vault that previously contained five fuel oil tanks was removed. The vault extended several feet below the water table and below the targeted depth of excavation. Following soil excavation in this area, the vault removal was performed by dewatering the excavation to permit the mechanical breaking of the concrete vault. The removed concrete was then reduced in size and replaced as backfill. No significant petroleum staining or

floating product was noted during vault removal activities. Minor amounts of petroleum emulsion were noted at times on the water surface in the excavation. This petroleum emulsion was treated with absorbent pads, which were removed and disposed with petroleum-impacted soil from the Site. End-point (confirmatory) sampling was performed in this area to document the final condition of soil, as discussed below.

Several subsurface systems were present beneath the Site, including NYCDEP combined sanitary/storm sewers and water main, Con Edison primary electrical conduits, and an Empire City Subway conduit and manhole. These subsurface systems were decommissioned, modified, and/or rerouted during remedial activities under the oversight and approval of the associated utility agency.

There were several deviations from the Remedial Work Plan necessitated by Site conditions or changes in development plans. These deviations and their impacts are described as follows:

- As shown on Figure 5.1 in the Remedial Work Plan, it was originally intended to leave a small area of the southeastern corner of the Site unexcavated due to the presence of a brick wall considered to be a local landmark. However, as the project progressed it became apparent that the brick wall should be removed. After notification to the neighbors and visual documenting of the wall, it was removed. This action enabled additional impacted soil to be removed from the Site, resulting in an improved remedy.
- Proposed end-point sample locations were shown on Figure 5.1 in the Remedial Work Plan. However, actual end-point sample locations were selected in the field to better represent conditions in the completed excavation. These sample locations are shown on the site plans in Appendix N. The effect of the change was an improved understanding of the residual soil conditions and an increase in the number of end-point samples collected.
- The Remedial Work Plan contemplated achieving a Track 1 cleanup. However, on review of the initial end-point sample results it became apparent that a Track 1 cleanup could not be achieved and, therefore, a Track 4 cleanup, including development of SCOs, would be necessary. Preliminary SCOs were developed with NYSDEC guidance and the SCOs received NYSDEC approval on September 13, 2006.

1.4.2 Residual Contamination

The results from the post-remediation confirmatory samples are summarized in Tables 4.4.1.1 through 4.4.1.3 in the FER and are compared to the SCOs. A total of 66 confirmatory soil samples was collected and none of the end-point results exceeds the SCOs. The remaining

soil site-wide does not exhibit any exceedances of the SCOs. The remaining contaminated soil is found generally at or below the water table, which is approximately 10 feet below the surrounding grade, and has been covered by cover materials.

Summary tables highlighting the constituents that exceed the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives and, therefore, are indicative of residual contamination, are presented in Appendix N. A site plan showing the location and depth of residual soil samples with exceedances of the NYSDEC Objectives is included in Appendix N.

At least one foot of cover has been placed over the residual soil. This cover is underlain by a demarcation layer of Mirafi fabric intended to stabilize the cover material. Following cover placement, the elevation of the top of the cover was surveyed and the cover thickness was determined at numerous locations throughout the Site. Documentation of the top elevation of the 'Residual Contamination Zone' is shown on the cover survey in Appendix P.

1.4.3 Engineering and Institutional Controls

Since residual contamination is present at this Site, Engineering Controls and Institutional Controls will be implemented to protect public health and the environment in the future. The Controlled Property will have two primary Engineering Controls. These are: (1) a composite cover system consisting of asphalt and concrete pavement, concrete-covered sidewalks, concrete building slabs, and/or one foot of gravel meeting the cover requirements in 6 NYCRR Part 375; and (2) vapor barrier materials consisting of a water-tight basement slab and wall sealing system.

Exposure to residual contaminated soils is prevented by an engineered, composite cover system that has been built on the Site during the remedial process and is undergoing modification during Site development. This composite cover system is comprised of cover gravel with a Mirafi fabric demarcation layer that was installed in November 2006. Following the completion of Site redevelopment, the cover system will consist of asphalt and concrete covered roads, concrete covered sidewalks, and concrete building slabs. The Pavement Plan in Appendix P shows the NYSDEC-approved design for the final remedial cover to be used on this Site. A cross-section depicting the final cover system for the Site is shown on Figure 1.4.3.1. A survey in Appendix P shows the location of the current cover type built at the Site. A Soil Management Plan is included in Attachment 1 of this SMP, and outlines the procedures required in the event the composite cover system and underlying residual contamination are disturbed. The Soil Management Plan is also discussed in detail in Section 2.3.2 herein.

Procedures for operating and maintaining the cover system are documented in the Operation and Maintenance Plan in Section 4 herein. The procedures for monitoring the system are included in Section 3, "Monitoring Plan" herein. The Monitoring Plan also addresses

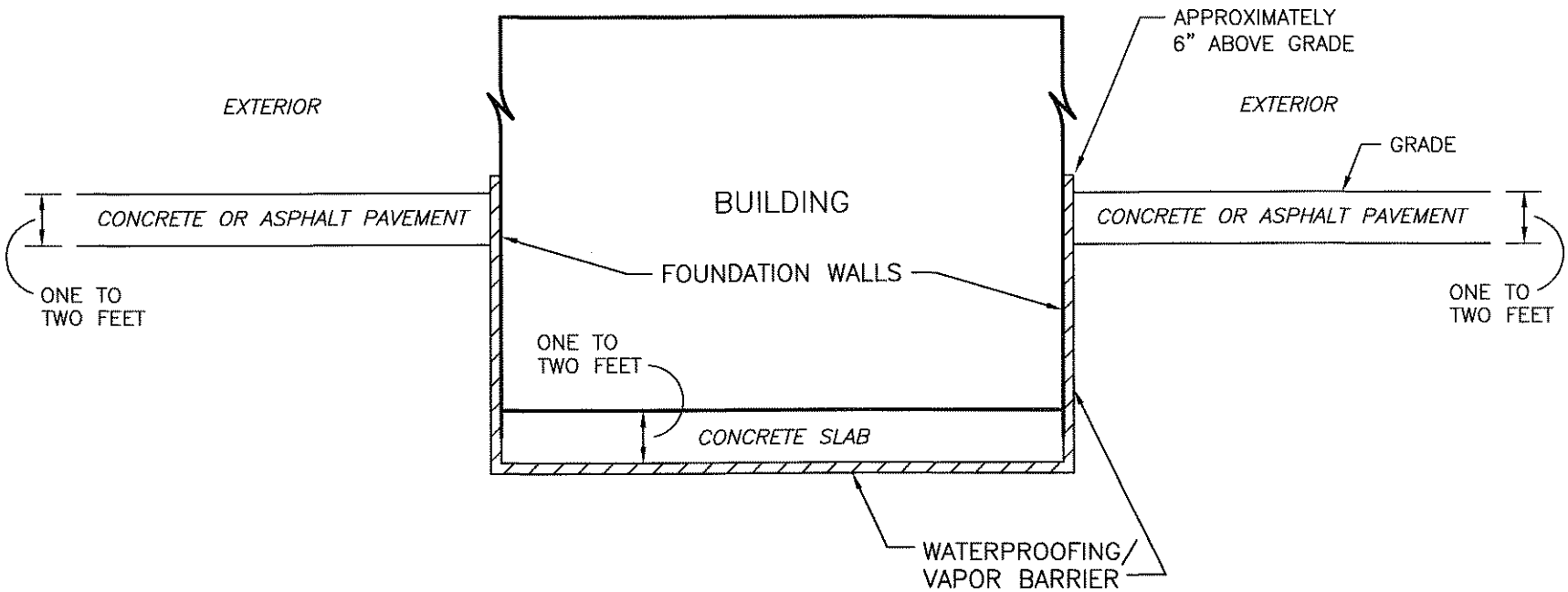

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FIGURE 1.4.3.1

FINAL COVER SYSTEM

EAST RIVER PLAZA
EAST HARLEM, NEW YORK

Drawn By:JDS	Checked By:SOD	Date:10/30/07

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inspection procedures that must occur after any severe weather condition has taken place that may affect on-Site ECs.

The sub-grade portions of the building (slab and foundation walls) are being provided with a barrier and seal system for water proofing purposes during the development phase of this project. This barrier and seal system will also function as a vapor barrier. The design for this project includes a water-tight basement slab and wall system designed in accordance with Federal Emergency Management Agency (FEMA) flood levels. This will be accomplished by providing a positive side waterproofing membrane beneath the slab, pile caps, and elevator pits using a sheet membrane waterproofing material. The foundation walls will also be waterproofed using a similar sheet membrane waterproofing material applicable for walls. Penetrations through the slab and/or wall for pipes and duct banks will be detailed in accordance with approved manufacturer's details. The waterproofing elements to be used are specified in the construction contract documents; copies of pertinent portions of these documents are included in Appendix Q and placement of these materials is shown on the typical foundation detail plan in Appendix Q. The vapor barrier system construction will be monitored under this SMP and will be documented on Annual Site Management Report.

A series of Institutional Controls are required to implement, maintain, and monitor these Engineering Controls. The Controlled Property has a series of Institutional Controls in the form of Site restrictions. Adherence to these Institutional Controls is required under the Environmental Easement.

The uses of the Controlled Property will be restricted residential and commercial. Restricted residential is the land use category which shall only be considered where there is common ownership or a single owner/managing entity of the site. Restricted residential use shall, at a minimum, include restrictions which prohibit any vegetable gardens on a site, although community vegetable gardens may be considered with Department approval; and single-family housing; and active recreational uses, which are public uses with a reasonable potential for soil contact. Commercial use is the land use category which shall only be considered for the primary purpose of buying, selling, or trading of merchandise or services. Commercial use includes passive recreational uses, which are public uses with limited potential for soil contact.

The Institutional Controls consist of the following:

A. The Controlled Property may be used for commercial use and restricted residential use (as defined in NYSDEC Regulations Subpart 375-1.8(g)(2)) as long as the following long-term Engineering and Institutional Controls are employed:

a) all engineering controls must be operated and maintained as specified in the Site Management Plan submitted by Grantor and approved by the Department for the Controlled Property (the "Site Management Plan"). No Engineering and Institutional Controls may be discontinued without a NYSDEC-approved amendment or extinguishment of this Environmental Easement;

b) Annual inspections of the Controlled Property, certifications of Engineering and Institutional Controls and usage of Controlled Property, and Site Management Reporting to the Department must be conducted in accordance with the NYSDEC-approved Site Management Plan;

c) groundwater and other environmental or public health monitoring, and reporting of information thus obtained, must be performed in a manner specified in the Site Management Plan;

d) onsite environmental monitoring devices, including but not limited to, groundwater monitor wells, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the NYSDEC-approved Site Management Plan;

e) vegetable gardens are prohibited; and

f) residential habitation will not take place in the basement or first floor and shall only occur above the first floor.

The Grantor hereby acknowledges receipt of a copy of the NYSDEC-approved Site Management Plan, dated December 2007 ("SMP"). The SMP describes obligations that Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system on the Controlled Property, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. Upon notice of not less than thirty (30) days the Department in exercise of its discretion and consistent with applicable law may revise the SMP. The notice shall be a final agency determination. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Regional Remediation Engineer
Region Two
NYS Department of Environmental Conservation
Hunters Point Plaza
47-40 21st Street
Long Island City, New York 11101-5401

or:

Site Control Section
Division of Environmental Remediation
NYS Department of Environmental Conservation
625 Broadway
Albany, New York 12233

B. The Controlled Property may not be used for a higher level of use such as **unrestricted** use and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

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

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

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

E. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury that the controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls employed at the Controlled Property were approved by the NYSDEC, and that nothing has occurred that would impair the ability of such control to protect the public health and environment or constitute a violation or failure to comply with any Site Management

Plan for such controls and giving access to such Controlled Property to evaluate continued maintenance of such controls.

These EC/ICs should:

- Prevent ingestion of groundwater.
- Prevent contact with contaminated groundwater.
- Restore ground water aquifer, to the extent practicable, to ambient conditions.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground water contamination.
- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of, or exposure to, contaminants in contaminated soil.
- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent inhalation of soil vapors.
- Prevent contaminated groundwater from migrating off-Site.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Remedial activities completed at the Site were conducted in accordance with the NYSDEC-approved Remedial Work Plan for East River Plaza (September 2005). The remedial goals included attainment of Track 4 Soil Cleanup Objectives (SCOs) for on-Site soils for commercial and restricted residential use. The Track 4 SCOs were approved by NYSDEC and are listed in Section 1.4.1 herein. A summary of the remedial strategies and EC/ICs implemented at the Site are as follows:

- Excavation of soils exceeding Track 4 SCOs;
- Maintenance of an engineered composite cover consisting of asphalt and concrete pavement, concrete-covered sidewalks, concrete building slabs, and/or one foot of gravel meeting the cover requirements in 6 NYCRR Part 375 to prevent human exposure to residual contaminated soils remaining under the Site;
- Registration of an Environmental Easement, including Institutional Controls, to prevent future exposure to any contamination remaining at the Site (a copy of the Environmental Easement is provided in Appendix F).
- Installation of vapor barrier materials consisting of a water-tight basement slab and wall sealing system.

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

2.1.2 Purpose

The purpose of this Plan is to provide:

- A description of all EC/ICs on the Site;
- The basic operation and intended role of each implemented EC/IC;
- A description of the key components of the ICs created as stated in the Environmental Easement;

- A description of the features that should be evaluated during each annual inspection and compliance certification period;
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Soil Management Plan for the safe handling of residual 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 CONTROL COMPONENTS

2.2.1 Engineering Control Systems

2.2.1.1 Composite Cover System

Exposure to residual contaminated soil is prevented by an engineered composite cover system built on-Site. This composite cover system is comprised of asphalt and concrete pavement, concrete-covered sidewalks, concrete building slabs, and/or one foot of gravel meeting the cover requirements in 6 NYCRR Part 375. The Pavement Plan in Appendix P shows the NYSDEC-approved design for the final remedial cover to be used on this Site. A survey in Appendix P shows the location of the current cover type built at the Site. A Soil Management Plan is included in Attachment 1 herein, and outlines the procedures required in the event the composite cover system and underlying residual contamination are disturbed. The Soil Management Plan is also discussed in greater detail in Section 2.3.2 of this EC/IC Plan. Issues related to maintenance of this cover are provided in the Monitoring Plan included in Section 4 of this SMP.

2.2.1.2 Vapor Barrier System

The sub-grade portions of the building (slab and foundation walls) are being provided with a barrier and seal system for water proofing purposes during the development phase of this project. This barrier and seal system will also function as a vapor barrier. The design for this project includes a water-tight basement slab and wall system designed in accordance with Federal Emergency Management Agency (FEMA) flood levels. This will be accomplished by providing a positive side waterproofing membrane beneath the slab, pile caps, and elevator pits using a sheet membrane waterproofing material. The foundation walls will also be waterproofed using a similar sheet membrane waterproofing material applicable for walls. Penetrations through the slab and/or wall for pipes and duct banks will be detailed in accordance with approved manufacturer's details. The waterproofing elements to be used are specified in the

construction contract documents; copies of pertinent portions of these documents are included in Appendix Q and placement of these materials is shown on the typical foundation detail plan in Appendix Q.

This vapor barrier system construction will be monitored under the SMP and will be documented in an Annual Site Management Report. Procedures for operating and maintaining the vapor barrier system are documented in the Operation and Maintenance Plan (Section 4 of this SMP). The procedures for monitoring the system are included in the Monitoring Plan (Section 3 of this SMP). The Monitoring Plan also addresses inspection severe condition inspections in the event that a severe condition, which may affect controls at the Site, has occurred.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

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 annual intervals in perpetuity.

2.2.2.2 Vapor Barrier System

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2.2.2.3 Groundwater Monitoring

Groundwater monitoring activities to assess groundwater conditions will continue, as determined by NYSDOH and NYSDEC, until residual groundwater concentrations are found to be below NYSDEC standards or have become asymptotic over an extended period. Monitoring will continue until permission to discontinue is granted in writing by NYSDEC and NYSDOH. Monitoring activities are outlined in the Monitoring Plan of this SMP.

2.3 INSTITUTIONAL CONTROLS COMPONENTS

2.3.1 Institutional Controls

A series of Institutional Controls are required under the Remedial Work Plan to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to residual contamination by controlling disturbances of the subsurface contamination; and, (3) restrict the use of the Site to commercial and restricted residential uses only. Adherence to these Institutional Controls on the Site (Controlled Property) is required under the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

A. The Controlled Property may be used for commercial use and restricted residential use (as defined in NYSDEC Regulations Subpart 375-1.8(g)(2)) as long as the following long-term Engineering and Institutional Controls are employed:

a) all engineering controls must be operated and maintained as specified in the Site Management Plan submitted by Grantor and approved by the Department for the Controlled Property (the "Site Management Plan"). No Engineering and Institutional Controls may be discontinued without a NYSDEC-approved amendment or extinguishment of this Environmental Easement;

b) Annual inspections of the Controlled Property, certifications of Engineering and Institutional Controls and usage of Controlled Property, and Site Management Reporting to the Department must be conducted in accordance with the NYSDEC-approved Site Management Plan;

c) groundwater and other environmental or public health monitoring, and reporting of information thus obtained, must be performed in a manner specified in the Site Management Plan;

d) onsite environmental monitoring devices, including but not limited to, groundwater monitor wells, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the NYSDEC-approved Site Management Plan;

e) vegetable gardens are prohibited; and

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The Grantor hereby acknowledges receipt of a copy of the NYSDEC-approved Site Management Plan, dated December 2007 ("SMP"). The SMP describes obligations that Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system on the Controlled Property, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. Upon notice of not less than thirty (30) days the Department in exercise of its discretion and consistent with applicable law may revise the SMP. The notice shall be a final agency determination. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

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B. The Controlled Property may not be used for a higher level of use such as **unrestricted** use and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

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E. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury that the controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls employed at the Controlled Property were approved by the NYSDEC, and that nothing has occurred that would impair the ability of such control to protect the public health and environment or constitute a violation or failure to comply with any Site Management

Plan for such controls and giving access to such Controlled Property to evaluate continued maintenance of such controls.

2.3.2 Soil/Materials Management Plan

The Site will be fully remediated for commercial and restricted residential use. Any future intrusive work that will disturb the residual contamination and modifications or repairs to the existing composite cover system will be performed in compliance with the Soil Management Plan (SoMP), which is included in this SMP. Intrusive construction work 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. The Soil Management Plan is presented in Attachment 2 and the CAMP is presented in Attachment 3 of the SMP. The HASP is the responsibility of the property owner and should be in compliance with DER-10 Technical Guide and 29 CFR 1910 and 1926, and all other applicable Federal, State and local regulations. Any intrusive construction work must be certified as compliant with the SMP and included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5).

2.3.2.1 Soil Screening Methods

Visual, olfactory and photoionization detector (PID) soil screening and assessment will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (Residual Contamination Zone). 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 Certificate of Completion (COC). Soil exhibiting visible contamination (e.g., staining, odors, elevated PID readings) will be stockpiled separately to prevent mixing with potentially uncontaminated excavated material.

Screening will be performed by qualified environmental professionals. Resumes will be provided in the Annual Site Management Report for all personnel conducting invasive work field screening (i.e. those representing the Remedial Engineer) for unknown contaminant sources during remediation and development work.

2.3.2.2 Stockpile Methods

Any significant amounts of excavated residual soil will be staged in approximately 1,000 cubic yard (yd^3) stockpiles to be characterized for potential on-site reuse as backfill. Stockpile locations will be selected at the time of excavation such that they are appropriately located with respect to onsite activities, Site boundaries, potential surface water runoff areas, and other factors that have the potential to affect stockpile operations or maintenance. During excavation and

stockpiling, the on-site field personnel will monitor the excavated soil for evidence of contamination and conduct periodic screening for VOCs using a calibrated PID. Soil exhibiting visible contamination (e.g., staining, odors, elevated PID readings) will be stockpiled separately to prevent mixing with potentially uncontaminated excavated material. All soil stockpiles will have side slopes not to exceed 2:1 and will be placed on a base consisting of minimum 6-mil plastic sheeting. Soil stockpiles that are not actively in use will be continuously encircled with silt fences. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times whenever excavation and/or loading operations are not occurring 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 dedicated water truck equipped with a water cannon will be available on-Site for dust control.

2.3.2.3 Materials Excavation and Load Out

The Remediation Engineer or a qualified environmental professional under his/her supervision will oversee all invasive work and the excavation and load-out of all excavated material. The owner of the Controlled Property and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan. The Applicant 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 invasive work, the structural integrity of excavations, and for structures that may be affected by excavations (such as building foundations and bridge footings).

The Remedial Engineer will ensure that Site development activities will not interfere with, or otherwise impair or compromise, remedial activities completed under the Remedial Work Plan.

The presence of utilities and easements on the portion of the Site subject to excavation will be investigated by the Remedial Engineer. 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.

Prior to conducting any intrusive activities involving residual soil following Site redevelopment, fencing or other barriers will be erected around the residual soil disturbance work zone, which will be designated as the exclusion zone. The barriers will include high-

visibility safety fencing, traffic cones and caution tape, or other similar measures. Any required sediment and erosion control measures will be installed prior to the intrusive activities.

All excavations will be considered open excavations and will be managed according to applicable local, state, and federal regulations. All excavations will be backfilled as soon as the work allows. Excavations not secured with fencing will not be left open overnight. Any backfilled areas where the Site cover is not immediately restored will be temporarily covered with plastic sheeting or other measures.

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 Remediation Engineer will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the Site until the invasive construction is complete.

Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-Site sediment tracking. The Remedial Engineer will be responsible for ensuring that all egress points for truck and equipment transport from the Site will be clean of dirt and other materials derived from the Site during Site development. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

If the air monitoring program identifies potential exposure of field personnel or the public to potential environmental hazards in the soil or groundwater, appropriate measures will be taken to control odors/dust and community air monitoring will be initiated as described in Section 2.3.2.12. Soil stockpiles will be kept covered with appropriately anchored tarps and/or plastic sheeting whenever excavation and/or loading operations are not occurring; the sheeting will be routinely inspected for damage and replaced as needed. Open excavated areas will be covered with plastic sheeting whenever excavation operations are not occurring to minimize emission of vapors. Water will be used as necessary to minimize the generation of dust during loading operations. Foam will be available, as needed, to control potential vapors or odors.

Mechanical processing of historical fill and contaminated soil on-Site is prohibited.

All primary contaminant sources (including but not limited to hotspots) identified during previous investigations and Remedial Action have been surveyed by a surveyor licensed to practice in the State of New York. The survey information will be shown on maps to be reported in the Annual Site Management Report.

2.3.2.4 Materials Transport Off-Site

All offsite transport of regulated 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. Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

Truck transport routes are anticipated to be as follows: East 117th Street shall be used for ingress/egress of the Site in accordance with an understanding reached with neighboring businesses and residents. East 117th Street is primarily commercial; use of this street will reduce impacts to nearby residents. Trucks will not queue or idle in the neighborhood near the Site; all queuing will occur onsite. From East 117th Street, trucks shall travel north on 1st Avenue, cross the Willis Avenue Bridge, and travel north on Willis Avenue to Interstate 87 (Major Deegan Expressway). All trucks loaded with Site materials will exit the vicinity of the Site using only this approved truck route.

The approved in-bound and out-bound truck route to the Site is shown in Figure 2.3.2.4.1. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting 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; and (g) community input. Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site. Queuing of trucks will be performed on-Site in order to minimize off-Site disturbance. Off-Site queuing will be prohibited.

2.3.2.5 Materials Disposal Off-Site

For large projects, the total quantity of material expected to be disposed off-Site will be reported to NYSDEC prior to performance of work. This will include quantity, 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.

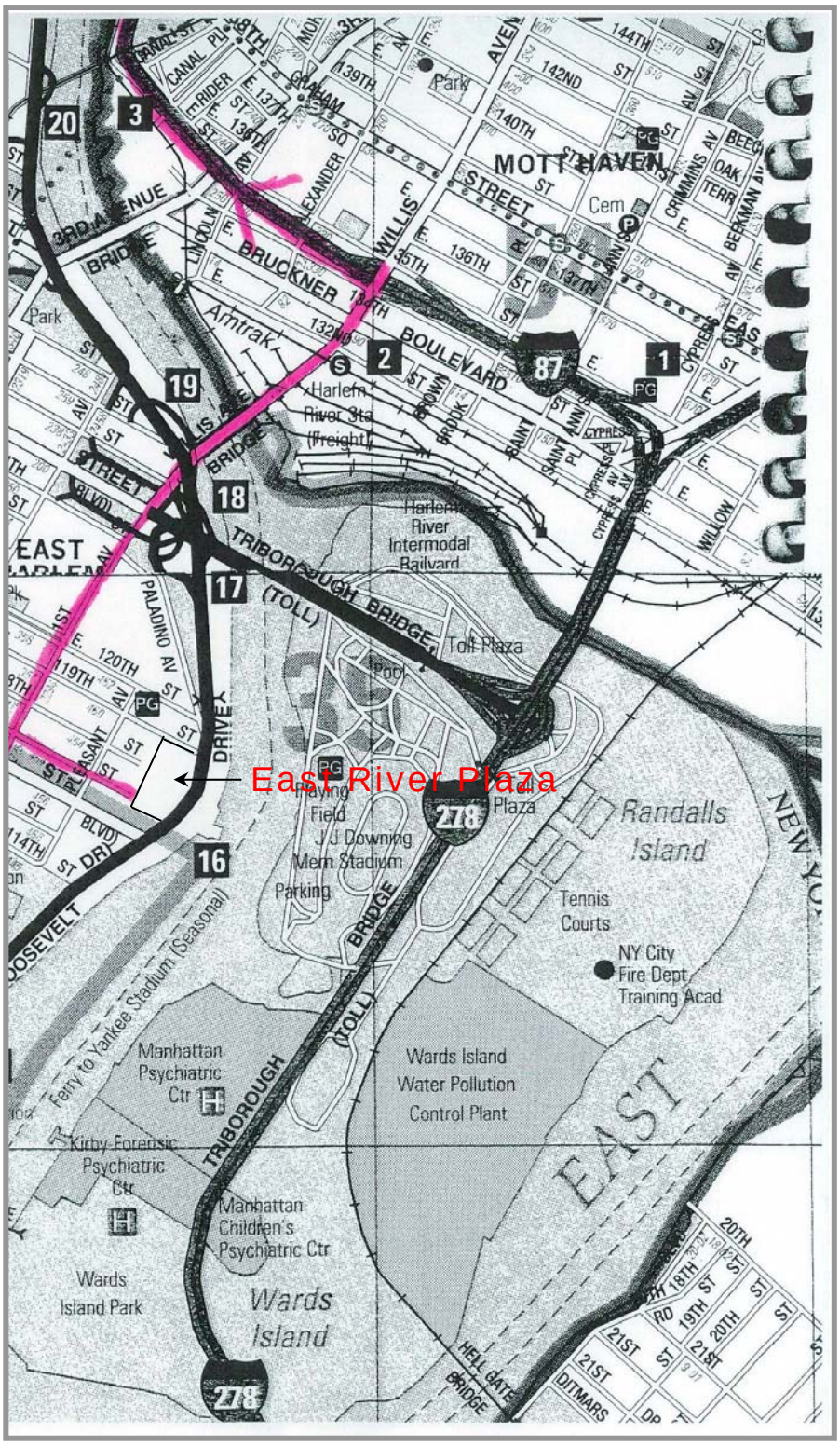


FIGURE 2.3.2.4.1
TRUCK ROUTE
EAST RIVER PLAZA

A Bill of Lading system or equivalent will be used for off-Site movement of non-hazardous wastes and contaminated soils. This information will be reported in the Annual Site Management Report. Appropriately licensed haulers will be used for material removed from this Site and will be in full compliance with all applicable local, State and Federal regulations.

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). 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. Historical fill and contaminated soils from the Site are prohibited from being disposed at Part 360-16 Registration Facilities (also known as Soil Recycling Facilities).

Hazardous wastes derived from on-Site will be stored, transported, and disposed of in full compliance with applicable local, State, and Federal regulations.

Soils that are contaminated but non-hazardous and are being removed from the Site are considered by the Division of Solid & Hazardous Materials (DSHM) in NYSDEC to be Construction and Demolition (C/D) materials with contamination not typical of virgin soils. These soils may be sent to a permitted Part 360 landfill. They may be sent to a permitted C/D processing facility without permit modifications only upon prior notification of NYSDEC Region 2 DSHM. This material is prohibited from being sent or redirected to a Part 360-16 Registration Facility. In this case, as dictated by DSHM, special procedures will include, at a minimum, a letter to the C/D facility that provides a detailed explanation that the material is derived from a DER remediation Site, that the soil material is contaminated and that it must not be redirected to on- Site or off- Site Soil Recycling Facilities. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported.

All soil/fill/solid waste excavated and removed from the Site will be treated as contaminated and regulated material and will be disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to NYSDEC's Project Manager. Unregulated off-Site management of materials from this Site is prohibited without formal NYSDEC approval.

If the analytical results indicate that contaminant concentrations in stockpiled soil exceed the SCOs, the corresponding stockpile(s) will be disposed off-site according to applicable regulations. Additional waste characterization will be conducted as required by the disposal facility. Fill material that meet the SCOs but that cannot be used for backfill will be disposed

off-site according to applicable regulations. Any organic matter derived from on-site will be prohibited from reuse on-site; these materials will be tested in accordance with the requirements of the receiving facility, and disposed as municipal solid waste per 6 NYCRR Part 360-1.2.

Waste characterization will be performed for off-Site disposal in a manner suitable to the receiving facility and in conformance with applicable permits. Sampling and analytical methods, sampling frequency, analytical results and QA/QC will be reported in the Annual Site Management Report. All data available for soil/material to be disposed at a given facility must be submitted to the disposal facility with suitable explanation prior to shipment and receipt.

The following documentation will be obtained and reported by the Remedial Engineer for each disposal location used in this project to fully demonstrate and document that the disposal of material derived from the Site conforms with all applicable laws: (1) a letter from the Remedial Engineer or BCP Applicant to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This letter will state that material to be disposed is contaminated material generated at an environmental remediation site in New York State. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported; and (2) a letter from all receiving facilities stating it is in receipt of the correspondence (above) and is approved to accept the material.

The disposal locations will be identified and reported to NYSDEC in the Annual Site Management Report. The Annual Site Management Report will include an accounting of the destination of all material removed from the Site during work performed under this plan, including excavated soil, contaminated soil, historic fill, solid waste, and hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material. This information will also be presented in a tabular form in the Annual Site Management Report.

Depending on the requirements of the receiving facility, large debris may be segregated from other soils, and characterized for separate disposal or possible on-site reuse. Fresh chip samples will be collected from segregated construction and demolition debris for analysis of VOCs, SVOCs, and metals at a frequency of one sample for each 1,000 yd^3. If this material is found to meet the SCOs, it could be reused on-site.

