FINAL REMEDIAL ACTION REPORT

Greenpoint Landing - Parcel E1

16 Dupont Street

Brooklyn, New York

NYC VCP Project Number # 22CVCP034K

OER Project Number # 22TMP0061K

Hazardous Materials E-Designation (E-317)

CEQR No. 14DCP004K

Revised Negative Declaration - Greenpoint Landing

Prepared for:

Greenpoint Landing Lot 6 LLC

1271 Avenue of the Americas, 24th Floor

New York, NY 10020

Prepared by:

Langan Engineering, Environmental, Surveying,

Landscape Architecture and Geology, D.P.C.

21 Penn Plaza

360 West 31st Street, 8th Floor

New York, New York 10001

July 2025

Langan Project No. 170229026

LANGAN

TABLE OF CONTENTS

FIGURES

TABLES

LIST OF APPENDICES

LIST OF ACRONYMS

Acronym	Definition
µg/m^3	Micrograms Per Cubic Meter
1,1,1-TCA	1,1,1-Trichloroethane
1,1-DCE	1,1-Dichloroethene
6 NYCRR	Title 6 New York Codes, Rules and Regulations
AGV	Air Guideline Value
Alpha	Alpha Analytical Inc.
AOC	Area Of Concern
BER	Business Environmental Risk
Bgs	Below Ground Surface
C&D	Construction & Demolition
CAMP	Community Air Monitoring Program
CEQR	City Environmental Quality Review
CHASP	Construction Health and Safety Plan
cis-1,2-DCE	cis-1,2-Dichloroethene
CSB	Clean Soil Bank
CVOC	Chlorinated Volatile Organic Compound
CY	Cubic Yard
EC	Engineering Control
el.	Elevation
EPH	Extractable Petroleum Hydrocarbon
EPIC	Environmental Project Information Center
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
GCP	Grace Construction Products
IC	Institutional Control
LSI	Limited Subsurface Investigation
mg/kg	Milligrams Per Kilogram
NAVD88	North American Vertical Datum Of 1988
NELAP	National Environmental Laboratory Accreditation Program
NJDEP	New Jersey Department of Environmental Protection
NLD	New Leaf Development
NNO	Notice Of No Objections
NYC	New York City

Acronym	Definition
NYCDEP	NYC Department of Environmental Protection
NYCDOB	NYC Department of Buildings
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OER	Office Of Environmental Remediation
P.E.	Professional Engineer
PADEP	Pennsylvania Department of Environmental Protection
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethene
PFAS	Per- And Polyfluoroalkyl Substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
PGW	Protection of Groundwater
PID	Photoionization Detector
PM-10	Particulate Matter Less than 10 Micrometers
ppb	Parts Per Billion
ppm	Parts Per Million
QA/QC	Quality Control/Quality Assurance
QEP	Qualified Environmental Professional
RAR	Final Remedial Action Report
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RI	Remedial Investigation
RIR	Remedial Investigation Report
RURR	Restricted Use Restricted-Residential
SCO	Soil Cleanup Objectives
SGV	Ambient Water Quality Standards and Guidance Value
SMMP	Soil/Materials Management Plan
SMP	Site Management Plan
SOE	Support of Excavation
SVOC	Semivolatile Organic Compounds
TAL	Target Analyte List
TCE	Trichloroethene

Acronym	Definition
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TOGS	Technical and Operational Guidance Series
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
UU	Unrestricted Use
VCP	Voluntary Cleanup Program
VOC	Volatile Organic Compound
WP/VB	Waterproofing/Vapor Barrier

CERTIFICATION

I, Jason J. Hayes, am currently a registered Professional Engineer licensed by the State of New York. I performed professional engineering services and had primary direct responsibility for implementation of the remedial program for Greenpoint Landing - Parcel E1 (New York City Office of Environmental Remediation [OER] Project Number 22TMP0061K, NYC Voluntary Cleanup Program [VCP] Project Number 22CVCP034K).

I certify to the following:

- I am currently a registered professional engineer licensed by the State of New York.
- I performed professional engineering services and had primary direct responsibility for designing the remedial program for Greenpoint Landing Parcel E1 site (Block 2494, Lot 6) (OER Project #22TMP0061K, NYC VCP Project Number 22CVCP034K).
- I have reviewed this document, to which my signature and seal are affixed.
- Engineering Controls (EC) implemented for this remedial action were designed by me or a person under my direct supervision and they achieve the goals established in the Remedial Action Work Plan (RAWP) for this site.
- The ECs constructed during this remedial action were professionally observed by me or by a person under my direct supervision and (1) are consistent with the EC design established in the RAWP and (2) are accurately reflected in the text and figures (as-built building composite cover system), and sufficiently represented in drawings for the as-built design prepared by qualified professionals who presented documentation to me including the as-built drawings dated July 25, 2023 prepared by Frank Seta & Associates, LLC. for the waterproofing/vapor barrier membrane system that I have reviewed.
- To the best of my knowledge, the OER-approved RAWP, dated January 13, 2022, and revised March 1, 2022 and Stipulation List dated March 4, 2022 were implemented and all requirements in these documents have been substantively complied with. I certify that to the best of my knowledge remediation-related soil, fill, and liquids from the property were removed in accordance with applicable City, State and Federal laws and regulations.

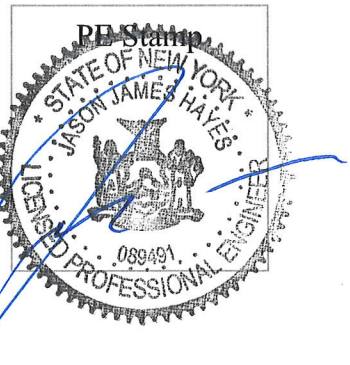
JASON HAYES
Name

089491
PE License Number

Signature

7-28-2025
Date

PE Stamp



EXECUTIVE SUMMARY

Greenpoint Landing Lot 6 LLC remediated Parcel E1 of the Greenpoint Landing development project located at 16 Dupont Street in Brooklyn, New York. Parcel E1 is identified as Block 2494, Lot 6 (formerly Lots 6 and 10) on the Brooklyn Borough tax map (the site). Parcel E1 is about 20,900 square feet in area and is the ninth parcel of the 19-acre Greenpoint Landing development property to be constructed.

Previous site investigations and a site-specific remedial investigation were performed to provide data and information necessary to develop a Remedial Action Work Plan (RAWP) for Parcel E1, which was implemented to render the site protective of public health and the environment consistent with the contemplated end use.

The remedy described in this document fulfills the remedial objectives defined in the New York City (NYC) Office of Environmental Remediation (OER)-approved RAWP. The remedy described in this document fulfills the remedial objectives defined in the NYC Office of Environmental Remediation (OER)-approved RAWP, and complies with applicable environmental standards, criteria and guidance. The site is enrolled in the NYC Voluntary Cleanup Program (VCP) (Project Number 22CVCP034K).

Site Location and Prior Usage

Parcel E1 is identified as Block 2494, Lot 6 (former Lots 6 and 10) on the Borough of Brooklyn tax map, is in the Greenpoint neighborhood of Brooklyn, New York and encompasses an area of about 20,900 square feet. The site is bound by the following:

- Dupont and Commercial Streets followed by Greenpoint Playground (Block 2486, Lot 1) and Newtown Barge Playground (Block 2472, Lot 75) to the north;
- A vacant parcel (Block 2494, Lot 20) and a low-rise residential building (Block 2494, Lot 26) to the east;
- A mid-rise mixed-use residential and commercial building (33 Eagle Street [a/k/a Parcel E1 [Block 2494, Lot 1 and parts of Lots 5 and 6]) to the south; and
- West Street Extension (Block 2472 Lots 10, 20, and 25 and Block 2494 Lots 3 and 5) followed by mid-rise and high-rise mixed-use residential and commercial buildings (1 Eagle Street [a/k/a Parcel D [Block 2472, Lots 2, 3, 21 and part of Lots 30 and 35 and Block 2502, Lot 2 and part of Lot 1]).

Before development, the eastern part of the site was an asphalt-paved parking lot (former Lot 10), and the western part was a vacant, vegetated lot (former Lot 6). Former Lot 6 was the former location of the NYC Department of Environmental Protection (NYCDEP) East River Sludge Storage Facility, which was demolished in 2014. A 1,000-gallon No.2 fuel oil underground storage tank (UST) was closed-in-placed in the southeastern corner of Lot 6 in 1997. However, this UST

was not found during remediation and construction activities. The elevation of Parcel E1 prior to development ranged from about el. 11 to el. 15 feet.[1] Depth to groundwater was recorded at about 8.9 to 10.9 feet below ground surface (bgs) (about el. 3.1 to 1.1) during the remedial investigation (RI).

Summary of Development

The development at Parcel E1 includes a 40-story mixed-use residential and commercial building over a partial cellar and an outdoor landscaped courtyard occupying about 900 square feet in the northwestern corner of the site. The cellar has a footprint of about 17,650 square feet and is used for parking, tenant storage, and building/mechanical services. The cellar will also contain the superintendent's office and a stormwater detention tank. The landscaped courtyard consists of concrete-paved and landscaped areas. The development includes 264 market-rate housing units and 114 affordable housing units. The remainder of the site was improved with the slab-on-grade components of the new building. The sanitary and stormwater lines servicing Parcel E3 within the sewer easement on the eastern part of the site were exposed and protected during excavation so the foundation for Parcel E1 could be built around the infrastructure. New site utilities and connections (e.g., gas, water, storm, sanitary, electricity, and telecommunication) were constructed for the new building. The end use of the site is consistent with the property's zoning classification (R8 and C2-4).

Site development required the removal of the existing asphalt pavement and the following excavation activities:

- In the area of the building:
    - About el. 8 to 5 feet (about 4 to 7 feet bgs) in an approximately 1,880-square-foot area to accommodate the first-floor slab in areas not underlain by the cellar;
    - About el. -1 to -11 feet (about 13 to 23 feet bgs) in an approximately 13,950-square-foot area to accommodate the pile caps and the cellar slab; and
    - About el. –8 to -17.8 feet (about 20 to 29.8 feet bgs) in an approximately 4,950-square-foot area to accommodate deep foundation components (including the elevator pits).
- In the area outside of the new building:

[1] All elevations herein are presented relative to the North American Vertical Datum of 1988 (NAVD88). Datum refers to the North American Vertical Datum of 1988 which is approximately 1.1 feet above mean sea level datum at Sandy Hook, New Jersey as defined by the United States Geologic Survey (USGS NGVD 1929).

  - About el. 10 to el. 11 feet (about 1 to 1 feet bgs) in an approximately 460-square-foot area to accommodate 2 feet of clean cover soil as a component of the site's composite cover system.

- In the area outside the property line:
  - About 0 feet (about 12 feet bgs) in an approximate 860-square-foot area to accommodate the Con Ed Vault.

A total of 24,588.74 tons of non-hazardous soil/fill were excavated and transported off-site in accordance with local, state, and federal laws and regulations. Dewatering was necessary during construction to accommodate excavation of foundation components (including foundation mat slabs, pile caps, elevator pits and parking lift pits) extending below the groundwater table.

Imported aggregates were used to construct the foundation and support of excavation (SOE) system, and imported aggregates and topsoil were used to complete the outdoor landscaped courtyard. All imports were performed in accordance with the OER-approved Soil/Materials Management Plan (SMMP), applicable laws and New York State Department of Environmental Conservation (NYSDEC) regulations. The imported topsoil for the courtyard met the cover soil quality criteria (lower of the Title 6 New York Codes, Rules and Regulations [6 NYCRR] Part 375 Restricted Use Restricted-Residential [RURR] and Protection of Groundwater [PGW] Soil Cleanup Objectives [SCO]).

Summary of Surrounding Property

The site is in a dense urban area generally improved with multi-story commercial, residential, light industrial, and manufacturing buildings in zoning districts designated for commercial, residential and manufacturing uses, which are summarized in the following table:

Direction	Adjacent Properties	Surrounding Properties
North	Dupont and Commercial Streets	Public parks, mixed-use residential and commercial buildings and the East River/Newtown Creek
	Greenpoint Playground	
	Newtown Barge Playground	
East	Vacant lot	Mixed-use residential and commercial buildings, residential buildings
	Low-rise residential building	
South	Mid-rise residential building (Greenpoint Landing – Parcel E3)	Industrial and residential buildings, active construction site

Direction	Adjacent Properties	Surrounding Properties
West	West Street Extension	East River/Newtown Creek
	Mid-rise and high-rise mixed-used residential and commercial buildings (Greenpoint Landing – Parcel D	

A search was performed for sensitive receptors, including, but not limited to, schools, daycare facilities, parks, hospitals, and senior care facilities, within an approximate 500-foot radius of the site boundary. Two sensitive receptors were identified within the search radius:

- Newtown Barge Playground
- Greenpoint Playground

Summary of Past Site Uses and Areas of Concern

Historical maps from the mid to late 1800s suggest that the northwestern corner of the site was partially underwater and was infilled to create usable land by 1897. In 1905, the southern part of the site was partly occupied by the International Mahogany Co. yard. According to Sanborn maps, from 1922 through at least 1924 the site appears as part of an unidentified one-story building that spans the southern and eastern adjoining properties. No structures were depicted between 1928 and 1966, but it was likely used for lumber storage during that time. Former Lot 6 was improved with a New York City Pollution Control Sludge Storage Tank by 1966 until 2014. Former Lot 10 was asphalt-paved by 1974 and was used to store vehicles for a towing business from 1984 to 2013. Before redevelopment, former Lot 6 was a fenced and vegetated lot and Lot 10 was used as a parking lot.

Based on the Phase I Environmental Site Assessment (ESA) and RI, no obvious areas of concern (AOC), such as current or former uses that resulted in generation, manufacturing, refinement, transport, storage, handling, treatment, discharge, and/or disposal of petroleum and/or hazardous substances, were identified. The known closed-in-place UST is not an AOC because of the absence of physical and analytical evidence of a petroleum release and associated contamination.

Summary of Environmental Findings

Three previous environmental investigations were completed before development at the site. The following summary of environmental findings is compiled from information found in the Phase I ESA Reports, Phase II Limited Subsurface Investigation (LSI) Report, and RI Report (RIR):

1. A sewer line and manhole were in the eastern part of former Lot 10 and a geophysical anomaly consistent with a known, closed-in-place 1,000-gallon No. 2 fuel oil UST was identified in the southeastern part of former Lot 6 during the RI. The size and shape of

the closed-in-place UST anomaly was irregular and may have indicated the presence of a second UST.

2. Based on groundwater measurements collected after each well recharged from purging and sampling for the RI, depth to groundwater ranged from about 8.9 to 10.9 feet bgs (about el. 3.1 to 1.1). The direction of groundwater flow is estimated to be to the west toward the confluence of the East River and Newtown Creek.

3. Bedrock was not encountered during the reviewed environmental investigations; however, bedrock was encountered at about 42 to 72 feet bgs (about el -28.5 to about el -59.5 NADV88) during Langan's geotechnical investigation completed in July-August 2021.

4. Pre-development, the stratigraphy of the site, from surface down, consisted of a 1.5- to 11-foot-thick layer of non-native fill material composed of varying amounts of sand, silt, and gravel and varying amounts of anthropogenic materials (brick, coal, incinerated materials, slag, asphalt, ceramics, glass, wood, and concrete). The non-native fill was generally underlain by native soil consisting of varying amounts of sand, clay, gravel, silt and organics. No evidence of a petroleum release was observed in the borings advanced in the vicinity of the closed-in-place UST or anywhere else on the site.

5. A total of sixteen soil samples plus quality control/quality assurance (QA/QC) samples were collected from eight borings and analyzed as part of two subsurface investigations completed on Parcel E1 (Langan's LSI and RI). The analytical results are generally consistent among existing data sets for the rest of the development property, confirm the presence of non-native fill across Parcel E1, and do not indicate significant or extensive soil contamination associated with releases of petroleum or hazardous substances. The soil analytical results were compared to the NYSDEC Part 375-6.8(b) Unrestricted Use (UU) SCOs and the NYSDEC Part 375-6.8(b) RURR SCOs and are summarized below by analyte category.

    a. Two volatile organic compounds (VOC), including acetone (max. 0.42 milligrams per kilogram [mg/kg]) and methyl ethyl ketone (max. 0.3 mg/kg), exceeded the UU SCOs in one soil sample collected from 8 to 10 feet bgs in soil boring SB01. No VOCs exceeded the RURR SCOs.

    b. One or more of seven semivolatile organic compounds (SVOC), including benzo(a)anthracene (max. 2.9 mg/kg), benzo(a)pyrene (max 2.9 mg/kg), benzo(b)fluoranthene (max. 3.7 mg/kg), benzo(k)fluoranthene (max. 0.97 mg/kg), chrysene (max. 2.6 mg/kg), dibenzo(a,h)anthracene (max. 0.4 mg/kg), and indeno(1,2,3-cd)pyrene (max. 1.9 mg/kg), exceeded the UU and/or RURR SCOs in the soil samples collected from 0 to 2 feet bgs in SB02, SB03, SB05, and SB07; 2

to 4 feet bgs in SB01 and SB08; 4 to 6 feet bgs in SB06; 8 to 10 feet bgs in SB01 and SB06; and 10 to 12 feet bgs in SB08.

c. Total Polychlorinated Biphenyls (PCB) (max 0.131 mg/kg) exceeded the UU SCO in one soil sample collected from 4 to 6 feet bgs in soil boring SB04. Total PCBs did not exceed the RURR SCO in this or any other sample.

d. One or more of six pesticides, including 4,4'-DDD (max. 0.18 mg/kg), 4,4'-DDE (max. 0.0576 mg/kg), 4,4'-DDT (max. 0.107 mg/kg), aldrin (max. 0.00707 mg/kg), dieldrin (max. 0.0529 mg/kg), and heptachlor (max. 0.43 mg/kg), exceeded their UU SCOs in samples collected from 0 to 2 feet bgs in SB02, SB03, SB05, and SB07; 2 to 4 feet bgs in SB01 and SB08; 4 to 6 feet bgs in SB04 and SB06; 6 to 8 feet bgs in SB05; 8 to 10 feet bgs in SB01 and SB06; and 10 to 12 feet bgs in SB04 and SB08. No pesticides exceeded the RURR SCOs.

e. No herbicides exceeded the UU or RURR SCOs in any samples.

f. One or more of six metals, including trivalent chromium (max. 49 mg/kg), hexavalent chromium (max. 2 mg/kg), copper (max. 97.3 mg/kg), lead (max. 380 mg/kg), mercury (max. 0.601 mg/kg), and zinc (max. 315 mg/kg), exceeded the UU SCOs in samples collected from 0 to 2 feet bgs in SB02, SB03, SB05, and SB07; 4 to 6 feet bgs in SB04; 6 to 8 feet bgs in SB03 and SB05; and 8 to 10 feet bgs in SB01, SB02, and SB06. No metals exceeded the RURR SCOs.

g. Perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) did not exceed Unrestricted or Restricted Residential Guidance Values for Anticipated Site Use. PFOS was detected in soil samples at a maximum concentration of 0.53 parts per billion (ppb) in the sample collected from 2 to 4 feet bgs at SB08. PFOA was detected in soil samples at a maximum estimated concentration of 0.244 parts per billion (ppb) in the sample collected from 0 to 2 feet bgs at SB03. 1,4-Dioxane was not detected in any soil sample.

6. A total of four groundwater samples (from four temporary monitoring wells) were collected and analyzed as part of two subsurface investigations completed on Parcel E1 (Langan's LSI and RI). The analytical results are consistent with the existing data set for the rest of the development property and the historical site use and do not indicate significant or extensive groundwater contamination. Groundwater analytical results were compared to the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values (SGV) for Class GA water (collectively referred to as NYSDEC SGVs) and are summarized below by analyte category.

   a. No VOCs were detected at concentrations exceeding the NYSDEC SGVs.

Herbicides and pesticides were not detected in any groundwater sample.

b. Seven SVOCs, including benzo(a)anthracene (max. 5 micrograms per liter [µg/L]), benzo(a)pyrene (max. 3.2 µg/L), benzo(b)fluoranthene (max. 3.9 µg/L), benzo(k)fluoranthene (max. 1.4 µg/L), chrysene (max. 6.6 µg/L), indeno(1,2,3-c,d)pyrene (max. 1.5 µg/L), and phenol (max. 1.3 µg/L) exceeded the NYSDEC SGVs in one groundwater sample collected from MW01.

c. Total PCBs (max. 0.198 µg/L) exceeded the NYSDEC SGV in one groundwater sample collected from MW01.

d. One or more of four total metals, including iron (max. 8,050 µg/L), lead (max. 113.1 µg/L), manganese (max. 736.9 µg/L), and sodium (max. 80,800 µg/L), exceeded the NYSDEC SGVs in two groundwater samples collected from monitoring wells MW01 and MW02. One or more of two dissolved metals, including manganese (max. 343.2 µg/L) and sodium (max. 89,000 µg/L) exceeded the NYSDEC SGVs in two groundwater samples collected from these same two monitoring wells.

e. One or more of three Per- and polyfluoroalkyl substances (PFAS), including Perfluorobutanesulfonic Acid (PFBS) (max. 424 nanograms per liter [ng/L]), PFOS (max. 16.8 ng/L), and PFOA (max. 69.8 ng/L), exceeded the NYSDEC January 2021 Guidance Values in two groundwater samples collected from MW02 and MW03. Total PFAS (max. 538 ng/L) exceeded the NYSDEC January 2021 Guidance Value in one groundwater sample collected from MW03. 1,4-Dioxane was not detected in any groundwater sample.

7. A total of six soil vapor samples collected and analyzed for VOCs as part of Langan's LSI and RI. Soil vapor sample results were evaluated using the New York State Department of Health (NYSDOH) Air Guideline Values (AGV) and were also evaluated using the NYSDOH Decision Matrices contained in the October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York Decision Matrices for Sub-Slab Vapor and Indoor Air and subsequent updates (2017). The NYSDOH Decision Matrices (Matrices A, B, and C) address the compounds tetrachloroethene (PCE), trichloroethene (TCE), 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), vinyl chloride, methylene chloride and carbon tetrachloride. The matrix evaluation requires soil vapor and indoor air data. In the absence of indoor air sampling data, soil vapor results are applied to the lowest concentration for which monitoring or mitigation is recommended in the NYSDOH Decision Matrices A, B, and C.

   a. 1,1-DCE, cis-1,2-DCE, vinyl chloride, methylene chloride, and carbon tetrachloride were not detected in soil vapor.

b. 1,1,1-TCA was detected in one soil vapor sample, SV03, at a concentration of 1.26 (micrograms per cubic meter [µg/m^3]). An evaluation of 1,1,1-TCA concentrations using the NYSDOH Decision Matrix B yields recommendations ranging from "no further action" to "identify source(s) and resample or mitigate". There is no NYSDOH AGV for 1,1,1-TCA.

c. PCE was detected in three soil vapor samples, SV01, SV02, and SV03, at concentrations ranging from 1.59 µg/m^3 in SV02 to 4.65 µg/m^3 in SV01. An evaluation of PCE concentrations using the NYSDOH Decision Matrix B yields recommendations ranging from "no further action" to "identify source(s) and resample or mitigate". PCE did not exceed the NYSDOH AGV of 30 µg/m^3.

d. TCE was detected in two soil vapor samples, SV01 and SV03, at concentrations ranging from 1.2 µg/m^3 in SV03 to 1.47 µg/m^3 in SV01. An evaluation of TCE concentrations using the NYSDOH Decision Matrix A yields recommendations ranging from "no further action" to "identify source(s) and resample or mitigate". TCE did not exceed the NYSDOH AGV of 2 µg/m^3; however, the reporting limit for sample SV04 was 2.15 µg/m^3, which is above the AGV.

Summary of the Remedy

The Remedial Action achieved protection of public health and the environment for the intended use of the property. The remedy achieved the remedial action objectives established in the RAWP, which are providing a remedy that is effective in the short-term and long-term; reducing mobility, toxicity and volume of contaminants; using standard methods well established in the industry; and complying with applicable environmental standards, criteria, guidance, and regulations.

A summary of the milestones achieved include the following:

- A Pre-Application Meeting was held on August 9, 2021.
- An RI and LSI was performed from February 2021 to September 2021.
- An RIR was prepared to evaluate data and information necessary to develop a RAWP.
- A Site Contact List was established.
- A draft RAWP was prepared and released with a Fact Sheet on January 19, 2022 for a 30-day public comment period.
- The RAWP, dated January 13, 2022 (revised March 1, 2022), and Stipulation List, dated March 4, 2022, were approved by the OER Notice to Proceed dated March 17, 2022.
- The Pre-Construction meeting was held on April 4, 2022.
- RAWP implementation began in April 2022 and was completed July 10, 2025.
- Construction updates were provided to the OER throughout the project.
- A site briefing was conducted with NYSDEC on August 24, 2021.
- A Fact Sheet providing notice of the start of the remedial action was issued on April 21, 2022.
- Submission of this RAR.

Previous environmental reports, including the RAWP, are included in **Appendix A**.

The OER-approved remedy included the following.

1. Prepared a Community Protection Statement and implemented a Citizen Participation Plan
2. Mobilized site security and equipment; completed utility mark outs; and marked and staked excavation areas
3. Performed a Waste Characterization Study prior to excavation activities - 26 soil sample sets, each consisting of one grab samples and one 5-point composite sample

characterization soil samples were collected between March 14 and 18, 2022. One sample set (consisting of one grab sample and one composite sample) was collected to represent the Con Ed Vault area from zero to fourteen feet below sidewalk grade, were collected between October 31 and November 3, 2022. Waste characterization samples were collected at a frequency dictated by disposal facility(s).