2.3.2.6 Materials Reuse On-Site

For stockpiled residual soil proposed to be reused onsite one multi-point composite soil sample will be collected from each 1,000 yd^3 of stockpiled soil and analyzed for VOCs by EPA Method 8260, SVOCs by EPA Method 8270, and Target Analyte List (TAL) metals. Acceptable

demolition material proposed for reuse on-Site, if any, will be sampled for asbestos. If the analytical results indicate that contaminant concentrations exceed the SCOs, the corresponding stockpile will be disposed offsite, as described in Section 2.3.2.5. If the analytical results indicate that all contaminant concentrations in the composite sample are below the SCOs, the corresponding stockpile can be used as backfill below the Site cover. Contaminated on-Site material, including historic fill and contaminated soil, removed for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the Site is prohibited for reuse on-Site.

Chemical criteria (SCOs) for on-Site reuse of material have been approved by NYSDEC. These criteria are listed on the next page.

Materials stockpiled for reuse will be managed in accordance with the stockpiling procedures discussed in Section 2.3.2.2 above.

Concrete crushing or processing on-Site is prohibited unless approved by the NYSDEC. However, the NYSDEC will consider the use of specially designed devices that are self-contained and capable of providing misting for dust control. DEC approval must be obtained. If dust-free operations are not achieved with such devices, this exception will be revoked.

Analyte	**SCO (in milligrams per kilogram)**
Total SVOCs	100
Arsenic	20
Barium	400
Chromium	43
Copper	100
Lead	800
Nickel	40
Zinc	200
Mercury	1.5

The Remedial Engineer will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material will not remain on-Site.

2.3.2.7 Fluids Management

Fluids to be removed from the Site are anticipated to include stormwater and/or groundwater from dewatering. All liquids to be removed from the Site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Liquids discharged into the New York City sewer system will be addressed through approval by NYCDEP. Fluids may also be discharged to the adjoining Harlem River under a State Pollutant Discharge Elimination System (SPDES) permit. Discharge of water generated during remedial construction to surface waters (i.e. a local pond, stream or river) is prohibited without a SPDES permit.

In the event that liquids are unsuitable for discharge to the sewer or the river and must be removed from the Site, they will be handled, transported, and disposed in accordance with applicable regulations. Waste manifests, bills of lading or other documentation of proper disposal shall be obtained as necessary for offsite shipments of fluids. Documentation of fluids disposal will be provided in the Annual Site Management Report.

Dewatered fluids will not be recharged back to the land surface or subsurface of the Site. Dewatering fluids will be managed off-Site.

2.3.2.8 Demarcation

For larger excavations conducted after the final cover is in place, after the completion of soil removal and any other invasive remedial activities and prior to backfilling, as necessary, a land survey will be performed by a New York State licensed surveyor. The survey will redefine the top elevation of residual contaminated soils. A physical demarcation layer, consisting of orange snow fencing material or equivalent material will be placed on this surface to provide a visual reference. This demarcation layer will constitute the top of the 'Residuals Management Zone', the zone that requires adherence to special conditions for disturbance of contaminated residual soils defined in this Site Management Plan. The survey will measure the grade covered by the demarcation layer before the placement of cover soils, pavement and sub-soils, structures, or other materials. This survey and the demarcation layer placed on this grade surface will constitute a modification of the physical and written record of the upper surface of the 'Residuals Management Zone' in the Site Management Plan. If larger excavations are conducted, a map showing the survey results will be included in the Annual Site Management Report and updates to the Site Management Plan.

2.3.2.9 Backfill from Off-Site Sources

All materials proposed for import onto the Site will be approved by the Remedial Engineer and will be in compliance with provisions in this SMP prior to receipt at the Site. All

imported soils will meet NYSDEC approved backfill or cover soil quality objectives for this Site. The NYSDEC-approved cover quality objectives are the NYSDEC Part 375 Restricted Residential Use SCOs.

Non-compliant soils will not be imported onto the Site without prior approval by NYSDEC. Nothing in the approved SMP or its approval by NYSDEC should be construed as an approval for this purpose. 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. Nothing in this SMP should be construed as an approval for this purpose.

Any imported material used as backfill will be documented as having originated from locations having no evidence of disposal or release of hazardous, toxic, or radioactive substances, wastes, or petroleum products. Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the Site. Solid waste will not be imported onto the Site.

If the contractor designates a source as "virgin" soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development, or agricultural use. Documented virgin soils will not be sampled prior to use as backfill on the site.

Non-virgin, offsite soils without an NYSDEC-approved Beneficial Use Determination (BUD) will be tested via collection of one composite sample per source area. Samples will be analyzed for TCL VOCs and SVOCs, and TAL metals. Soils will be considered appropriate for use as onsite backfill above the cover if contaminant concentrations are less than applicable NYSDEC Part 375 Restricted Residential Use SCOs. Backfill to be placed beneath the cover must have contaminant concentrations less than the site-specific SCOs shown in Table 1.4.1.2.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers. Imported soil stockpiles will be managed in accordance with the stockpiling procedures discussed in Section 2.3.2.2 above.

2.3.2.10 Stormwater Pollution Prevention

The Site is surrounded by existing NYCDEP combined sewers. All stormwater discharges from the site enter the NYCDEP combined sewers. In accordance with the permit requirements for the State Pollutant Discharge Elimination System (SPDES) General Permit (GP-02-01) for stormwater discharges for construction activities, construction activities that discharge to combined sewers do not require coverage under GP-02-01. If stormwater accumulates at the Site it will be removed and discharged to the sewer or to the river under a

permit, as described in Section 2.3.2.7 above. Discharges will be routed through a fractionation tank prior to the sewer inlet such that sediment and any floatable materials are removed from the discharge. Drop-inlets in the street will be protected with hay bales and silt fencing.

Barriers and hay bale checks around soil stockpiles 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. 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.

2.3.2.11 Contingency Plan

All excavations will be continuously monitored for the potential presence of buried tanks, drums or other containers, sludges, or soil that shows evidence of obvious contamination, such as heavy staining, sheen, or strong odors. If any of these are detected, excavation in the area will be halted. 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. These findings will be also included in daily and periodic electronic media reports. The following people will be notified in the event of unknown or unexpected contaminated media:

Name	Title	Phone Number
Shaminder Singh	NYSDEC Project Manager	718-482-4909 (office)
Stephanie Davis	FPM Group	(631) 737-6200,ext. 228
Owner	Tiago Holdings, LLC	(516) 921-0800

Note: Contact information will be updated as appropriate in the Annual Site Management Report.

The affected area will be cordoned off and no further work will be performed at that location until the appropriate contingency response plan is implemented. Work zone air monitoring will be conducted during all contingency response actions, as described in the project HASP (see Attachment 2). In addition, community air monitoring will be conducted as described in the CAMP (Attachment 3).

If underground tanks or other previously unidentified contaminant sources are found during on-Site development related construction, sampling will be performed on product, sediment, and surrounding soils, etc., as appropriate. If soil exhibiting gross contamination such

as heavy staining, sheen, product, or strong odors, is encountered during residual soil disturbance, the following procedures will be implemented:

- Spill reporting to the NYSDEC Spill Hotline (800-457-7362) will be conducted as necessary;
- The grossly contaminated soil will be excavated and stockpiled in accordance with the procedures presented in Section 2.3.2;
- The excavation will continue vertically and horizontally until the grossly-contaminated soil is removed or until groundwater or another physical limitation is encountered. If post-excavation samples exceed SCOs, then additional excavation will be performed, as warranted. Chemical analytical work will be for full scan parameters (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs). These analyses will not be limited to STARS parameters where tanks are identified without prior approval by NYSDEC. Analyses will not be otherwise limited without NYSDEC approval.
- The stockpiled soil will be sampled for waste characterization purposes for the parameters required by the intended disposal facility. Upon acceptance at an appropriate disposal facility, the contaminated soil will be disposed offsite in accordance with Section 2.3.2.5.

Copies of correspondence with disposal facilities concerning classification of materials, testing results, and permits/approvals will be maintained by the project manager and will be submitted to the NYSDEC as part of a close-out report, as described in Section 5.

2.3.2.12 Community Air Monitoring Plan

This Community Air Monitoring Plan (CAMP) includes procedures to address potential community health and safety issues associated with activities involving residual materials at the Site. Remedial activities conducted at the Site in 2005 and 2006 resulted in the removal of significant quantities of impacted soil. However, the remaining soil (residual material) exhibits some exceedances of the NYSDEC Recommended Soil Cleanup Objectives. Groundwater and soil vapor beneath the Site also contain low levels of contaminants. Engineering and institutional controls have been implemented to protect the Site occupants and the surrounding community from exposure to residual materials. However, certain intrusive activities have the potential to expose residual materials on a short-term basis. This CAMP describes monitoring procedures to be used during these intrusive activities to protect the Site community.

This CAMP will be implemented at the Site by environmental professionals during intrusive activities involving residual materials that have the potential to affect the surrounding

community. These activities may include excavation and well installation activities. Due to the nature of the activities, there is the potential for organic vapor and/or dust emissions to occur as these activities are conducted. In addition, there is the potential for organic vapors and/or dust to be associated with the exhaust from the direct-push and/or drilling equipment. To address these concerns, organic vapor and dust monitoring will be performed.

The CAMP findings will be included in daily and periodic electronic media reports. Exceedances observed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

2.3.2.12.1 Organic Vapor Monitoring

Under the CAMP, organic vapor concentrations will be monitored by an environmental professional at the downwind perimeter of the work area while intrusive activities are occurring. In general, the work area will be a 30-foot radius around the work zone, or the Site boundary, whichever is smaller. To monitor organic vapors, a photoionization detector (PID) will be used and maintained in good operating condition. Calibration of the PID will be performed according to manufacturer's instructions. Background levels of organic vapors will be measured at the Site prior to beginning work and upwind of the work area periodically using a PID. Organic vapors will be monitored at the downwind perimeter of the work area while intrusive activities are occurring and will be averaged on a 15-minute basis. PID readings will be recorded in the field logbook and will include the time, location, and PID readings observed. The action levels and required responses are as follows:

Organic Vapor Readings	
Action Level	**Response Action**
Less than 5 ppm above background.	Continue work.
More than 5 ppm but less than 25 ppm above background.	Implement Vapor Emission Response Plan.
More than 25 ppm above background.	Stop work. Perform downwind monitoring in accordance with Vapor Emission Response Plan.

2.3.2.12.2 Vapor Emission Response Plan

The Vapor Emission Response Plan includes the following trigger levels and responses:

- In the event the level of organic vapors exceeds 5 ppm above the background at the downwind perimeter of the work area on a 15-minute average basis, activities will be halted and monitoring continued. Work may resume if the organic vapor level then decreases to below 5 ppm above background, or concentrations measured 200 feet

downwind or at half of the distance to the nearest residential or commercial building, whichever is less, are below 5 ppm over background.

- If the level of organic vapors measured 200 feet downwind or at half of the distance to the nearest residential or commercial structure, whichever is less, is greater than 5 ppm above background then all work will be halted, the vapor source will be identified, and corrective actions taken. If the level at the downwind location persists above 5 ppm over background after work stops and corrective actions are taken, then monitoring will be performed within 20 feet of the nearest downward residential or commercial structure (20-foot zone).
- If efforts to abate the emission source are unsuccessful and the vapor levels are greater than 25 ppm above background in the 20-foot zone, then work will be halted.

2.3.2.12.3 Particulate Monitoring

Particulate (dust) monitoring will be performed with a Miniram personal monitor (or equivalent) calibrated according to the manufacturer's instructions. Monitoring will be performed within, upwind, and downwind of the work area by an environmental professional during activities involving residual soil movement. The readings will be recorded in the environmental professional's field logbook.

If the downwind particulate level integrated over 15 minutes exceeds the upwind level by more than 100 micrograms per cubic meter (ug/m^3) or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Dust suppression techniques are anticipated to include reducing moving equipment rates and/or application of water to dry surfaces. Work may continue with dust suppression techniques providing that the downwind particulate level does not exceed the upwind particulate level by more than 150 ug/m^3.

If, after implementation of dust suppression techniques, downwind particulate levels are greater than 150 ug/m^3 above upwind levels, then work will stop and activities will be reevaluated. Work may resume providing that dust suppression techniques and other controls are successful in reducing the downwind particulate level to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

2.3.2.12.4 Noise Monitoring

Due to the use of excavation, direct-push, and/or drilling equipment at the Site during intrusive activities, there is the potential for noise to impact the surrounding community. However, since work will be performed only during normal working hours when ambient noise

levels are elevated due to ongoing traffic on the adjoining FDR Drive and commercial activities in the community, the potential for noise impacts on the surrounding community is low.

The environmental professional will monitor ambient noise levels at the property boundary prior to starting work each day. During activities that produce noise, the environmental professional will periodically monitor noise levels at the closest property boundary with a hand-held sound level meter. Noise levels will be monitored in decibels (dBs) in the A-weighted, slow-response mode. If noise level readings during work activities significantly exceed ambient noise levels at the closest property boundary, the environmental professional will take appropriate measures to reduce noise exposure beyond these boundaries. These measures may include relocation of equipment that generates noise, reducing equipment operations, or other measures, as appropriate. In the event that the noise exposure measures are inadequate, work will cease until noise levels can be reduced to within a reasonable level of ambient conditions at the closest Site boundary.

2.3.2.13 Odor, Dust and Nuisance Control Plan

If the air monitoring program identifies potential exposure of field personnel or the public to potential environmental hazards in the soil or groundwater, appropriate measures will be taken to control odors/dust and community air monitoring will be initiated as described in Section 2.3.2.12.

2.3.2.13.1 Odor Control Plan

This odor control plan is capable of controlling emissions of nuisance odors off-Site and on-Site. Specific odor control methods to be used on a routine basis will include minimizing of open excavations and stockpiles, covering of stockpiles, covering of excavations if necessary, and/or use of foam if necessary. All necessary means will be employed to prevent on- and off-Site odor nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations and stockpiles 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. Excavation sizes and open durations will be minimized to the extent possible. Soil stockpiles will be minimized and kept covered with appropriately anchored tarps and/or plastic sheeting whenever excavation and/or loading operations are not occurring; the sheeting will be routinely inspected for damage and replaced as needed. Open excavated areas will be covered with plastic sheeting whenever excavation operations are not occurring to minimize odors. Water will be used as necessary to minimize

odors during loading operations. Foam will be available, as needed, to control potential vapors or odors.

If nuisance odors are identified, 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 all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of the Controlled Property owner's Remediation Engineer, who is responsible for certifying the Annual Site Management Report.

Where odor nuisances have developed during remedial work and cannot be corrected, or where the release of nuisance odors cannot otherwise be avoided due to on-Site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering excavation and handling areas under tented containment structures equipped with appropriate air venting/filtering systems.

2.3.2.13.2 Dust Control Plan

This dust suppression plan addresses dust management during invasive on-Site work. This plan includes the items listed below:

- Dust suppression will be achieved though the use of a dedicated on-Site water truck for road wetting, when applicable. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Larger excavations may 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.

To further minimize the generation of dust, soil stockpiles will be kept covered with appropriately anchored tarps and/or plastic sheeting whenever excavation and/or loading operations are not occurring; the sheeting will be routinely inspected for damage and replaced as needed. Open excavated areas will be covered with plastic sheeting whenever excavation operations are not occurring to minimize emission of dust. Water will be used as necessary to minimize the generation of dust during loading operations.

2.3.2.13.3 Other Nuisances

A noise control plan will be developed and utilized by the contractor for all remedial work and will conform, at a minimum, to NYCDEP noise control standards.

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of all systems installed on-Site will be conducted at the frequency specified in SMP Monitoring Plan schedule. A comprehensive Site-wide inspection will be conducted annually. The inspections will determine and document the following:

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

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Site Management Reporting 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 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

2.4.2.1 NYSDEC-acceptable Electronic Database

The following information is presented in Attachment 4 in an electronic database format:

- A Site summary;
- The name of the current Site owner and/or the remedial party implementing the SMP for the Site;
- The location of the Site;
- The current status of Site remedial activity;

- A copy of the Environmental Easement; and
- A contact name and phone number of a person knowledgeable about the Environmental Easement's requirements, in order for NYSDEC to obtain additional information, as necessary.

This information should be: 1) modified as conditions change; (2) revised in Attachment 4 of this document; and, (3) submitted to NYSDEC in the Annual Site Monitoring Report. Should the Environmental Easement be modified or terminated, the copy of the revised Environmental Easement will also be updated in this manner.

2.4.2.2 Non-routine Notifications

Non-routine notifications are to be submitted by the property owner(s) to the NYSDEC on an as-needed basis for the following reasons:

- 60-day advance notice of any proposed changes in Site use that are inconsistent with the terms of the Brownfield Cleanup Agreement.
- 10-day advance notice of any significant proposed ground-intrusive activities.
- Notice within 48-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 taken to mitigate the damage or defect.
- Notice within 48-hours 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, including a summary of action taken and the 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.

3.0 MONITORING PLAN *(Revised August 2009: low-flow sampling procedures, July 2011: termination of groundwater monitoring, vapor barrier system monitoring).*

3.1 INTRODUCTION

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the implemented ECs in reducing or mitigating contamination at the Site. ECs at the Site include a composite cover system and vapor barrier. This Monitoring Plan is subject to revision by NYSDEC.

3.1.2 Purpose

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of groundwater;
- Evaluating Site information periodically to confirm that the remedy continues to be effective as per the design; and
- Preparing the necessary reports for the various monitoring activities.
- Assessing compliance with NYSDEC groundwater standards and Track 4 SCOs for soil;
- Assessing achievement of the remedial performance criteria.

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;
- Monitor well decommissioning procedures; and
- Annual inspection and certification.

Quarterly groundwater monitoring of the performance of the remedy and overall reduction in contamination on-Site will be conducted for the first year. Frequency thereafter will be determined by NYSDEC. *The NYSDEC approved the termination of quarterly groundwater*

monitoring on June 29, 2011. 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. The monitoring program is summarized in Table 3.1.2.1 and outlined in detail in Sections 3.2 through 3.3 below.

Table 3.1.2.1: Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Groundwater**	Quarterly, first year	Groundwater	TCL VOCs, TCL BN SVOCs, TAL metals
Cover	Annual	Cover	-
Vapor Barrier	Annual	Vapor Barrier	-

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH.
** *The NYSDEC approved the termination of quarterly groundwater monitoring on June 29, 2011.*

3.2 ENGINEERING CONTROL SYSTEM MONITORING

3.2.1 Composite Cover System

Exposure to residual contaminated soils is prevented by an engineered, composite cover system that is has been built on the Site and is undergoing modification during Site development. This composite cover system is comprised of cover gravel with a Mirafi fabric demarcation layer that was installed in November 2006. Following the completion of Site redevelopment, the cover system will consist of asphalt and concrete covered roads, concrete covered sidewalks, and concrete building slabs. The Pavement Plan in Appendix P shows the NYSDEC-approved design for the final composite cover to be used on this Site. An as-built survey in Appendix P shows the location of the current cover system built at the Site.

3.2.1.1 Cover System Monitoring Schedule

The cover will be inspected daily during its modification by an environmental professional. Following final modification, the cover will be inspected annually at a minimum and whenever site activities with the potential to breach the cover are conducted.

Inspection frequency is subject to change by NYSDEC and NYSDOH. 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 composite cover system are specified later in this Plan.

3.2.1.2 Cover System General Equipment Monitoring

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

- Gravel thickness and continuity
- Nature of gravel materials
- Asphalt continuity and condition
- Concrete continuity and condition

A complete list of components to be checked is provided in the Cover System and Vapor Barrier System Inspection Checklist, presented in Attachment 5. If any portions of the system are not performing within specifications, maintenance and repair as per the Operation and Maintenance Plan are required immediately.

3.2.2 Vapor Barrier System

The sub-grade portions of the building (slab and foundation walls) are being provided with a barrier and seal system for water proofing purposes during the development phase of this project. This barrier and seal system will also function as a vapor barrier. The design for this project includes a water-tight basement slab and wall system designed in accordance with Federal Emergency Management Agency (FEMA) flood levels. This will be accomplished by providing a positive side waterproofing membrane beneath the slab, pile caps, and elevator pits using a sheet membrane waterproofing material. The foundation walls will also be waterproofed using a similar sheet membrane waterproofing material applicable for walls. Penetrations through the slab and/or wall for pipes and duct banks will be detailed in accordance with approved manufacturer's details. The waterproofing elements to be used are specified in the construction contract documents; copies of pertinent portions of these documents are included in Appendix Q and placement of these materials is shown on the typical foundation detail plan in Appendix Q.

3.2.2.1 Monitoring Schedule

The vapor barrier components are inspected daily during installation by a construction professional. Following building construction, the vapor barrier system will be inspected annually at a minimum and whenever site activities with the potential to breach the vapor barrier are conducted.

Inspection frequency is subject to change by NYSDEC and NYSDOH. Unscheduled inspections and/or sampling may take place when a suspected failure of the vapor barrier system has been reported or an emergency occurs that is deemed likely to affect the operation of the system. Sampling will be conducted in the event that basement space is contemplated to be used for retail purposes. Monitoring deliverables for the vapor barrier system are specified later in this Plan.

3.2.2.2 Vapor Barrier General Equipment Monitoring

A visual inspection of the complete vapor barrier system will be conducted during the monitoring event. It should be noted that the vapor barrier system is installed beneath the concrete cover, where it is inaccessible and not visible. Therefore, monitoring of the vapor barrier system is contingent on monitoring of the concrete cover components. Vapor barrier system monitoring will include the following:

- Concrete continuity and condition

A complete list of components to be checked is provided in the Cover System and Vapor Barrier System Inspection Checklist, presented in Attachment 5. If any portions of the system are not performing within specifications, maintenance and repair as per the Operation and Maintenance Plan are required immediately.

3.2.2.3 Vapor Barrier System Sampling

The sub-grade areas of the site building are planned to be used for parking, mechanical equipment, and storage. If retail use is contemplated for a portion of the sub-grade area, then indoor air sampling will be performed for the retail space. Prior to retail use, a sampling plan will be developed and submitted to the NYSDEC and NYSDOH for their approval. The sampling plan will include the following provisions:

- Indoor air sampling to be performed in accordance with NYSDEC and/or NYSDOH guidance;
- Sampling duration will be comparable to potential exposure duration (e.g. 8-hour to 24-hour samples);
- The HVAC system for the retail space would be operated in the same manner as when the retail space is occupied; and
- Samples will be collected using methods and equipment in accordance with NYSDEC/NYSDOH guidance and analyzed by a NYSDOH ELAP-approved laboratory in accordance with approved methods; and

- Sample results will be reported in an interim report and/or in the Annual Site Management Report for the time that the sampling is performed.

Following NYSDEC and NYSDOH approval of the sampling plan, the sampling will be conducted and reported in accordance with the plan.

Vapor barrier system monitoring was conducted in 2010 for two sub-grade spaces that were targeted for retail use. Sampling was conducted in accordance with a NYSDEC and NYSDOH-approved Indoor Air Sampling Work Plan. The results were reported in the Site Management Periodic Review Report for 2010 and indicated that there is no concern for indoor air quality in the retail warehouse space and that tetrachloroethene (PCE) detected in indoor air in the retail kennel space resulted from construction activities. This PCE was confirmed to have dissipated below the NYSDOH air guideline value by December 2010.

The vapor barrier system monitoring results show no concerns for soil vapor intrusion, which is consistent with previous soil vapor, soil, and groundwater monitoring data, all of which show no concerns for soil vapor intrusion. As reported in the Site Management Periodic Review Report for 2010, no further vapor barrier system monitoring was indicated or recommended. The NYSDEC and NYSDOH agreed with this conclusion.

3.3 GROUNDWATER MONITORING PROGRAM

Groundwater monitoring will be performed on a regular basis to assess the performance of the remedy. *The NYSDEC approved the termination of the quarterly groundwater monitoring program on June 29, 2011.*

3.3.1 Monitoring System Design

The network of monitoring wells is designed to monitor both up-gradient and down-gradient groundwater conditions at the Site. The network of on-Site wells has been located in the downgradient vicinity of the former area of petroleum-impacted soil, the downgradient vicinity of the former area of metals-impacted soil, and at upgradient locations. These wells include MW-8 through MW-14, as shown on the Site Plan in Appendix N. These wells are installed approximately five feet into the water table aquifer and a portion of each well screen spans the water table surface. Groundwater flow is toward the Harlem River to the east. It should be noted that historic Site wells M-1 through M-7 were lost prior to or during Site demolition activities. These wells no longer exist and, therefore, cannot be monitored.

A groundwater sampling matrix is shown in Table 3.3.1.1 and indicates the wells to be sampled, the rationale for sampling, the types of sample containers, preservatives, and handling, the analyses to be performed, and the laboratory deliverables. This sampling matrix will be used

TABLE 3.3.1.1
GROUNDWATER SAMPLING MATRIX
EAST RIVER PLAZA SITE, NEW YORK, NEW YORK

Sample Type	Sample Name	Sampling Protocol	Analytes	Laboratory Deliverables	Sample Containers	Preservation
Primary Samples	M-8 through M-14	If no free-phase product, purge and sample.	TCL VOCs and base-neutral SVOCs, TAL metals	Category B	Two VOA vials for VOCs Two 1-liter amber for SVOCs One 1-liter plastic for metals	HCl, cool to 4°C Cool to 4°C HNO_3, cool to 4°C
QA/QC Samples	Equipment Blank	One per day per matrix sampled	Same as matrix	Category B	Two VOA vials for VOCs One 1-liter plastic for metals Two 1-liter amber for SVOCs	HCl, cool to 4°C HNO_3, cool to 4°C Cool to 4°C
	Trip Blank	One per cooler containing VOC samples	TCL VOCs	Category B	Two VOA vials (filled by lab)	HCl (by lab), cool to 4°C
	Blind Duplicate	One per 10 environmental samples per matrix	Same as matrix	Category B	Same as matrix	Same as matrix

to guide groundwater sampling activities in the field and will be adjusted as necessary as wells are removed from the monitoring program. *Please note that termination of the groundwater monitoring program was approved by the NYSDEC on June 29, 2011.*

3.3.2 Groundwater Well Construction

Well installation procedures and well construction are documented in the FER. Copies of the well installation logs are also included in Appendix R herein.

3.3.3 Monitoring Schedule

Quarterly groundwater monitoring will be performed on wells M-8 through M-14 for the first year. Following the initial two monitoring events, if it is determined that the quality of ambient groundwater migrating onto the Site has been established, a request may be made to the NYSDEC to abandon upgradient wells. No wells will be abandoned without NYSDEC approval. Quarterly monitoring will be performed at the downgradient wells to confirm groundwater conditions following remediation. Following evaluation of post-remediation groundwater quality, a request may be made to the NYSDEC to abandon the downgradient monitoring wells. No wells will be abandoned without NYSDEC approval.

The sampling frequency may be modified by NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC. Deliverables for the groundwater-monitoring program are specified below.

The Site Management Periodic Review Report for 2010 documented that no Site-related groundwater impacts had been observed downgradient of a former area of petroleum-impacted soil for three years and that groundwater conditions at all Site wells were consistent with ambient groundwater conditions in the Site vicinity. Termination of quarterly groundwater monitoring was requested and was approved by the NYSDEC on June 29, 2011.

3.3.4 Sampling Event Protocol

All well sampling activities will be recorded in a field book and a groundwater sampling log presented in Attachment 6. 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.

During the initial sampling event under this SMP, or at any time a replacement monitoring well is installed, the top of casing elevation shall be surveyed to the nearest 0.01 foot such that an elevation reference point for each well is established.

Well purging and sampling procedures will conform to USEPA low-flow groundwater sampling procedures (EPA/540/S-95/504, April 1996). At each well to be sampled, the depth to

the static water level and the depth to any non-aqueous-phase liquids (petroleum) will be measured using an interface probe. The probe will be carefully inserted and withdrawn so as to least disturb the water in the well. The depth of the well will be confirmed after sampling is complete. Any well(s) exhibiting free-phase petroleum will not be sampled. A decontaminated low-flow pump with dedicated tubing will then be used to purge the well at a rate of up to 0.5 liters per minute (<0.13 gallon per minute). The pump will be installed with the intake at the desired sampling point (within the screen interval). The depth to water will be monitored during purging and the flow rate will be adjusted so as to result in minimal drawdown (<0.1 meter or <0.33 feet). Water quality parameters, including pH, turbidity, specific conductivity, and temperature, will be monitored using an in-line meter during purging at a frequency of once every three to five minutes. When all parameters have stabilized for three successive readings, the well will be sampled.

Well sampling forms documenting the well purging and sampling procedures will be completed and provided in the Annual Site Management Report. During well purging, groundwater will be disposed in accordance with the discharge permit(s) for the Site.

Following purging, the in-line monitoring meter will be removed and the groundwater samples will be collected directly from the pump tubing. As per the USEPA low-flow sampling procedures, sample filtration to remove excess turbidity, if necessary due to turbidity levels exceeding 50 NTU, will be performed using an in-line 0.45 µm filter. The retrieved samples will be placed directly into laboratory-supplied sample containers. A groundwater sampling matrix is shown in Table 3.3.1.1 and indicates the wells to be sampled, the rationale for sampling, the types of sample containers, preservatives, and handling, the analyses to be performed, and the laboratory deliverables. This sampling matrix will be used to guide groundwater sampling activities in the field and will be adjusted as necessary as wells are removed from the monitoring program.

Groundwater monitoring procedures and results will be reported in the Annual Site Management Report. This report shall include a groundwater flow direction map developed from the well elevations and depth-to-water measurements.

All non-disposable downhole sampling equipment will be decontaminated by washing in a potable water and Alconox solution and rinsing in potable water prior to use at each location to reduce the potential for cross-contamination. All sampling equipment will be either dedicated disposable equipment or will be decontaminated prior to use at each location. The decontamination procedures utilized for all non-disposable sampling equipment will be as follows:

- The equipment will be scrubbed in a bath of potable water and low-phosphate detergent;
- The equipment will then be rinsed with potable water; and
- The equipment will be allowed to air dry, if feasible, and wrapped for storage and transportation.

In the event that petroleum or other materials are encountered that may not be amenable to decontamination with water-based decontamination fluids, then lab-grade methanol and/or hexane may be utilized as necessary to properly decontaminate the equipment. Use of methanol and/or hexane will be documented in the field logbook.

All samples will be consistently identified in all field documentation, chain-of-custody documents and laboratory reports using an alphanumeric code. The designation "MS" will be added at the end of the designation for matrix spike/matrix spike duplicate samples. The field duplicate samples will be labeled with a dummy sample location to ensure that they are submitted as blind samples to the laboratory. The dummy identification will consist of the sample type followed by a letter. Trip blanks and field blanks will be identified with "TB" and "FB", respectively.

All sample containers will be provided with labels containing the following information:

- Project identification
- Sample identification
- Date and time of collection
- Analyses to be performed
- Sampler's initials

Once the groundwater samples are collected and labeled, they will be placed in ice-filled coolers and stored in a cool area away from direct sunlight to await shipment to the laboratory. The completed COC form will accompany the cooler. Samples will be shipped overnight (e.g., via Federal Express) or transported by a laboratory courier. All coolers shipped to the laboratory will be sealed with mailing tape and a COC seal to ensure that the coolers remain sealed during delivery.