4. Performed a Community Air Monitoring Program (CAMP) for particulates and VOCs - CAMP was performed between April 26, 2022 and August 15, 2023. Elevated vapors and dust levels were observed during the CAMP and corrective actions were taken.
5. Established Track 4 Site Specific SCOs - The following Track 4 site-specific SCOs were utilized, which include the 6 NYCRR Part 375 RURR SCOs with site specific SCOs for Total SVOCs at 100 ppm, Barium at 650 ppm, Lead at 800 ppm, and Mercury at 1.2 ppm.
6. The following on-site excavations were performed to the following elevations/depths:
    - In the area of the building:
        - About el. 8 to 5 feet (about 4 to 7 feet bgs) in an approximately 1,880-square-foot area to accommodate the first-floor slab in areas not underlain by the cellar;
        - About el. -1 to -11 feet (about 13 to 23 feet bgs) in an approximately 13,950-square-foot area to accommodate the pile caps and the cellar slab; and
        - About el. -8 to -17.8 feet (about 20 to 29.8 feet bgs) in an approximately 4,950-square-foot area to accommodate deep foundation components (including the elevator pits).
    - In the area outside of the building:
        - About el. 10 to 11 feet (about 1 to 2 feet bgs) in an approximately 460-square-foot area to accommodate 2 feet of clean cover soil as a component of the site's composite cover system.
    - In the area outside of the property line:
        - About el. 0 feet (about 12 feet bgs) in an approximate 860-square-foot area to accommodate the Con Ed Vault.
7. Transported and disposed of 24,588.74 tons of non-hazardous soil/fill at permitted facilities in accordance with all applicable laws and regulations for handling, transporting, and disposal, and the RAWP - Soil/fill was removed as follows:
    - 32.88 tons of non-hazardous soil and fill went to the Bayshore Soil Management facility in Keasbey, New Jersey.

- 18,029.49 tons of non-hazardous soil and fill went to the Capital Quarry Reclamation Project facility in East Bangor, Pennsylvania.
- 6,526.37 tons of non-hazardous soil and fill went to the P Park LLC. facility in Prospect Park, New Jersey.
- A total of 760 cubic yards (CY) of clean soil went to the NYC Clean Soil Bank (OER Stockpile – Forbell Street).

8. Screened excavated soil/fill during ground intrusive work for indications of contamination by visual and olfactory observation, odors, and monitoring with a photoionization detector (PID)
9. Conducted management of excavated materials including temporarily stockpiling and segregating in accordance with defined types and to prevent co-mingling of contaminated and non-contaminated soil and fill
10. Collected and analyzed 11 post-excavation endpoint samples (EP01 through EP02) including one duplicate to determine attainment of SCOs - Two locations (EP01_EL_10-11 and EP02_EL_10-11) exhibited individual SVOCs exceeding the 6 NYCRR Part 375 RURR SCOs. However, Total SVOCs in both confirmation endpoint samples (14.015 mg/kg in EP01_EL10-11 and 32.992 mg/kg in EP02_EL_10-11) did not exceed the site-specific SCO of 100 mg/kg.
11. Constructed an engineered Composite Cover System consisting of a 12- to 24-inch-thick concrete building slab and a 4-inch-thick concrete slab, and at least 2 feet of clean soil (meeting the lower of 6 NYCRR Part 375 RURR and PGW SCOs) in the landscaped courtyard - The soil was imported from an OER-approved source and placed to prevent human exposure to remaining soil/fill in areas not covered by impervious cover in the courtyard. The contractor for cover system construction was Dubner Landscaping & Construction.
12. Installed a waterproofing/vapor barrier (WP/VB) system (with a minimum thickness of 20 mils) as per manufacturer's specifications, consisting of Grace Construction Products (GCP) Preprufe® 300R and GCP Florprufe 120® for horizontal applications and GCP Preprufe® 160R and Bituthene® 4000 for vertical applications - Transitions between the WP/VB membranes, pipe penetrations, and horizontal membrane seams were sealed with Bituthene® liquid membrane and Preprufe® tape to prevent preferential pathways for vapor migration. The contractor for the Vapor Barrier System construction was New Leaf Development.
13. Residual soil is present beneath the clean soil cover layer in the courtyard and will be subject to Site Management under this Remedial Action. A highly-visible physical

demarcation barrier (e.g., orange snow fencing) was placed beneath the limited clean soil cover layer will be subject to Site Management under this Remedial Action.

14. Performed all activities required for the Remedial Action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations
15. Implemented stormwater pollution prevention measures in compliance with applicable laws and regulations
16. Performed dewatering in compliance with city, state, and federal laws and regulations - Extracted groundwater was pre-treated and discharged to the NYC sewer system under a permit from the NYCDEP.
17. Imported backfill in compliance with the RAWP and in accordance with applicable laws and regulations - The imported backfill consisted of virgin quarry stone and sand from permitted facilities:
    - 242.99 tons of ASTM #57 3/4" Virgin Stone from Stavola Construction Materials - Bound Brook Quarry for the truck wash station, dewatering system and foundation/pile caps
    - 141.02 tons of ASTM #57 3/4" Recycled Stone from IRRC in Lyndhurst, NJ for foundation/pile caps
    - 488.28 tons of ASTM #57 3/4" Virgin Stone from Inwood Materials in Inwood, NY for foundation pile caps and Con Ed Vault area
    - 39.39 tons of ASTM #57 3/4" Virgin Stone from Tilcon New York, Inc – Clinton Point Quarry for the landscaped courtyard
    - 30 CY of planting soil ("Topsoil D") from Naturcycle, LLC and sourced from Route 82 Sand and Gravel, Inc. of Millbrook, NY, for the cover soil layer within open-bottom planters in landscaped courtyard
18. Submitted daily reports during construction oversight activities - Daily reports were submitted from April 26, 2022 to July 10, 2025.
19. Submitted a Sustainability Report.
20. Submitted an RAR that describes the Remedial Action, certifies that the remedial requirements defined in the RAWP have been achieved, defines the Site boundaries, describes all Engineering and Institutional Controls (EC/IC) applicable to the Site, and describes any changes from the RAWP
21. Submitted a Site Management Plan (SMP) for long-term management of residual soil, including plans for operation, maintenance, inspection and certification of the

performance of ECs and ICs - Inspections will be performed every ten years. Inspection and certification reports will be submitted by July 30, 2035 (for the reporting period calendar year 2025-2034), July 30, 2045 (for the reporting period calendar year 2035-2044), and every ten years thereafter. Inspection and certification reports will cover all calendar years since the prior reporting period.

22. The property will continue to be registered with an E-Designation by the NYC Department of Buildings. ECs/ICs will be managed in compliance with the SMP. ICs will include prohibition of the following: (1) vegetable gardening and farming in residual soil; (2) the use of groundwater beneath the site without treatment rendering it safe for the intended use; (3) disturbance of residual soil material unless it is conducted in accordance with the SMP; and (4) higher levels of land usage than the restricted residential uses addressed by this remedial action without prior notification and approval by OER.

FINAL REMEDIAL ACTION REPORT

1.0 SITE BACKGROUND

This Final Remedial Action Report (RAR) was developed for the Parcel E1 property in the Greenpoint neighborhood of Brooklyn, New York (the site). Greenpoint Landing Lot 6 LLC enrolled in the New York City (NYC) Voluntary Cleanup Program (VCP) to investigate and remediate an approximately 20,900-square-foot property (Parcel E1) at 16 Dupont Street, Brooklyn, New York (the site). The boundary of the property subject to this remedial action is shown on **Figure 1**.

Parcel E1 is part of the Greenpoint Landing development project, which will eventually cover about 19 acres and is referred herein as the "development property." The development project includes construction of residential (affordable and market-rate housing) buildings, a public elementary/intermediate school, new street infrastructure, new combined sewer overflow pipes and outfalls, a public promenade along the East River, public open space, as well as bulkhead reconstruction and shoreline stabilization. The development property plan is presented on **Figure 2**.

The site was developed under the regulatory oversight of the NYC Office of Environmental Remediation (OER) pursuant to the Revised Negative Declaration for the Greenpoint Landing Rezoning dated November 6, 2013 (City Environmental Quality Review [CEQR] No. 14DCP004K), which placed E-Designations for Hazardous Materials, Noise, and Air Quality (E-317) on the tax lots comprising the site. This new E-Designation (E-317) supersedes the E-Designation (E-138) previously assigned to the tax lots that comprise the site in connection with the May 11, 2005 Greenpoint-Williamsburg Rezoning (04DCP003K). An application for enrollment into the VCP was submitted on December 2, 2021, and the VCP Site Number 22CVCP034K was assigned. Work completed under the VCP will satisfy the requirements of the E-Designation for Hazardous Materials that exists for the site; the Noise and Air Quality E-Designation will be handled separately from the VCP.

This RAR is for Parcel E1, which includes the construction of a new 40-story mixed-use residential and commercial tower over a partial cellar and an outdoor landscaped courtyard. The remedial action was implemented pursuant to the OER-approved March 2022 Remedial Action Work Plan (RAWP) in a manner that has rendered the site protective of public health and the environment consistent with its intended use. This RAR describes the remedial action performed under the RAWP. The remedial action described in this document provides for the protection of public health and the environment and complies with applicable environmental standards, criteria, guidance, laws and regulations.

1.1 Site Location and Prior Usage

Parcel E1 is identified as Block 2494, Lot 6 (former Lots 6 and 10, which were merged on February 14, 2022) on the Borough of Brooklyn tax map, is in the Greenpoint neighborhood of Brooklyn, New York and encompasses an area of about 20,900 square feet. The site is bound by the following:

- Dupont and Commercial Streets followed by Greenpoint Playground (Block 2486, Lot 1) and Newtown Barge Playground (Block 2472, Lot 75) to the north;
- A vacant parcel (Block 2494, Lot 20) and a low-rise residential building (Block 2494, Lot 26) to the east;
- A mid-rise mixed-use residential and commercial building (33 Eagle Street [a/k/a Parcel E3 [Block 2494, Lot 1 and parts of Lots 5 and 6]) to the south; and
- West Street Extension (Block 2472 Lots 10, 20, and 25 and Block 2494 Lots 3 and 5) followed by mid-rise and high-rise mixed-use residential and commercial buildings (1 Eagle Street [a/k/a Parcel D [Block 2472, Lots 2, 3, 21 and part of Lots 30 and 35 and Block 2502, Lot 2 and part of Lot 1]).

The site was previously occupied by an asphalt-paved parking lot on former Lot 10 and vacant, vegetated land on former Lot 6. Former Lot 6 was the former location of the NYC Department of Environmental Protection (NYCDEP) East River Sludge Storage Facility, which was demolished in 2014. A 1,000-gallon No.2 fuel oil underground storage tank (UST) was closed-in-placed in the southeastern corner of Lot 6 in 1997. This UST was not found during remediation and construction activities. Former Lot 10 was historically used for lumber storage (circa 1950s to early 2000s) and automobile parking and storage (early 2000s to present day).

The elevation of Parcel E1 prior to development ranged from about el. 11 to el. 15 feet.[2] The redevelopment did not require any elevation or grade adjustments.

1.2 Development

The development at Parcel E1 includes a 40-story mixed-use residential and commercial building over a partial cellar and an outdoor landscaped courtyard occupying about 900 square feet in the northwestern corner of the site. The cellar, which extends into the groundwater table, has a footprint of about 17,650 square feet and will be used for parking, tenant storage, and

[2] All elevations herein are presented relative to the North American Vertical Datum of 1988 (NAVD88). Datum refers to the North American Vertical Datum of 1988 which is approximately 1.1 feet above mean sea level datum at Sandy Hook, New Jersey as defined by the United States Geologic Survey (USGS NGVD 1929).

building/mechanical services. The cellar will also contain the superintendent's office and a stormwater detention tank. The landscaped courtyard consists of concrete-paved and landscaped areas. A highly-visible physical demarcation barrier (e.g., orange snow fencing) was placed beneath the clean soil cover layer in landscaped areas. The development includes 264 market-rate housing units and 114 affordable housing units. The remainder of the site is improved with the slab-on-grade components of the new building. The sanitary and stormwater lines servicing Parcel E3 within the sewer easement on the eastern part of the site were exposed and protected during excavation so the foundation for Parcel E1 could be built around the infrastructure. New site utilities and connections (e.g., gas, water, storm, sanitary, electricity, and telecommunication) were constructed for the new building.

The site development required the removal of concrete and asphalt pavement and the following excavation activities:

- In the area of the building:
    - About el. 8 to 5 feet (about 4 to 7 feet bgs) in an approximately 1,880-square-foot area to accommodate the first-floor slab in areas not underlain by the cellar;
    - About el. -1 to -11 feet (about 13 to 23 feet bgs) in an approximately 13,950-square-foot area to accommodate the pile caps and the cellar slab; and
    - About el. –8 to -17.8 feet (about 20 to 29.8 feet bgs) in an approximately 4,950-square-foot area to accommodate deep foundation components (including the elevator pits).
- In the area outside of the proposed building:
    - About el. 10 to el. 11 feet (about 1 to 2 feet bgs) in an approximately 460-square-foot area to accommodate 2 feet of clean cover soil as a component of the site's composite cover system.
- In the area outside the property line:
    - About 0 feet (about 12 feet bgs) in an approximate 860-square-foot area to accommodate the Con Ed Vault.

About 24,588.74 tons of soil/fill were excavated to accommodate the proposed cellar and first floor slab and were disposed off-site in accordance with local, state, and federal laws and regulations. Dewatering was required during construction as the cellar and foundation components (including foundation slab and mats, elevator pits, and pile caps) extend into the groundwater table. Dewatering effluent was discharged to the NYC sewer system under a NYCDEP sewer discharge permit.

Imported aggregates were used to construct the foundation and support of excavation (SOE) system, and imported aggregates and topsoil were used to complete the outdoor landscaped courtyard. All imports were performed in accordance with the OER-approved Soil/Materials Management Plan (SMMP), applicable laws and New York State Department of Environmental Conservation (NYSDEC) regulations. Imported topsoil for the courtyard met the cover soil quality criteria (lower of the Title 6 New York Codes, Rules and Regulations [6 NYCRR] Part 375 Restricted Use Restricted-Residential [RURR] and Protection of Groundwater [PGW] Soil Cleanup Objectives [SCO]).

A map showing the locations of the new building, cellar, and open space is provided on the Development Plan included as **Figure 3.**

1.3 Description of Surrounding Property

The site is in a dense urban area generally improved with multi-story commercial, residential, light industrial, and manufacturing buildings in zoning districts designated for commercial, residential and manufacturing uses, which are summarized in the following table:

Direction	Adjacent Properties	Surrounding Properties
North	Dupont and Commercial Streets	Public parks, mixed-use residential and commercial buildings and the East River/Newtown Creek
	Greenpoint Playground	
	Newtown Barge Playground	
East	Vacant lot	Mixed-use residential and commercial buildings, residential buildings
	Low-rise residential building	
South	Mid-rise residential building (Greenpoint Landing – Parcel E3)	Industrial and residential buildings, active construction site
West	West Street Extension	East River/Newtown Creek
	Mid-rise and high-rise mixed-used residential and commercial buildings (Greenpoint Landing – Parcel D	

A search was performed for sensitive receptors, including, but not limited to, schools, daycare facilities, parks, hospitals, and senior care facilities, within an approximate 500-foot radius of the site boundary. Two sensitive receptors were identified within the search radius:

- Newtown Barge Playground
- Greenpoint Playground

1.4 Summary of Past Uses of Site and Areas of Concern

Historical maps from the mid to late 1800s suggest that the northwestern corner of the site was partially underwater and was infilled to create usable land by 1897. In 1905, the southern part of the site was partly occupied by the International Mahogany Co. yard. According to Sanborn maps, from 1922 through at least 1924 the site appears as part of an unidentified one-story building that spans the southern and eastern adjoining properties. No structures were depicted between 1928 and 1966, but it was likely used for lumber storage during that time. Former Lot 6 was improved with a NYC Pollution Control Sludge Storage Tank by 1966 until 2014. Former Lot 10 was asphalt-paved by 1974 and was used to store vehicles for a towing business from 1984 to 2013. Before redevelopment, former Lot 6 was a fenced and vegetated lot and Lot 10 was used as a parking lot.

Based on the Phase I Environmental Site Assessment (ESA) and Remedial Investigation (RI), no obvious areas of concern (AOC), such as current or former uses that resulted in generation, manufacturing, refinement, transport, storage, handling, treatment, discharge, and/or disposal of petroleum and/or hazardous substances, were identified. The known closed-in-place UST is not an AOC because of the absence of physical and analytical evidence of a petroleum release and associated contamination.

1.5 Summary of Previous Environmental Reports

The following environmental reports (in chronological order) are associated with the site:

- *Phase I Environmental Site Assessment Report – Greenpoint Lumber Yard, Brooklyn, New York, prepared by AKRF, Inc. dated July 2001*
- *Phase I Environmental Site Assessment Report – Greenpoint Landing – Parcel E1, prepared by Langan, dated June 21, 2021*
- *Remedial Investigation Report – Greenpoint Landing – Parcel E1, prepared by Langan, dated November 1, 2021*

Brief summaries of the three previous environmental investigations are provided in this section. The Phase I ESA Report for Greenpoint Lumber Yard prepared by AKRF and the Phase I ESA Report for Parcel E1 and Remedial Investigation Report (RIR) prepared by Langan are included in **Appendix A** of the RAR.

Summary of the Phase I Environmental Site Assessment Report for Greenpoint Lumber Yard

AKRF, Inc. was retained by Park Tower Realty Corporation to perform an ESA of the former lumber yard in the Greenpoint neighborhood of Brooklyn, New York.

Lumber storage was the primary historical use for more than 100 years from the late 1800s until approximately 1980. The lumber yard operations were phased out during the 1980s when the owner (Lumber Exchange Terminal, Inc.) began to lease portions of the site to tenants for construction materials, heavy construction equipment and machinery storage.

Summary of Phase I Environmental Site Assessment Report for Parcel E1

One Recognized Environmental Condition (REC) and four Business Environmental Risks (BER) were identified for the site:

- REC-1: Soil, Groundwater and Soil Vapor Impacts at the Subject Property: Subsurface investigations completed at the Subject Property identified the following soil, groundwater and soil vapor impacts at the Subject Property:
    - Non-native fill up to 11 feet below ground surface (bgs) and Volatile Organic Compound (VOC), Semivolatile Organic Compounds (SVOCs), Polychlorinated Biphenyls (PCB), pesticides, metals in soil above the NYSDEC 6 NYCRR Part 375 Unrestricted Use (UU) SCOs and/or RURR SCOs.
    - SVOCs, metals, and Per- and polyfluoroalkyl substances (PFAS) in groundwater above the NYSDEC Title 6 NYCRR Part 703.5 and NYSDEC Standards and Guidance Values (SGV) or the June 2021 NYSDEC PFAS Guidance Values.
    - Chlorinated Volatile Organic Compounds (CVOCs) in soil vapor.

The known soil, groundwater and soil vapor impacts collectively represent a REC for the site.

- BER-1: Subsurface Structures Related to Former NYCDEP Sludge Storage Tank Facility: Subsurface structures associated with the former sludge storage tank facility, including the 18-inch sludge force main, remnant utilities, and foundation elements, may exist beneath the ground surface and present design and/or construction constraints or limitations. An unregistered, abandoned 1,000-gallon No. 2 fuel oil UST is also present in the southeastern corner of former Lot 6. Because the removal and/or abandonment of remnant utilities and/or foundation elements (if present) and removal of the abandoned UST will have a material cost impact on future development activities, they are considered a BER.
- BER-2: E-Designations: The E-Designations on former Lots 6 and 10 will result in additional investigation and/or remediation and reporting under the jurisdiction of the NYCOER as part of future development activities. These activities will have a material cost impact on future development activities, as such, the E-Designation requirements are considered a BER.

- BER-3: FEMA Flood Zones: According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Panel 3604970202G (revised December 5, 2013), most of the Subject Property is located within Zone X, which is defined as 0.2% annual chance flood areas. A portion of the Subject Property, limited to the northwest corner of former Lot 6, is located in Zone AE, which is subject to inundation by the 1% annual chance flood. While flooding potential exists under current conditions, the planned redevelopment is expected to raise site grades and building designs will meet FEMA and NYC Department of Buildings (NYCDOB) guidelines; thereby mitigating future flood risk. Future flood mitigation will result in a material cost impact on future development activities, as such, mitigation required by FEMA is considered a BER.

Summary of the Remedial Investigation Report for Parcel E1

The RI consisted of a geophysical survey, advancement of nine soil borings, installation of four temporary monitoring wells, installation of six soil vapor points, and collection and laboratory analysis of soil, groundwater, and soil vapor samples. The following conclusions were made based on field observations and analytical results generated by the RI:

- Geophysical Survey: A sewer line and manhole are in the eastern part of former Lot 10 and a geophysical anomaly consistent with a known closed-in-place 1,000-gallon No. 2 fuel oil UST was identified in the southeastern part of former Lot 6. The size and shape of the closed-in-place UST anomaly was irregular and may indicate the presence of a second UST.
- Stratigraphy: An asphalt cover was observed on former Lot 10. Non-native fill, primarily composed of varying amounts of sand, silt, and gravel and varying amounts of anthropogenic materials (brick, coal, incinerated materials, slag, asphalt, ceramics, glass, wood, and concrete), was observed in soil borings to about 1.5 to 2.5 feet bgs in former Lot 10 and to about 8.5 to 11 feet bgs in former Lot 6. Non-native fill was generally underlain by native soil composed of varying amounts of sand, clay, gravel, silt and organics. Bedrock was not encountered during the RI; however, bedrock was encountered at about 42 to 72 feet bgs during Langan's geotechnical investigation completed in July-August 2021. No evidence of a petroleum or chemical release was observed in the borings advanced in the vicinity of the closed-in-place UST and the geophysical anomaly that is indicative of a UST or anywhere else on the site.
- Hydrogeology: Depth to groundwater ranged from approximately 8.9 to 10.9 feet bgs. Groundwater flow was not evaluated during the RI but is expected to flow west-northwest towards the confluence of Newtown Creek and the East River.

- Soil: Non-native fill contains contaminants including SVOCs, PCBs, and metals exceeding UU SCOs and SVOCs exceeding RURR SCOs. The VOCs acetone and MEK were detected in non-native fill, but they are common laboratory contaminants and is unlikely related to on-site contamination. The presence of the remaining analytes is attributed to the quality of non-native fill.
- Groundwater: Groundwater contains SVOCs, PCBs and metals at concentrations exceeding the NYSDEC SGVs and PFAS exceeding the NYSDEC June 2021 Guidance Values. The presence of SVOCs, PCBs, iron, and lead were attributed to entrained sediments in the groundwater samples derived from non-native fill. Manganese and sodium are commonly detected in groundwater above the NYSDEC SGVs and are representative of naturally-occurring and/or regional groundwater conditions. No on-site source of PFAS was identified; therefore, the presence of PFAS compounds in groundwater is likely a regional condition and attributed to off-site sources.
- Soil Vapor: 1,1,1-trichloroethane (1,1,1-TCA), trichloroethene (TCE), and tetrachloroethene (PCE) were detected in soil vapor at concentrations that yield recommendations ranging from "no further action" to "identify source(s) and resample or mitigate", according to the New York State Department of Health (NYSDOH) decision matrices. TCE and PCE were not detected in the soil vapor samples at concentrations exceeding the NYSDOH Air Guideline Values (AGV). There is no AGV for 1,1,1-TCA. An onsite source of 1,1,1-TCA, TCE, and PCE in soil vapor was not identified in soil or groundwater and the history of the site is not consistent with chlorinated solvent use.
- Areas of Concern: No AOCs were identified by the RI. The known closed-in-place UST is not an AOC because of the absence of physical and analytical evidence of a petroleum release and associated contamination. The size and shape of the closed-in-place UST anomaly may indicate the presence of a second UST, but is not an AOC because of the absence of physical and analytical evidence of a petroleum release and associated contamination.
- The RI did not identify on-site sources of contamination or evidence of on-site releases of petroleum or hazardous substances. The RI confirmed the presence of non-native fill and the observations and analytical data set indicates subsurface environmental conditions at the site are consistent with what one would expect to find on urban waterfront property in NYC.

2.0 SUMMARY OF THE REMEDIAL ACTION

The site was remediated in accordance with the procedures set forth in the RAWP. Remedial action objectives established in the RAWP were fulfilled and completed in accordance with applicable laws and regulations and the site-specific Construction Health and Safety Plan (CHASP). The remedial actions are effective in the short-term and long-term; reduced mobility, toxicity and volume of contaminants; used standard methods well established in the industry; and comply with applicable environmental standards, criteria, guidance and regulations.

A summary of the milestones achieved include the following:

- An RI and Limited Subsurface Investigation was performed from February 2021 to September 2021.
- An RIR was prepared to evaluate data and information necessary to develop a RAWP.
- A Site Contact List was established.
- A draft RAWP was prepared and released with a Fact Sheet on January 19, 2022 for a 30-day public comment period.
- The RAWP, dated January 13, 2022 (revised March 1, 2022), and Stipulation List, dated March 4, 2022, were approved by the OER Notice to Proceed dated March 17, 2022.
- The Pre-Construction meeting was held on April 4, 2022.
- RAWP implementation began in April 2022 and was completed July 10, 2025.
- Construction updates were provided to the OER throughout the project.
- A site briefing was conducted with NYSDEC on August 24, 2021.
- A Fact Sheet providing notice of the start of the remedial action was issued on April 21, 2022.
- Submission of this RAR.

Previous environmental reports, including the RAWP, are included in **Appendix A**.

The OER-approved remedy included the following:

1. Prepared a Community Protection Statement and implemented a Citizen Participation Plan
2. Mobilized site security and equipment; completed utility mark outs; and marked and staked excavation areas
3. Performed a Waste Characterization Study prior to excavation activities - 26 soil sample sets, each consisting of one grab samples and one 5-point composite sample

characterization soil samples were collected between March 14 and 18, 2022. One sample set (consisting of one grab sample and one composite sample) was collected to represent the Con Ed Vault area from zero to fourteen feet below sidewalk grade, were collected between October 31 and November 3, 2022. Waste characterization samples were collected at a frequency dictated by disposal facility(s).