Field personnel will be responsible for maintaining the sample coolers in a secured location until they are delivered to the laboratory. The record of possession of samples from the time they are obtained in the field to the time they are delivered to the laboratory or shipped off-site will be documented on COC forms. The COC forms will contain the following information:

project name; names of sampling personnel; sample number; date and time of collection and matrix; and signatures of individuals involved in sample transfer, and the dates and times of transfers. Laboratory personnel will note the condition of the custody seal at sample check-in.

All groundwater samples collected during monitoring activities will be analyzed using the most recent NYSDEC ASP. Analytical data will be submitted in complete ASP Category B data packages including documentation of laboratory QA/QC procedures that will provide legally defensible data in a court of law.

The laboratory proposed to perform the analyses will be certified through the NYSDOH ELAP to perform CLP analyses and Solid Waste and Hazardous Waste analytical testing on all media to be sampled.

Where appropriate, trip blanks, field blanks, field duplicates, and MS/MSD samples will be collected at a frequency of 5% (1 set of QA/QC samples per 20 field samples), and will be used to assess the quality of the data.

3.4 WELL REPLACEMENT/REPAIRS AND DECOMMISSIONING

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance. Well decommissioning, for the purpose of replacement, should be reported to NYSDEC prior to performance and in the annual report. Well decommissioning without replacement must receive prior approval by 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 and NYSDOH.

3.5 SITE-WIDE INSPECTION

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections should 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 (Attachment 7). 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.

3.6 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 (Attachment 8). 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;
- Data Reduction and Validation:
    - Data validation will be performed in accordance with the USEPA validation guidelines for organic and inorganic data review. Validation will include the following:

- Verification of 100% of all QC sample results (both qualitative and quantitative);
- Verification of the identification of 100% of all sample results (both positive hits and non-detects);
- Recalculation of 10% of all investigative sample results; and
- 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.

3.7 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular monitoring events and inspections will be kept on file with the Remedial Engineer. 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 Annual Site Management Report, as specified in the Reporting Plan of the SMP.

All monitoring results will be reported to NYSDEC on an Annual basis in the Site Management Report. A report or letter will be prepared for submission, if required by NYSDEC, subsequent to each sampling event. The report (or letter) 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 (also to be submitted electronically in the NYSDEC-identified format);
- A copy of the laboratory certification;
- Any observations, conclusions, or recommendations; and
- A determination as to whether plume 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 3.7.1 below.

Table 3.7.1: Monitoring/Inspection Deliverables

Task	Frequency*	Annual Reporting Requirement
Groundwater Monitoring**	Quarterly**	X**
Cover System Inspection	Annual	X
Vapor Barrier Inspection	Annual	X
Site-Wide Inspection	Annual, and after emergencies	X

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH.
** *The NYSDEC approved the termination of quarterly groundwater monitoring on June 29, 2011.*

3.8 CERTIFICATIONS

Site inspections and sampling activities will take place as outlined above. Frequency of inspection is subject to change by NYSDEC. Inspection certification for all ICs and ECs will be submitted to NYSDEC on a calendar year basis and must be submitted by March 1 of the following year. A qualified environmental professional, as determined by NYSDEC, will perform inspection and certification. Further information on the certification requirements are outlined in the Reporting Plan of the SMP.

4.0 OPERATION AND MAINTENANCE PLAN *(Revised July 2011: termination of groundwater monitoring, implementation of annual well inspections).*

4.1 INTRODUCTION

An Operation and Maintenance Plan describes the measures necessary to operate and maintain any mechanical components of the remedy selected for the Site (i.e., sub-slab depressurization systems, air sparge/soil vapor extraction systems). An Operation and Maintenance Plan:

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

There are no mechanical remedial systems requiring operation or maintenance at the East River Plaza Site. However, the Site has groundwater monitoring wells that may require periodic maintenance. This Operation and Maintenance Plan describes the measures necessary to operate and maintain this monitoring well network.

Information on the non-mechanical Engineering Controls installed at this Site (i.e. composite cover and vapor barrier) can be found in Section 3 - Engineering and Institutional Control Plan.

4.2 GROUNDWATER MONITORING WELL MAINTENANCE

The groundwater monitoring wells will *initially* be inspected on a quarterly basis. *On June 29, 2011 the NYSDEC approved termination of quarterly groundwater monitoring. Thereafter, the groundwater monitoring wells will be inspected on an annual basis in conjunction with the Site-wide inspection.* Inspection will consist of lowering a weighted measuring tape to the bottom of the well to ensure that it has not been filled in with silt, and a visual assessment of the well casing, cap, and protective standpipe. Any minor damage (e.g., missing well cap, cracked riser) will be repaired and documented.

If biofouling or silt accumulation has occurred in the on-Site monitoring wells, the wells will be physically agitated/surged and redeveloped *prior to any sampling*. Additionally, monitoring wells will be properly decommissioned and replaced (as per Section 3.4 of the Monitoring Plan), if an event renders the wells unusable. If a replacement well is installed, the elevation of the top of the casing shall be surveyed to the nearest 0.01 foot.

4.3 MAINTENANCE REPORTING REQUIREMENTS

Maintenance reports and any other information generated during regular operations at the Site will be kept on-file at the office of the Remedial Engineer. Duplicates of certain information may be maintained onsite if relevant for site operation. All reports, forms, and other relevant information generated will be available upon request to the NYSDEC and submitted as part of the Annual Site Management Report, as specified in the Section 5 of this SMP.

4.3.1 Routine Maintenance Reports

Checklists or forms (see Attachment 6) will be completed during each routine well 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;
- 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).

4.3.2 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;
- Nature of non-routine maintenance/repair;
- Resolution of non-routine maintenance/repair;
- 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).

4.4 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions. Emergencies that may occur during groundwater monitoring or associated maintenance events will be managed in accordance with the procedures outlined below.

4.4.1 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 the Remedial Engineer, as shown below. These emergency contact lists must be maintained in an easily accessible location at the Site.

Table 4.4.1.1: Emergency Contact Numbers

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
Stephanie Davis, FPM Group Project Manager	(631) 737-6200, ext. 228
Bryan Wong, NYSDEC Project Manager	*(718) 482-4905* (office)

***Note**: Contact numbers are subject to change and will be updated as necessary and, at a minimum, in the Annual Site Management Report.

4.4.2 Map and Directions to Nearest Health Facility

Site Location: East River Plaza, 527 East 118th Street, New York, NY

Nearest Hospital Name: Metropolitan Hospital

Hospital Location: East 97th Street, between First and Second Avenues

Hospital Telephone: (212) 423-6166 (emergency room)

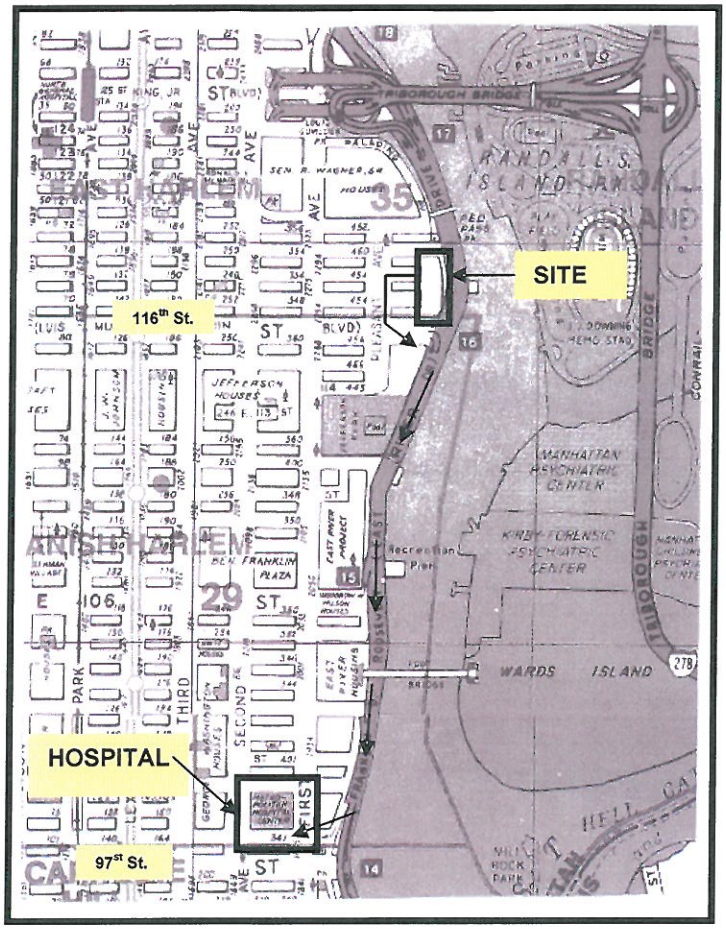
Directions to the Hospital:

1. Travel west from the Site to Pleasant Avenue and turn Left.
2. Travel south on Pleasant Avenue to East 116th Street and turn Left.
3. Travel east on East 16th Street to southbound FDR Drive, turn Right onto FDR Drive.
4. Travel south on the FDR Drive to 97th Street. Exit FDR Drive at 97th Street.
5. Travel one-half block west on 97th Street to the Emergency Room entrance.

Total Distance: approximately one-half mile.

Total Estimated Time: approximately five minutes.

Map Showing Route from the Site to the Hospital:



4.4.3 Response Procedures

4.4.3.1 Emergency Contacts/Notification System

As appropriate, the fire department and other emergency response groups will be notified immediately by telephone of the emergency. The emergency telephone number list is found at

the beginning of this Contingency Plan (Table 4.4.1.1). The list is also posted prominently at the Site and made readily available to all personnel at all times.

If a petroleum spill occurs on the Site the following procedures will be implemented:

- Spill reporting to the NYSDEC Spill Hotline (800-457-7362) will be conducted as necessary;
- The petroleum will be contained and removed from the Site surface by a petroleum remediation contractor in accordance with federal, state and local regulations;
- If Site soil is affected, then grossly contaminated soil will be excavated, stockpiled, and managed in accordance with the procedures presented in the Contingency Plan in Section 2.3.2.11;

Copies of correspondence with disposal facilities concerning classification of materials, testing results, and permits/approvals will be maintained by the project manager and will be submitted to the NYSDEC as part of a close-out report, as described in Section 5.

This Contingency Plan may be amended if Site conditions change. Amendments to the Contingency Plan will be made as needed and approved by the NYSDEC and will be included in the Annual Site Management Report.

5.0 SITE MANAGEMENT REPORTING PLAN

5.1 INTRODUCTION

An Annual Site Management Report will be submitted to NYSDEC following the calendar year reporting period, by March 1. The Site Management Report will be prepared in accordance with NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation requirements. This Site Management Reporting Plan and its requirements are subject to revision by NYSDEC.

This report will include the following:

- Identification of all required EC/ICs required by the Remedial Action Work Plan for the Site;
- An evaluation of the Engineering and Institutional Control Plan and the Monitoring Plan for adequacy in meeting remedial goals;
- Assessment of the continued effectiveness of all Institutional and Engineering Controls for the Site;
- Certification of the EC/ICs;
- Results of the required periodic Site Inspections; and
- All deliverables generated during the reporting period, as specified in Section 2 EC/IC Plan, Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan.
- The Site Management Reporting Plan is subject to NYSDEC revision.

5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

Information of EC/ICs can be found in the Engineering and Institutional Control Plan portion of the SMP. Inspection of the EC/ICs will occur at a frequency described in Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan. After the last inspection of the reporting period, a Professional Engineer licensed to practice in New York State will sign and certify the document. The document will certify that:

- On-Site ECs/ICs are unchanged from the previous certification;
- They remain in-place and effective;
- The systems are performing as designed;

- Nothing has occurred that would impair the ability of the controls to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any operation and maintenance plan for such controls;
- Access is available to the Site by NYSDEC and NYSDOH to evaluate continued maintenance of such controls; and
- Site usage is compliant with the environmental easement.

The signed certification will be included in the Annual Site Management Report (see Section 5.3).

5.3 SITE INSPECTIONS

5.3.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan of this SMP. At a minimum, a Site-wide inspection will be conducted:

- Annually; and
- Whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.3.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate forms for their respective system (refer to Attachment 5 for composite cover and vapor barrier systems). Additionally, a general Site-wide inspection form will be completed during the Site-wide inspection (see Attachment 7). These forms are subject to NYSDEC revision.

All applicable inspection forms and other records (including all sampling data of any media at the Site and system maintenance reports) generated for the Site during the calendar year will be included in the Annual Site Management Report.

5.3.3 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 Remedial Work Plan and FER.

5.4 SITE MANAGEMENT REPORT

The Site Management Report will be submitted annually and will be submitted by March 1 of the calendar year following the reporting period. Other activities such as groundwater monitoring reports will be submitted quarterly for the first year, and as determined by NYSDEC thereafter, with those results also incorporated into the Annual Site Management Report. The report will include:

- EC/IC certification;
- All applicable inspection forms and other records generated for the Site during the reporting period;
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;
- Cumulative data summary tables and/or graphical representations of contaminants of concern by media (groundwater), which include a listing of all compounds analyzed along with the applicable standards, with all exceedances highlighted;
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables required for all points sampled during the calendar year (also to be submitted electronically in the NYSDEC-specified format);
- A Site evaluation, which will address the following:
    - The compliance of the remedy with the requirements of the Site-specific Remedial Work Plan and FER;
    - The performance and effectiveness of the remedy;
    - Any new conclusions or observations regarding Site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored; and
    - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan.

- A figure showing sampling and well locations, and significant analytical values at sampling locations; and
- Comments, conclusions, and recommendations, based on an evaluation of the information included in the report, regarding EC/ICs at the Site.

The Site Management Report will be submitted, in hard-copy format, to the Region 2 NYSDEC offices, located at 41-40 21st Street, Long Island City, New York, and in electronic format to NYSDEC and NYSDOH.

ATTACHMENT 1 OF SITE MANAGEMENT PLAN

Soil Management Plan

East River Plaza
Manhattan, New York

NYSDEC BCP Number: C231045

Prepared for:

Tiago Holdings, LLC
300 Robbins Lane, Syosset, New York

Prepared by:

FPM group™

909 MARCONI AVENUE
RONKONKOMA, NEW YORK 11779

NOVEMBER 2007

SOIL MANAGEMENT PLAN

1.0 INTRODUCTION AND DESCRIPTION OF SITE

1.1 INTRODUCTION

This Soil Management Plan (SoMP) has been prepared for the East River Plaza Site (hereafter 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 the Brownfield Cleanup Agreement (BCA) Index# W2-1068-05-06, Site No. C231045, which was issued in May 2005.

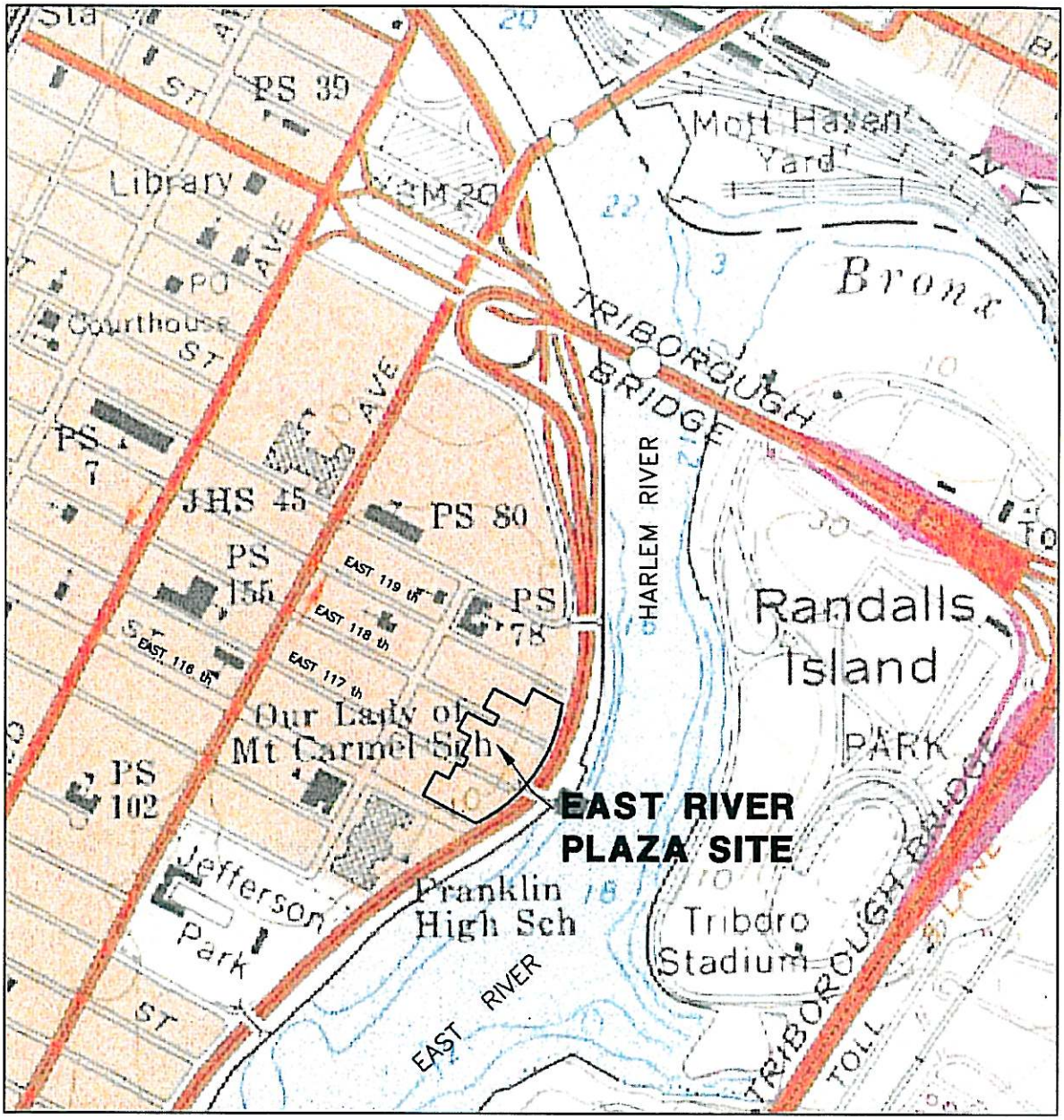
1.1.1 General

Tiago Holdings, LLC entered into a BCA with the NYSDEC to develop a 4.5-acre property located in East Harlem, Manhattan, New York into a commercial and residential development. This BCA required Tiago Holdings, LLC to investigate and remediate contaminated media at the Site. A map of the Site location is shown in Figure 1.1.1. The Site boundary is shown in Figure 1.1.2.

After completion of the remedial work described in the Final Engineering Report (FER), some contamination was left in the subsurface at this Site, which is hereafter referred to as 'residual contamination.' This SoMP was prepared to provide procedures to govern activities involving residual contamination at the Site in perpetuity or until extinguishment of the Environmental Easement in accordance with 6 NYCRR Part 375. This SoMP addresses the means for conducting intrusive work that will disturb the residual contamination and procedures for addressing modifications or repairs to the existing composite cover system. This plan is subject to change by NYSDEC.

1.1.2 Purpose

The Site contains residual contamination left after completion of the Remedial Action performed under the BCP. Engineering Controls (ECs) have been incorporated into the Site remedy to provide proper management of residual contamination in the future to ensure protection of public health and the environment. A Site-specific Environmental Easement has been recorded with the New York County Clerk that provides an enforceable means to ensure the continued and proper management of residual contamination and protection of public health and the environment. It requires strict adherence to all Engineering Controls and all Institutional Controls (ICs) placed on this Site by NYSDEC by the grantor of the Environmental Easement



FPM GROUP		
FIGURE 1.1.1 SITE LOCATION EAST RIVER PLAZA SITE NEW YORK, N.Y.		
Drawn By:H.C.	Checked By: S.D.	Date:11/20/06

PLEASANT AVENUE

BLOCK 1715

BLOCK 1716

BLOCK 1815

EAST 116th STREET

EAST 117th STREET

EAST 118th STREET

EAST 119th STREET

P/O LOT 19
(512–522 E. 118th ST.)

LOT 22
(517–544 E. 116th ST.)

P/O LOT 19
(539–555 E. 117th ST.)

LOT 23
(527–549
E. 118th ST.)

LOT 31
(540–546
E. 119th ST.)

FRANKLIN D. ROOSEVELT DRIVE (EAST RIVER DRIVE)

LEGEND:

BOUNDARY OF FORMER WASHBURN WIRE PROPERTY/BROWNFIELD SITE

EAST RIVER PLAZA SITE DEVELOPMENT BOUNDARY

APPROX. SCALE: 0 40' 80'

FPM GROUP

FIGURE 1.1.2
SITE PLAN
EAST RIVER PLAZA SITE
NEW YORK, N.Y.

Drawn By: H.C. | Checked By: S.D. | Date: 11/20/06

C:\Draw\BDF\EAST RIVER PLAZA SITE\SITE MANAGEMENT\fp_2.dwg, 11/22/2006 2:04:57 PM, 1:80

and any and all successors and assigns of the grantor. ICs provide restrictions on Site usage and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs.

1.2 SITE BACKGROUND

1.2.1 Site Location and Description

The Site is located in the County of New York, East Harlem, New York and is identified as 517-544 East 116th Street (Block 1715, Lot 22), 539-555 East 117th Street (Block 1716, p/o Lot 19), 512-522 East 118th Street (Block 1716, p/o Lot 19), 527-549 East 118th Street (Block 1815, Lot 23) and 540-546 East 119th Street (Block 1815, Lot 31) on the New York City Tax Map. The Site is an approximately 4.5-acre area bounded by East 119th Street to the north, East 116th Street to the south, FDR Drive to the east, and adjoining portions of the East River Plaza project site and adjoining commercial and residential properties to the west.

1.2.2 Site History

The Site was initially developed by R.H. Woolf & Company prior to 1896 and was occupied prior to 1911 by the Washburn Wire Company. The Washburn Wire Company engaged in manufacturing of wire up until its closure in the 1980s. The Site was abandoned from the 1980s until remedial activities commenced in 2005. Prior to remediation, the parcels comprising the Site were purchased by Tiago Holdings, LLC, (Tiago), which is the current owner of the Site and the BCP Volunteer Applicant. Following purchase of the Site, the previous buildings were demolished.

Phase I ESAs and Phase II subsurface investigations have been performed on several occasions between 1995 and 2004. Impacted soil was identified at several onsite locations. An area of petroleum-contaminated soil (soil exhibiting visible indications of petroleum impact, including staining and/or odors) was present on the east side of the Site between East 118th and East 119th Streets. This soil appeared to be associated with former subsurface concrete vaults containing heating oil tanks that adjoined the north side of East 118th Street. A smaller area of petroleum-impacted soil was identified on the west side of the portion of the Site between East 118th and East 119th Streets. An area of metal-contaminated soil was identified on the east side of the Site between East 116th and East 117th Streets in an area where acid tanks were formerly present.

Floating product was formerly present in the area where heating oil tank vaults were historically present. Floating product was addressed during the remedial action.

Several metals, including iron, magnesium, manganese and sodium, were historically found at slightly elevated concentrations in both upgradient and downgradient groundwater

monitoring wells at the Site. Low levels of VOCs and SVOCs were also found. The historic detections were suspected to be indicative of ambient groundwater conditions in the Site vicinity and were not concluded to be necessarily Site-related.

1.2.3 Geological Conditions

The Site subsurface conditions were evaluated during several investigations and were previously described in the Final Investigation Report and Remedial Work Plan (FPM, September 2005). The topographic elevation of the Site, prior to remediation, was generally between 7 and 12 feet above mean sea level (MSL) and had been previously significantly modified from its original grade by placement of fill, presumably in conjunction with historic development. The remedial action has lowered most of the former Washburn Wire Property to an elevation of approximately one foot above the existing water table. In general, the historic Site surface sloped gradually to the southeast, towards the Harlem River and was modified by excavation during remedial activities.

Groundwater at the Site is found at a depth of approximately 10 feet below the pre-redevelopment grade. The regional groundwater flow direction in the area of the Site is to the southeast, toward the Harlem River.

Bedrock (Manhattan Schist) is located within one hundred feet of the ground surface and is overlain by sand and gravel deposits presumably associated with a former channel of the Harlem River. Peat is present in several locations beneath the northern portion of the Site. Fill material was formerly present over much of the Site and was presumably placed in association with historic development activities. Much of this fill has now been removed during the remedial actions.

1.2.4 Residual Contamination

Residual contamination remains present onsite in soil, which in some areas exceeds NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives. Summary tables highlighting the constituents that exceed the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives and, therefore, are indicative of residual contamination, are presented in Tables 1.2.4.1 through 1.2.4.3. None of the end-point results exceeds the Track 4 Site-Specific Soil Cleanup Objectives (SCOs). The remaining soil site-wide does not exhibit any exceedances of the SCOs. The remaining contaminated soil is found generally at or below the water table, which is approximately 10 feet below the surrounding grade, and has been covered by cover materials.

A site plan showing the location and depth of residual soil samples with exceedances of the NYSDEC Objectives is included in Attachment A.

TABLE 1.2.4.1
RESIDUAL SOIL DATA - EAST 116TH STREET TO EAST 117TH STREET
EAST RIVER PLAZA SITE, NEW YORK, NY

BOLD SHADED VALUES SHOW EXCEEDANCES OF NYSDEC RECOMMENDED SOIL CLEANUP OBJECTIVES IN RESIDUAL SOIL

Sample No.	EP-1	EP-2		EP-3		EP-4		EP-5		EP-6		EP-7		EP-8	EP-9		EP-10	NYSDEC Recommended Soil Cleanup Objectives	Site-Specific Cleanup Objectives
Sample Depth (feet below original grade)	9	9	10	8	10	8	10	8	10	8	10	8	10	8	8	10	8		
Sample Date	1/31/06	1/31/06	2/23/06	3/8/06	4/7/06	3/8/06	4/7/06	3/8/06	4/7/06	3/8/06	4/7/06	3/8/06	4/7/06	3/8/06	3/8/06	4/7/06	3/8/06		
Target Compound List Volatile Organic Compounds in micrograms per kilogram																			
Xylenes (total)	4.5 J	ND	ND	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	1,200	-
Acetone	36 B	33 B	11 JB	ND	NA	6.8 J	NA	ND	NA	7.6 J	NA	ND	NA	ND	8.1 J	NA	ND	200	-
Chloroform	ND	ND	ND	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	300	-
Methylene Chloride	4.2 JB	4.4 JB	11 JB	7.8 JB	NA	6.8 JB	NA	7.2 JB	NA	6.9 JB	NA	7.3 JB	NA	7.7 JB	7.8 JB	NA	7.0 JB	100	-
Target Compound List Semivolatile Organic Compounds in micrograms per kilogram																			
bis(2-ethylhexyl)phthalate	ND	ND	ND	ND	NA	ND	ND	ND	NA	55 J	ND	ND	NA	ND	83 J	ND	ND	50,000	-
Fluoranthene	ND	ND	ND	90 J	NA	780	53 J	ND	NA	620	110 J	ND	NA	ND	650	410	64 J	50,000	-
Pyrene	ND	ND	ND	87 J	NA	650	ND	ND	NA	630	97 J	ND	NA	ND	660	380	55 J	50,000	-
Benzo(a)anthracene	ND	ND	ND	58 J	NA	340 J	ND	ND	NA	340 J	64 J	ND	NA	ND	340 J	210 J	ND	224	-
Chrysene	ND	ND	ND	49 J	NA	400	ND	ND	NA	350 J	65 J	ND	NA	ND	320 J	200 J	ND	400	-
Indeno(1,2,3-cd)pyrene	ND	ND	ND	39 J	NA	250 J	ND	ND	NA	240 J	ND	ND	NA	ND	220 J	120 J	ND	3,200	-
Anthracene	ND	ND	ND	ND	NA	84 J	ND	ND	NA	110 J	ND	ND	NA	ND	160 J	67 J	ND	50,000	-
Carbazole	ND	ND	ND	ND	NA	58 J	ND	ND	NA	ND	ND	ND	NA	ND	69 J	ND	ND	-	-
Benzo(a)pyrene	ND	ND	ND	ND	NA	320 J	ND	ND	NA	270 J	49 J	ND	NA	ND	280 J	**170 J**	ND	61	-
Benzo(b)fluoranthene	ND	ND	ND	ND	NA	430	ND	ND	NA	390	ND	ND	NA	ND	390	**230 J**	ND	224	-
Benzo(k)fluoranthene	ND	ND	ND	ND	NA	220 J	ND	ND	NA	170 J	ND	ND	NA	ND	150 J	91 J	ND	610	-
Dibenzo(a,h)anthracene	ND	ND	ND	ND	NA	45 J	ND	ND	NA	62 JM	ND	ND	NA	ND	ND	ND	ND	14.3	-
Benzo(g,h,i)perylene	ND	ND	ND	ND	NA	260 J	ND	ND	NA	250 J	ND	ND	NA	ND	230 J	100 J	ND	50,000	-
Phenanthrene	ND	70 J	ND	76 J	NA	450	55 J	ND	NA	460	60 J	ND	NA	ND	540	300 J	51 J	50,000	-
Naphthalene	ND	ND	ND	ND	NA	ND	ND	ND	NA	71 J	ND	ND	NA	ND	86 J	ND	ND	13,000	-
Acenapthylene	ND	ND	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	41,000	-
Fluorene	ND	ND	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	NA	ND	81 J	ND	ND	50,000	-
Acenapthene	ND	ND	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	NA	ND	76 J	ND	ND	50,000	-
Dibenzofuran	ND	ND	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	NA	ND	62 J	ND	ND	6,200	-
2-Methylnaphthalene	ND	ND	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	NA	ND	ND	ND	ND	36,400	-
Total SVOCs	ND	ND	ND	399	NA	4,287	108	ND	NA	4,018	445	ND	NA	ND	4,397	2,278	170	500,000	100,000
Target Analyte List Metals in milligrams per kilogram																			
Aluminum	3,790	1,770	1,290	6,410	6,700	3,530	12,000	1,110	310 B	407	492	287 B	503	399	3,350	1,690	2,940	-	-
Antimony	ND	ND	ND	ND	ND	ND	1.5 B	2.0 B	ND	ND	1.2 B	ND	ND	ND	ND	ND	ND	-	-
Arsenic	ND	3.0 B	2.9 B	ND	5.0 B	1.4 B	3.2 B	4.0 B	ND	ND	1.2 B	ND	ND	ND	ND	2.3 B	ND	7.5	20
Barium	33.9	31.8	42.8	28.1	11.3	22.4	28.4	22.7	3.9	34.0	44.0	26.9	33.8	12.0	33.0	38.7	43.5	300	400
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	-
Calcium	2,260	3,600	435	2,490	765	4,390	396	432	157	1,220	353	378	593	343	811	834	960	-	-
Chromium	7.1	12.2	9.8	14.3	**15.4**	15.1	**22.2**	14.0	3.0 B	9.7	3.3	1.9 B	4.0	2.9 B	14.0	8.8	**16.8**	10	43
Cobalt	3.9	1.1 B	0.87 B	3.8	9.5	2.1	6.2	ND	ND	ND	0.74 B	ND	0.46 B	ND	3.3	1.3 B	1.9 B	30	-
Copper	14.5	11.3	6.1	16.0	23.9	11.8	21.2	20.8	5.1 B	9.1	5.1	1.6 B	4.9 B	4.7 B	12.9	11.0	13.6	25	100
Iron	**7,780**	8,410	**7,950**	9,920	**10,100**	9,690	**18,000**	12,900	**2,780**	3,090	**3,980**	2,980	**3,160**	**2,300**	9,640	**10,600**	**12,400**	2,000	-
Lead	15.4	403	308	54.7	14.9	163	17.1	1,670	17.0	206	234	417	128	305	437	**720**	331	500*	800
Magnesium	1,810	824	626	2,470	2,120	1,280	3,320	298	127	161	179	67.8	216	98.7	2,230	838	1,320	-	-
Manganese	268	56.9	56.9	155	58.7	130	101	27.7	6.5	59.0	71.9	5.3	18.7	4.5	81.0	72.7	84.7	-	-
Nickel	**15.3**	4.0 B	2.6 B	11.4	**21.0**	6.4	**16.6**	1.5 B	ND	4.2 B	2.4 B	ND	2.5 B	0.90 B	14.9	4.7 B	5.7	13	40
Potassium	463	443	622	574	575	336	858	553	216 B	322	213	365	246	235	1,380	767	785	-	-
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	-
Sodium	195	101 B	85.1 B	120	166	116	470	111 B	659	80.3 B	249	94.6 B	74.6 B	54.5	112	112	98.6	-	-
Vanadium	8.6	9.1	6.6	14.1	20.2	11.4	25.1	5.7 B	1.8 B	1.5 B	2.2 B	1.5 B	2.3 B	1.2 B	12.5	8.5	12.2	150	-
Zinc	**72.6**	114	11.1 B	302	**83.9**	88.9	**51.1**	35.7	6.8 B	26.9 B	14.1 B	ND	10.9 B	ND	195	**66.6**	**89.1**	20	200
Mercury	ND	0.063	0.014 B	0.073	NA	0.10	NA	0.028 B	NA	0.069	NA	0.044	NA	0.028 B	0.030 B	NA	0.089	0.1	1.5

Notes:

ND = Not detected.
NA = Not Analyzed.
- = Not established.