4. Performed a Community Air Monitoring Program (CAMP) for particulates and VOCs. CAMP was performed from April 26, 2022 to August 15, 2023. Elevated vapors and dust levels were observed during the CAMP and corrective actions were taken
5. Established Track 4 Site Specific SCOs. The following Track 4 site-specific SCOs were utilized, which include the 6 NYCRR Part 375 RURR SCOs with site specific SCOs for Total SVOCs at 100 ppm, Barium at 650 ppm, Lead at 800 ppm, and Mercury at 1.2 ppm
6. The following on-site excavations were performed to the following elevations/depths:
    - In the area of the building:
        - About el. 8 to 5 feet (about 4 to 7 feet bgs) in an approximately 1,880-square-foot area to accommodate the first-floor slab in areas not underlain by the cellar;
        - About el. -1 to -11 feet (about 13 to 23 feet bgs) in an approximately 13,950-square-foot area to accommodate the pile caps and the cellar slab; and
        - About el. -8 to -17.8 feet (about 20 to 29.8 feet bgs) in an approximately 4,950-square-foot area to accommodate deep foundation components (including the elevator pits)
    - In the area outside of the building:
        - About el. 10 to el. 11 feet (about 1 to 2 feet bgs) in an approximately 460-square-foot area to accommodate 2 feet of clean cover soil as a component of the site's composite cover system.
    - In the area outside of the property line:
        - About el. 0 feet (about 12 feet bgs) in an approximate 860-square-foot area to accommodate the Con Ed Vault.
7. Transported and disposed of 24,588.74 tons of non-hazardous soil/fill at permitted facilities in accordance with all applicable laws and regulations for handling, transporting, and disposal, and the RAWP. Soil/fill was removed as follows:

- 32.88 tons of non-hazardous soil and fill went to the Bayshore Soil Management facility in Keasbey, New Jersey.
- 18,029.49 tons of non-hazardous soil and fill went to the Capital Quarry Reclamation Project facility in East Bangor, Pennsylvania.
- 6,526.37 tons of non-hazardous soil and fill went to the P Park LLC. facility in Prospect Park, New Jersey.
- A total of 760 CY of clean soil went to the NYC Clean Soil Bank (OER Stockpile – Forbell Street).

8. Screened excavated soil/fill during ground intrusive work for indications of contamination by visual and olfactory observation, odors, and monitoring with a photoionization detector (PID).
9. Conducted management of excavated materials including temporarily stockpiling and segregating in accordance with defined material types and to prevent co-mingling of contaminated and non-contaminated soil and fill.
10. Collected and analyzed 11 post-excavation endpoint samples (EP01 through EP02) including one duplicate to determine attainment of SCOs. Two locations (EP01_EL_10-11 and EP02_EL_10-11) exhibited individual SVOCs exceeding the 6 NYCRR Part 375 RURR SCOs. However, Total SVOCs in both confirmation endpoint samples (14.015 mg/kg in EP01_EL10-11 and 32.992 mg/kg in EP02_EL_10-11) did not exceed the site-specific SCO of 100 mg/kg.
11. Constructed an engineered Composite Cover System consisting of a 12- to 24-inch-thick concrete building slab and a 4-inch-thick concrete slab, and at least 2 feet of clean soil (meeting the lower of 6 NYCRR Part 375 RURR and PGW SCOs) in the landscaped courtyard. The soil was imported from an OER-approved source and placed to prevent human exposure to remaining soil/fill in areas not covered by impervious cover in the courtyard. The contractor for the cover system construction was Dubner Landscaping & Construction.
12. Installed a waterproofing/vapor barrier (WP/VB) system (with a minimum thickness of 20 mils) as per manufacturer's specifications, consisting of Grace Construction Products (GCP) Preprufe® 300R and GCP Florprufe 120® for horizontal applications and GCP Preprufe® 160R and Bituthene® 4000 for vertical applications. Transitions between the WP/VB membranes, pipe penetrations, and horizontal membrane seams were sealed with Bituthene® liquid membrane and Preprufe® tape to prevent preferential pathways

for vapor migration. The contractor for the Vapor Barrier System construction was New Leaf Development.

13. Residual soil is present beneath the clean soil cover layer in the courtyard and will be subject to Site Management under this Remedial Action. A highly-visible physical demarcation barrier (e.g., orange snow fencing) was placed beneath the limited clean soil cover layer will be subject to Site Management under this Remedial Action.
14. Performed all activities required for the Remedial Action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
15. Implemented storm-water pollution prevention measures in compliance with applicable laws and regulations.
16. Performed dewatering in compliance with city, state, and federal laws and regulations. Extracted groundwater was pre-treated and discharged to the NYC sewer system under a permit from the NYCDEP;
17. Imported backfill in compliance with the RAWP and in accordance with applicable laws and regulations. The imported backfill consisted of virgin quarry stone and sand from permitted facilities:
    - 242.99 tons of ASTM #57 3/4" Virgin Stone from Stavola Construction Materials - Bound Brook Quarry for the truck wash station, dewatering system and foundation/pile caps.
    - 141.02 tons of ASTM #57 3/4" Recycled Stone from IRRC in Lyndhurst, NJ for foundation/pile caps.
    - 488.28 tons of ASTM #57 3/4" Virgin Stone from Inwood Materials in Inwood, NY for foundation pile caps and Con Ed Vault area.
    - 39.39 tons of ASTM #57 3/4" Virgin Stone from the Tilcon New York Inc. Clinton Point Quarry for the landscaped courtyard.
    - 30 cubic yards (CY) of planting soil ("Topsoil D") from Naturcycle, LLC and sourced from Route 82 Sand and Gravel, Inc. of Millbrook, NY for the cover soil layer within open-bottom planters in the landscaped courtyard.
18. Submitted daily reports during construction oversight activities. Daily reports were submitted from April 26, 2022 to July 10, 2025.
19. Submitted a Sustainability Report.
20. Submitted an RAR that describes the Remedial Action, certifies that the remedial requirements defined in the RAWP have been achieved; defines the Site boundaries;

describes all Engineering and Institutional Controls (EC/IC) applicable to the Site; and describes any changes from the RAWP.

21. Submitted a Final Site Management Plan (SMP) for long-term management of residual soil, including plans for operation, maintenance, inspection and certification of the performance of ECs and ICs. Inspections will be performed every ten years. Inspection and certification reports will be submitted by July 30, 2035 (for the reporting period calendar year 2025-2034), July 30, 2045 (for the reporting period calendar year 2035-2044), and every ten years thereafter. Inspection and certification reports will cover all calendar years since the prior reporting period.
22. The property will continue to be registered with an E-Designation by the NYCDOB. Engineering Controls and Institutional Controls will be managed in compliance with the SMP. Institutional Controls will include prohibition of the following: (1) prohibition of vegetable gardening and farming in residual soil; (2) prohibition of the use of groundwater beneath the site without treatment rendering it safe for the intended use; (3) prohibition of disturbance of residual soil material unless it is conducted in accordance with the SMP; and (4) prohibition of higher levels of land usage than the restricted residential uses addressed by this remedial action without prior notification and approval by OER.

3.0 COMPLIANCE WITH REMEDIAL ACTION PLAN

The remedial construction activities performed under this program were in compliance with the CHASP and applicable laws and regulations. The Site Safety Coordinator was William Bohrer.**Community Air Monitoring Program**

The CAMP monitored air during remedial construction activities so that proper protections were employed to protect workers and the neighboring community. The CAMP consisted of real-time air monitoring for total VOCs and respirable particulate matter (PM10) at the upwind and downwind perimeter of the work area during intrusive soil disturbance activities to evaluate the need for odor and dust control measures to mitigate off-site impacts to the surrounding neighborhood. Monitoring was performed from April 26, 2022 to August 15, 2023 in compliance with the CAMP in the OER-approved RAWP.

Particulate matter was monitored using TSI DustTRAK® aerosol monitors and total VOCs were monitored using MiniRAE® 3000 PID instruments. In addition, total VOCs were monitored with a PID adjacent to areas of soil disturbance during excavation, post-excavation endpoint sampling, and soil export activities. Dust management measures were implemented during construction as necessary, including the use of dedicated water sprays for roads, excavation areas and stockpiles; anchored tarps to cover stockpiles; and gravel at egress points. No community nuisance odor or dust complaints were received during the remedy. Particulate matter and VOCs concentrations in excess of action levels were recorded for isolated and brief periods during the remedy. Corrective actions included, but were not limited to, mitigation via dust suppression techniques (i.e., water distribution), relocating vehicles producing dust, and replacement of stone at stabilized construction entrances. Copies of the community air monitoring results are included as **Appendix B**.

3.2 Soil/Material Management Plan

The SMMP provides detailed plans for managing all soil and fill that were disturbed at the site, including excavation, handling, storage, transport and disposal. It also included a series of controls to provide effective, nuisance-free remedial activity in compliance with applicable laws and regulations. Remedial construction activities performed under this program were in compliance with the SMMP in the OER-approved RAWP. The RE is not responsible for the excavation, characterization, handling, disposal facility selection, or off-site transport and management of any construction & demolition (C&D) material that was generated during demolition of on-site structures and not commingled with site soil or non-native fill. It is the responsibility of the contractor to manage and dispose of demolition-related C&D debris in accordance with applicable state and local laws and regulations.

3.3 Stormwater Pollution Prevention

Stormwater pollution prevention included physical methods and processes to control and/or divert surface water flows and to limit the potential for erosion and migration of site soils, via wind or water. Remedial construction activities performed under this program were in full compliance with methods and processes defined in the RAWP for stormwater prevention and applicable laws and regulations.

3.4 Deviations from the Remedial Action Work Plan

There were no deviations from the RAWP.

4.0 DESCRIPTION OF THE REMEDIAL PROGRAM

4.1 Project Organization and Oversight

The remedial action was performed concurrently with site redevelopment. Monadnock Construction, hereafter referred to as "the Construction Manager", provided construction management services for the project. Four contractors (hereafter referred collectively to as "the Contractor") were involved with the remedial action and are listed in the following table:

Contractor Name	Scope of Work
New Leaf Development (NLD)	Excavation/earthwork, foundation construction
Cichetti Engineering PLLC	Dewatering/pre-treatment
Donato Inc.	Plumbing and sewer
Tony Casale, Inc.	Sidewalk and curbs
Dubner Landscaping & Construction	Landscaping and Courtyard Construction

Langan provided environmental engineering services, including documenting compliance with the RAWP, implementing the CAMP, and coordinating with OER.

The New York State Professional Engineer (P.E.) responsible for overseeing implementation of the RAWP is Jason J. Hayes, P.E., Principal/Vice President at Langan. Under the direction of Mr. Hayes, Langan field staff documented that the remedial actions were implemented in accordance with the RAWP, SMMP, and site-specific CHASP. Gregory C. Wyka, P.G (Langan) served as the project manager during environmental oversight. Padmanabhan Krishnaswamy and Caitlyn Dempsey served as Langan's primary on-site field representatives.

4.2 Site Controls

Site Preparation

Any existing utilities within the site were investigated, demarcated, protected, and maintained by the Construction Manager during remedial construction. Utilities constructed as part of the Greenpoint Landing Lot 6 LLC development were also protected and maintained by the Construction Manager and contractors during construction and remediation. Soil-intrusive activities were performed in compliance with applicable laws and regulations.

Easements

A utility easement (13.25-feet-wide) for underground sanitary and storm sewer pipes servicing Parcel E3 exists on the eastern part of the site. The sanitary and storm were pipes pass through the foundation for Parcel E1. There is not separate easement area outside of the new building or cellar footprint. This and other easements that existed prior to the remedial action will remain following construction. The easement is shown on **Figure 4**.

Soil Screening

During the remedy and foundation construction, soil was inspected through visual and olfactory means for evidence of staining or odors representative of a chemical or petroleum release. Soil was also screened using a handheld RKI GX-6000 PID.

Stockpile Management

Excavated soil/fill was staged in stockpiles on and covered (during off-hours) with polyethylene sheeting or on asphalt in good condition, pending off-site disposal. Stockpiles were only used when necessary, removed as soon as possible and routinely inspected. Stockpiles were appropriately graded to control run-off in accordance with applicable laws and regulations.

Truck Inspection

Outbound truck inspection/wash stations were erected at the site entrance along Dupont Street. Outbound trucks were required to stop at the inspection stations for examination by the Contractor for evidence of soil and debris on the undercarriage, body, and wheels before exiting the site. Soil and debris observed on outbound trucks was removed before exiting the site by the Contractor using brooms, shovels, and pressurized potable water, as necessary. Soil observed on sidewalks and streets outside of the construction egresses was routinely cleaned by the Contractor. The Construction Manager was provided with truck route maps showing designated NYC truck and commercial vehicle routes for use by vehicles arriving at and leaving the site.

Site Security

Site access was controlled by a 24-hour guarded entrance on Dupont Street. Exterior and interior gates and doors were locked and secured by the Construction Manager at the end of each workday.