J = Estimated concentration between instrument detection limit and method detection limit
B = For metals, analyte was detected between the Method Detection Limit and the Reporting Limit. For ogranic compounds, analyte was detected in an associated laboratory blank.
*Background levels for lead vary widely. Average background levels in metropolitan or surburban areas typically range from 200 to 500 ppm.

TABLE 1.2.4.1 (CONTINUED)
RESIDUAL SOIL DATA - EAST 116TH STREET TO EAST 117TH STREET
EAST RIVER PLAZA SITE, NEW YORK, NY

BOLD SHADED VALUES SHOW EXCEEDANCES OF NYSDEC RECOMMENDED SOIL CLEANUP OBJECTIVES IN RESIDUAL SOIL

Sample No.	EP-11		EP-12		EP-13		EP-14	EP-15	EP-16	EP-17		EP-18	EP-19	EP-20	NYSDEC Recommended Soil Cleanup Objectives	Site-Specific Cleanup Objectives
Sample Depth (feet below original grade)	8	10	8	10	8	10	8	8	8	8	10	8	8	8		
Sample Date	3/8/06	4/7/06	3/8/06	4/7/06	3/8/06	4/7/06	3/8/06	3/8/06	3/8/06	3/8/06	4/7/06	3/8/06	3/10/06	3/10/06		
Target Compound List Volatile Organic Compounds in micrograms per kilogram																
Xylenes (total)	ND	NA	ND	NA	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	1,200	-
Acetone	ND	NA	ND	NA	ND	NA	ND	4.1 JH	ND	ND	NA	ND	38 H	ND	200	-
Chloroform	ND	NA	1.5 J	NA	ND	NA	ND	ND	ND	ND	NA	ND	ND	ND	300	-
Methylene Chloride	11 JB	NA	8.4 JB	NA	7.5 JB	NA	8.5 JB	13 JB	12 JB	13 JB	NA	12 JB	11 JB	9.7 JB	100	-
Target Compound List Semivolatile Organic Compounds in micrograms per kilogram																
bis(2-ethylhexyl)phthalate	ND	75 J	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	50,000	-
Fluoranthene	12,000	140 J	ND	NA	ND	NA	ND	ND	210 J	540	ND	ND	ND	ND	50,000	-
Pyrene	9,100	130 J	ND	NA	ND	NA	ND	ND	250 J	570	ND	ND	ND	ND	50,000	-
Benzo(a)anthracene	4,400	85 J	ND	NA	ND	NA	ND	ND	100 J	330 J	ND	ND	ND	ND	224	-
Chrysene	5,100	76 J	ND	NA	ND	NA	ND	ND	110 J	350 J	ND	ND	ND	ND	400	-
Indeno(1,2,3-cd)pyrene	2,700	ND	ND	NA	ND	NA	ND	ND	70 J	290 J	ND	ND	ND	ND	3,200	-
Anthracene	930 J	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	50,000	-
Carbazole	390 J	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	-	-
Benzo(a)pyrene	2,900	65 J	ND	NA	ND	NA	ND	ND	100 J	330 J	ND	ND	ND	ND	61	-
Benzo(b)fluoranthene	5,600	ND	ND	NA	ND	NA	ND	ND	ND	440	ND	ND	ND	ND	224	-
Benzo(k)fluoranthene	1,700	ND	ND	NA	ND	NA	ND	ND	ND	150 J	ND	ND	ND	ND	610	-
Dibenzo(a,h)anthracene	740 J	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	14.3	-
Benzo(g,h,i)perylene	2,700	52 J	ND	NA	ND	NA	ND	ND	84 J	330 J	ND	ND	ND	ND	50,000	-
Phenanthrene	8,200	69 J	ND	NA	ND	NA	ND	ND	190 J	240 J	ND	ND	ND	ND	50,000	-
Naphthalene	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	13,000	-
Acenapthylene	230 J	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	41,000	-
Fluorene	310 J	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	50,000	-
Acenapthene	330 J	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	50,000	-
Dibenzofuran	330 J	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	6,200	-
2-Methylnaphthalene	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	36,400	-
Total SVOCs	57,660	692	ND	NA	ND	NA	ND	ND	1,114	3,570	ND	ND	ND	ND	500,000	100,000
Target Analyte List Metals in milligrams per kilogram																
Aluminum	4,940	1,210	2,450	7,650	649	435	850	267 B	3,040	393	NA	2,780	2,080	4,100	-	-
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.9 B	NA	ND	ND	ND	-	-
Arsenic	4.0 B	2.5 B	ND	2.2 B	4.1 B	ND	4.9 B	ND	ND	ND	NA	ND	ND	ND	7.5	20
Barium	77.2	48.8	45.1	37.0	41.3	16.8	40.7	3.1	48.4	22.4	NA	26.8	22.1	33.2	300	400
Cadmium	1.6 B	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	1	-
Calcium	7,120	1,190	2,150	1,630	334	267	534	289	982	497	NA	733	826	702	-	-
Chromium	13.3	8.2	12.7	19.4	3.5 B	2.8 B	3.5 B	1.4 B	12.9	4.1 B	NA	8.8	5.5	8.7	10	43
Cobalt	3.7	0.90 B	1.5 B	4.8	ND	ND	0.62 B	ND	2.0 B	ND	NA	1.3 B	2.7	3.1	30	-
Copper	34.8	11.9	16.6	22.1	17.9	5.0 B	4.7 B	4.1 B	18.1	10.0	NA	10.2	9.2	10.9	25	100
Iron	12,600	7,540	10,200	15,800	5,140	3,580	4,790	2,120	8,550	2,530	NA	6,090	3,750	6,000	2,000	-
Lead	494	310	698	166	986	648	245	66.7	73.9	210	NA	6.3 B	2.6 B	3.3 B	500*	800
Magnesium	2,540	465	1,190	3,680	165	118	332	35.2 B	1,330	131	NA	1,160	1,120	1,600	-	-
Manganese	216	45.8	71.0	151	11.0	8.2	29.7	1.8 B	75.3	8.7	NA	85.7	148	354	-	-
Nickel	11.1	2.8 B	5.3 B	14.8	0.81 B	0.84 B	1.9 B	ND	7.8	0.69 B	NA	5.2 B	6.2	7.7	13	40
Potassium	835	466	790	975	375	250	505	203 B	537	239 B	NA	520	261	504	-	-
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	2	-
Sodium	166	95.8 B	219	186	81.1 B	64.3 B	87.5 B	83.8 B	82.6 B	52.2 B	NA	93.4 B	60.3 B	68.3 B	-	-
Vanadium	12.9	5.9	8.7	18.6	3.2 B	2.7 B	4.2 B	0.51 B	9.6	1.4 B	NA	6.9	6.0	8.7	150	-
Zinc	584	83.7	54.6	182	44.8	7.1 B	47.8	ND	32.1	16.2 B	NA	44.7	26.5	17.9 B	20	200
Mercury	0.12	NA	0.025 B	NA	ND	NA	ND	ND	0.022 B	0.033 B	NA	ND	ND	ND	0.1	1.5

Notes:

ND = Not detected.
NA = Not Analyzed.
- = Not established.

J = Estimated concentration between instrument detection limit and method detection limit
B = For metals, analyte was detected between the Method Detection Limit and the Reporting Limit. For ogranic compounds, analyte was detected in an associated laboratory blank.
*Background levels for lead vary widely. Average background levels in metropolitan or surburban areas typically range from 200 to 500 ppm.

TABLE 1.2.4.2
RESIDUAL SOIL DATA - EAST 117TH STREET TO EAST 118TH STREET
EAST RIVER PLAZA SITE, NEW YORK, NY

BOLD SHADED VALUES SHOW EXCEEDANCES OF NYSDEC RECOMMENDED SOIL CLEANUP OBJECTIVES IN RESIDUAL SOIL

Sample No.	EP-33	EP-34	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-67	SB-5	NYSDEC Recommended Soil Cleanup Objectives	Site-Specific Cleanup Objectives
Sample Depth (feet below original grade)	10	10	14	14	9	9	13	9	9	9	9	9	11	14	14	9	10	14	14	8-9		
Sample Date	5/5/06	5/5/06	6/2/06	6/2/06	6/7/06	6/7/06	7/10/06	6/7/06	6/7/06	6/7/06	6/7/06	6/7/06	6/7/06	6/14/06	6/14/06	6/14/06	6/14/06	6/14/06	6/20/06	2/26/96		
Target Compound List Volatile Organic Compounds in micrograms per kilogram																						
Carbon disulfide	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.3 J	ND	ND	1,200	-
Xylenes (total)	ND	ND	ND	ND	3.8 J	ND	NA	2.9 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,200	-
Acetone	ND	ND	10 J	9.4 J	12 J	3.9 J	NA	6.6 J	ND	5.3 J	ND	ND	3.6 J	6.6 JB	7.9 JB	16 JB	ND B	7.3 JB	9.7 J	ND	200	-
Chloroform	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	300	-
Methylene Chloride	3.7 JB	5.8 JB	6.3 JB	5.7 JB	10 JB	6.0 JB	NA	8.1 JB	5.9 JB	6.4 JB	6.1 JB	5.6 JB	5.0 JB	8.3 JB	14 JB	8.3 JB	5.9 JB	8.3 JB	10 JB	23	100	-
Toluene	ND	ND	ND	1.3 J	1.2 J	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	-
Target Compound List Semivolatile Organic Compounds in micrograms per kilogram																						
bis(2-ethylhexyl)phthalate	370 B	450 B	540 B	510 B	300 JB	ND	NA	620 B	800 B	600 B	370 JB	330 JB	510 B	78 JB	68 JB	150 JB	590 B	670 B	620 B	150 J	50,000	-
Fluoranthene	640	2,100	ND	ND	160 J	ND	NA	ND	56 J	ND	ND	ND	ND	ND	ND	ND	510	91 J	ND	930	50,000	-
Pyrene	700	1,700	ND	ND	260 J	ND	NA	75 J	120 J	ND	74 J	ND	ND	ND	ND	ND	620	110 J	ND	1,200	50,000	-
Benzo(a)anthracene	**270 J**	**860**	ND	ND	110 J	ND	NA	58 J	ND	ND	ND	ND	ND	ND	ND	ND	**380**	ND	ND	**620**	224	-
Chrysene	360	**1,000**	ND	ND	110 J	ND	NA	63 J	ND	ND	54 J	ND	ND	ND	ND	ND	**410**	61 J	ND	**920**	400	-
Indeno(1,2,3-cd)pyrene	77 J	610	ND	ND	74 J	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	260 J	ND	ND	720 J	3,200	-
Anthracene	110 J	460	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50,000	-
Carbazole	ND	86 J	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-
Benzo(a)pyrene	**150 J**	**620**	ND	ND	80 J	ND	NA	**69 J**	ND	ND	**66 J**	ND	ND	ND	ND	ND	**340 J**	ND	ND	**620 J**	61	-
Benzo(b)fluoranthene	180 J	**800**	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	**490**	ND	ND	**2,500**	224	-
Benzo(k)fluoranthene	81 J	340 J	ND	ND	64 J	ND	NA	58 J	ND	ND	ND	ND	ND	ND	ND	ND	170 J	ND	ND	ND	610	-
Dibenzo(a,h)anthracene	ND	**150 J**	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	**62 J**	ND	ND	ND	14.3	-
Benzo(g,h,i)perylene	110 J	680	ND	ND	75 J	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	300 J	ND	ND	ND	50,000	-
Phenanthrene	ND	1,100	ND	ND	110 J	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	160 J	57 J	ND	ND	50,000	-
Naphthalene	ND	64 J	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13,000	-
Acenapthylene	ND	87 J	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	94 J	41,000	-
Fluorene	ND	190 J	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50,000	-
Acenapthene	ND	160 J	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50,000	-
Dibenzofuran	ND	69 J	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6,200	-
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	36,400	-
Total SVOCs	3,048	11,526	540	510	1,343	ND	NA	943	976	600	564	330	510	78	68	150	4,292	989	620	7,954	500,000	100,000
Target Analyte List Metals in milligrams per kilogram																						
Aluminum	16,100	7,460	5,770	11,500	6,050	4,020	NA	5,600	7,310	6,550	8,020	13,700	13,600	10,900	9,990	3,100	3,820	5,780	2,220	3,690	-	-
Antimony	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	-	-
Arsenic	ND	ND	1.4 B	1.5 B	2.2 B	4.2 B	NA	ND	1.3 B	1.5 B	3.2 B	ND	ND	2.5 B	2.2 B	ND	1.4 B	1.8 B	ND	**8.2**	7.5	20
Barium	173	99.4	51.2	106	34.1	29.8	NA	41.6	41.8	64.1	60.0	126	109	93	84.6	33.0	116	35.5	26.3	ND	300	400
Cadmium	1.0 B	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6	1	-
Calcium	4,720	4,060	1,420	38,500	32,700	4,620	NA	13,200	40,600	6,840	62,600	12,200	23,000	3,170	2,840	876	7,250	6,070	603	63,800	-	-
Chromium	**42.4**	**24.2**	9.5	**21.1**	**34.1**	**10.9**	NA	5.3	**12.9**	**14.4**	**11.8**	4.7	4.0	**24**	**18.0**	**13.5**	**14.5**	**11.8**	6.1	**11.7**	10	43
Cobalt	13.1	6.0	6.1	11.2	4.9	3.8	NA	3.4	5.1	6.1	5.2	10.1	9.5	11.9	10.3	1.9 B	3.7	5.0	2.4	ND	30	-
Copper	**44.9**	**32.5**	12.4	**26.4**	23.8	15.6	NA	12.8	18.3	23.6	**61.1**	10.2	17.4	**25.8**	22.4	7.2	19.0	**59.0**	8.2	**35.0**	25	100
Iron	**33,000**	**16,600**	**11,500**	**17,600**	**8,630**	**9,720**	NA	**10,600**	**12,100**	**13,100**	**12,400**	**26,000**	**25,900**	**23,500**	**21,300**	**7,200**	**7,770**	**9,200**	**5,860**	**16,300**	2,000	-
Lead	11.3	63.4	5.9 B	8.9 B	33.0	31.2	NA	8.1	129	7.5 B	150	3.4 B	3.4 B	14.0	10.8 B	38.3	56.7	14.9	3.1 B	**617.0**	500*	800
Magnesium	12,000	5,280	2,600	22,000	16,100	3,800	NA	8,450	26,000	6,750	17,200	11,700	17,900	6,080	5,720	2,720	2,790	5,080	1,100	1,170	-	-
Manganese	379	225	419	442	261	756	NA	132	214	924	322	282	268	504	490	33.3	231	292	98.8	315.0	-	-
Nickel	**27.5**	**16.7**	**14.9**	**23.7**	12.4	8.7	NA	4.6	10.8	**18.2**	11.0	4.5 B	4.9 B	**33.1**	**28.2**	7.8	11.6	12.9	7.1	ND	13	40
Potassium	5,230	2,940	1,020	2,880	1,840	1,040	NA	2,290	2,770	1,420	2,130	5,300	5,740	2,100	1,880	643	489	816	403	606.0	-	-
Selenium	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	-
Sodium	770	217	160	554	622	135	NA	125	240	167	590	479	529	305	338	90.5 B	102	206	148	364.0	-	-
Vanadium	64.7	29.8	14.9	23.4	13.5	13.3	NA	9.1	16.3	20.0	15.9	63.8	47.5	28.0	25.7	11.8	32.4	27.2	8.4	ND	150	-
Zinc	**111**	**82.0**	**27.1**	**61.9**	**41.0**	**40.7**	NA	**28.1**	**55.9**	**40.2**	**50.7**	**54.3**	**61.1**	**59.1**	**52.7**	**86.5**	**91.6**	**53.0**	**26.8**	**43**	20	200
Mercury	0.030 B	0.087	ND	ND	0.042 B	2.1	**0.16**	**0.17**	0.022 B	ND	0.028 B	ND	ND	ND	ND	ND	0.074	**0.12**	ND	ND	0.1	1.5

Notes:

ND = Not detected.
NA = Not Analyzed.
- = Not established.

J = Estimated concentration between instrument detection limit and method detection limit
B = For metals, analyte was detected between the Method Detection Limit and the Reporting Limit. For ogranic compounds, analyte was detected in an associated laboratory blank.
*Average background levels in metropolitan or surburban areas typically range from 200 to 500 ppm.

TABLE 1.2.4.3
RESIDUAL SOIL DATA - EAST 118TH STREET TO EAST 119TH STREET
EAST RIVER PLAZA SITE, NEW YORK, NY

BOLD SHADED VALUES SHOW EXCEEDANCES OF NYSDEC RECOMMENDED SOIL CLEANUP OBJECTIVES IN RESIDUAL SOIL

Sample No.	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-35 / EP-61	EP-51	EP-52	EP-53	EP-54	EP-55	EP-56	EP-57	EP-58		EP-59	EP-60		EP-62	EP-63	EP-64			EP-65	EP-66	NYSDEC Recommended Soil Cleanup Objectives	Site-Specific Cleanup Objectives
Sample Depth (feet below original grade)	7	17	7	15	7	11	7	7	9	7	10	14	7	10	7	7	7	7	7	11	12	14	9	11	9	9	9	9	9	9	15	9	9	11	14	14	14	15	16	14	14		
Sample Date	4/20/06	7/12/06	4/20/06	7/13/06	4/20/06	8/3/06	4/20/06	4/20/06	8/3/06	4/20/06	8/16/06	8/3/06	4/20/06	5/16/06	4/20/06	4/20/06	4/20/06	4/20/06	4/20/06	7/13/06	5/17/06	8/20/06	8/16/06	8/16/06	8/15/06	8/16/06	8/16/06	8/16/06	8/16/06	8/16/06	7/13/06	8/16/06	8/16/06	8/3/06	8/20/06	8/20/06	8/20/06	7/12/06	8/3/06	8/20/06	8/20/06				
Target Compound List Volatile Organic Compounds in micrograms per kilogram																																											
Carbon disulfide	ND	NA	ND	NA	4.2 J	NA	ND	ND	NA	1.7 JB	NA	NA	ND	NA	ND	ND	8.6 J	ND	ND	NA	14	ND	ND	1.3 J	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	NA	NA	ND	ND	1,200	-
Xylenes (total)	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	NA	NA	ND	NA	ND	ND	ND	ND	ND	NA	3.6 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	NA	NA	ND	ND	1,200	-
Acetone	ND	NA	ND	NA	290	NA	ND	ND	NA	5.1 J	NA	NA	5.6 J	NA	ND	ND	99 J	47 J	16 J	NA	77 B	6.5 JB	17 JB	7.3 JB	5.4 JB	4.3 JB	ND	200	45 J	98 J	NA	8.5 JB	19 JB	NA	6.3 JB	6.6 JB	7.9 JB	NA	NA	7.0 JB	62 J	200	-
2-Butanone (MEK)	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	NA	NA	ND	NA	ND	ND	ND	ND	ND	NA	7.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	NA	NA	ND	ND	300	-
Chloroform	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	NA	NA	ND	NA	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	NA	NA	ND	ND	300	-
Methylene Chloride	40 JB	NA	37 JB	NA	19 JB	NA	18 JB	14 JB	NA	11 JB	NA	NA	5.8 JB	NA	20 JB	6.7 JB	37 JB	40 JB	20 JB	NA	9.9 JB	7.3 JB	8.8 JB	8.5 JB	12 JB	11 JB	13 JB	51 JB	51 JB	48 JB	NA	14 JB	30 B	NA	7.4 JB	8.2 JB	8.9 JB	NA	NA	11 JB	51 JB	100	-
Ethylbenzene	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	NA	NA	ND	NA	ND	ND	ND	ND	ND	NA	2.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	NA	NA	ND	ND	5,500	-
Toluene	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	NA	NA	ND	NA	ND	ND	ND	ND	ND	NA	20	ND	ND	ND	ND	ND	ND	ND	ND	6.0 J	NA	ND	ND	NA	ND	ND	ND	NA	NA	ND	ND	1,500	-
Target Compound List Semivolatile Organic Compounds in micrograms per kilogram																																											
bis(2-ethylhexyl)phthalate	ND	NA	ND	NA	ND	NA	160 J	110 J	NA	95 J	NA	NA	480 J	NA	90 J	250 J	ND	ND	ND	260 JB	ND	340 JB	150 JB	350 JB	170 JB	320 JB	260 JB	690 JB	440 B	180 JB	NA	1,000 B	470 JB	ND	350 JB	280 JB	1,400 B	NA	NA	190 JB	1,300 B	50,000	-
Di-n-butyl phthalate	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	NA	NA	ND	NA	110 J	ND	ND	ND	ND	62 J	ND	ND	120 J	ND	ND	ND	ND	ND	ND	140 J	ND	NA	270 J	ND	ND	ND	ND	ND	NA	NA	ND	ND	8,100	-
Diethyl phthalate	ND	NA	ND	NA	ND	NA	290 JB	ND	NA	ND	NA	NA	ND	NA	ND	74 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	NA	NA	ND	ND	7,100	-
Fluoranthene	6,500	NA	2,100	NA	1,000	NA	1,600	3,300	NA	2,700	NA	NA	7,100	NA	6,200	2,300	1,300 J	1,700 J	31,000	250 J	ND	4,700	720	ND	290 J	120 J	1,300	860	130 J	ND	NA	8,600	11,000	ND	4,400	120 J	2,000	NA	NA	ND	160 J	50,000	-
Pyrene	6,900	NA	1,600	NA	1,600	NA	1,600	3,300	NA	2,600	NA	NA	6,600	NA	4,700	2,200	1,800 J	2,900 J	29,000	360 J	ND	4,000	670	ND	360 J	150 J	1,100	860	200 J	400	NA	7,700	8,500	910	3,900	100 J	2,200	NA	NA	ND	240 J	50,000	-
Benzo(a)anthracene	**4,100**	NA	**1,300**	NA	**470 J**	NA	**1,200**	**2,000**	NA	**1,600**	NA	NA	**3,700**	NA	**3,100**	**1,400**	**700 J**	**730 J**	16,000	120 J	ND	**2,600**	360 J	ND	160 J	80 J	**590**	310 J	ND	ND	NA	**4,200**	6,300	ND	**2,500**	ND	**1,200**	NA	NA	ND	57 J	224	-
Chrysene	**3,500**	NA	**1,300**	NA	**550 J**	NA	**1,300**	**1,900**	NA	**1,800**	NA	NA	**4,100**	NA	**2,700**	**1,200**	**790 J**	**1,100 J**	17,000	160 J	ND	**2,500**	350 J	ND	160 J	92 J	**550**	340 J	ND	ND	NA	**4,000**	5,800	ND	**2,100**	ND	**1,200**	NA	NA	ND	83 J	400	-
Indeno(1,2,3-cd)pyrene	2,400	NA	760	NA	330 J	NA	760	1,900	NA	1,700	NA	NA	3,200	NA	2,300	1,100	440 J	ND	13,000	94 J	ND	1,900	240 J	ND	75 J	77 J	190 J	150 J	ND	ND	NA	ND	6,800	ND	1,800	ND	950	NA	NA	ND	ND	3,200	-
Anthracene	2,500	NA	710	NA	2,500	NA	490	600	NA	440 J	NA	NA	1,400 J	NA	1,100	490	2,600	4,200	8,500	100 J	ND	1,100	370 J	ND	ND	110 J	300 J	1,300	440	1,200	NA	2,400	3,200	ND	1,400	ND	620	NA	NA	ND	340 J	50,000	-
Carbazole	1,100	NA	220 J	NA	ND	NA	150 J	160 J	NA	200 J	NA	NA	550 J	NA	430	160 J	ND	ND	2,700 J	ND	ND	630	ND	ND	ND	ND	97 J	ND	ND	ND	NA	730 J	910	ND	620	ND	200 J	NA	NA	ND	ND	-	-
Benzo(a)pyrene	**2,600**	NA	**1,300**	NA	**390 J**	NA	**1,400**	**2,100**	NA	**1,600**	NA	NA	**3,700**	NA	**2,700**	**1,300**	**520 J**	**540 J**	14,000	150 J	ND	**2,300**	**330 J**	ND	160 J	120 J	**370 J**	**240 J**	ND	ND	NA	**3,500**	6,600	ND	**2,100**	ND	**1,100**	NA	NA	ND	51 J	61	-
Benzo(b)fluoranthene	**3,100**	NA	**1,200**	NA	**450 J**	NA	**1,700**	**2,300**	NA	**1,900**	NA	NA	**3,400**	NA	**2,900**	**1,200**	**640 J**	ND	14,000	100 J	ND	**2,800**	**400 J**	ND	170 J	140 J	**500**	**270 J**	ND	ND	NA	**3,900**	6,900	ND	**2,200**	ND	**1,300**	NA	NA	ND	ND	224	-
Benzo(k)fluoranthene	**1,500**	NA	600	NA	190 J	NA	ND	**910**	NA	**800**	NA	NA	**1,700**	NA	**1,400**	**660**	ND	ND	6,500	86 J	ND	**880**	170 J	ND	77 J	55 J	170 J	130 J	ND	ND	NA	**1,700**	3,100	ND	**850**	ND	450 J	NA	NA	ND	ND	610	-
Dibenzo(a,h)anthracene	**740 J**	NA	390 J	NA	120 J	NA	240 J	**620**	NA	**390 J**	NA	NA	**1,000 J**	NA	**740**	**320 J**	ND	ND	3,900 J	ND	ND	**490**	**51 J**	ND	ND	ND	ND	ND	ND	ND	NA	**560 J**	1,500	ND	**440**	ND	190 J	NA	NA	ND	ND	14.3	-
Benzo(g,h,i)perylene	3,100	NA	810	NA	350 J	NA	1,000	2,500	NA	2,000	NA	NA	3,900	NA	2,700	1,300	490 J	520 J	15,000	89 J	ND	2,000	250 J	ND	80 J	74 J	170 J	150 J	ND	ND	NA	2,900	7,100	ND	1,800	ND	1,100	NA	NA	ND	ND	50,000	-
Phenanthrene	8,400	NA	1,800	NA	7,600	NA	1,200	1,900	NA	1,600	NA	NA	6,400	NA	3,700	1,800	12,000	17,000	38,000	720	ND	4,100	2,800	97 J	200 J	97 J	1,200	10,000	3,000	8,400	NA	8,200	7,100	2,300	4,400	110 J	2,100	NA	NA	74 J	940	50,000	-
Naphthalene	1,800	NA	540	NA	2,000	NA	250 J	340 J	NA	220 J	NA	NA	550 J	NA	220 J	240 J	ND	5,900	2,500 J	120 J	ND	460	ND	ND	ND	ND	ND	ND	ND	ND	NA	740 J	1,000	ND	690	ND	370 J	NA	NA	ND	220 J	13,000	-
Acenaphthylene	550 J	NA	ND	NA	ND	NA	270 J	170 J	NA	180 J	NA	NA	540 J	NA	410	200 J	ND	ND	2,100 J	ND	ND	260 J	ND	ND	ND	ND	ND	ND	ND	ND	NA	260 J	3,800	ND	130 J	ND	ND	NA	NA	ND	220 J	41,000	-
Fluorene	1,500	NA	720	NA	10,000	NA	340 J	490	NA	260 J	NA	NA	760 J	NA	430	340 J	5,400	6,600	6,900	350 J	ND	850	1,500	ND	ND	130	150 J	5,700	2,000	4,800	NA	1,400	1,200	3,400	740	ND	610	NA	NA	ND	680	50,000	-
Acenapthene	1,100	NA	480	NA	5,000	NA	160 J	260 J	NA	180 J	NA	NA	670 J	NA	410	270 J	3,600	5,400	5,700	150 J	ND	590	680	ND	ND	ND	140 J	2,900	1,000	ND	NA	1,200	430 J	ND	630	ND	510	NA	NA	ND	470	50,000	-
Dibenzofuran	1,000	NA	270 J	NA	3,800	NA	200 J	160 J	NA	140 J	NA	NA	500 J	NA	300 J	190 J	660 J	3,300 J	2,500 J	200 J	ND	420	ND	ND	ND	ND	79 J	3,000	1,000	ND	NA	810	450 J	ND	450	ND	ND	NA	NA	ND	ND	6,200	-
2-Methylnaphthalene	1,500	NA	1,400	NA	1,800	NA	620	780	NA	450	NA	NA	390 J	NA	320 J	470	18,000	31,000	2,700 J	240 J	ND	490	ND	ND	ND	ND	ND	1,700	ND	290 J	NA	450 J	460 J	ND	440	ND	720	NA	NA	ND	330 J	36,400	-
n-Nitrosodiphenylamine	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	NA	NA	ND	NA	ND	ND	ND	ND	ND	570	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	6,000	290 J	ND	ND	NA	NA	ND	ND	-	-
4-Nitroaniline	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	NA	NA	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	770 J	NA	ND	ND	ND	ND	ND	ND	NA	NA	ND	ND	-	-
Total SVOCs	54,090	NA	17,410	NA	38,150	NA	15,130	25,840	NA	20,855	NA	NA	50,640	NA	36,960	17,484	48,940	80,890	231,000	4,161	ND	33,610	9,161	447	1,912	1,565	7,166	28,600	8,350	16,040	NA	54,520	82,640	12,610	32,230	610	18,220	NA	NA	264	5,091	500,000	100,000
Target Analyte List Metals in milligrams per kilogram																																										
Aluminum	8,750	NA	6,630	NA	11,600	NA	6,670	7,880	NA	9,640	5,130	NA	6,340	2,350	8,280	7,510	9,340	11,600	19,200	NA	7,710	8,400	7,950	3,080	2,250	2,630	9,990	4,390	3,480	6,980	NA	8,120	6,260	NA	5,230	11,100	9,570	NA	NA	3,480	3,600	-	-
Antimony	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	NA	NA	ND	ND	-	-
Arsenic	**18.3**	NA	22.8	ND	**17.1**	NA	**15.8**	**17.0**	NA	26.4	3.1 B	NA	9.4 B	3.6 B	**9.8**	**6.0 B**	3.6 B	4.8 B	**12.8 B**	NA	ND	4.3 B	2.2 B	ND	1.5 B	1.4 B	3.0 B	2.0 B	1.6 B	3.7 B	NA	6.4 B	4.4 B	NA	2.6 B	3.1 B	4.0 B	NA	NA	4.3 B	ND	7.5	20
Barium	252	NA	136	NA	164	NA	132	**355**	NA	536	57.8	NA	84.0	16.4	81.2	113	64.6	54.0	221	NA	80.2	99.2	49.9	17.6	14.4	20.1	67.6	40.9	26.0	127	NA	127	380	NA	63.8	52.4	80.8	NA	NA	29.5	24.3	300	400
Beryllium	ND	NA	ND	NA	**0.89 B**	NA	ND	ND	NA	0.56 B	ND	NA	ND	ND	ND	ND	ND	ND	**0.92 B**	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	**0.70 B**	ND	NA	NA	ND	ND	0.16	-
Cadmium	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	ND	1.9 B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	NA	NA	ND	ND	1	-
Calcium	5,540	NA	11,300	NA	10,900	NA	7,280	11,700	NA	6,850	6,320	NA	15,600	1,770	7,760	9,060	5,010	9,650	23,100	NA	46,400	30,800	4,570	1,220	1,920	872	4,460	2,440	835	11,700	NA	16,800	15,100	NA	16,100	2,410	19,400	NA	NA	776	1,110	-	-
Chromium	**29.2**	NA	**16.1**	NA	**19.9**	NA	**23.8**	**35.8**	NA	70.8	**11.3**	NA	26.0	5.7	**36.4**	**28.9**	**18.1**	**17.9**	52.1	**16.9**	17.2	**42.2**	**14.6**	8.1	6.3	7.3	**16.2**	7.5	**11.2**	**22.5**	NA	**23.8**	**20.7**	NA	**18.7**	9.3	**18.3**	NA	NA	10.8	11.0	10	43
Cobalt	19.8	NA	15.7	NA	18.9	NA	9.0	11.6	NA	13.0	5.0	NA	6.2	2.6 B	9.7	7.1	7.2	8.1	18.1	NA	3.7	4.8	5.6	3.7	2.5	2.8	6.0	4.0	3.6	5.5	NA	6.7	4.2	NA	4.4	7.5	6.2	NA	NA	1.7 B	2.2 B	30	-
Copper	**47.8**	NA	**35.9**	NA	**165**	11.1	**59.0**	**86.3**	NA	65.8	22.6	NA	44.3	7.2 B	**46.6**	**41.5**	**33.4**	**34.4**	**91.4**	NA	15.6	**36.9**	**64.1**	11.7	5.8 B	10.4	12.6	11.3	10.8	**30.5**	NA	**31.0**	**37.2**	NA	**28.9**	18.1	**38.1**	NA	NA	10.3	11.3	25	100
Iron	**19,600**	NA	**44,800**	NA	**18,700**	NA	**21,300**	**29,700**	NA	26,500	**13,200**	NA	17,500	**4,030**	**22,200**	**15,900**	**16,400**	**18,000**	**35,300**	NA	13,900	**16,100**	**12,200**	**5,880**	**5,080**	**5,050**	**14,700**	**5,850**	**6,250**	**11,500**	NA	**13,200**	**10,900**	NA	**12,900**	**15,300**	**16,900**	NA	NA	**9,600**	**7,140**	2,000	-
Lead	**555**	NA	354	NA	486	NA	**541**	**555**	NA	1,120	154	NA	4,020	5.5 B	257	**696**	481	292	**681**	NA	58.0	350	109	19.7	14.8	5.0 B	125	50.1	4.3 B	1,570	2.0 B	276	1,020	3.0 B	197	17.5	1,390	1,940	95.0	4.3 B	20.7	500*	800
Magnesium	4,360	NA	4,970	NA	2,340	NA	2,420	2,220	NA	2,920	2,910	NA	2,690	1,340	2,710	2,520	3,290	4,870	6,460	NA	12,600	4,220	2,420	1,480	1,150	1,270	2,720	1,640	1,310	3,060	NA	3,320	2,810	NA	3,470	3,640	4,040	NA	NA	1,290	1,270	-	-
Manganese	479	NA	286	NA	213	NA	256	271	NA	295	229	NA	247	150	351	228	224	237	641	NA	276	286	224	88.1	93.0	249	262	345	224	278	NA	344	216	NA	202	169	265	NA	NA	552	93.7	-	-
Nickel	**39.1**	NA	**21.0**	NA	**38.9**	NA	**20.0**	**26.3**	NA	27.2	10.4	NA	17.4	6.7 B	**21.1**	**17.1**	**17.0**	**24.3**	40.2	**15.7**	9.9	12.9	12.1	9.5	7.1	8.0	12.0	8.6	9.0	12.0	NA	12.8	12.9	NA	**15.9**	**18.8**	**15.8**	NA	NA	8.0	8.1	13	40
Potassium	968	NA	731	NA	733	NA	836	727	NA	961	677	NA	790	320	788	734	996	1,070	2,230	NA	1,590	900	723	293	342	372	654	438	465	758	NA	834	719	NA	694	725	1,020	NA	NA	474	398	-	-
Selenium	ND	NA	ND	NA	ND	NA	ND	ND	NA	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	NA	ND	ND	ND	NA	NA	ND	ND	2	-
Sodium	233	NA	380	NA	316	NA	305	319	NA	256	519	NA	550	54.1 B	313	269	342	467	1,970	NA	1,220	512	131	157	83.0 B	75.2 B	297	168	109 B	222	NA	276	446	NA	353	317	597	NA	NA	112	101 B	-	-
Vanadium	22.7	NA	20.6	NA	30.5	NA	37.3	22.2	NA	22.3	12.5	NA	18.0	6.9	20.2	18.0	18.7	22.5	46.5	NA	16.4	21.4	16.4	10.4	6.8	10.2	18.2	10.1	10.2	17.0	NA	19.2	18.0	NA	14.8	23.2	20.7	NA	NA	10.5	9.2	150	-
Zinc	591	**63.0**	**128**	NA	375	18.1 B	**139**	205	9.7 B	224	58.0	33.8	239	10.4 B	**130**	**124**	**72.3**	**95.6**	423	34.7	50.7	**147**	**58.5**	16.5 B	38.4	13.6 B	**75.0**	**51.0**	19.5 B	147	NA	**153**	223	11.8 B	**71.4**	**49.9**	**158**	NA	NA	15.6 B	15.7	20	200
Mercury	1.2	NA	**0.88**	NA	2.0	0.014 B	**0.45**	1.2	ND	0.83	2.4	ND	0.50	ND	**1.1**	**0.52**	**0.11**	0.098	**0.88**	NA	57.0	**1.4**	**0.27**	ND	0.019 B	ND	**0.11**	0.025 B	ND	ND	NA	**0.32**	**0.31**	NA	**0.74**	0.049 B	**0.52**	NA	NA	ND	0.019 B	0.1	1.5