Nuisance Controls

Continuous air monitoring was performed at the upwind and downwind perimeter of the site during earthwork to evaluate the need for vapor and dust control in accordance with the RAWP and CHASP. The perimeter of the site was screened for odors periodically by Langan staff. Dust, vapor and/or odor management during invasive on-site work included the following:

- Usage of water spray methodology for roads, excavation areas and stockpiles
- Proper usage of anchored tarps to cover stockpiles
- Limiting the area of open excavations
- Placement of clean aggregate on egresses and other roadways to provide a road surface that limits potential nuisance dust

The vapor, odor and dust control plans were effective in controlling emissions; there were no community complaints and no instances of halting work because of nuisances.

Reporting

Langan generated daily reports to provide a general summary of activities for each day of active remedial work; these reports were uploaded to OER's Environmental Project Information Center (EPIC). The reports generally included the following information:

- Project number
- Statement of the activities and locations of work performed
- An update of progress made toward completion of site remediation
- Quantities of soil and fill imported and exported from the site
- Status of on-site soil/fill stockpiles
- A summary of CAMP exceedances
- A summary of sampling activities
- Photographs of notable site conditions and activities

Daily field reports are included in **Appendix C**. Digital photographs of the remedial action are included in **Appendix D**.

4.3 Materials Excavation and Removal Action

Soil/Fill Characterization

A waste characterization investigation was completed for the proposed building footprint of Parcel E1 in March 2022, and a limited waste characterization investigation was also completed for the Con Ed Vault area on the newly constructed segment of West Street along Parcel E1 between October and November 2022. The purpose of the waste characterization investigation was to provide information and data related to the management and disposal of excess soil generated during the remedy/construction.

Preliminary In-Situ Waste Characterization

A waste characterization investigation was completed for the proposed building footprint of Parcel E1 in March 2022. The site was divided into six horizontal waste characterization grids, each consisting of one to five vertical waste characterization cells for a total of twenty-six waste characterization cells each representing about 800 CY. Each cell was characterized using four to five soil borings. Twenty-three soil borings were completed. Borings were advanced from grade surface down to a maximum of 30 feet bgs. Soil samples were collected continuously from grade

surface to the boring termination depth into two-inch-diameter, four- to five-foot-long intervals. Twenty-six soil sample sets were collected to represent specific areas and depth intervals. Each sample set consisting of one grab sample and one composite sample, and associated quality control/quality assurance (QA/QC) samples, were collected and submitted for laboratory analysis. Grab soil samples were analyzed for the following parameters:

- Target compound list (TCL), Part 375, and New Jersey Department of Environmental Protection (NJDEP), and Pennsylvania Department of Environmental Protection (PADEP) VOCs
- NJDEP Extractable Petroleum Hydrocarbons (EPH) (Category 1)

One grab sample (WC03_GRAB_15-16) was also analyzed for the following:

- Toxicity Characteristic Leaching Procedure (TCLP) VOCs

Composite soil samples were analyzed for the following:

- TCL, Part 375, NJDEP, and PADEP SVOCs
- PCBs
- Pesticides
- Herbicides
- TCLP metals
- Target Analyte List (TAL) metals (including hexavalent/trivalent chromium)
- Total cyanide

One composite sample (WC03_COMP_12-18) was also analyzed for the following:

- Resource Conservation and Recovery Act (RCRA) characteristics, consisting of corrosivity, ignitability, and reactivity (cyanide and sulfide)
- TCLP SVOCs, TCLP pesticides, and TCLP herbicides

Based on the analytical results, the soil/fill was classified as non-hazardous waste and managed accordingly during construction. A copy of the waste characterization report is included in **Appendix E**.

Limited Waste Characterization Study of the Con Ed Vault Area

A limited waste characterization investigation was completed for the Con Ed Vault area of Parcel E1 located on the newly constructed segment of West Street between October 31 and November 3, 2022.

The Con Ed Vault area located along West Street was investigated as a single waste characterization cell representing about 600 CY of soil/fill. The cell was characterized using four soil borings. Borings were advanced from grade surface up to 16 feet bgs. Soil samples were collected continuously from grade surface to the boring termination depth into two-inch-diameter, two- to four-foot-long intervals. One soil sample set was collected to represent the Con Ed Vault area from grade surface to fourteen feet bgs. One sample set consisting of one grab sample and one composite sample, was collected and submitted for laboratory analysis. The grab soil sample was analyzed for the following parameters:

- TCL, Part 375, NJDEP, and PADEP VOCs

The composite soil sample was analyzed for the following:

- TCL, Part 375, NJDEP, and PADEP SVOCs
- EPH (Category 1)
- Pesticides
- Herbicides
- TAL metals (including hexavalent/trivalent chromium)
- PCBs
- TCLP metals
- RCRA characteristics, consisting of corrosivity, ignitability, and reactivity (cyanide and sulfide)
- Paint filter

Based on the analytical results, the soil/fill was classified as non-hazardous waste and managed accordingly during construction. A copy of the waste characterization report is included in **Appendix E**.

Soil/Fill Excavation and Removal

Soil and fill management, including excavation, handling and disposal, were conducted in accordance with the RAWP. The excavation/foundation Contractor determined the means and

methods used to excavate, transport and dispose of excavated soil and fill. **Figure 4** shows the approximate locations and depths of excavations.

The remedy and construction required excavation to the following elevations/depths:

- In the area of the new building:
    - About el. 8 to 5 feet (about 4 to 7 feet bgs) in an approximate 1,880-square-foot area to accommodate the first floor slab in areas not underlain by the cellar
    - About el. -1 to -11 feet (about 13 to 23 feet bgs) in an approximate 13,950-square-foot area to accommodate pile caps and the cellar foundation slab
    - About el. -8 to -17.8 feet (about 20 to 29.8 feet bgs) in an approximate 4,950-square-foot area to accommodate deep foundation components (including the elevator pits)
- In the area outside of the new building:
    - About el. 10 to 11 feet (about 1 to 2 feet bgs) in an approximate 460-square-foot area for removal of soil/fill to accommodate 2 feet of clean cover soil as a component of the site's composite cover system
- In the area outside of the property line:
    - About el. 0 feet (about 12 feet bgs) in an approximate 860-square-foot area to accommodate the Con Ed Vault

A total of 24,588.74 tons of soil/fill were excavated and removed from the property during the remedial action. Soil/fill removed from the property under this remedial action is generally classified as non-hazardous non-native soil/fill and non-hazardous petroleum contaminated soil/fill. This excavated soil and fill were sent to the following facilities:

- 32.88 tons of non-hazardous soil and fill were sent to Bayshore Soil Management facility in Keasbey, New Jersey
- 18,029.49 tons of non-hazardous soil and fill were sent to Capital Quarry Reclamation Project facility in East Bangor, Pennsylvania
- 6,526.37 tons of non-hazardous soil and fill to the P Park LLC. facility in Prospect Park, New Jersey
- 760 CY of clean soil were sent to the NYC Clean Soil Bank (OER Stockpile – Forbell Street)

The removal action for the project was performed under the oversight of Jason Hayes., PE.

No soil/fill was reused on site.

UST Removal

Previous reports indicated that a 1,000-gallon No. 2 fuel oil UST was closed-in-placed in the southeastern corner of Lot 6 in 1997. However, this UST was not found during the remedy and foundation construction activities.

Dewatering

Construction dewatering was required to implement the remedy and construct the foundation for the new building. The discharge of dewatering fluids to NYC sewers was authorized by NYCDEP sewer discharge permits (Permit IDs: C001507337, C001843647, C002130837). Construction dewatering was conducted between May 2022 and September 2023 using a perimeter dewatering well network and localized sumps during foundation construction and utility installation. Dewatering fluids were collected and directed to an on-site pretreatment system operated and maintained by Monadnock Construction, Inc. and their subcontractor, Cichetti Engineering PLLC. The dewatering system included a settling/fractionation (frac) tank. Following settling, dewatering fluids were discharged to a storm sewer located on the intersection of West Street and Eagle Street. Copies of the NYCDEP sewer discharge permits are included in **Appendix F**.

End Point Sample Results

The Track 4 cleanup selected in the RAWP was achieved.

A total of eleven post-excavation endpoint samples, including one duplicate sample were collected for laboratory analysis from the base of redevelopment excavations (building footprint and courtyard) in accordance with the OER-approved RAWP.

Endpoint samples EP01 and EP02 were collected from the top of subgrade (el. 10 to el.11) in the outdoor courtyard. Endpoint samples EP03 to EP11 were collected from the top of foundation subgrade within the new building footprint.

Post-excavation confirmation endpoint soil samples were analyzed for VOCs, SVOCs, PCBs, pesticides, herbicides, metals (including hexavalent and trivalent chromium), and cyanide. The analytical results show that all eleven post-excavation confirmation endpoint samples met the site-specific SCOs. Two locations (EP01_EL_10-11 and EP02_EL_10-11) exhibited individual SVOCs exceeding the 6 NYCRR Part 375 RURR SCOs. However, Total SVOCs in both confirmation endpoint samples (14.015 mg/kg in EP01_EL10-11 and 32.992 mg/kg in EP02_EL_10-11) did not exceed the site-specific SCO of 100 mg/kg.

The residual concentrations of individual SVOCs will by capped as part of the remedy (refer to Section 5.0).

The post-excavation documentation endpoint sampling locations are presented on **Figure 5**. A summary of post-excavation confirmation samples is included as **Table 1**. A summary of the post-excavation confirmation sample analytical results is included as **Table 2**. Laboratory analytical data reports are included in **Appendix G**.

Endpoint Data Usability Summary

The OER-approved RAWP did not require a Documentation Endpoint Data Usability Summary. The following is an evaluation of QA/QC for documentation endpoint sample analysis. A total of eleven post-excavation endpoint samples, including one duplicate sample was collected for laboratory analysis. Samples were collected using dedicated, disposable sampling equipment and submitted to Alpha Analytical Inc. (Alpha) via courier service under standard chain-of-custody protocol. Samples met National Environmental Laboratory Accreditation Program (NELAP) requirements for NELAP accredited parameters with no significant deviations encountered during preparation or analysis. Sample-specific quality control data for each individual sample and laboratory batch quality control for each parameter are summarized in the laboratory data packages.

4.4 Soil/Fill Disposal

This section contains a summary of exported soil/fill from the site including types, export quantities, and disposal facilities. A tabulated summary of exported soil and fill is provided in **Table 3** and the table below. Disposal facility documentation including disposal facility applications, approval letters, permits, and waste disposal manifests/countersigned scale tickets are included in **Appendix H**. In accordance with the RAWP, real-time air monitoring for VOCs and particulates was performed during active load-out of soil/fill. Excavated soil/fill was screened during intrusive work for indications of contamination using PID, visual, and olfactory methods. Excavated soil and fill were appropriately segregated by type, as needed, on-site prior to off-site disposal.

The type, quantity and disposal location of soil/fill removed and disposed of off-site is presented below:

Exported Soil/Fill Summary Table					
Disposal Facility Name and Address	**Type**	**Quantity Exported (Tons)**	**Date Range of Disposal**	**Permit/Registration and ID Number**	**List of Supporting Documentation in RAR**
Bayshore Soil Management, 75 Crows Mill Road, Keasbey, New Jersey 08832	Non-hazardous soil	32.88	08/16/22 to 03/03/23	NJDEP Permit No. CBG210002	Pre-approval request letter Waste profile/application Facility permit renewal Approval letter Manifests/Weight tickets Soil Disposal Notification
VIP Capital Development 1 Capital Boulevard East Bangor, Pennsylvania 18013	Non-hazardous soil	18,029.49	07/05/22 to 8/15/23	NPDES Permit No. PAD480026	Pre-approval request letter Waste profile/application Facility permit renewal Approval letter Manifests/Weight tickets Soil Disposal Notification
NYC Clean Soil Bank 830 Forbell Street Brooklyn, New York 11208	Clean Soil	760*	02/21/23 to 03/29/23	OER Stockpile No. 19TMP133K; CSB Transfer #23CCSB038	Pre-approval request letter Waste profile/application Approval letter Waste transporter permits Manifests Soil Disposal Notification
P Park NJ LLC, 100 Planten Ave. Prospect Park, New Jersey 07508	Non-hazardous soil	6,526.37	11/11/22 to 03/30/23	NJDEP Permit No. CBG170001	Pre-approval request letter Waste profile/application Facility permit renewal Approval letter Manifests/Weight tickets Soil Disposal Notification

Note: *NYC Clean Soil Bank export quantity provided in CY (estimated); countersigned manifests did not include export tonnages.

4.5 Fill Import

Imported soil and stone were screened for indications of contamination using instrumental (PID), visual, and olfactory methods. Imported soil and stone were appropriately segregated on-site before use and met the requirements of the RAWP and SMMP. Imported soil/stone placement areas are shown on **Figure 6**.