Notes:

ND = Not detected.
NA = Not Analyzed.
- = Not established.

J = Estimated concentration between instrument detection limit and method detection limit
B = For metals, analyte was detected between the Method Detection Limit and the Reporting Limit. For ogranic compounds, analyte was detected in an associated laboratory blank.
*Average background levels in metropolitan or surburban areas typically range from 200 to 500 ppm.

At least one foot of cover has been placed over the residual soil. This cover is underlain by a demarcation layer of Mirafi fabric intended to stabilize the cover material. Following cover placement, the elevation of the top of the cover was surveyed and the cover thickness was determined at numerous locations throughout the Site. Documentation of the top elevation of the 'Residual Contamination Zone' is shown on the cover survey in Appendix P in the FER.

1.2.5 Engineering and Institutional Controls

Since residual contamination is present at this Site, Engineering Controls (ECs) and Institutional Controls (ICs) have been implemented to protect public health and the environment in the future. The Site has two primary ECs. These are: (1) a composite cover system consisting of asphalt and concrete pavement, concrete-covered sidewalks, concrete building slabs, and/or one foot of gravel meeting the cover requirements in 6 NYCRR Part 375; and (2) vapor barrier materials consisting of a water-tight basement slab and wall sealing system.

Exposure to residual contaminated soils is prevented by an engineered, composite cover system that has been built on the Site during the remedial process and is undergoing modification during Site development. This composite cover system is comprised of cover gravel with a Mirafi fabric demarcation layer that was installed in November 2006. Following the completion of Site redevelopment, the cover system will consist of asphalt and concrete covered roads, concrete covered sidewalks, and concrete building slabs. The Pavement Plan in Appendix P of the FER shows the NYSDEC-approved design for the final remedial cover to be used on this Site. A survey in Appendix P of the FER shows the location of the current cover type built at the Site. This SMP outlines the procedures required in the event the composite cover system and underlying residual contamination are disturbed.

Procedures for operating and maintaining the cover system are documented in the Operation and Maintenance Plan in Section 4 of the Site Management Plan (SMP). The procedures for monitoring the system are included in Section 3 of the SMP, "Monitoring Plan". The Monitoring Plan also addresses inspection procedures that must occur after any severe weather condition has taken place that may affect on-Site ECs.

The sub-grade portions of the building (slab and foundation walls) are being provided with a barrier and seal system for water proofing purposes during the development phase of this project. This barrier and seal system will also function as a vapor barrier. The design for this project includes a water-tight basement slab and wall system designed in accordance with Federal Emergency Management Agency (FEMA) flood levels. This will be accomplished by providing a positive side waterproofing membrane beneath the slab, pile caps, and elevator pits using a sheet membrane waterproofing material. The foundation walls will also be waterproofed

using a similar sheet membrane waterproofing material applicable for walls. Penetrations through the slab and/or wall for pipes and duct banks will be detailed in accordance with approved manufacturer's details. The waterproofing elements to be used are specified in the construction contract documents; copies of pertinent portions of these documents are included in Appendix Q of the FER and placement of these materials is shown on the typical foundation detail plan in Appendix Q of the FER.

A series of ICs are required to implement, maintain, and monitor these ECs. The Site has a series of ICs in the form of Site restrictions, which are described in Section 2.3.1 of the SMP.

2.0 SOIL MANAGEMENT PROCEDURES

The Site will be fully remediated for commercial and restricted residential use. Any future intrusive work that will disturb the residual contamination and modifications or repairs to the existing composite cover system will be performed in compliance with the soil management procedures herein. Intrusive construction work 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. The HASP is presented in Attachment 2 of the SMP and the CAMP is presented in Attachment 3 of the SMP. The HASP is the responsibility of the property owner and is in compliance with DER-10 Technical Guide and 29 CFR 1910 and 1926, and all other applicable Federal, State and local regulations. Any intrusive construction work must be certified as compliant with the SMP and included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5 of the SMP).

2.1 SOIL SCREENING METHODS

Visual, olfactory and photoionization detector (PID) soil screening and assessment will be performed by a qualified environmental professional during all excavations into known or potentially contaminated material (Residual Contamination Zone). Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during and following development, such as excavations for foundations and utility work. Soil exhibiting visible contamination (e.g., staining, odors, elevated PID readings) will be stockpiled separately to prevent mixing with potentially uncontaminated excavated material.

Screening will be performed by qualified environmental professionals. Resumes will be provided in the Annual Site Management Report for all personnel conducting invasive work field screening (i.e. those representing the Remedial Engineer) for unknown contaminant sources during development and post-development work.

2.2 STOCKPILE METHODS

Any significant amounts of excavated residual soil will be staged in approximately 1,000 cubic yard (yd^3) stockpiles to be characterized for potential on-site reuse as backfill. Stockpile locations will be selected at the time of excavation such that they are appropriately located with respect to onsite activities, Site boundaries, potential surface water runoff areas, and other factors that have the potential to affect stockpile operations or maintenance. During excavation and stockpiling, the on-site field personnel will monitor the excavated soil for evidence of contamination and conduct periodic screening for VOCs using a calibrated PID. Soil exhibiting visible contamination (e.g., staining, odors, elevated PID readings) will be stockpiled separately

to prevent mixing with potentially uncontaminated excavated material. All soil stockpiles will have side slopes not to exceed 2:1 and will be placed on a base consisting of minimum 6-mil plastic sheeting. Soil stockpiles that are not actively in use will be continuously encircled with silt fences. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times whenever excavation and/or loading operations are not occurring 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 dedicated water truck equipped with a water cannon will be available on-Site for dust control.

2.3 MATERIALS EXCAVATION AND LOAD OUT

The Remediation Engineer or a qualified environmental professional under his/her supervision will oversee all invasive work and the excavation and load-out of all excavated material. The owner of the Site and its contractors are solely responsible for safe execution of all invasive and other work performed under this SoMP. The Applicant and associated parties preparing the remedial documents submitted to the NYSDEC, and parties performing this work, are completely responsible for the safe performance of all invasive work, the structural integrity of excavations, and for structures that may be affected by excavations (such as building foundations and bridge footings).

The Remedial Engineer will ensure that Site intrusive activities will not interfere with, or otherwise impair or compromise, remedial activities completed under the Remedial Work Plan.

The presence of utilities and easements on the portion of the Site subject to excavation will be investigated by the Remedial Engineer. 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.

Prior to conducting any intrusive activities involving residual soil following Site redevelopment, fencing or other barriers will be erected around the residual soil disturbance work zone, which will be designated as the exclusion zone. The barriers will include high-visibility safety fencing, traffic cones and caution tape, or other similar measures. Any required sediment and erosion control measures will be installed prior to the intrusive activities.

All excavations will be considered open excavations and will be managed according to applicable local, state, and federal regulations. All excavations will be backfilled as soon as the

work allows. Excavations not secured with fencing will not be left open overnight. Any backfilled areas where the Site cover is not immediately restored will be temporarily covered with plastic sheeting or other measures.

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 Remediation Engineer will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the Site until the invasive work is complete.

Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-Site sediment tracking. The Remedial Engineer will be responsible for ensuring that all egress points for truck and equipment transport from the Site will be clean of dirt and other materials derived from the Site during intrusive activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

If the air monitoring program identifies potential exposure of field personnel or the public to potential environmental hazards in the soil or groundwater, appropriate measures will be taken to control odors/dust and community air monitoring will be initiated as described in the CAMP (Attachment 3 of SMP). Soil stockpiles will be kept covered with appropriately anchored tarps and/or plastic sheeting whenever excavation and/or loading operations are not occurring; the sheeting will be routinely inspected for damage and replaced as needed. Open excavated areas will be covered with plastic sheeting whenever excavation operations are not occurring to minimize emission of vapors. Water will be used as necessary to minimize the generation of dust during loading operations. Foam will be available, as needed, to control potential vapors or odors.

Mechanical processing of historical fill and contaminated soil on-Site is prohibited.

2.4 MATERIALS TRANSPORT OFF-SITE

All offsite transport of regulated 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. Egress points for truck and

equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

Truck transport routes are anticipated to be as follows: East 117th Street shall be used for ingress/egress of the Site in accordance with an understanding reached with neighboring businesses and residents. East 117th Street is primarily commercial; use of this street will reduce impacts to nearby residents. Trucks will not queue or idle in the neighborhood near the Site; all queuing will occur onsite. From East 117th Street, trucks shall travel north on 1st Avenue, cross the Willis Avenue Bridge, and travel north on Willis Avenue to Interstate 87 (Major Deegan Expressway). All trucks loaded with Site materials will exit the vicinity of the Site using only this approved truck route.

The approved in-bound and out-bound truck route to the Site is shown in Figure 2.4.1. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting 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; and (g) community input. Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site. Queuing of trucks will be performed on-Site in order to minimize off-Site disturbance. Off-Site queuing will be prohibited.

2.5 MATERIALS DISPOSAL OFF-SITE

For large projects, the total quantity of material expected to be disposed off-Site will be reported to NYSDEC prior to performance of work. This will include quantity, 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.

A Bill of Lading system or equivalent will be used for off-Site movement of non-hazardous wastes and contaminated soils. This information will be reported in the Annual Site Management Report. Appropriately licensed haulers will be used for material removed from this Site and will be in full compliance with all applicable local, State and Federal regulations.

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). 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. Historical fill and contaminated soils from the Site are prohibited from being disposed at Part 360-16 Registration Facilities (also known as Soil Recycling Facilities).

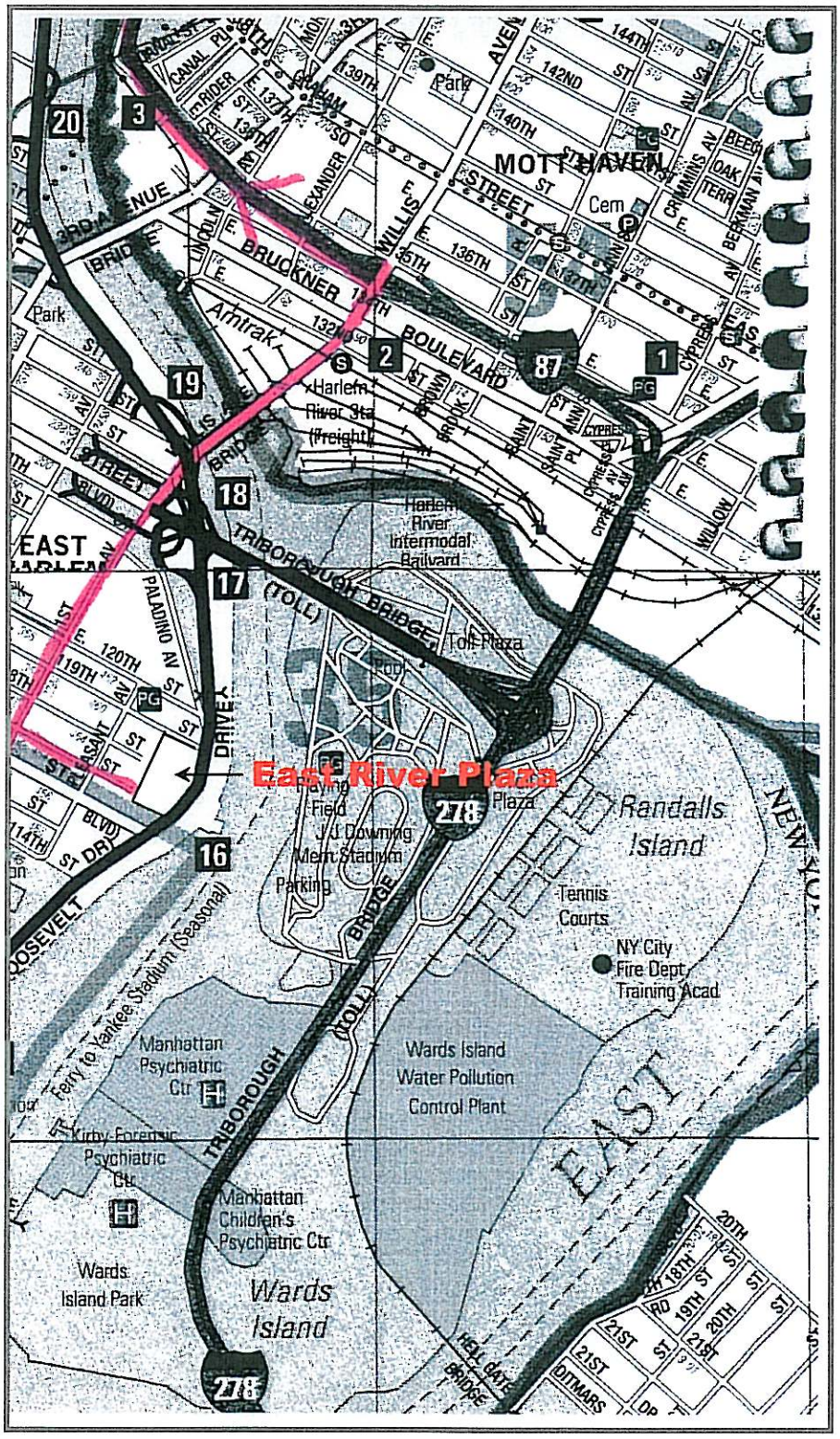


FIGURE 2.4.1
TRUCK ROUTE
EAST RIVER PLAZA

FPM

Hazardous wastes derived from on-Site will be stored, transported, and disposed of in full compliance with applicable local, State, and Federal regulations.

Soils that are contaminated but non-hazardous and are being removed from the Site are considered by the Division of Solid & Hazardous Materials (DSHM) in NYSDEC to be Construction and Demolition (C/D) materials with contamination not typical of virgin soils. These soils may be sent to a permitted Part 360 landfill. They may be sent to a permitted C/D processing facility without permit modifications only upon prior notification of NYSDEC Region 2 DSHM. This material is prohibited from being sent or redirected to a Part 360-16 Registration Facility. In this case, as dictated by DSHM, special procedures will include, at a minimum, a letter to the C/D facility that provides a detailed explanation that the material is derived from a DER remediation Site, that the soil material is contaminated and that it must not be redirected to on- Site or off- Site Soil Recycling Facilities. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported.

All soil/fill/solid waste excavated and removed from the Site will be treated as contaminated and regulated material and will be disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to NYSDEC's Project Manager. Unregulated off-Site management of materials from this Site is prohibited without formal NYSDEC approval.

If the analytical results indicate that contaminant concentrations in stockpiled soil exceed the SCOs, the corresponding stockpile(s) will be disposed off-site according to applicable regulations. Additional waste characterization will be conducted as required by the disposal facility. Fill material that meet the SCOs but that cannot be used for backfill will be disposed off-site according to applicable regulations. Any organic matter derived from on-site will be prohibited from reuse on-site; these materials will be tested in accordance with the requirements of the receiving facility, and disposed as municipal solid waste per 6 NYCRR Part 360-1.2.

Waste characterization will be performed for off-Site disposal in a manner suitable to the receiving facility and in conformance with applicable permits. Sampling and analytical methods, sampling frequency, analytical results and QA/QC will be reported in the Annual Site Management Report. All data available for soil/material to be disposed at a given facility must be submitted to the disposal facility with suitable explanation prior to shipment and receipt.

The following documentation will be obtained and reported by the Remedial Engineer for each disposal location used in this project to fully demonstrate and document that the disposal of

material derived from the Site conforms with all applicable laws: (1) a letter from the Remedial Engineer or BCP Applicant to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This letter will state that material to be disposed is contaminated material generated at an environmental remediation site in New York State. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported; and (2) a letter from all receiving facilities stating it is in receipt of the correspondence (above) and is approved to accept the material.

The disposal locations will be identified and reported to NYSDEC in the Annual Site Management Report. The Annual Site Management Report will include an accounting of the destination of all material removed from the Site during work performed under this plan, including excavated soil, contaminated soil, historic fill, solid waste, and hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material. This information will also be presented in a tabular form in the Annual Site Management Report.

Depending on the requirements of the receiving facility, large debris may be segregated from other soils, and characterized for separate disposal or possible on-site reuse. Fresh chip samples will be collected from segregated construction and demolition debris for analysis of VOCs, SVOCs, and metals at a frequency of one sample for each 1,000 yd^3. If this material is found to meet the SCOs, it could be reused on-site.

2.6 MATERIALS REUSE ON-SITE

For stockpiled residual soil proposed to be reused onsite one multi-point composite soil sample will be collected from each 1,000 yd^3 of stockpiled soil and analyzed for VOCs by EPA Method 8260, SVOCs by EPA Method 8270, and Target Analyte List (TAL) metals. Acceptable demolition material proposed for reuse on-Site, if any, will be sampled for asbestos. If the analytical results indicate that contaminant concentrations exceed the SCOs, the corresponding stockpile will be disposed offsite, as described in Section 2.5. If the analytical results indicate that all contaminant concentrations in the composite sample are below the SCOs, the corresponding stockpile can be used as backfill below the Site cover. Contaminated on-Site material, including historic fill and contaminated soil, removed for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the Site is prohibited for reuse on-Site.

Chemical criteria (SCOs) for on-Site reuse of material have been approved by NYSDEC. These criteria are listed below.

Analyte	SCO (in milligrams per kilogram)
Total SVOCs	100
Arsenic	20
Barium	400
Chromium	43
Copper	100
Lead	800
Nickel	40
Zinc	200
Mercury	1.5

Materials stockpiled for reuse will be managed in accordance with the stockpiling procedures discussed in Section 2.2 above.

Concrete crushing or processing on-Site is prohibited unless approved by the NYSDEC. However, the NYSDEC will consider the use of specially designed devices that are self-contained and capable of providing misting for dust control. DEC approval must be obtained. If dust-free operations are not achieved with such devices, this exception will be revoked.

The Remedial Engineer will ensure that procedures defined for materials reuse in this SoMP are followed and that unacceptable material will not remain on-Site.

2.7 FLUIDS MANAGEMENT

Fluids to be removed from the Site are anticipated to include stormwater and/or groundwater from dewatering. All liquids to be removed from the Site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Liquids discharged into the New York City sewer system will be addressed through approval by NYCDEP. Fluids may also be discharged to the adjoining Harlem River under a State Pollutant Discharge Elimination System (SPDES) permit. Discharge of water generated during construction to surface waters (i.e. a local pond, stream or river) is prohibited without a SPDES permit.

In the event that liquids are unsuitable for discharge to the sewer or the river and must be removed from the Site, they will be handled, transported, and disposed in accordance with applicable regulations. Waste manifests, bills of lading or other documentation of proper disposal shall be obtained as necessary for offsite shipments of fluids. Documentation of fluids disposal will be provided in the Annual Site Management Report.

Dewatered fluids will not be recharged back to the land surface or subsurface of the Site. Dewatering fluids will be managed off-Site.

2.8 DEMARCATION

For larger excavations conducted after the final cover is in place, after the completion of soil removal and any other invasive remedial activities and prior to backfilling, as necessary, a land survey will be performed by a New York State licensed surveyor. The survey will redefine the top elevation of residual contaminated soils. A physical demarcation layer, consisting of orange snow fencing material or equivalent material will be placed on this surface to provide a visual reference. This demarcation layer will constitute the top of the 'Residuals Contamination Zone', the zone that requires adherence to special conditions for disturbance of contaminated residual soils defined in this Site Management Plan. The survey will measure the grade covered by the demarcation layer before the placement of cover soils, pavement and sub-soils, structures, or other materials. This survey and the demarcation layer placed on this grade surface will constitute a modification of the physical and written record of the upper surface of the 'Residuals Contamination Zone' in the Site Management Plan. If larger excavations are conducted, a map showing the survey results will be included in the Annual Site Management Report and updates to the Site Management Plan.

2.9 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the Site will be approved by the Remedial Engineer and will be in compliance with provisions in this SMP prior to receipt at the Site. All imported soils will meet NYSDEC approved backfill or cover soil quality objectives for this Site. The NYSDEC-approved cover quality objectives are the NYSDEC Part 375 Restricted Residential Use SCOs.

Non-compliant soils will not be imported onto the Site without prior approval by NYSDEC. Nothing in the approved SMP or its approval by NYSDEC should be construed as an approval for this purpose. 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. Nothing in this SMP should be construed as an approval for this purpose.

Any imported material used as backfill will be documented as having originated from locations having no evidence of disposal or release of hazardous, toxic, or radioactive substances, wastes, or petroleum products. Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the Site. Solid waste will not be imported onto the Site.

If the contractor designates a source as "virgin" soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development, or agricultural use. Documented virgin soils will not be sampled prior to use as backfill on the site.

Non-virgin, offsite soils without an NYSDEC-approved Beneficial Use Determination (BUD) will be tested via collection of one composite sample per source area. Samples will be analyzed for TCL VOCs and SVOCs, and TAL metals. Soils will be considered appropriate for use as onsite backfill above the cover if contaminant concentrations are less than applicable NYSDEC Part 375 Restricted Residential Use SCOs. Backfill to be placed beneath the cover must have contaminant concentrations less than the site-specific SCOs.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers. Imported soil stockpiles will be managed in accordance with the stockpiling procedures discussed in Section 2.2 above.

2.10 STORMWATER POLLUTION PREVENTION

The Site is surrounded by existing NYCDEP combined sewers. All stormwater discharges from the site enter the NYCDEP combined sewers. In accordance with the permit requirements for the State Pollutant Discharge Elimination System (SPDES) General Permit (GP-02-01) for stormwater discharges for construction activities, construction activities that discharge to combined sewers do not require coverage under GP-02-01. If stormwater accumulates at the Site it will be removed and discharged to the sewer or to the river under a permit, as described in Section 2.7 above. Discharges will be routed through a fractionation tank prior to the sewer inlet such that sediment and any floatable materials are removed from the discharge. Drop-inlets in the street will be protected with hay bales and silt fencing.

Barriers and hay bale checks around soil stockpiles 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. 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.

2. 11 CONTINGENCY PLAN

All excavations will be continuously monitored for the potential presence of buried tanks, drums or other containers, sludges, or soil that shows evidence of obvious contamination, such as heavy staining, sheen, or strong odors. If any of these are detected, excavation in the area will be halted. 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. These findings will be also included in daily and periodic electronic media reports. The following people will be notified in the event of unknown or unexpected contaminated media:

Name	Title	Phone Number
Shaminder Singh	NYSDEC Project Manager	718-482-4909 (office)
Stephanie Davis	FPM Group	(631) 737-6200,ext. 228
Owner	Tiago Holdings, LLC	(516) 921-0800

Note: Contact information will be updated as appropriate in the Annual Site Management Report.

The affected area will be cordoned off and no further work will be performed at that location until the appropriate contingency response plan is implemented. Work zone air monitoring will be conducted during all contingency response actions, as described in the project HASP (see Attachment 2 of the SMP). In addition, community air monitoring will be conducted as described in the CAMP (Attachment 3 of the SMP).

If underground tanks or other previously unidentified contaminant sources are found during on-Site construction, sampling will be performed on product, sediment, and surrounding soils, etc., as appropriate. If soil exhibiting gross contamination such as heavy staining, sheen, product, or strong odors, is encountered during residual soil disturbance, the following procedures will be implemented:

- Spill reporting to the NYSDEC Spill Hotline (800-457-7362) will be conducted as necessary;
- The grossly contaminated soil will be excavated and stockpiled in accordance with the procedures presented in Section 2.2;
- The excavation will continue vertically and horizontally until the grossly-contaminated soil is removed or until groundwater or another physical limitation is encountered. If post-excavation samples exceed SCOs, then additional excavation will be performed, as

warranted. Chemical analytical work will be for full scan parameters (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs). These analyses will not be limited to STARS parameters where tanks are identified without prior approval by NYSDEC. Analyses will not be otherwise limited without NYSDEC approval.

- The stockpiled soil will be sampled for waste characterization purposes for the parameters required by the intended disposal facility. Upon acceptance at an appropriate disposal facility, the contaminated soil will be disposed offsite in accordance with Section 2.5.

Copies of correspondence with disposal facilities concerning classification of materials, testing results, and permits/approvals will be maintained by the project manager and will be submitted to the NYSDEC as part of a close-out report, as described in Section 5 of the SMP.

2.12 COMMUNITY AIR MONITORING

During intrusive activities, a Community Air Monitoring Plan (CAMP) shall be implemented to address potential community health and safety issues associated with activities involving residual materials at the Site. Residual soil at the Site exhibits some exceedances of the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives. Groundwater and soil vapor beneath the Site also contain low levels of contaminants. Engineering and institutional controls have been implemented to protect the Site occupants and the surrounding community from exposure to residual materials. However, certain intrusive activities have the potential to expose residual materials on a short-term basis. The CAMP, which is included as Attachment 3 of the SMP, describes monitoring procedures to be used during these intrusive activities to protect the Site community.

The CAMP will be implemented at the Site by environmental professionals during intrusive activities involving residual materials that have the potential to affect the surrounding community. These activities may include excavation and well installation activities. Due to the nature of the activities, there is the potential for organic vapor and/or dust emissions to occur as these activities are conducted. In addition, there is the potential for organic vapors and/or dust to be associated with the exhaust from the direct-push and/or drilling equipment. To address these concerns, organic vapor and dust monitoring will be performed, as described in the CAMP. Noise monitoring will also be performed if heavy equipment is used.

The CAMP findings will be included in daily and periodic electronic media reports. Exceedances observed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

2.13 ODOR, DUST AND NUISANCE CONTROL

If the air monitoring program identifies potential exposure of field personnel or the public to potential environmental hazards, appropriate measures will be taken to control odors/dust and community air monitoring will be initiated as described in Section 2.12.

2.13.1 Odor Control Plan

This odor control plan is capable of controlling emissions of nuisance odors off-Site and on-Site. Specific odor control methods to be used on a routine basis will include minimizing of open excavations and stockpiles, covering of stockpiles, covering of excavations if necessary, and/or use of foam if necessary. All necessary means will be employed to prevent on- and off-Site odor nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations and stockpiles 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. Excavation sizes and open durations will be minimized to the extent possible. Soil stockpiles will be minimized and kept covered with appropriately anchored tarps and/or plastic sheeting whenever excavation and/or loading operations are not occurring; the sheeting will be routinely inspected for damage and replaced as needed. Open excavated areas will be covered with plastic sheeting whenever excavation operations are not occurring to minimize odors. Water will be used as necessary to minimize odors during loading operations. Foam will be available, as needed, to control potential vapors or odors.

If nuisance odors are identified, 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 all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of the Controlled Property owner's Remediation Engineer, who is responsible for certifying the Annual Site Management Report.

Where odor nuisances have developed during remedial work and cannot be corrected, or where the release of nuisance odors cannot otherwise be avoided due to on-Site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering excavation and handling areas under tented containment structures equipped with appropriate air venting/ filtering systems.

2.13.2 Dust Control Plan

This dust suppression plan addresses dust management during invasive on-Site work. This plan includes the items listed below:

- Dust suppression will be achieved though the use of a dedicated on-Site water truck for road wetting, when applicable. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Larger excavations may 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.

To further minimize the generation of dust, soil stockpiles will be kept covered with appropriately anchored tarps and/or plastic sheeting whenever excavation and/or loading operations are not occurring; the sheeting will be routinely inspected for damage and replaced as needed. Open excavated areas will be covered with plastic sheeting whenever excavation operations are not occurring to minimize emission of dust. Water will be used as necessary to minimize the generation of dust during loading operations.

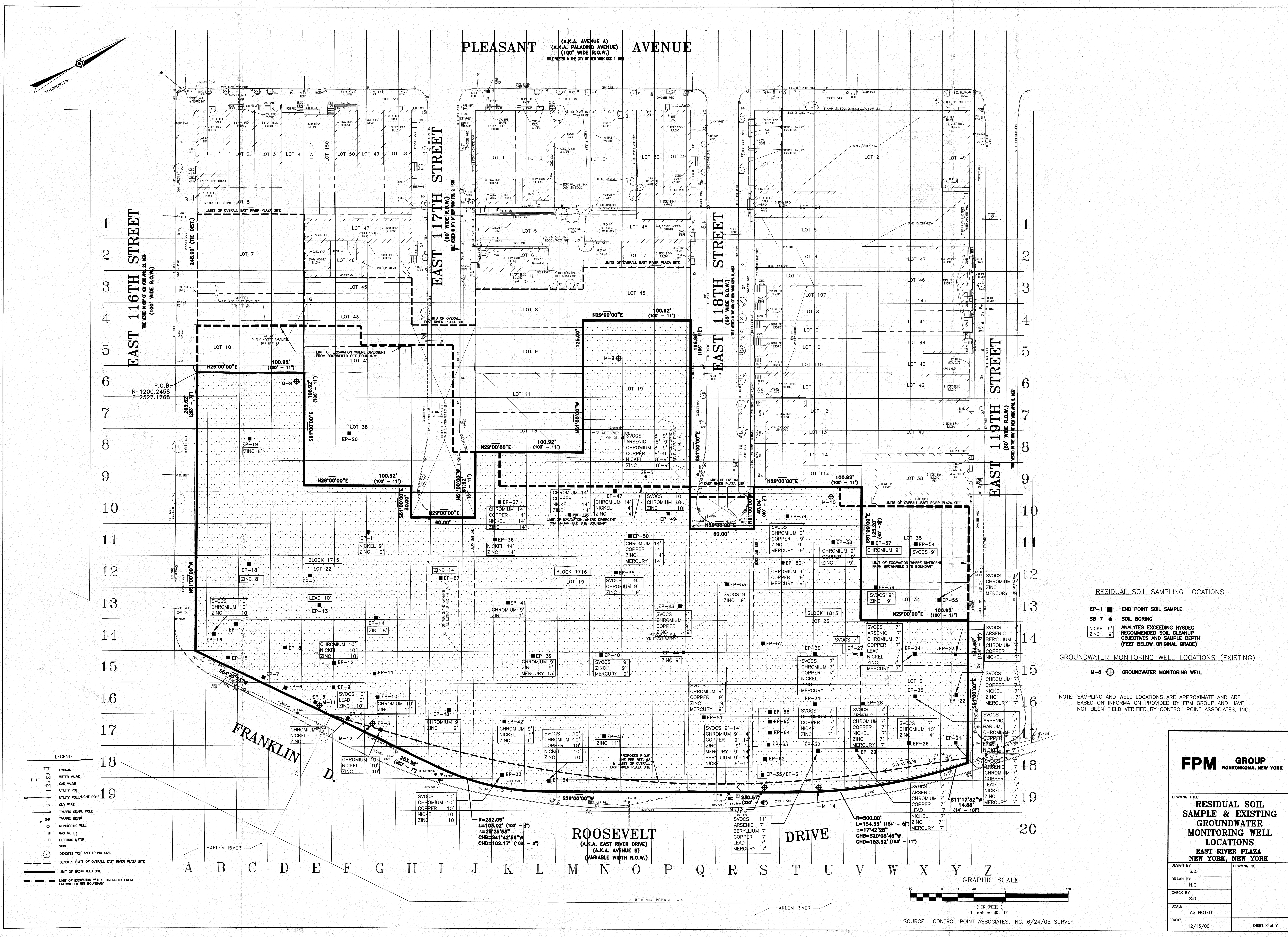
2.13.3 Other Nuisances

A noise control plan will be developed and utilized by the contractor for all invasive work and will conform, at a minimum, to NYCDEP noise control standards.

ATTACHMENT A

RESIDUAL SOIL SAMPLE AND EXISTING GROUNDWATER MONITORING WELL LOCATIONS

FPM



PLEASANT (A.K.A. AVENUE A) (A.K.A. PALADINO AVENUE) (100' WIDE R.O.W.) AVENUE
EAST 116TH STREET
EAST 117TH STREET
EAST 118TH STREET
EAST 119TH STREET
FRANKLIN D. ROOSEVELT DRIVE (A.K.A. EAST RIVER DRIVE) (A.K.A. AVENUE B) (VARIABLE WIDTH R.O.W.)
HARLEM RIVER
BLOCK 1715
BLOCK 1716
BLOCK 1815
LIMITS OF OVERALL EAST RIVER PLAZA SITE
LIMIT OF EXCAVATION WHERE DIVERGENT FROM BROWNFIELD SITE BOUNDARY
P.O.B.
N 1200.2458
E 2527.1768
RESIDUAL SOIL SAMPLING LOCATIONS
EP-1 END POINT SOIL SAMPLE
SB-7 SOIL BORING
NICKEL 9' ZINC 9' ANALYTES EXCEEDING NYSDEC RECOMMENDED SOIL CLEANUP OBJECTIVES AND SAMPLE DEPTH (FEET BELOW ORIGINAL GRADE)
GROUNDWATER MONITORING WELL LOCATIONS (EXISTING)
M-8 GROUNDWATER MONITORING WELL
NOTE: SAMPLING AND WELL LOCATIONS ARE APPROXIMATE AND ARE BASED ON INFORMATION PROVIDED BY FPM GROUP AND HAVE NOT BEEN FIELD VERIFIED BY CONTROL POINT ASSOCIATES, INC.
LEGEND
HYDRANT
WATER VALVE
GAS VALVE
UTILITY POLE
UTILITY POLE/LIGHT POLE
GUY WIRE
TRAFFIC SIGNAL POLE
TRAFFIC SIGNAL
MONITORING WELL
GAS METER
ELECTRIC METER
SIGN
DENOTES TREE AND TRUNK SIZE
DENOTES LIMITS OF OVERALL EAST RIVER PLAZA SITE
LIMIT OF BROWNFIELD SITE
LIMIT OF EXCAVATION WHERE DIVERGENT FROM BROWNFIELD SITE BOUNDARY
GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.
SOURCE: CONTROL POINT ASSOCIATES, INC. 6/24/05 SURVEY
FPM GROUP RONKONKOMA, NEW YORK
DRAWING TITLE:
RESIDUAL SOIL SAMPLE & EXISTING GROUNDWATER MONITORING WELL LOCATIONS
EAST RIVER PLAZA NEW YORK, NEW YORK
DESIGN BY: S.D.
DRAWN BY: H.C.
CHECK BY: S.D.
SCALE: AS NOTED
DATE: 12/15/06
DRAWING NO.
SHEET X of Y

ATTACHMENT 2 OF SITE MANAGEMENT PLAN

Health and Safety Plan

East River Plaza
Manhattan, New York

NYSDEC BCP Number: C231045

Prepared for:

Tiago Holdings, LLC
300 Robbins Lane, Syosset, New York

Prepared by:

FPM group™

909 MARCONI AVENUE
RONKONKOMA, NEW YORK 11779

NOVEMBER 2007

HEALTH AND SAFETY PLAN

This Health and Safety Plan (HASP) is to be utilized at the East River Plaza site (Site) during intrusive activities for the protection of worker health and safety. This HASP has been prepared in accordance with OSHA Hazardous Waste Operations Standards (29 CFR 1910.120) and applicable general Construction Standards (29 CFR 1926). The Site Owner, Tiago Holdings LLC, will be responsible for implementation of the HASP.

1.0 Introduction

This HASP is designed to be applicable to locations where excavation, well installation, and/or groundwater sampling are performed at the Site by all parties that either perform or witness the activities on Site. This HASP may be modified or amended to meet specific needs of the proposed work.

This HASP details the Site safety procedures, Site background, and safety monitoring. Contractors will be required to adopt this HASP in full or to follow a HASP approved by the Site Owner. The Health and Safety Officer (HSO) will be an employee of the Remedial Engineer and will be present at the Site to inspect the implementation of the HASP; however, it is the sole responsibility of the Site workers to comply with the HASP.

The HASP has been formulated as a guide to complement professional judgment and experience. The appropriateness of the information presented should always be evaluated with respect to unforeseen Site conditions which may arise.

2.0 Site Work Zone and Visitors

The Site work zone (a.k.a. exclusion zone) during the performance of excavation, well installation, and/or groundwater monitoring will be a 30-foot radius about the work location.

This work zone may be extended if, in the judgment of the HSO, Site conditions warrant a larger work zone.

No visitors will be permitted within the work zone without the consent of the HSO. All visitors will be required to be familiar with, and comply with, the HASP. The HSO will deny access to those whose presence within the work zone is unnecessary or those who are deemed by the HSO to be in non-compliance with the HASP.

All Site workers who have the potential to contact residual materials at the Site, as defined below, including the contractors, will be required to have 40-hour hazardous material training (eight-hour refresher courses annually), and current medical surveillance as stated in 29 CFR 1910.120. Copies of documentation certifying the above-listed requirements will be kept at an offsite office location and will be provided to the HSO upon request.

The HSO will also give an on-Site health and safety discussion to all affected Site personnel, prior to initiating the Site work. Affected workers not in attendance during the health and safety talk will be required to have the discussion with the HSO prior to entering the work zone.

Emergency telephone numbers and directions to the nearest hospital are shown in Figure 2.1 and will be kept at the Site in the possession of the HSO. Copies of this information will be available to all Site workers and visitors via posting at an applicable onsite location.

3.0 Key Personnel/Alternates

An environmental professional employee of the Remedial Engineer, who is under contract to the Site Owner, will act as the HSO. An alternate assistant HSO, who is also an environmental professional, may be designated for select field activities, as designated by the Owner.

FIGURE 2.1
EMERGENCY INFORMATION
EAST RIVER PLAZA SITE
NEW YORK, NY

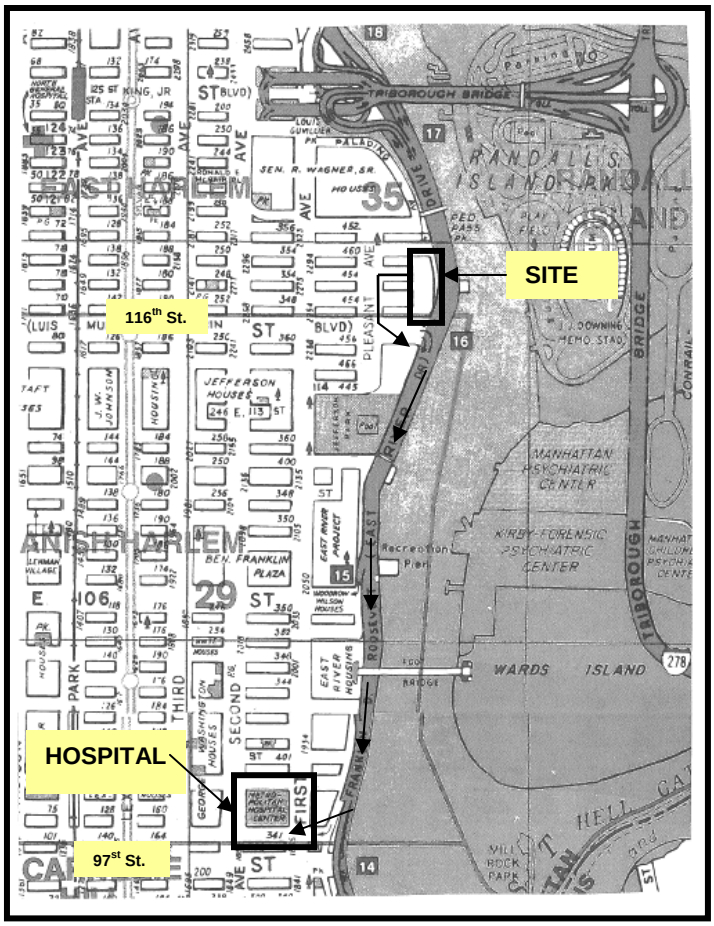
Emergency Site Contacts:

Owner's Representative: ..... Peter Mykytyn (516) 921-0800, Cell (516) 680-6611
Remedial Engineer Representatives: ..... Stephanie Davis (631) 737-6200, ext. 228, Cell (516) 381-3400
..... Kevin Phillips (631) 737-6200, ext. 204
NYSDEC ..... Shaminder Chawla (718) 482-4909
NYSDOH ..... Dawn Hettrick (518) 402-7880

Emergency Response Contacts:

Ambulance: 911
Police, 25th Precinct ..... (212) 860-6511
NYSDEC Spill Hotline ..... (800) 457-7362
Emergency Room, Metropolitan Hospital: ..... (212) 423-6166

Directions to Nearest Hospital:



Metropolitan Hospital
East 97th Street, between
First and Second Avenues

Travel west from Site to Pleasant Avenue. Turn left and travel south on Pleasant Avenue to East 116th Street. Turn left and travel east on East 116th Street to southbound FDR Drive. Enter FDR Drive and travel south to 97th Street. Exit FDR Drive at 97th Street and go one-half block west to the Emergency Room entrance.

FPM

4.0 Site Background

Based on the Site history and analyses of samples, the known chemicals present at the Site include volatile and semivolatile organic compounds (VOCs and SVOCs) and metals. These chemicals may be present in soil, soil vapor, and groundwater at the Site. Remedial activities completed in 2006 resulted in the removal of significant quantities of impacted soil from the Site. However, the remaining soil (residual material) exhibits some exceedances of the NYSDEC Recommended Soil Cleanup Objectives for select SVOCs and metals. Groundwater sampling has also shown metals and VOCs in Site groundwater at levels slightly exceeding the NYSDEC Class GA Ambient Water Quality Standards at select locations. Soil vapor sampling has also shown the presence of low levels of VOCs in soil vapor beneath the Site. Engineering and institutional controls, including capping of residual material, prohibitions against groundwater use, and use of vapor barriers, protect Site occupants from exposure to residual materials. The protective measures described herein are intended to protect workers who may contact residual material during invasive activities. Invasive activities are anticipated to include excavations below the capping materials, groundwater sampling, and installation of groundwater monitoring wells, if required.

5.0 Task/Operation Health and Safety Analysis

This section presents health and safety analyses for excavation, well installation, and/or groundwater monitoring. In general, sampling and/or well installation activities will be performed by one to two environmental professionals. No excavation or other intrusive activities with the potential to contact residual materials will be conducted by contractors without the presence of an environmental professional. In the event that the HSO is not present on the Site, the Assistant HSO will implement the HASP.

Background organic vapor readings will be obtained each day prior to the start of work using a calibrated photoionization detector (PID). These readings will be used to establish the background organic vapor level for that day. Any conditions that may affect organic vapor readings (high humidity, low temperatures, changes in traffic) will also be noted.

5.1 Excavation Safety Analysis

Excavation activities will generally be performed by contractors. Environmental professionals are not anticipated to operate excavation equipment or to physically manage excavated materials. Excavation will involve the use of heavy equipment. Safety concerns will include risk of injury due to being struck by equipment, being trapped between moving equipment parts, being struck by dropped materials, and hearing damage due to equipment noise. Site personnel will take precautions against these risks when working in the vicinity of heavy equipment by being aware of equipment locations and movement, by wearing steel-toed boots and hard hats, and by using hearing protection, if necessary. Site personnel who have not previously worked in the vicinity of heavy equipment will be paired with and experienced person for at least one day to familiarize themselves with heavy equipment operations and safety procedures.

Excavation procedures will result in open excavations at the Site. Open excavations will be secured with fencing and other devices to limit access and to minimize their hazards.

During excavation activities into residual materials, a PID will be utilized to screen vapors in the work zone. Level C personal protection (see Section 8.0) will be donned if steady-state concentrations exceed 10 parts per million (ppm) above background. Steady-state readings, for this purpose, will be defined as readings ranging between 10 and 20 ppm above background for a minimum of ten seconds. Upon encountering PID levels greater than 20 ppm above

background in the worker's breathing zone, work will stop until the source of vapor is abated and readings are less than 20 ppm above background.

5.2 Monitoring Well Installation Safety Analysis

Monitoring well installation, if necessary, will be performed by both environmental professionals and by contractor personnel. Contractor personnel are anticipated to perform borings for well installation. Environmental professionals will participate in these activities.

Well installation activities may result in exposure to subsurface soil vapors. During these activities, a calibrated PID will be used to screen vapors in the work zone. Level C personal protection (see Section 8.0) will be donned if steady-state concentrations exceed 10 ppm above background. Steady-state readings, for this purpose, will be defined as readings ranging between 10 and 20 ppm above background for a minimum of ten seconds. Upon encountering PID levels greater than 20 ppm above background in the worker's breathing zone, work will stop until the source of vapors is abated and readings are less than 20 ppm above background.

Nitrile gloves will be worn by contractors and environmental professionals to avoid dermal contact with Site soil and/or groundwater. Gloves will be periodically examined and will be discarded and replaced if indications of wear or deterioration are noted.

Well installation will be performed using a direct-push and/or hollow-stem auger drill rig. Safety considerations when working around drill rigs include staying clear of moving machinery, hearing protection, protection from falling objects, and hazards associated with overhead and subsurface utilities. Environmental professionals shall remain clear of direct-push and drill rigs while operating and shall follow driller's requests with respect to rig safety. Environmental professionals and contractor personnel shall also wear hard hats while in the vicinity of set up and/or operating rigs. Drillers shall be responsible for maintaining proper clearance between

overhead/ subsurface utilities and their rig. Noise issues are discussed in Section 5.4 of this HASP.

5.3 Groundwater Sampling Safety Analysis

Groundwater sampling will generally be performed by environmental professionals. No contractor activities are anticipated.

During groundwater sampling activities, a calibrated PID will be utilized to screen vapors in the work zone. Level C personal protection (see Section 8.0) will be donned if steady-state concentrations exceed 10 ppm but are below 20 ppm above background. Steady-state readings, for this purpose, will be defined as readings ranging from 10 to 20 ppm above background for a minimum of ten seconds.

Upon encountering PID levels greater than 20 ppm above background in the worker's breathing zone, work will stop until the source of vapors is abated and readings are less than 20 ppm above background.

All personnel will wear chemical-resistant nitrile gloves during groundwater monitoring. Dermal contact with groundwater will be avoided.

5.4 Other Safety Considerations

Noise

During excavation or well installation activities, potentially harmful levels of noise may be generated. During these activities, the HSO will monitor noise levels with a hand-held sound level meter. Noise levels will be monitored in decibels (dBs) in the A-weighted, slow-response mode. Noise level readings that exceed 85 dBA will require hearing protection to reduce the sound level to less than 85 dBA.

Hearing protection will be available to all Site workers and will be required for exceedance of noise exposure limits. The hearing protection will consist of foam, expansion-fit earplugs (or other approved hearing protection) with noise reduction rating of at least 29 dB. Hearing protection must alleviate worker exposure to noise to an eight-hour time-weighted average of 85 dBA or below. In the event that the hearing protection is inadequate, work will cease until a higher level of hearing protection can be incorporated.

Slip/Trip/Fall Preventative Measures

To reduce the potential for slipping, tripping, or falling, the work zone will be kept clear of unnecessary equipment. In addition, all Site workers will be required to wear work boots with adequate tread to reduce the potential for slipping. Work boots must be leather or chemical-resistant and contain steel toes and steel shanks.

Insects and Ticks

Insect and tick problems are expected to be minimal. Potential insect problems at the Site may include, but are not limited to, bees, wasps, and hornets. Prior to commencement of work, each work area will be surveyed for nests and hives to reduce the possibility of disturbing these insects. In addition, each Site worker will be asked to disclose any allergies related to insect stings or bites. Any workers with allergies will be requested to keep his or her anti-allergy medicine on Site.

Tick species native to the Site area consist of the pinhead-sized deer tick and the much-larger dog tick. Ticks are unlikely to exist at the Site due to a paucity of suitable habitat. All Site workers will be advised to check for ticks on clothing periodically.

Potential Electrical Hazards

Potential electric hazards consist mainly of overhead and underground power lines. Prior to commencement of invasive work at the Site, all excavation and well installation locations will be inspected with respect to overhead lines. Drilling or excavation activities involving equipment will not be performed when the horizontal distance between the equipment and overhead wires is less than 30 feet.

Underground potential electrical hazards will be minimized by reviewing as-built Site blueprints to avoid contact with subsurface utility lines or structures. The One-Call service will also be contacted to provide markouts of the utilities beneath adjoining public streets.

The Buddy System

All activities in contaminated or potentially contaminated areas will be conducted by pairing off the Site workers in groups of two or three. Each person (buddy) will be able to:

- Provide his or her partner with assistance.
- Observe his or her partner for signs of chemical, cold, or heat exposure.
- Periodically check the integrity of his or her partner's protective clothing.
- Notify the HSO or others if emergency help is needed.

The buddy system will be instituted at the beginning of each work day. If new workers arrive on Site, a buddy will be chosen prior to the new worker entering the work zone.

Site Communications

Two sets of communication systems will be established at the Site: internal communication among personnel on-Site, and external communication between on-Site and off-Site personnel.

Internal communication will be used to:

- Alert team members to emergencies.
- Pass along safety information such as heat stress check, protective clothing check, etc.
- Communicate changes in the work to be accomplished.
- Maintain Site control.

Due to ambient noise, verbal communications may be difficult at times. In this event, hand signals or visual contact will be utilized.

An external communication system between on-Site and off-Site personnel will be established to:

- Coordinate emergency response
- Report to the Site Owner
- Maintain contact with essential off-Site personnel

A cellular phone or similar portable communication device will be available at all times in the HSO's vehicle. A backup portable communication device will also be identified.

General Safe Work Practices

Standing orders applicable during Site operations involving residual materials are as follows:

- No smoking, eating, drinking, or application of cosmetics in the work zone.
- No matches or lighters in the work zone.
- Any signs of contamination or unusual conditions will be evaluated by the HSO and appropriate actions will be taken.

- Loose-fitting clothing and loose long hair will be prohibited in the work zone during drilling operations.
- A signal person will direct the backing of work vehicles.
- Equipment operators will be instructed to check equipment for indications of damage such as oozing liquids, frayed cables, unusual odors, etc.

6.0 Personnel Training Requirements

All environmental professionals and contractor personnel will receive adequate training prior to entering the Site. Environmental professionals and contractor personnel with the potential to contact residual materials will, at a minimum, have completed OSHA-approved, 40-hour hazardous materials Site safety training and an OSHA-approved, eight-hour safety refresher course within one year prior to commencing field work. The HSO will have received the OSHA-approved, eight-hour course on managing hazardous waste operations. In addition, each worker must have a minimum of three days field experience under the direct supervision of a trained, experienced supervisor.

Prior to invasive Site field work, the HSO will conduct an in-house review of the project with respect to health and safety with all personnel who will be involved with field work at the Site. The review will include discussions of signs and symptoms of chemical exposure and heat/cold stress that indicate potential medical emergencies. In addition, review of personal protective equipment will be conducted.

7.0 Medical Surveillance Program

All workers at the Site with the potential to contact residual materials must participate in a medical surveillance program in accordance with 29 CFR 1910.120. A medical examination

and consultation must have been performed within the last twelve months to be eligible for invasive work.

The content of the examination and consultation will include a medical and work history with special emphasis on symptoms related to the handling of hazardous substances, health hazards, and fitness for duty including the ability to wear required personal protective equipment under conditions that may be expected at the worksite.

All medical examinations and procedures shall be performed by, or under the supervision of, a licensed physician. The physician shall furnish a written opinion containing:

- The results of the medical examination and tests;
- The physician's opinion as to whether the worker has any detected medical conditions which would place the worker at increased risk of material impairment of health from work in proximity to residual materials;
- The physician's recommended limitations upon the worker assigned to the work; and
- A statement that the worker has been informed by the physician of the results of the medical examination and any further examination or treatment.

An accurate record of the medical surveillance will be retained at the worker's office. The record will consist of at least the following information:

- The name and social security number of the worker;
- The physician's written opinions, recommended limitations, and results of examinations and tests; and
- Any worker medical complaints related to exposure to hazardous substances.

8.0 Personal Protective Equipment

The two basic objectives of personal protective equipment (PPE) are to protect the wearer from safety and health hazards, and to prevent the wearer from incorrect use and/or malfunction of the PPE.

Potential Site hazards have been discussed previously in Section 5.0. The duration of Site activities is estimated to be several days. All work is expected to be performed during daylight hours and workdays, in general, are expected to be eight to ten hours in duration. Any work performed beyond daylight hours will require the permission of the HSO. This decision will be based on the adequacy of artificial illumination and the type and necessity of the task being performed.

Personal protection levels for the Site activities, based on past investigations, are anticipated to be Level D with the possibility of upgrading to Level C. The equipment included for each level of protection is provided as follows:

Level C PPE

- Respiratory Protection: Air-purifying respirator, with particulate and organic vapor cartridges;
- Protective Clothing: Work clothing, work boots (leather or chemical-resistant, steel toe and shank), nitrile gloves;

Organic vapor readings of less than 20 ppm will permit the use of Level C protection.

Level D PPE

- Respiratory Protection: None
- Protective Clothing: Work clothing, nitrile gloves, work boots (leather or chemical-resistant, steel toe and shank)

If organic vapor levels do not exceed 10 ppm, use of Level D protection will be allowed.

Additional Considerations for Selecting Levels of Protection

Another factor which will be considered in selecting the appropriate level of protection is heat and physical stress. The use of protective clothing and respirators increases physical stress, in particular, heat stress on the wearer. Chemical protective clothing greatly reduces natural ventilation and diminishes the body's ability to regulate its temperature. Even in moderate ambient temperatures, the diminished capacity of the body to dissipate heat can result in one or more heat-related problems.

All chemical protective garments can be a contributing factor to heat stress. Greater susceptibility to heat stress occurs when protective clothing requires the use of a tightly fitted hood against the respirator face piece, or when gloves or boots are taped to the suit. As more body area is covered, less cooling takes place, increasing the probability of heat stress.

Wearing protective equipment also increases the risk of accidents. It is heavy, cumbersome, decreases dexterity, agility, interferes with vision, and is fatiguing to wear. These factors all increase physical stress and the potential for accidents. In particular, the necessity of selecting a level of protection will be balanced against the increased probability of heat stress and accidents.

Respirator Fit Testing

The fit or integrity of the facepiece-to-face seal of a respirator affects its performance. Most facepieces fit only a certain percentage of the population; thus each facepiece must be tested on the potential wearer in order to ensure a tight seal. Facial features such as scars, hollow temples, very prominent cheekbones, deep skin creases, dentures or missing teeth, and the chewing of gum and tobacco may interfere with the respirator-to-face seal. A respirator shall not

be worn when such conditions prevent a good seal. The worker's diligence in observing these factors shall be evaluated by periodic checks. Fit testing will comply with 29 CFR 1910.1025 regulations.

Inspection, Maintenance, and Decontamination

PPE will be inspected as it is issued to workers and periodically as it is worn. PPE found to be damaged or worn to the extent that it no longer provides the necessary protection will be discarded.

Following use, air-purifying respirators will be dismantled, washed, and placed in sealed plastic bags. Specialized maintenance will be performed only by the factory or an authorized repair person. Routine maintenance, such as cleaning, will be performed by the personnel to which the equipment is assigned.

Personnel decontamination will occur whenever a worker leaves the work zone. Decontamination will include the following:

- Physical removal of contaminants from work boots;
- Removal of disposable PPE (gloves); and
- Hand and face washing, as necessary.