Sources of fill, including aggregates and cover soil, proposed by the Contractor were reviewed and evaluated by the Remedial Engineer in accordance with the RAWP and NYSDEC DER-10, including a review of the source location and its current and historical use(s) and any other provided documentation (e.g., sieve/gradation reports, facility permits, and clean source certification letters). Fill from industrial sites, spill sites, environmental remediation sites or other potentially contaminated sites was not imported to the site. Fill was subject to environmental sampling and testing prior to import to the site, as required. The aggregates imported to the site did not exhibit more than 10% by weight passing a No. 80 sieve and therefore no environmental testing was required per NYSDEC DER-10. The environmental testing performed on the cover soil used in the courtyard met the lower of 6 NYCRR Part 375 RURR and PGW SCOs. Requests to import fill to the site were submitted by the Remedial Engineer to the OER for review and approval. No proposed fill was rejected by the OER.

The following table summarizes imported soil/stone types, volumes, placement, and import facilities for soil/stone imported to the site as of May 2025. A tabulated record of soil and stone imports is provided in **Table 4**. Import facility documentation (including tables summarizing chemical analytical results and full laboratory reports), weight scale tickets, manifests for imported soil and stone, and available OER approvals are included in **Appendix I**.

Imported Fill Summary Table

Import Facility and Address	Type	Quantity Imported (Tons)	Date Range of Import	Placement Location/Use	Permit/Registration and ID Number	List of Supporting Documentation in RAR
Inwood Material Terminal – Inwood, New York	ASTM #57 ¾-inch Virgin Stone	488.28	2/22/23 to 8/14/23	Building footprint and Con Ed Vault foundation/pile caps	NYSDEC Part 360 Permit No. 30W39R	NYSDEC Facility Part 360 Permit, Sieve Analysis, Weight Tickets, OER Approval
IRRC – Lyndhurst, New Jersey	¾-inch Recycled Stone	141.02	1/25/23 to 3/18/23	Building footprint foundation/pile caps	NJDEP Class B Permit No. 131888	NJDEP Class B Permit, Laboratory Analytical Results, Sieve Analysis, Weight Tickets, OER Approval

Naturcycle, LLC, sourced from Route 82 Sand and Gravel, Inc. – Millbrook, NY	Planting Soil (Topsoil D)	30*	5/2/25	Landscaped Courtyard	NYSDEC Mine ID 30021	OER Import Request Package Laboratory Analytical Results, Import Ticket, OER Approval
Tilcon New York, Inc – Clinton Point Quarry	ASTM #57 ¾-inch Virgin Stone	39.39	1/30/25	Landscaped Courtyard	NYSDEC Mining Permit No. 3-1346-0087/00003	NYSDEC Facility Part 360 Permit, Sieve Analysis, Weight Tickets, OER Approval
Stavola Construction Materials – Bound Brook Quarry	ASTM #57 ¾-inch Virgin Stone	242.99	7/8/22 to 1/13/23	Truck wash station, dewatering system, and building footprint foundation/pile caps	NJ Mine Registration No. 004916	Mine Registration Certificate, Sieve Analysis, Weight Tickets, OER Approval

Note: *Naturcycle, LLC planting soil import quantity provided in CY (estimated).

4.6 Demarcation

Residual soil/fill that remains outside of the new building footprint in the outdoor landscaped courtyard was demarcated using a highly visible physical demarcation barrier (e.g., orange snow fencing), which was placed on top of an about 4 to 6-inch layer of imported ¾-inch gravel that was placed on top of residual soil/fill for drainage. A map showing the location of the physical demarcation barrier is included as **Figure 7**. Photographs of the physical demarcation barrier are included in **Appendix J**.

5.0 ENGINEERING CONTROLS

Engineering controls were constructed as part of the remedy to address residual site contamination. The site has two ECs:

1. A composite cover system
2. A waterproofing/vapor barrier system

A map showing the location of the ECs is provided as **Figure 8**.

5.1 Composite Cover System

The site was capped with an engineered composite cover system to prevent exposure to residual soil/fill. The composite cover system completed as a part of the RAR consists of a 12 to 24-inch-thick concrete foundation slab underlain by a WP/VB membrane.

The composite cover system at the outdoor courtyard consists of a 4-inch-thick concrete slab and a minimum of 2 feet of clean soil/fill (meeting the lower of 6 NYCRR Part 375 RURR and PGW SCOs) that was imported in accordance with the SMMP.

The as-built composite cover system layout and details are included on **Figures 9 and 10**.

5.2 Waterproofing/Vapor Barrier Membrane System

Exposure to soil vapor is mitigated by a WP/VB membrane system that was installed with the new building foundation. A WP/VB membrane system was installed by NLD beneath cellar slab and first floor slab (including under the elevator pits, foundation mats, and pile caps), extending along all subsurface foundation walls of the foundation from the base of excavation to surface grade level to mitigate potential soil vapor intrusion. The bottom of the foundation slab lies within the groundwater table; therefore, no or negligible soil pore space is expected to be available for the accumulation of soil vapor. This condition precluded the installation and operation of a sub-membrane depressurization system below the building foundation.

The WP/VB system is composed of Grace Preprufe® 300R (46 mils) and Florprufe®120 (21 mils) for horizontal applications and Grace Preprufe® 160R (32 mils) and Bituthene® 4000 (62 mils), for vertical applications. Frank Seta & Associates, LLC provided third-party inspection of the WP/VB installation and confirmed that the system was installed in accordance with manufacturer's specifications. Langan observed and documented installation of the WP/VB membrane system. Photographs of the installation process can be found in daily reports from April 26, 2022 to August 15, 2023 (**Appendix C**). The following documents associated with the WP/VB membrane system are included in **Appendix K**:

- P.E. signed/stamped As-built drawings and details

- A letter from the third-party responsible for field inspections
- The manufacturer's certificates of warranty
- The installer certification letter from NLD
- Product specifications

Photographs of WP/VB membrane installation in addition to site photographs taken throughout the remedy are included in **Appendix D**.

6.0 INSTITUTIONAL CONTROLS

A series of ICs are required under this remedial action to assure permanent protection of public health by elimination of exposure to residual materials. These ICs define the program to operate, maintain, inspect and certify the performance of ECs and ICs on this property. These ICs will be implemented in accordance with the SMP included in this RAR.

(1) The property will continue to be registered with an E-Designation by the NYCDOB. Property owner and property owner's successors and assigns are required to comply with the approved SMP;

(2) Compliance with an OER-approved SMP including procedures for appropriate operation, maintenance, inspection, and certification of performance of ECs and ICs - The property owner and property owner's successors and assigns will inspect ECs and ICs and submit to OER a written certification that evaluates their performance in a manner and at a frequency to be determined by OER;

(3) ECs will not be discontinued without prior OER approval;

(4) OER has the right to enter the site upon notice for the purpose of evaluating the performance of ECs and ICs;

(5) Vegetable gardens and farming in residual soil/fill on the site are prohibited;

(6) Use of groundwater underlying the site without treatment rendering it safe for its intended use is prohibited;

(7) All future activities on the site that will disturb residual soil/fill must be conducted pursuant to the Soil/Materials Management provisions of the SMP, or otherwise approved by OER; and

(8) The site is intended to be used for restricted residential and commercial use and will not be used for a higher level of use without prior approval by OER.

7.0 SITE MANAGEMENT PLAN

Site Management is the last phase of the remedial process and begins after the approval of the RAR and issuance of the Notice of Completion (NOC) by OER. It is the responsibility of the property owner to ensure that all Site Management responsibilities are performed. The penalty for failure to implement the SMP includes revocation of the Notice of Completion and all associated certifications and liability protections providing notice of the revocation to the NYC DOB.

ECs and ICs have been incorporated into this remedial action to make the site remains protective of public health and the environment. In general, ECs provide physical protective measures and ICs provide restrictions on site usage and establish remedial operation, maintenance, inspection and certification measures. This SMP has been established to govern performance of ECs and ICs for this property.

The SMP provides a detailed description of procedures required to manage residual soil/fill at the site following the completion of remedial construction in accordance with the NYC Voluntary Cleanup Agreement with OER. This includes: (1) operation and maintenance of ECs; (2) inspection of ECs and ICs; and (3) certification of performance of ECs and ICs.**Engineering Controls**

Engineering Controls were employed in the remedial action to address residual soil/fill remaining at the site. The site has two EC Systems. ECs for this property are:

1. A composite cover system
2. A waterproofing/vapor barrier system

Operation and Maintenance of Composite Cover System

Section 5.0 of the RAR describes the composite cover system utilized in this remedial action and provides as-built design details and the location of each cover type. The composite cover system is a permanent EC for the site. The system will be inspected and its performance certified at specified intervals defined in this SMP. A SMMP is included in this SMP and outlines the procedures to be followed if the composite cover system and underlying residual soil/fill must be disturbed after the remedial action is complete.

The composite cover system does not require any special operation or maintenance activities. If the system is breached during future construction activities (or "normal wear and tear"), the system will be rebuilt by reconstructing the system according to the original design and tying newly constructed cover layers into existing cover layers to form a continuous layer(s).

Operation and Maintenance of Vapor Barrier System

Section 5.0 of the RAR describes the WP/VB system utilized in this remedial action and provides as-built design details and the system location. The WP/VB system is a permanent EC for the Site. The system will be inspected and its performance certified at specified intervals defined in this SMP.

The WP/VB system does not require any special operation or maintenance activities. If the system is breached during future construction activities, the system will be rebuilt by reconstructing the vapor barrier layers and sealing the newly constructed materials with existing barrier materials in accordance with manufacturer specifications.

7.2 Institutional Controls

A series of ICs are required under this remedial action to assure permanent protection of public health by elimination of exposure to residual materials. These ICs define the program to operate, maintain, inspect and certify the performance of ECs and ICs on this property. Adherence to these ICs is required under the SMP established for this Remedial Action. Implementation will be in accordance with the SMP included in this RAR.

ICs are also designed to prevent future exposure to residual soil/materials by controlling disturbances in the subsurface, restricting higher uses of the property than those addressed by the Remedial Action and establishing restrictions on activities and site usage. ICs for this property are:

(1) The property will continue to be registered with an E-Designation by the NYCDOB. Property owner and property owner's successors and assigns are required to comply with the approved SMP;

(2) Compliance with an OER-approved SMP including procedures for appropriate operation, maintenance, inspection, and certification of performance of ECs and ICs. The property owner and property owner's successors and assigns will inspect ECs and ICs and submit to OER a written certification that evaluates their performance in a manner and at a frequency to be determined by OER;

(3) Engineering Controls will not be discontinued without prior OER approval;

(4) OER has the right to enter the site upon notice for the purpose of evaluating the performance of ECs and ICs;

(5) Vegetable gardens and farming in residual soil/fill on the site are prohibited;

(6) Use of groundwater underlying the site without treatment rendering it safe for its intended use is prohibited;

(7) All future activities on the site that will disturb residual soil/fill must be conducted pursuant to the Soil/Materials Management provisions of the SMP, or otherwise approved by OER;

(8) The site is intended to be used for restricted-residential, commercial, or industrial use and will not be used for a higher level of use without prior approval by OER.

7.3 Inspections

ECs and ICs will be inspected on a periodic basis at a frequency established in this plan. The inspections will evaluate the following:

- If ECs or ICs employed at the site continue to perform as designed and continue to be protective of human health and the environment;
- If anything has occurred that impairs the ability of the ECs or ICs to protect public health and the environment;
- If changes are needed to the remedial systems or controls;
- If compliance with this SMP has been maintained;
- If site records are complete and up to date; and
- General site conditions at the time of inspection.

In addition, if an emergency occurs, such as a natural disaster, or if an unforeseen failure of any of the Engineering Controls occurs, an inspection of the Site will be performed within 30 days to evaluate the ECs, and a letter report of findings will be submitted to OER.

Inspection of Composite Cover System

The composite cover system shall be inspected on a periodic basis by building management and every ten years by the Remedial Engineer. Inspections will include a visual evaluation of all accessible system components. Evidence of active invasive activity through the cover system, or past invasive activity, such as patches and repairs, should be evaluated. Observations made during inspections (including photographs) will be presented in annual inspection reports to document findings.

Inspection of Waterproofing/Vapor Barrier System

The WP/VB membrane system was installed directly below the building slab and along the vertical subsurface walls of the building foundation. As such, it is not practicable to inspect the physical condition of the membrane system once installed. However, water leaks would indicate the failure of the WP/VB membrane. The foundation shall be inspected on a periodic basis by building management and every ten years by the Remedial Engineer. If water leaks are identified, the owner will be notified and the corrective actions must be followed. Observations made during

inspections (including photographs) will be presented in annual inspection reports to document findings.

If future work on site requires disturbance of the slab, documentation of the disturbance, as well as required repairs of the WP/VB system, will be documented in annual inspection reports. The annual inspection will examine the slab for any such disturbance that may indicate that ECs may have been impacted. The annual inspection report will indicate the extent of such work and, if applicable, will report the location(s) where slab disturbance occurred.