Used PPE and decontamination equipment will be containerized and properly disposed offsite as solid waste.

ATTACHMENT 3 OF SITE MANAGEMENT PLAN

Community Air Monitoring Plan

East River Plaza
Manhattan, New York

NYSDEC BCP Number: C231045

Prepared for:

Tiago Holdings, LLC
300 Robbins Lane, Syosset, New York

Prepared by:

FPM group™

909 MARCONI AVENUE
RONKONKOMA, NEW YORK 11779

NOVEMBER 2007

COMMUNITY AIR MONITORING PLAN

This Community Air Monitoring Plan (CAMP) includes procedures to address potential community health and safety issues associated with activities involving residual materials at the East River Plaza Site (Site). Remedial activities completed at the Site in 2006 resulted in the removal of significant quantities of impacted soil. However, the remaining soil (residual material) exhibits some exceedances of the NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives. Groundwater and soil vapor beneath the Site also contain low levels of contaminants. Engineering and institutional controls have been implemented to protect the Site occupants and the surrounding community from exposure to residual materials. However, certain intrusive activities have the potential to expose residual materials on a short-term basis. This CAMP describes monitoring procedures to be used during these intrusive activities to protect the Site community.

This CAMP will be implemented at the Site by environmental professionals during intrusive activities involving residual materials that have the potential to affect the surrounding community. These activities may include excavation and well installation activities. Due to the nature of the activities, there is the potential for organic vapor and/or dust emissions to occur as these activities are conducted. In addition, there is the potential for organic vapors and/or dust to be associated with the exhaust from the direct-push and/or drilling equipment. To address these concerns, organic vapor and dust monitoring will be performed.

1.0 Organic Vapor Monitoring

Under the CAMP, organic vapor concentrations will be monitored by an environmental professional at the downwind perimeter of the work area while intrusive activities are occurring. In general, the work area will be a 30-foot radius around the work zone, or the Site boundary,

whichever is smaller. To monitor organic vapors, a photoionization detector (PID) will be used and maintained in good operating condition. Calibration of the PID will be performed according to manufacturer's instructions. Background levels of organic vapors will be measured at the Site prior to beginning work and upwind of the work area periodically using a PID. Organic vapors will be monitored at the downwind perimeter of the work area while intrusive activities are occurring and will be averaged on a 15-minute basis. PID readings will be recorded in the field logbook and will include the time, location, and PID readings observed. The action levels and required responses are as follows:

Organic Vapor Readings	
Action Level	**Response Action**
Less than 5 ppm above background.	Continue work.
More than 5 ppm but less than 25 ppm above background.	Implement Vapor Emission Response Plan.
More than 25 ppm above background.	Stop work. Perform downwind monitoring in accordance with Vapor Emission Response Plan.

1.1 Vapor Emission Response Plan

The Vapor Emission Response Plan includes the following trigger levels and responses:

- In the event the level of organic vapors exceeds 5 ppm above the background at the downwind perimeter of the work area on a 15-minute average basis, activities will be halted and monitoring continued. Work may resume if the organic vapor level then decreases to below 5 ppm above background, or concentrations measured 200 feet downwind or at half of the distance to the nearest residential or commercial building, whichever is less, are below 5 ppm over background.
- If the level of organic vapors measured 200 feet downwind or at half of the distance to the nearest residential or commercial structure, whichever is less, is

greater than 5 ppm above background then all work will be halted, the vapor source will be identified, and corrective actions taken. If the level at the downwind location persists above 5 ppm over background after work stops and corrective actions are taken, then monitoring will be performed within 20 feet of the nearest downward residential or commercial structure (20-foot zone).

- If efforts to abate the emission source are unsuccessful and the vapor levels are greater than 25 ppm above background in the 20-foot zone, then work will be halted.

2.0 Particulate Monitoring

Particulate (dust) monitoring will be performed with a Miniram personal monitor (or equivalent) calibrated according to the manufacturer's instructions. Monitoring will be performed within, upwind and downwind of the work area by an environmental professional during activities involving residual soil movement. The readings will be recorded in the environmental professional's field logbook.

If the downwind particulate level integrated over 15 minutes exceeds the upwind level by more than 100 micrograms per cubic meter (ug/m^3) or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Dust suppression techniques are anticipated to include reducing moving equipment rates and/or application of water to dry surfaces. Work may continue with dust suppression techniques providing that the downwind particulate level does not exceed the upwind particulate level by more than 150 ug/m^3.

If, after implementation of dust suppression techniques, downwind particulate levels are greater than 150 ug/m^3 above upwind levels, then work will stop and activities will be reevaluated. Work may resume providing that dust suppression techniques and other controls are

successful in reducing the downwind particulate level to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

3.0 Noise Monitoring

Due to the use of excavation, direct-push, and/or drilling equipment at the Site during intrusive activities, there is the potential for noise to impact the surrounding community. However, since work will be performed only during normal working hours when ambient noise levels are elevated due to ongoing traffic on the adjoining FDR Drive and commercial activities in the community, the potential for noise impacts on the surrounding community is low.

The HSO will monitor ambient noise levels at the property boundary prior to starting work each day. During activities that produce noise, the HSO will periodically monitor noise levels at the closest property boundary with a hand-held sound level meter. Noise levels will be monitored in decibels (dBs) in the A-weighted, slow-response mode. If noise level readings during work activities significantly exceed ambient noise levels at the closest property boundary, the HSO will take appropriate measures to reduce noise exposure beyond these boundaries. These measures may include relocation of equipment that generates noise, reducing equipment operations, or other measures, as appropriate. In the event that the noise exposure measures are inadequate, work will cease until noise levels can be reduced to within a reasonable level of ambient conditions at the closest Site boundary.

ATTACHMENT 4 OF SITE MANAGEMENT PLAN

Site Summary Information
(Text and CD)

East River Plaza
Manhattan, New York

NYSDEC BCP Number: C231045

Prepared for:

Tiago Holdings, LLC
300 Robbins Lane, Syosset, New York

Prepared by:

FPM group™

909 MARCONI AVENUE
RONKONKOMA, NEW YORK 11779

NOVEMBER 2007

SITE SUMMARY INFORMATION

The following site summary information is also presented in digital format on a CD in this Attachment.

Site Name:	East River Plaza
Site Location:	East Harlem, Manhattan, New York
Site Number:	NYSDEC BCP # C2310405
Site Owner:	Tiago Holdings, LLC 300 Robbins Lane, Syosset, NY 11791
Owner Contact:	James Rigano, Esq. – (631) 979-3000
Site Summary:	A site summary is provided on the following pages and also on CD in this Attachment.
Status of Remediation/ Monitoring:	- Soil removal for remediation complete: November 2006 - Soil vapor sampling complete: December 2006 - Groundwater monitoring: Ongoing
Environmental Easement:	A copy of the Environmental Easement is provided on the CD in this Attachment.
Environmental Easement Contacts:	James Rigano, Esq. - (631) 979-3000

EAST RIVER PLAZA SITE SUMMARY

1.0 Site Location and Description

The East River Plaza Site is located in the County of New York (Manhattan), East Harlem, New York and is identified as 517-544 East 116th Street (Block 1715, Lot 22), 539-555 East 117th Street (Block 1716, p/o Lot 19), 512-522 East 118th Street (Block 1716, p/o Lot 19), 527-549 East 118th Street (Block 1815, Lot 23) and 540-546 East 119th Street (Block 1815, Lot 31) on the New York City Tax Map. These addresses and tax lots are shown in the table below.

ADDRESSES AND TAX LOTS
EAST RIVER PLAZA SITE
EAST HARLEM, NEW YORK

Address	Tax Lot
517-544 East 116th Street	Block 1715, Lot 22
539-555 East 117th Street	Block 1716, p/o Lot 19
512-522 East 118th Street	Block 1716, p/o Lot 19
527-549 East 118th Street	Block 1815, Lot 23
540-546 East 119th Street	Block 1815, Lot 31

The Site is an approximately 4.5-acre area bounded by East 119th Street to the north, East 116th Street to the south, FDR Drive to the east, and adjoining portions of the East River Plaza project site and adjoining commercial and residential properties to the west.

2.0 Site History

The Site was initially developed by R.H. Woolf & Company prior to 1896 and was occupied prior to 1911 by the Washburn Wire Company. The Washburn Wire Company engaged in manufacturing of wire up until its closure in the 1980s. The Site was abandoned from the 1980s until remedial activities commenced in 2005. Prior to remediation, the parcels comprising the Site were purchased by Tiago Holdings, LLC, (Tiago), which is the current owner of the Site and the BCP Volunteer Applicant. Following purchase of the Site, the previous buildings were demolished.

Phase I ESAs and Phase II subsurface investigations have been performed on several occasions between 1995 and 2004. Impacted soil was identified at several onsite locations. An area of petroleum-contaminated soil (soil exhibiting visible indications of petroleum impact,

including staining and/or odors) was present on the east side of the Site between East 118th and East 119th Streets. This soil appeared to be associated with former subsurface concrete vaults containing heating oil tanks that adjoined the north side of East 118th Street. A smaller area of petroleum-impacted soil was identified on the west side of the portion of the Site between East 118th and East 119th Streets. An area of metal-contaminated soil was identified on the east side of the Site between East 116th and East 117th Streets in an area where acid tanks were formerly present.

Floating product was formerly present in the area where heating oil tank vaults were historically present. Floating product was addressed during the remedial action.

Several metals, including iron, magnesium, manganese and sodium, were historically found at slightly elevated concentrations in both upgradient and downgradient groundwater monitoring wells at the Site. Low levels of VOCs and SVOCs were also found. The historic detections were suspected to be indicative of ambient groundwater conditions in the Site vicinity and were not concluded to be necessarily Site-related.

All Sanborn maps available for the Site were reviewed. Identified structures of potential environmental significance included a machine shop, a wire dipping area, and large acid tanks located between East 116th and East 117th Streets, three annealing houses and a boiler and engine room between East 117th and East 118th Streets, and a laboratory building and annealing house between East 118th and East 119th Streets. Soil and/or groundwater sampling has been performed in each of these areas. Metals-impacted soil had been identified in the former area of the large acid tanks and petroleum-impacted soil had been identified in the vicinity of the former laboratory building, which also contained the petroleum tank vaults.

3.0 Geological Conditions

The Site subsurface conditions were evaluated during several investigations. The topographic elevation of the Site, prior to remediation, was generally between 7 and 12 feet above mean sea level (MSL) and had been previously significantly modified from its original grade by placement of fill, presumably in conjunction with historic development. The remedial action has lowered most of the former Washburn Wire Property to an elevation of approximately one foot above the existing water table. In general, the historic Site surface sloped gradually to the southeast, toward the Harlem River and was modified by excavation during remedial activities.

Groundwater at the Site is found at a depth of approximately 10 feet below the pre-redevelopment grade. The regional groundwater flow direction in the area of the Site is to the southeast, toward the Harlem River.

Bedrock (Manhattan Schist) is located within one hundred feet of the ground surface and is overlain by sand and gravel deposits presumably associated with a former channel of the Harlem River. Peat is present in several locations beneath the northern portion of the Site. Fill material was formerly present over much of the Site and was presumably placed in association with historic development activities. Much of this fill has now been removed during the remedial actions.

4.0 Summary of Remedial Investigation Findings

The Site subsurface conditions were evaluated during the investigations and the Site information was used to develop a conceptual site model of the contaminant sources, distribution and behavior. The Site consists of a former industrial property used for various processes related to the manufacturing of wire from prior to 1911 until the 1980s when it became vacant. The Site was underlain by variable materials, primarily fill placed during historic development. The Site is located on the northeastern edge of the island of Manhattan in New York. Groundwater is found at a depth of approximately 10 feet below grade (prior to remediation). The regional groundwater flow direction is to the southeast, toward the Harlem River.

Soil exhibiting visible indications of petroleum impact (staining, odors) was present in the subsurface in portions of the area between East 118th and East 119th Streets. Some of this soil was associated with subsurface concrete vaults formerly containing heating oil tanks that adjoined the north side of East 118th Street. Petroleum-related compounds are not anticipated to migrate significantly to groundwater or to impact human health. Since the petroleum compounds are subject to degradation over time, it is anticipated that if this material had been left onsite the concentrations would gradually decrease. However, since much of this soil was removed during the redevelopment activities, the potential for impact from this soil was substantially reduced.

Floating product was encountered in the area of the former heating oil tank vaults and had been removed under the oversight of the NYSDEC prior to site-wide remediation. It was possible that some floating product remained present in the area of the former tank vaults. Although floating product will degrade over time through natural processes, it had the potential to impact soil and groundwater quality. It could also migrate downgradient under favorable conditions, although the presence of foundations that extend below the water table along the FDR Drive likely confined any remaining product to the Site. Floating product removal was performed during remediation activities. Groundwater monitoring was also performed in this area following remedial activity to confirm the absence of floating product.

Several metals, including iron, magnesium, manganese and sodium, were found at slightly elevated concentrations in both upgradient and downgradient wells at the Site. These

detections were thought to be indicative of ambient groundwater conditions in the Site vicinity and not necessarily Site-related. However, the metals-impacted soil at the Site had the potential to impact groundwater quality. Therefore, groundwater monitoring was performed following the removal of metals-impacted soil.

The Site is undergoing redevelopment; remediation included excavation of the majority of the Site to between six and nine feet below grade elevation. The excavated soil was removed from the Site and disposed. This excavation removed much of the contaminated soil from the Site. The remaining soil and groundwater is isolated from human contact by cover materials.

Soil

Site soil conditions prior to the remedy included impacted soil at several onsite locations. An area of petroleum-contaminated soil (soil exhibiting visible indications of petroleum impact, including staining and/or odors) was present on the east side of the Site between East 118th and East 119th Streets. This soil appeared to be associated with former subsurface concrete vaults containing heating oil tanks that adjoined the north side of East 118th Street. A smaller area of petroleum-impacted soil was identified on the west side of the portion of the Site between East 118th and East 119th Streets. An area of metal-contaminated soil was identified on the east side of the Site between East 116th and East 117th Streets in an area where acid tanks were formerly present.

Groundwater

Floating product was formerly present in the area where heating oil tank vaults were historically located and was addressed during the remedial action. Following remediation, groundwater monitoring has not detected any floating product at the site.

Several metals, including iron, magnesium, manganese and sodium, were historically found at slightly elevated concentrations in both upgradient and downgradient wells at the Site. Low levels of VOCs and SVOCs were also found. Following remediation, the concentrations of metals, VOCs and SVOCs have been reduced.

Groundwater monitoring was performed following the remedial activities at the Site to further evaluate groundwater quality and assess the anticipated decrease in groundwater impact following the removal of impacted Site soil. However, historic groundwater monitoring wells M-1 through M-7 were lost prior to or during the building demolition process and were no longer available for sampling. Therefore, additional groundwater monitoring wells M-8 through M-14 were installed and monitored in November 2006 during the remedial action.

The November 2006 groundwater monitoring results are similar to historic groundwater monitoring results for the Site. No free-phase petroleum was present and none of the detected constituents was particularly elevated.

Groundwater monitoring will continue in accordance with the Site Management Plan.

Soil Vapor

Soil vapor sampling was performed at six onsite locations on December 15, 2005 during the initial period of excavation before the sampled areas were disturbed by remedial activities. Several VOCs were detected in these samples. These VOCs include low levels of several petroleum compounds and low levels of several chlorinated solvents at locations on the upgradient side of the site. No chlorinated VOCs have been detected in onsite soil or groundwater samples and the chlorinated VOCs were noted on the upgradient side of the Site. Therefore, these VOCs observed in the soil vapor likely originated from an offsite source.

Low levels of several petroleum-related VOCs have been detected in site soil and groundwater and were also found in the soil vapor samples. None of these detections were elevated and no SCGs have been established for these VOCs. These detections do not present a significant concern as no significant vadose zone will be present beneath the building and development plans include placement of a full-foundation waterproofing membrane (vapor barrier) and the use of seals for foundation penetrations.

Underground Storage Tanks

Two USTs were identified in 1998 to the east of the building between East 118th and East 119th Streets, including a 2,500-gallon steel UST and a 4,000-gallon steel UST both of which reportedly contained lubricating oil. The USTs were emptied, removed, cleaned and disposed in 1998.

The remaining tanks at the Site included three 12,000-gallon and two 16,000-gallon #6 or #5 heating oil tanks contained in concrete vaults beneath the floor of the building on the north side of East 118th Street and a suspected 550-gallon gasoline UST to the east of the building between East 118th and East 119th Streets. In January 2000 the contents of the five heating oil tanks were pumped out to the extent feasible. Removal of the three 12,000-gallon and two 16,000-gallon tanks and associated petroleum occurred in May 2003 following building demolition. The tank vaults were removed during remedial activities.

The suspected 550-gallon UST was located and removed in December 2003. Free-phase product removal began in July 2003 and was completed in October 2003. The associated petroleum spill (#90-12286) was closed on December 28, 2005.

5.0 Description of Remedial Actions

The Site was remediated in accordance with the scope of work presented in the NYSDEC-approved Remedial Work Plan dated September 2005 and Stipulations in a letter dated October 27, 2005 and approved by the NYSDEC.

Below is a summary of the Remedial Actions required and implemented at the Site under the NYSDEC-approved Remedial Work Plan. In general, the remedial actions include excavation and disposal of soil, placement of a cover over residual soil, installation of a vapor barrier, and groundwater and soil vapor monitoring. Remedial elements are generally listed as follows:

1. Excavation of soil exceeding Track 4 Site-Specific Cleanup Objectives (SCOs);
2. Construction and maintenance of an engineered composite cover consisting of concrete, asphalt and/or gravel to prevent human exposure to residual contaminated soils remaining under the Site;
3. Recording of an Environmental Easement, including Institutional Controls, to prevent future exposure to any residual contamination remaining at the Site;
4. Removal of tank vaults and other subsurface systems;
5. Proper disposal of dewatering fluids;
6. Removal and proper disposal of residual free-phase petroleum;
7. Sampling of soil vapor and groundwater in accordance with the approved Remedial Work Plan;
8. Implementation of Institutional Controls, including limitations of property use to commercial and restricted residential, restriction of residential habitation to above the first floor, prohibition of vegetable gardens, implementation of an SMP, prohibition of groundwater use, protection/replacement of groundwater monitoring wells, and annual certification;
9. Publication of an SMP for long term management of residual contamination as required by the Environmental Easement, including plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting;
10. Screening for indications of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive Site work;
11. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attainment of Track 4 SCOs;

12. 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;

13. Import of materials to be used for backfill and cover in compliance with: (1) chemical limits and other specifications included in Table 375-6.8(b) of 6 NYCRR Subpart 375; (2) all Federal, State and local rules and regulations for handling and transport of material; and

14. All responsibilities associated with the Remedial Action, including permitting requirements and pretreatment requirements, addressed in accordance with all applicable Federal, State and local rules and regulations.

Remedial activities completed at the Site were conducted in accordance with the NYSDEC-approved Remedial Work Plan for East River Plaza (September 2005), as described below.

Removal of Contaminated Materials from the Site

Contaminated materials removed from the Site included soil and dewatering fluids (groundwater). Associated materials removed included concrete tank vaults and subsurface utility systems.

Soil was removed by excavation, which was conducted to the targeted depth in all areas of the Site. All excavated soil was transported off Site by licensed waste haulers and delivered to permitted waste disposal facilities. A total of 86,516.19 tons of material (3,161 truck loads) was excavated and properly disposed offsite.

Dewatering was routinely performed at the Site to allow access to submerged infrastructure to be removed for Site redevelopment. Stormwater accumulations were also removed as necessary. All removed fluids were pumped to an approximately 18,000-gallon fractionation tank to allow for settling of particulates prior to discharge to the New York City combined sewer system. All discharges to the sewer were in accordance with a NYCDEP sewer discharge permit. A total of 2,470,652 gallons was discharged to the sewer during the excavation work.

During excavation, a concrete vault that previously contained five fuel oil tanks was removed. The vault extended several feet below the water table and below the targeted depth of excavation. Following soil excavation in this area, the vault removal was performed by dewatering the excavation to permit the mechanical breaking of the concrete vault. The removed concrete was then reduced in size and replaced as backfill. No significant petroleum staining or floating product was noted during vault removal activities. Minor amounts of petroleum

emulsion were noted at times on the water surface in the excavation. This petroleum emulsion was treated with absorbent pads, which were removed and disposed with petroleum-impacted soil from the Site. End-point (confirmatory) sampling was performed in this area to document the final condition of soil, as discussed below.

Several subsurface systems were present beneath the Site, including NYCDEP combined sanitary/storm sewers and water main, Con Edison primary electrical conduits, and an Empire City Subway conduit and manhole. These subsurface systems were decommissioned, modified, and/or rerouted during remedial activities under the oversight and approval of the associated utility agency.

Residual Contamination

Post-remediation confirmatory sampling was performed and the remaining soil site-wide does not exhibit any exceedances of the SCOs. The remaining contaminated soil is found generally at or below the water table, which is approximately 10 feet below the surrounding grade, and has been covered by cover materials.

At least one foot of cover has been placed over the residual soil. This cover is underlain by a demarcation layer of Mirafi fabric intended to stabilize the cover material. Following cover placement, the elevation of the top of the cover was surveyed and the cover thickness was determined at numerous locations throughout the Site. A final cover of concrete and/or asphalt is being constructed.

Engineering and Institutional Controls

Since residual contamination is present at this Site, Engineering Controls and Institutional Controls will be implemented to protect public health and the environment in the future. The Controlled Property will have two primary Engineering Controls. These are: (1) a composite cover system consisting of asphalt and concrete pavement, concrete-covered sidewalks, concrete building slabs, and/or one foot of gravel meeting the cover requirements in 6 NYCRR Part 375; and (2) vapor barrier materials consisting of a water-tight basement slab and wall sealing system.

Exposure to residual contaminated soils is prevented by an engineered, composite cover system that is has been built on the Site during the remedial process and is undergoing modification during Site development. This composite cover system is comprised of cover gravel with a Mirafi fabric demarcation layer that was installed in November 2006. Following the completion of Site redevelopment, the cover system will consist of asphalt and concrete covered roads, concrete covered sidewalks, and concrete building slabs. A Soil Management Plan is included in the SMP, and outlines the procedures required in the event the composite cover system and underlying residual contamination are disturbed.

Procedures for operating and maintaining the cover system are documented in the Operation and Maintenance Plan in the SMP. The Monitoring Plan also addresses inspection procedures that must occur after any severe weather condition has taken place that may affect on-Site ECs.

The sub-grade portions of the building (slab and foundation walls) are being provided with a barrier and seal system for water proofing purposes during the development phase of this project. This barrier and seal system will also function as a vapor barrier. The design for this project includes a water-tight basement slab and wall system designed in accordance with Federal Emergency Management Agency (FEMA) flood levels. This will be accomplished by providing a positive side waterproofing membrane beneath the slab, pile caps, and elevator pits using a sheet membrane waterproofing material. The foundation walls will also be waterproofed using a similar sheet membrane waterproofing material applicable for walls. Penetrations through the slab and/or wall for pipes and duct banks will be detailed in accordance with approved manufacturer's details. The waterproofing elements to be used are specified in the construction contract documents. The vapor barrier system construction will be monitored under this SMP and will be documented on Annual Site Management Report.

A series of Institutional Controls are required to implement, maintain, and monitor these Engineering Controls. The Controlled Property has a series of Institutional Controls in the form of Site restrictions. Adherence to these Institutional Controls is required under the Environmental Easement. A copy of the Environmental Easement is included on this CD.

The uses of the Controlled Property will be restricted residential and commercial. Restricted residential is the land use category which shall only be considered where there is common ownership or a single owner/managing entity of the site. Restricted residential use shall, at a minimum, include restrictions which prohibit any vegetable gardens on a site, although community vegetable gardens may be considered with Department approval; and single-family housing; and active recreational uses, which are public uses with a reasonable potential for soil contact. Commercial use is the land use category which shall only be considered for the primary purpose of buying, selling, or trading of merchandise or services. Commercial use includes passive recreational uses, which are public uses with limited potential for soil contact.

The Institutional Controls generally consist of the following:

A. The Controlled Property may be used for commercial use and restricted residential use (as defined in NYSDEC Regulations Subpart 375-1.8(g)(2)) as long as the following long-term Engineering and Institutional Controls are employed:

a) all engineering controls must be operated and maintained as specified in the Site Management Plan submitted by Grantor and approved by the Department for the Controlled Property (the "Site Management Plan"). No Engineering and Institutional Controls may be discontinued without a NYSDEC-approved amendment or extinguishment of this Environmental Easement;

b) Annual inspections of the Controlled Property, certifications of Engineering and Institutional Controls and usage of Controlled Property, and Site Management Reporting to the Department must be conducted in accordance with the NYSDEC-approved Site Management Plan;

c) groundwater and other environmental or public health monitoring, and reporting of information thus obtained, must be performed in a manner specified in the Site Management Plan;

d) onsite environmental monitoring devices, including but not limited to, groundwater monitor wells, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the NYSDEC-approved Site Management Plan;

e) vegetable gardens are prohibited; and

f) residential habitation will not take place in the basement or first floor and shall only occur above the first floor.

The Grantor hereby acknowledges receipt of a copy of the NYSDEC-approved Site Management Plan, dated December 2007 ("SMP"). The SMP describes obligations that Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system on the Controlled Property, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. Upon notice of not less than thirty (30) days the Department in exercise of its discretion and consistent with applicable law may revise the SMP. The notice shall be a final agency determination. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Regional Remediation Engineer
Region Two
NYS Department of Environmental Conservation
Hunters Point Plaza
47-40 21st Street
Long Island City, New York 11101-5401

or:

Site Control Section
Division of Environmental Remediation
NYS Department of Environmental Conservation
625 Broadway
Albany, New York 12233

B. The Controlled Property may not be used for a higher level of use such as **unrestricted** use and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

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

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

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

E. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury that the controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls employed at the Controlled Property were approved by the NYSDEC, and that nothing has occurred that would impair the ability of such control to protect the public health and environment or constitute a violation or failure to comply with any Site Management

Plan for such controls and giving access to such Controlled Property to evaluate continued maintenance of such controls.

These EC/ICs should:

- Prevent ingestion of groundwater.
- Prevent contact with contaminated groundwater.
- Restore the groundwater aquifer, to the extent practicable, to ambient conditions.
- Prevent the discharge of contaminants to surface water.
- Remove the source of groundwater contamination.
- Prevent ingestion/direct contact with residual soil.
- Prevent inhalation of, or exposure to, contaminants in residual soil.
- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent inhalation of soil vapors.
- Prevent contaminated groundwater from migrating off-Site.

County: New York Site No: C231045 Contract/Order No: W2-1068-05-06

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

THIS INDENTURE made this 20 day of December, 2007, between Tiago Holdings, LLC ("Grantor Fee Owner" or "Grantor"), a New York limited liability company having an office at 300 Robbins Lane, Syosset, New York, and the People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

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

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

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

WHEREAS, Grantor, is the owner of real property located in the City of New York, New York County, New York known and designated on the tax map of the Borough of Manhattan as 517-544 East 116th Street, Block 1715, Lot 22, 539-555 East 117th Street and 512-522 East 118th Street, Block 1716, Lot 19, 527-549 East 118th Street, Block 1815, Lot 23, and 540-546 East 119th Street, Block 1815, Lot 31, which is designated as Site No. C231045 under the Brownfield Cleanup Agreement which is comprised of approximately 4.5 hereinafter more fully described in Schedule A attached hereto and made a part hereof (the " Controlled Property"); and;

WHEREAS, the Commissioner does hereby acknowledge that the Department accepts this Environmental Easement in order to ensure the protection of human health and the environment and to achieve the requirements for remediation established at this Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36;and

NOW THEREFORE, in consideration of the covenants and mutual promises contained herein and the terms and conditions of **Brownfield Cleanup Agreement Number** W2-1068-05-06 Grantor grants, conveys and releases to Grantee a permanent Environmental Easement pursuant to Article 71, Title 36 of the ECL in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

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

2. Institutional and Engineering Controls. The following engineering and institutional controls ("Engineering and Institutional Controls") apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees, and any person using the Controlled Property:

A. The Controlled Property may be used for commercial use and restricted residential use (as defined in NYSDEC Regulations Subpart 375-1.8(g)(2) as long as the following long-term Engineering and Institutional Controls are employed:

a) all engineering controls must be operated and maintained as specified in the Site Management Plan submitted by Grantor and approved by the Department for the Controlled Property (the "Site Management Plan"). No Engineering and Institutional Controls may be discontinued without a NYSDEC-approved amendment or extinguishment of this Environmental Easement;

b) Annual inspections of the Controlled Property, certifications of Engineering and Institutional Controls and usage of Controlled Property, and Site Management Reporting to the Department must be conducted in accordance with the NYSDEC-approved Site Management Plan;

c) groundwater and other environmental or public health monitoring, and reporting of information thus obtained, must be performed in a manner specified in the Site Management Plan;

d) on-site environmental monitoring devices, including but not limited to, groundwater monitor wells, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the NYSDEC-approved Site Management Plan;

e) vegetable gardens are prohibited; and

f) residential habitation will not take place in the basement or first floor and shall only occur above the first floor.

The Grantor hereby acknowledges receipt of a copy of the NYSDEC-approved Site Management Plan, dated December 2007 ("SMP"). The SMP describes obligations that Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system on the Controlled Property, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. Upon notice of not less than thirty (30) days the Department in exercise of its discretion and consistent with applicable law may revise the SMP. The notice shall be a final agency determination. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Regional Remediation Engineer
Region Two
NYS Department of Environmental Conservation
Hunters Point Plaza
47-40 21st Street
Long Island City, New York 11101-5401

or:

Site Control Section
Division of Environmental Remediation
NYS Department of Environmental Conservation
625 Broadway
Albany, New York 12233

B. The Controlled Property may not be used for a higher level of use such as **unrestricted** use and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

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

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

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

E. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury that the controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls employed at the Controlled Property were approved by the NYSDEC, and that nothing has occurred that would impair the ability of such control to protect the public health and environment or constitute a violation or failure to comply with any Site Management Plan for such controls and giving access to such Controlled Property to evaluate continued maintenance of such controls.

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

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

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

2. The right to give, sell, assign, or otherwise transfer the underlying fee interest to the Controlled Property by operation of law, by deed, or by indenture, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches,

estoppel, or waiver. It is not a defense in any action to enforce this environmental easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person intentionally violates this environmental easement, the Grantee may revoke the Certificate of Completion provided under ECL Article 27, Title 14, or Article 56, Title 5 with respect to the Controlled Property.

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

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar its enforcement rights in the event of a subsequent breach of or noncompliance with any of the terms of this Environmental Easement.

6. Notice. Whenever notice to the State (other than the annual certification) or approval from the State is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information: County, NYSDEC Site Number, NYSDEC Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Environmental Easement Attorney
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

Such correspondence shall be delivered by hand, or by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

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

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

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

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

11. Conflict with Reciprocal Easement. Any conflicts between the terms and provisions of that certain Reciprocal Easement, Restriction and Common Area Maintenance Declaration made as of January 31, 2007 by Tiago Holdings, LLC recorded in CRFN 2007000097184 and the terms and provisions of this environmental easement, shall be resolved in favor of this environmental easement.

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

Tiago Holdings, LLC

By: FC East River Associates, LLC

By: RRG East River, LLC

By: _____

Name: DAVID L. BERLINER
Title: SR. VICE PRESIDENT
Date: 12/10/2007

By: DWD Associates, LLC

By: _____

Name: DAVID BLUMENFELD
Title: MANAGER
Date: DEC. 7, 2007

County: New York Site No: C 231145 Contract/Order No: W2-1068-05-06

Grantor's Acknowledgment

State of New York)
) ss.:
County of KINGS)

On the 10th day of Dec., 2007 before me, the undersigned, personally appeared David L. Bellinel, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Jeanne Mucci

JEANNE MUCCI
Notary Public, State of New York
No. 30-4834577
Qualified in Nassau County
Commission Expires March 30, 2011

State of New York)
) ss.:
County of NASSAU)

On the 7th day of DECEMBER 2007, before me, the undersigned, personally appeared DAVID BLUMENFELD, personally known to me who or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

DAVID J. KAPLAN
Notary Public, State of New York
No. 02KA6010914
Qualified in Nassau County
Commission Expires July 27, 2009

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

by: _____
Alexander B. Grannis, Commissioner

Grantee's Acknowledgment

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

On the 20 day of Dec, in the year 07, before me, the undersigned, personally appeared ALEXANDER B. GRANNIS, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity as Commissioner of the State of New York Department of Environmental Conservation, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

SCOTT OWENS
Notary Public, State of New York
No. 02OW6108092
Qualified In Albany County
Commission Expires April 12, 2008

SCHEDULE A

NOVEMBER 22, 2006
REVISED SEPTEMBER 13, 2007
REVISED DECEMBER 7, 2007
C96511

METES & BOUNDS DESCRIPTION
BROWNFIELDS PARCEL
LANDS OF TIAGO HOLDINGS, LLC
LOT 22, BLOCK 1715, LOT 19, BLOCK 1716
AND LOTS 23 & 31, BLOCK 1815
BOROUGH OF MANHATTAN
CITY, COUNTY AND STATE OF NEW YORK

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

BEGINNING AT A POINT ON THE NORTHERLY SIDE OF EAST 116TH STREET (100 FOOT WIDE RIGHT OF WAY), SAID POINT BEING DISTANT 248.00 FEET FROM THE CORNER FORMED BY THE INTERSECTION OF THE NORTHERLY SIDE OF EAST 116TH STREET WITH THE EASTERLY SIDE OF PLEASANT AVENUE (A.K.A. AVENUE "A", A.K.A. PALADINO AVENUE, 100 FOOT WIDE RIGHT OF WAY) AND FROM SAID POINT OF BEGINNING RUNNING, THENCE;

1. NORTHERLY, PARALLEL WITH THE EASTERLY SIDE OF PLEASANT AVENUE, A DISTANCE OF 100.92 FEET (100 FEET, 11 INCHES) TO THE CENTER LINE OF BLOCK 1715, THENCE;

2. EASTERLY, PARALLEL WITH THE NORTHERLY SIDE OF EAST 116TH STREET, A DISTANCE OF 106.92 FEET (106 FEET, 11 INCHES) TO A POINT, THENCE;

3. NORTHERLY, PARALLEL WITH THE EASTERLY SIDE OF PLEASANT AVENUE, A DISTANCE OF 100.92 FEET (100 FEET, 11 INCHES) TO A POINT ON THE SOUTHERLY SIDE OF EAST 117TH STREET (60 FOOT WIDE RIGHT OF WAY), THENCE;

4. EASTERLY, ALONG THE SOUTHERLY SIDE OF EAST 117TH STREET, A DISTANCE OF 30.00 FEET TO A POINT, THENCE;

5. NORTHERLY, ALONG THE EASTERLY TERMINUS OF EAST 117TH STREET AND BEING PARALLEL WITH THE EASTERLY SIDE OF PLEASANT AVENUE, A DISTANCE OF 60.00 FEET TO A POINT ON THE NORTHERLY SIDE OF EAST 117TH STREET, THENCE;

6. WESTERLY, ALONG THE NORTHERLY SIDE OF EAST 117TH STREET, A DISTANCE OF 61.92 FEET (61 FEET, 11 INCHES) TO A POINT, THENCE;

7. NORTHERLY, PARALLEL WITH THE EASTERLY SIDE OF PLEASANT AVENUE, A DISTANCE OF 100.92 FEET (100 FEET, 11 INCHES) TO THE CENTER LINE OF BLOCK 1716, THENCE;

8. WESTERLY, PARALLEL WITH THE NORTHERLY SIDE OF EAST 116TH STREET, A DISTANCE OF 125.00 FEET TO A POINT, THENCE;

9. NORTHERLY, PARALLEL WITH THE EASTERLY SIDE OF PLEASANT AVENUE, A DISTANCE OF 100.92 FEET (100 FEET, 11 INCHES) TO THE SOUTHERLY SIDE OF EAST 118TH STREET (60 FOOT WIDE RIGHT OF WAY), THENCE;

10. EASTERLY, ALONG THE SOUTHERLY SIDE OF EAST 118TH STREET, A DISTANCE OF 196.98 FEET (196 FEET, 11 3/4 INCHES) TO A POINT, THENCE;

11. NORTHERLY, ALONG THE EASTERLY TERMINUS OF EAST 118TH STREET AND BEING PARALLEL WITH THE EASTERLY SIDE OF PLEASANT AVENUE, A DISTANCE OF 60.00 FEET TO A POINT ON THE NORTHERLY SIDE OF EAST 118TH STREET, THENCE;

12. WESTERLY, ALONG THE NORTHERLY SIDE OF EAST 118TH STREET, A DISTANCE OF 40.04 FEET (40 FEET, 1/2 INCH) TO A POINT, THENCE;

13. NORTHERLY, PARALLEL WITH THE EASTERLY SIDE OF PLEASANT AVENUE, A DISTANCE OF 100.92 FEET (100 FEET, 11 INCHES) TO THE CENTER LINE OF BLOCK 1815, THENCE;

14. EASTERLY, PARALLEL WITH THE NORTHERLY SIDE OF EAST 116TH STREET, A DISTANCE OF 125.20 FEET (125 FEET, 2 3/8 INCHES) TO A POINT, THENCE;

15. NORTHERLY, PARALLEL WITH THE EASTERLY SIDE OF PLEASANT AVENUE, A DISTANCE OF 100.92 FEET (100 FEET, 11 INCHES) TO THE SOUTHERLY SIDE OF EAST 119TH STREET (60 FOOT WIDE RIGHT OF WAY), THENCE;

16. EASTERLY, ALONG THE SOUTHERLY SIDE OF EAST 119TH STREET, A DISTANCE OF 129.70 FEET (129 FEET, 8 3/8 INCHES) TO THE CORNER FORMED BY THE INTERSECTION OF THE SOUTHERLY SIDE OF EAST 119TH STREET AND THE NEW WESTERLY SIDE OF FRANKLIN D. ROOSEVELT DRIVE (A.K.A. EAST RIVER DRIVE, A.K.A. AVENUE "B", VARIABLE WIDTH RIGHT OF WAY), THENCE; THE FOLLOWING FOUR (4) COURSES ALONG SAID NEW WESTERLY SIDE OF FRANKLIN D. ROOSEVELT DRIVE:

17. SOUTHERLY, A DISTANCE OF 77.74 FEET (77 FEET, 8 7/8 INCHES) TO A POINT OF CURVATURE, THENCE;

18. ALONG A CURVE TO THE RIGHT, HAVING A RADIUS OF 1,000.00 FEET, A CENTRAL ANGLE OF 25 DEGREES - 27 MINUTES - 37 SECONDS, AN ARC LENGTH OF 444.37 FEET (444 FEET, 4½ INCHES), TO A POINT OF TANGENCY, THENCE;

19. SOUTHWESTERLY, A DISTANCE OF 87.41 FEET (87 FEET, 4 7/8 INCHES) TO A POINT, THENCE;

20. SOUTHWESTERLY, A DISTANCE OF 138.35 FEET (138 FEET, 4 1/4 INCHES) TO THE CORNER FORMED BY THE INTERSECTION OF THE WESTERLY SIDE OF FRANKLIN D. ROOSEVELT DRIVE AND THE NORTHERLY SIDE OF EAST 116TH STREET, THENCE;

21. WESTERLY, ALONG THE NORTHERLY SIDE OF EAST 116TH STREET, A DISTANCE OF 263.62 FEET (263 FEET, 7 ½ INCHES) TO THE POINT AND PLACE OF BEGINNING.

CONTAINING 194,457 SQUARE FEET OR 4.464 ACRES

CONTROL POINT ASSOCIATES, INC.

NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER

2007122100054000001P6C74

PAYMENT COVER PAGE **PAGE 1 OF 1**

Transaction No.: 2007122100054 Document Date: 12-20-2007 Preparation Date: 12-21-2007

PRESENTER:
GUARDIAN LAND ABSTRACT CORP.
AS AGENT FOR COMMONWEALTH / G41112NY
1010 NORTHERN BOULEVARD, PO BOX 385
GREAT NECK, NY 11021
516-466-6050
glendarutter@title-team.com/ PICK UP RSR

RETURN TO:
DAVID KAPLAN, ESQ.
300 ROBBINS LANE
SYOSSET, NY 11791

Document ID: 2007122100054001
EASEMENT

114.00

Fees	$	114.00	
Taxes	$	0.00	
	$	114.00	Document Total
	$	114.00	Transaction Total
	$	0.00	Amount Paid
	$	**114.00**	**Balance Due**

RECEIPT : NA040012695

DEPARTMENT OF FINANCE
MANHATTAN PAYMENT CENTER
66 JOHN STREET
NEW YORK
2ND FLOOR

12/21/2007 12:01:07 PM
1 SALE ITEM

CASHIER: NYC1279
TOTAL DUE: $114.00

ITEM DESCRIPTION	TOTAL
9500 ACRIS Recording Fees and Taxes	$114.00
Tran ID 2007122100054000001P6C74	

ACR SUBTOTAL:	$114.00
SUBTOTAL:	$114.00
TAX:	$0.00
TOTAL DUE:	$114.00

1 PAYMENT ITEM
Business Check 011384 $114.00

TOTAL DUE:	$114.00
AMOUNT RECEIVED:	$114.00

THANK YOU

ATTACHMENT 5 OF SITE MANAGEMENT PLAN

Cover System and Vapor Barrier System Inspection Checklist

East River Plaza
Manhattan, New York

NYSDEC BCP Number: C231045

Prepared for:

Tiago Holdings, LLC
300 Robbins Lane, Syosset, New York

Prepared by:

FPM group™

909 MARCONI AVENUE
RONKONKOMA, NEW YORK 11779

NOVEMBER 2007

Cover System and Vapor Barrier System
Inspection Checklist
East River Plaza, Manhattan, New York

Date of Inspection: _____

Description of Cover System and Vapor Barrier System

This property is equipped with a surface cover system, including pavement, concrete slabs at the lowest level of the building, and/or at least one foot of cover gravel underlain by Mirafi fabric. The Pavement Plan in Appendix P of the Final Engineering Report (FER) shows the approved design for the final concrete/asphalt cover at this Site. An as-built survey in Appendix P shows the gravel cover system.

The property building is also equipped with a vapor barrier and seal system. This system includes a positive-side waterproofing membrane beneath the slab, pile caps and elevator pits. The foundation walls are also waterproofed using a similar sheet membrane material. Penetrations through the slab and walls for pipes and duct banks are also sealed. Vapor barrier and seal materials are specified in the foundation construction documents included in Appendix Q of the FER.

Activities that have the potential to disrupt the cover system and/or vapor barrier system must be reported in advance to the property owner such that they can be monitored and documented and any necessary repairs made. Examples of activities that may disturb the cover and/or vapor barrier systems include:

- Cutting or removal of pavement
- Breakup or significant deterioration of pavement/slab
- Cutting or removal of concrete slab or foundation materials on lowest level of building
- Planting or removal of vegetation (trees/shrubs) through the pavement or slab
- Excavations for subsurface utilities or other purposes
- Any activities that may disturb the ground

The cover and vapor barrier systems must be inspected at least annually. More frequent inspections may be conducted during construction activities with the potential to affect these systems. An inspection shall also be conducted following a severe condition (flood, fire, etc.) with the potential to affect the cover and/or vapor barrier systems. The following checklist shall be used during each inspection. Supplemental information should be attached to the checklist, if needed. Copies of completed checklists and any supplemental information will be included in the Annual Site Management Report.

Notifications to the NYSDEC are required for the following conditions:

- 10-day advance notice of any significant proposed ground-intrusive activities;
- 48-hour notice of any damage or defect to the foundation structures that reduces or has the potential to reduce the effectiveness of the cover system and/or vapor barrier system; and
- 48-hour notification following any severe condition with the potential to affect the cover system and/or vapor barrier system.

Follow-up status reports for the above conditions must be submitted to the NYSDEC within 45 days. Additional information concerning notifications is included in Section 2.4.2 of the Site Management Plan (SMP).

Cover System Inspection Checklist:

A visual inspection of the entire cover system throughout the Site must be conducted, to include the gravel, asphalt, concrete pavement and/or concrete slab. Representative digital photographs must be taken showing the cover extent, nature and condition. The following questions must be answered. Please attach supporting information as necessary.

- If gravel is present, note and describe its thickness and continuity: _____

  _____

  _____

  _____

- The approved gravel cover is constructed of ¾-inch washed RCA provided by Tilcon of New York. What is the nature of the observed gravel cover? Is it consistent with the approved gravel cover? _____

_____

- The gravel is underlain by Marafi fabric. Is any of the fabric visible? If so, describe the condition: _____

_____

_____

- Asphalt and/or concrete pavement provide cover for the on-grade portions of the site. Are these materials continuous or are there penetrations? Describe: _____

_____

_____

- Comment on the condition of the asphalt /concrete pavement. _____

_____

_____

_____

- Concrete slabs and foundation walls provide cover within the lower levels of the Site building. Are these materials continuous? Describe: _____

_____

_____

- Comment on the condition of the concrete slabs and foundation walls. _____

_____

_____

_____

- Provide any other pertinent information regarding the condition of the cover system here:

_____

_____

_____

Vapor Barrier System Inspection Checklist

A visual inspection must be conducted to confirm that the vapor barrier system remains in place. The vapor barrier system is installed beneath the concrete slabs and foundation walls and, therefore, cannot be directly observed. Therefore, monitoring of the vapor barrier system is largely contingent on monitoring of the concrete slab and foundation components. Foundation penetrations should be observed where feasible. The following questions must be answered. Attach additional supporting information as necessary.

- Are the concrete slab and foundation components intact? Describe: _____
  _____
  _____

- Are there any conditions associated with the concrete slab and/or foundation components that suggest the possibility of damage to the vapor barrier system? _____
  _____
  _____
  _____

- Do the foundation penetrations exhibit indications of water leakage, soil penetration or other conditions suggesting problems with the foundation seals? Describe: _____
  _____
  _____

- Is water infiltration observed through any lower-level floors or walls, suggesting possible problems with the vapor barrier system? Describe: _____
  _____
  _____

- Provide any other pertinent information regarding the condition of the vapor barrier system here: _____
  _____
  _____

Inspector Information

Name and Affiliation of Inspector: _____

_____

Date of Inspection: _____

Reason for Inspection: _____

_____

List additional inspections or activities conducted in association with this inspection: _____

_____

_____

_____

_____

ATTACHMENT 6 OF SITE MANAGEMENT PLAN

Well Boring/Sampling Logs

East River Plaza
Manhattan, New York

NYSDEC BCP Number: C231045

Prepared for:

Tiago Holdings, LLC
300 Robbins Lane, Syosset, New York

Prepared by:

FPM group™

909 MARCONI AVENUE
RONKONKOMA, NEW YORK 11779

NOVEMBER 2007
REVISED AUGUST 2009

Well Sampling Data Form
East River Plaza
East Harlem, Manhattan, New York

Well No.: _____ Well Diameter: _____

Date: _____ Weather: _____ Start Time: _____ Finish Time: _____

Sampled By (full name and affiliation): _____

Depth to Bottom of Well (measure after sampling): _____ Feet. Depth to Water: _____ Feet.

Purge Method and Rate: Low-flow pump, _____ liters/minute or _____ gallons per minute (must be <0.5L/min or <0.13 gal/min)

FIELD MEASUREMENTS:

Time	Depth to Water (feet)	pH	Cond. (uS)	Temp. (^{o}F)	Turbidity (NTU)	Notes

Stability Criteria: ±0.1 for pH, ±3% for conductivity, ±10% for turbidity over three successive readings.
Sampling and Analytical Methods: Direct sample from low-flow pump,
Laboratory Name and Location: _____
Condition of Well and Surface Completion: _____
Recommended Repairs/Maintenance: _____

Well Maintenance Form
East River Plaza
East Harlem, Manhattan, New York

Well No.: _____

Nature of Maintenance: _____

Name and Affiliation of Maintenance Personnel: _____

Describe Maintenance in detail: _____

_____

_____

_____

_____

_____

_____

Additional Comments: _____

_____

_____

Attach all supporting documentation including location of maintenance work, digital photographs, sketches, invoices, equipment instructions, manuals, etc.

ATTACHMENT 7 OF SITE MANAGEMENT PLAN

Site-Wide Inspection Checklist

East River Plaza
Manhattan, New York

NYSDEC BCP Number: C231045

Prepared for:

Tiago Holdings, LLC
300 Robbins Lane, Syosset, New York

Prepared by:

FPM group™

909 MARCONI AVENUE
RONKONKOMA, NEW YORK 11779

NOVEMBER 2007

Site-Wide Inspection List
East River Plaza
East Harlem, Manhattan, New York

Date of Inspection: _____

Site-wide inspections will be performed annually, at a minimum. A site-wide inspection shall also be performed after severe events that may affect the Engineering Controls (ECs) or monitoring wells.

The following inspection form shall be completed during each site-wide inspection. Supporting documentation shall be attached, as necessary. The completed site-wide inspection checklist and supporting documentation shall be included in the associated Annual Site Management Report.

Compliance with Institutional Controls

Institutional Controls (ICs) are required under the Remedial Work Plan to: (1) implement, maintain and monitor EC systems; (2) prevent future exposure to residual contamination by controlling disturbances of the subsurface materials; and, (3) restrict the use of the Site to commercial and restricted residential uses only. Adherence to these ICs on the Site (Controlled Property) is required under the Environmental Easement. These ICs are described in Section 2.3 of the Site Management Plan. Please complete the following checklist to confirm compliance with the Site ICs:

- The Controlled Property may be used for commercial use. Confirm whether commercial use is occurring: _____
- The Controlled Property may be used for restricted residential use only above the first floor. Confirm the current locations of residential use: _____
  _____

- All Engineering Controls (cover system and vapor barrier system) must be operated and maintained as specified in the Site Management Plan for the Controlled Property. Confirm operation and maintenance of ECs and attach checklists: _____

  _____

  _____

- Annual inspections and certifications must be conducted in accordance with the Site Management Plan. Confirm compliance with annual inspections and certifications: ____

  _____

  _____

  _____

- Groundwater and other environmental or public health monitoring, and reporting of information thus obtained, must be performed in a manner specified in the Site Management Plan. Confirm that the required monitoring and reporting are in accordance with the SMP: _____

  _____

  _____

- Onsite environmental monitoring devices, including but not limited to groundwater monitoring wells, will be protected and replaced as necessary to ensure continued functioning in the manner specified in the Site Management Plan. Confirm that monitoring devices have been protected and/or replaced: _____

  _____

  _____

- Vegetable gardens are prohibited. Confirm the absence of vegetable gardens: _____

  _____

- All soil disturbance activities that will impact residual contaminated material, including building renovation/expansion, subgrade utility line repair/relocation, and new construction must be conducted in accordance with the NYSDEC-approved Site Management Plan. Confirm that these activities are in compliance with the SMP: _____

  _____

  _____

- Use of the groundwater underlying the Controlled Property is prohibited without treatment rendering it safe for the intended purpose. Confirm that groundwater use has not occurred: _____

- The Controlled Property may not be used for a higher level of use, such as unrestricted residential, and the above-stated engineering controls may not be discontinued without proper notification of the NYSDEC of the change and approval of that use by the NYSDEC, and an amendment of the Site Management Plan approved by the NYSDEC. Confirm continued compliance with the Environmental Easement: _____

  _____

  _____

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

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

Confirm that property deed and all subsequent instruments of conveyance are in compliance: _____

_____

_____

- Grantor covenants and agrees that the Environmental Easement shall be incorporated in full or by reference in any leases, license, or other instruments granting a right to use the Controlled Property. Confirm that leases, licenses or other right-to-use documents incorporate or reference the Environmental Easement: _____

  _____

  _____

  _____

- Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury that the controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls employed at the Controlled Property were approved by the NYSDEC, and that nothing has occurred that would impair the ability of such control to protect the public health and environment or constitute a violation or failure to comply with any Site Management Plan for such controls and giving access to such Controlled Property to evaluate continued maintenance of such controls. Confirm the submittal of the Annual Certification Statement: _____

  _____

  _____

Compliance with Engineering Controls

Using the completed checklists from Attachment 5 of this Site Management Plan, provide a written evaluation of the condition and continued effectiveness of the ECs: _____

_____

_____

_____

_____

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_____

General Site Conditions

Provide a written description of the Site conditions at the time of the site-wide inspection. Attach digital photographs or other supporting information as needed: _____

_____

_____

_____

_____

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_____

Site Management Activities

Provide a discussion and assessment of ongoing site management activities including, but not limited to, soil/materials management, groundwater monitoring, community air monitoring, nuisance control, well replacement/repair, health and safety monitoring, and other applicable and pertinent activities. Attach supporting documentation as necessary: _____

_____

_____

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Compliance with Permits and Schedules

The Operation and Maintenance Plan included in Section 4 of the Site Management Plan does not include any permit requirements but does include a schedule for groundwater monitoring well maintenance. Discuss compliance with the groundwater monitoring well maintenance schedule: _____

_____

_____

_____

_____

Site Records

The Site records include, but are not limited to, groundwater monitoring reports, EC inspection checklists, site-wide inspection checklists, soil management documents, community air monitoring documents, non-routine notifications to the NYSDEC, regulatory agency correspondence, reports, and the Annual Site Management Report. Confirm that each type of Site record is up to date and provide comments: _____

_____

_____

_____

_____

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_____

_____

_____

Inspector Information

Name and Affiliation of Inspector: _____

_____

Date of Inspection: _____

Reason for Inspection: _____

_____

List additional inspections or activities conducted in association with this inspection: _____

_____

_____

_____

_____

ATTACHMENT 8 OF SITE MANAGEMENT PLAN

Quality Assurance Project Plan

East River Plaza
Manhattan, New York

NYSDEC BCP Number: C231045

Prepared for:

Tiago Holdings, LLC
300 Robbins Lane, Syosset, New York

Prepared by:

FPM group™

909 MARCONI AVENUE
RONKONKOMA, NEW YORK 11779

NOVEMBER 2007
REVISED AUGUST 2009

Quality Assurance Project Plan
East River Plaza
East Harlem, Manhattan, New York

This Quality Assurance Project Plan (QAPP) describes the quality assurance procedures and the sampling and analysis procedures to be used during groundwater monitoring.

1.0 QA/QC Objectives

The QA/QC objectives are applicable to all data-gathering activities at the Site. QA/QC objectives are incorporated into sampling, analysis, and quality assurance tasks associated with monitoring activities.

The primary data user for this project is FPM. The Site owner and the NYSDEC will also be provided with the data. No other data users are anticipated.

The collected data are intended to assess the current nature and extent of groundwater impacts at the Site, including ambient groundwater conditions, and to assess the performance of the remedial measures. These data will allow for the evaluation of groundwater conditions and possible modification of the monitoring system.

The following applicable or relevant and appropriate requirements for the Site groundwater have been identified:

- The NYSDEC Class GA Ambient Water Quality Standards (1998), which are used to evaluate the groundwater chemical analytical results.

2.0 Sampling Quality Assurance Procedures

The Quality Assurance (QA) procedures to be utilized during the groundwater monitoring activities are described below.

Decontamination Procedures

Dedicated disposable equipment (disposable tubing, gloves, cord, etc.) will be utilized whenever possible to reduce the risk of cross-contamination. When it is not possible to use disposable equipment, all non-disposable downhole or sampling equipment (i.e., low-flow pump, in-line parameter monitoring device) will be decontaminated prior to use at each location. The

equipment to be decontaminated will be scrubbed in a bath of potable water and low-phosphate detergent followed by a potable water rinse. The equipment will then be rinsed with distilled water. A methanol rinse will also be utilized for removal of oily contamination, if present. The equipment will then be allowed to air dry prior to use if time permits and shall receive a final distilled water rinse. The decontaminated equipment will be wrapped in aluminum foil (shiny side out) for transport if necessary.

Sample Designation

All samples will be identified with sequential numbers referencing the sampling location from which they were obtained. If additional samples are collected from the same location, they will be clearly labeled with the sampling date and time so as to facilitate identification. All sample depths will be referenced to the top of the well casing.

Sample Containers, Packaging, and Shipment

All samples will be collected into laboratory-provided new sample containers with appropriate preservatives, if necessary. Containers with preservatives will be labeled as such. Table 2.1 documents the sample container type, preservation, and analysis for the primary and QA/QC samples.

All filled sample containers will be placed in a laboratory-supplied cooler and packed with ice to depress the temperature to 4 degrees Celsius. The filled coolers will be secured with tape and custody seals will be placed along cooler openings in a manner to reveal if the cooler was opened during transit. The secured coolers will be delivered to the laboratory by FPM or by an overnight carrier. In the event the samples cannot be delivered to the laboratory overnight, the samples will remain in the custody of FPM personnel overnight and the samples will be delivered to the laboratory the following day.

Chain-of-Custody Procedures

For each day of sampling, a chain-of-custody sheet will be completed and submitted to the laboratory together with the associated sample coolers. A copy of the chain-of-custody will be retained by FPM. The chain-of-custody sheet will include the project name, the sampler's signature, the sampling locations, the date and time, and analysis parameters requested. If the

TABLE 2.1
GROUNDWATER SAMPLING MATRIX
EAST RIVER PLAZA SITE, NEW YORK, NEW YORK

Sample Type	Sample Name	Sampling Protocol	Analytes	Laboratory Deliverables	Sample Containers	Preservation
Primary Samples	M-8 through M-14	If no free-phase product, purge and sample.	TCL VOCs and base-neutral SVOCs, TAL metals	Category B	Two VOA vials for VOCs Two 1-liter amber for SVOCs One 1-liter plastic for metals	HCl, cool to 4°C Cool to 4°C HNO_3, cool to 4°C
QA/QC Samples	Equipment Blank	One per day per matrix sampled	Same as matrix	Category B	Two VOA vials for VOCs One 1-liter plastic for metals Two 1-liter amber for SVOCs	HCl, cool to 4°C HNO_3, cool to 4°C Cool to 4°C
	Trip Blank	One per cooler containing VOC samples	TCL VOCs	Category B	Two VOA vials (filled by lab)	HCl (by lab), cool to 4°C
	Blind Duplicate	One per 10 environmental samples per matrix	Same as matrix	Category B	Same as matrix	Same as matrix

samples are shipped using an overnight courier, the air bill number will be placed on the chain-of-custody to facilitate tracking, if necessary.

Samples will be tracked through the field collection, laboratory analysis, and laboratory report preparation processes. FPM will perform the sample tracking and assemble and review the analytical results as they are received.

QA/QC Samples

QA/QC samples will be obtained during the groundwater sampling events. QA/QC samples for groundwater will include equipment blank samples, trip blank samples, duplicate samples, and matrix spike/matrix spike duplicate (MS/MSD) samples.

One equipment blank sample per day of sampling will be obtained. Each equipment blank sample will be prepared by pouring laboratory-supplied, deionized water through the dedicated or decontaminated sampling equipment and into a set of sample containers. The equipment blank samples will be tested for the same analytes as the groundwater samples. The equipment blank sample results will be reviewed to evaluate the potential for field or laboratory contamination and will be used to attest to the quality of the decontamination procedures.

One trip blank sample will be provided by the laboratory for each cooler containing groundwater samples to be submitted to the laboratory for VOC analysis. The trip blank samples will be prepared by the laboratory from analyte-free, deionized water and will remain in the coolers in which the samples are stored. Trip blank samples will be analyzed for VOCs. The purposes of trip blank samples are to ensure that no cross-contamination of VOCs occurs in the sample cooler and to attest to laboratory quality.

MS/MSD samples will be submitted to the laboratory by obtaining an extra volume of groundwater sample. Preparation of the spike and spike duplicate will be performed by the laboratory. The frequency of MS/MSD samples will be one per groundwater sample delivery group (20 primary samples). The purpose of the MS/MSD samples is to confirm the accuracy and precision of the laboratory.

Blind duplicate samples for groundwater will be obtained at a frequency of at least one duplicate sample per sample delivery group. Each blind duplicate sample will be prepared by

obtaining an extra volume of groundwater sample. The purpose of the blind duplicate samples is to attest to the precision of the laboratory.

3.0 Analytical Quality Assurance Procedures

Sample Analyses

All samples will be submitted to New York State Department of Health ELAP-certified laboratories. The laboratory testing for the groundwater samples will conform to NYS ASP methods with Category B data reporting and deliverables. Laboratory testing and data reporting will be performed by subcontracted laboratories. 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. Laboratory analyses will include internal QC sample analyses and checks.

The laboratory reports will include sample analytical results, methods of analysis, reportable field and laboratory QA/QC sample analytical results, method limits of detection, and sample practical quantification limits (PQLs). All groundwater samples will be analyzed for Target Compound List (TCL) VOCs and base-neutral SVOCs and Target Analyte List (TAL) metals.

Data Validation

The laboratory results from all groundwater samples obtained and analyzed will be subjected to data validation in accordance with USEPA guidelines for organic and inorganic data review. The data validation will verify that the analytical results are of sufficient quality to be relied upon to assess the groundwater quality at the Site. A Data Usability Summary Report (DUSR) will present the data validation results, 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.

Data Evaluation

Data collected during the monitoring will be assembled, reviewed, and evaluated to assure satisfaction of the monitoring objectives. Data evaluated will included chemical analytical data, field reports, and other project documents. The data collected will be organized and analyzed to evaluate the nature and extent of groundwater impacts, including the nature of

ambient groundwater, and the performance of the remedial measures at the Site. Data will be presented and evaluated in the Annual Site Management Report.

4.0 QA/QC Performance

QA/QC performance shall be assessed in each DUSR and in each groundwater monitoring report in the Annual Site Management Report. QA/QC assessment shall include the following:

- An evaluation of whether the QA/QC program is adequate to identify potential issues with data completeness, accuracy or precision;
- A review of monitoring equipment maintenance procedures and schedules to confirm their performance; and
- An evaluation of whether corrective actions are necessary for any of the monitoring or QA/QC procedures or equipment.

If corrective actions are identified, they will be implemented in subsequent monitoring events.