Site Use Prohibitions

Inspections to evaluate the status of site use prohibitions will include an evaluation of all the ICs listed above, including:

- Evaluating whether there is vegetable gardening or farming in residual soil/fill;
- Determining if groundwater underlying the site has been used without treatment rendering it safe for its intended use;
- Evaluating if activities that have disturbed site soil/fill have been conducted pursuant to the SMMP provisions of the SMP, or otherwise approved by OER; and
- Determining if the site has been used for a higher level of use other than the restricted residential, commercial, or industrial use addressed by the remedial action.

7.4 Inspection and Certification Letter Report

Results of inspections performed during a reporting period and certification of performance of all ECs and ICs will be included in an Inspection and Certification Letter Report. Inspections will be performed every ten years. Inspection and certification letter reports will be submitted by July 31, 2035 (for the reporting period calendar years 2025-2034), July 31, 2045 (for the reporting period calendar year 2035-2044) and every ten years thereafter. Inspection and certification reports will cover all calendar years since the prior reporting period. Inspection and certification letter reports will be submitted to OER in digital format; a template is included in **Appendix L**.

The certification letter report will include, at a minimum:

- Date of inspection;
- Personnel conducting inspection;
- Description of the inspection activities performed;
- Observations, conclusions, or recommendations;
- Photographs; and

- Certification of the performance of ECs and ICs executed by the P.E. or Qualified Environmental Professional (QEP) responsible for this Inspection and Certification Letter Report, as discussed below.

The certification of the performance of ECs and ICs will establish:

- If ECs and ICs employed at the site continue to be in place, perform as designed and continue to be protective of human health and the environment;
- If anything has occurred that impairs the ability of ECs or ICs to protect public health and the environment;
- If changes are needed to the remedial systems or controls;
- If compliance with this SMP has been maintained;
- If vegetable gardening and farming in residual soils has been prevented;
- If groundwater underlying the site is being utilized without treatment rendering it safe for the intended purpose has been prevented;
- If activities on the site that have disturbed residual soil/fill material have been in accordance with the SMMP in this SMP;
- If the site has been used for a higher level of use other than the restricted residential, commercial, or industrial use addressed by the remedial action;
- If site records are complete and up to date;
- If the site continues to be registered as an E-Designated property by the NYCDOB; and
- OER may enter the site upon notice for the purpose of evaluating the performance of ECs and ICs.

7.5 Notifications

Notifications will be submitted by the property owner to OER as described below:

- 60-day advance notice of any proposed changes in Site use, such as an upgrade from existing use to residential use that was not contemplated in the Remedial Action.
- Notice within 30 days of any emergency, such as a fire, flood, or earthquake that has the potential to reduce the effectiveness of Engineering Controls in place at the site.

7.6 Soil/Materials Management Plan

Any future intrusive work that will disturb residual soil/fill beneath the property, including modifications or repairs to the existing composite cover system, will be performed in compliance

with this SMMP. Intrusive work will also be conducted in accordance with the procedures defined in the CAMP included in this chapter and a CHASP. The CHASP is the responsibility of the property owner and should be in compliance with NYSDEC DER-10 Technical Guide and 29 CFR 1910 and 1926, and all other applicable Federal, State and City regulations. Intrusive construction work should be compliant with this SMMP and described in the next inspection and certification letter report.

Soil Screening Methods

Visual, olfactory and PID soil screening and assessment will be performed under the supervision of a QEP. Soil screening will be performed during any future intrusive work.

Stockpile Methods

Soil excavated from areas of residual contamination will be stockpiled separately and will be segregated from clean soil and construction soil/fill. Stockpiles will be used only when necessary, and will be removed as soon as practicable. While stockpiles are in place, they will be inspected daily, and before and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. Excavated soils will be stockpiled on, at minimum, double layers of 6-mil minimum sheeting, will be kept covered at all times with appropriately anchored plastic tarps, and will be routinely inspected. Broken or ripped tarps will be promptly replaced.

Stockpile activities will be compliant with applicable laws and regulations. Soil stockpile areas will be appropriately graded to control run-off in accordance with applicable laws and regulations. Stockpiles of excavated soils and other materials shall be located at least of 50 feet from the property boundaries, where possible. Hay bales or equivalent will surround soil stockpiles except for areas where access by equipment is required. Silt fencing and hay bales will be used as needed near catch basins, surface waters, and other discharge points.

Characterization of Excavated Materials

Soil/fill or other excavated media that is transported off-site for disposal will be sampled in a manner required by the receiving facility, and in compliance with applicable laws and regulations. Excavated soil will only be reused on-site with prior approval by OER.

Soil/Fill Excavation, Load-Out and Departure

The P.E./QEP overseeing the remedial action will:

- Oversee intrusive work and the excavation and load-out of excavated soil/fill;
- Designate a party responsible for the safe execution of invasive and other work performed under this management plan;

- Keep site maintenance activities and maintenance-related grading cuts from interfering with, or otherwise impairing or compromising the remedial measures established during the remediation construction phase;
- Investigating the presence of utilities and easements on the site and having any identified risks from work proposed under this plan properly addressed by the appropriate party(ies);
- Inspect loaded outbound trucks are for cleanliness and, if necessary, cleaning of trucks before leaving the site; and
- Keep egress points for truck and equipment transport from the site clean of site-derived soil/fill during site intrusive work.

Locations where vehicles exit the site shall be inspected daily for evidence of soil tracking off premises. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

Off-Site Materials Transport

Loaded vehicles leaving the site will comply with all applicable soil/fill transportation requirements (including appropriate covering, manifests, and placards) in accordance with applicable laws and regulations, including use of licensed haulers in accordance with 6 NYCRR Part 364. If loads contain wet soil/fill capable of causing leakage from trucks, truck liners will be used. Queuing of trucks will be performed on-site, when possible, to minimize off site disturbance. Off-site queuing will be minimized.

Outbound truck transport routes are shown on **Figure 11**. This routing considers the following factors: (a) limiting transport through residential areas and past sensitive sites; (b) use of mapped truck routes; (c) minimizing 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. To the extent possible, all trucks loaded with site soil/fill will travel from the site using these truck routes. Trucks will not stop or idle unnecessarily in the neighborhood after leaving the project site.

Soil/Fill Disposal Off-Site

If soil/fill is generated that requires off-site disposal, the protocols described in this section will be followed.

The following documentation will be established and reported by the P.E./QEP for each receiving facility to document that the disposal of regulated soil/fill exported from the site conforms with applicable laws, regulations, and permit conditions applicable to each receiving facility:

1. An OER Historical Fill Notification Form and letter from the P.E./QEP or Enrollee to each disposal facility describing the soil/fill to be disposed and requesting written acceptance of the material. This letter will state that material to be disposed is regulated material generated at an environmental remediation site in NYC under a governmental remediation program. The letter will provide the project identity and the name and phone number of the P.E./QEP or Enrollee. The letter will include, as an attachment, a summary of all chemical data for the material being transported; and
2. A letter from each disposal facility stating it is in receipt of the correspondence (1, above) and is approved to accept the material.

An itemized account of the destination of all soil/fill removed from the site during any post-remedial action work will be presented to the OER as necessary. Documentation associated with disposal of all material will include records and approvals for receipt of the material. All impacted soil/fill or other waste excavated and removed from the site will be managed as regulated soil/fill and will be disposed in accordance with applicable laws and regulations. Non-native fill and contaminated soils taken off-site will be handled as solid waste and will not be disposed at a Part 360 or Part 361 Solid Waste Recycling Facility.

Waste characterization will be performed for off-site disposal in a manner required by the receiving facility and in conformance with its applicable permits. Waste characterization sampling and analytical methods, sampling frequency, analytical results and QA/QC will be retained and included in the following inspection and certification report. A manifest system for off-site transportation of exported materials will be employed. Hazardous wastes derived from on-site will be stored, transported, and disposed of in compliance with applicable laws and regulations.

Soil/Fill Reuse On-Site

All non-hazardous soil excavated during any future repair or construction purposes will be placed in the same excavation it was derived from or will be disposed of off-site unless otherwise approved by OER beforehand.

Demarcation

Residual soil/fill that remains outside of the new building footprint in the outdoor landscaped courtyard was demarcated using a highly-visible physical demarcation barrier (e.g., orange snow fencing), which was placed on top of an about 4 to 6-inch layer of imported ¾-inch gravel that was placed on top of residual soil/fill for drainage. A demarcation map is provided as **Figure 7**. Photographs of the demarcation barrier are included as **Appendix J**.

Location	Method of Demarcation	Purpose	IRAR Reference
Landscaped areas outside of building footprint	Highly visible physical demarcation barrier	Demarcate top of remaining non-native fill outside of the new building footprint	Figure 7 and Appendix J

If additional demarcation is necessary in the future, the top of the residual soil/fill may be defined by one of three methods: (1) placement of a demarcation layer. The demarcation layer will consist of geosynthetic fencing or equivalent material to be placed on the surface of residual soil/fill to provide an observable reference layer; or (2) a land survey of the top elevation of residual soil/fill before the placement of cover soil/fill, pavement and associated sub-soil, or other soil/fill or structures or, (3) all soil/fill beneath the approved cover will be considered impacted and subject to site management after the remedy is complete. Demarcation may be established by one or any combination of these three methods. As appropriate, a map showing the method of demarcation, and all associated documentation will be provided to the OER. The demarcation would constitute the top of the site management horizon.

Repair of Remedial Systems

After completion of invasive work, any damage to the ECs (composite cover system, vapor barrier, etc.) will be restored to the original condition established during initial construction.

Import of Backfill Soil/Fill from Off-Site Sources

This section presents the requirements for imported soil/fill to be used below permanent structures, impervious surfaces (e.g., sidewalks and walkways), or in the clean soil cover layer. Imported soils will meet OER-approved backfill and cover SCOs for this site. The backfill and cover SCOs are listed below:

- Imported backfill used below the new building slab, the clean soil cover layer, or below other impervious surfaces shall meet the lower of the appropriate NYSDEC 6 NYCRR Part 375-6.8(b) RURR and PGW SCOs.

A process will be established to evaluate sources of backfill and cover soil to be imported to the site, and will include an examination of source location, current and historical use(s), and any applicable documentation. Soil/fill from industrial sites, spill sites, environmental remediation sites or other potentially contaminated sites will not be imported to the site.

The following potential sources may be used pending attainment of backfill and soil cover SCOs:

- Clean soil from construction projects at non-industrial sites in compliance with applicable laws and regulations;

- Clean soil from roadway or other transportation-related projects in compliance with applicable laws and regulations;
- Clean recycled concrete aggregate (RCA) from facilities permitted or registered by the regulations of NYSDEC; and
- Virgin quarried material or other materials with an approved Beneficial Use Determination (BUD) from NYSDEC for reuse as clean fill.

All soil/fill received for import to the site will be approved by a P.E./QEP and be compliant with provisions in this SMP and SMMP. The source of the fill, evidence that an inspection was performed on the source, chemical sampling results, frequency of testing, and a site map indicating the locations where backfill or soil/fill cover was placed will be provided to OER.

Import of Clean Cover Soil

Planting soil and drainage soil/fill will be needed during the construction of landscaped areas on the site and may be needed during routine maintenance of landscaped areas.

If additional cover soil is needed, a process will be established to evaluate sources of clean cover soil to be imported to the site, and will include an examination of source location, current and historical use(s), and any applicable documentation.

The imported uncontaminated, clean soil cover will be from an approved source/facility and will be evaluated by the PE/QEP. Imported uncontaminated, clean soil cover will conform to the following:

1) Segregated stockpiles will be properly maintained at the source and will not be commingled with any other soil/fill prior to importing and grading the clean cover soil/fill at the site;
2) The soil/fill will not include any solid waste, including construction and demolition material or debris, as it is prohibited; and
3) Screening for evidence of contamination by visual, olfactory and PID soil screening practices will occur prior to testing at the source as well as upon importing to the site for grading is completed.

A maximum five-part composite sample will be collected from the segregated stockpile at the source at a frequency in accordance with NYSDEC DER-10 Table 5.4(e)(10) or at a lesser frequency negotiated with the OER, depending on the proposed source soil/fill and analyzed for the following parameters:

- United States Environmental Protection Agency (USEPA) Method 8260B for VOCs;

- USEPA Method 8270C for SVOCs;
- USEPA Method 8082 for PCBs
- USEPA Method 8081A for pesticides
- USEPA Method 6010C/7471B for TAL metals;

Upon receipt of the segregated stockpile analytical results collected at the source, a sampling report will be submitted to the OER for review and approval prior to importing the clean cover soil/fill to the site. The report will include the following:

1) Summary of number of number of samples collected and analyzed, tabulated data and comparison to the site-specific SCOs;
2) Analytical data sheets and chain of custody documentation;
3) Photographs from the segregated stockpile at the source with sample point locations identified;
4) An affidavit from the source/facility on company letterhead stating that the segregated stockpile(s) has been properly maintained at the source and complies with the requirements listed above; and
5) A copy of source/facility permit.

Upon importing and grading the OER-approved clean cover soil/fill, the following documentation will be presented to the OER:

1) Copies of purchase invoices;
2) Truck transportation slips from the source to the site;
3) Confirmation of volume/weight of OER-approved clean cover soil/fill imported and graded at the site;
4) Site plan depicting all areas where the OER-approved clean cover soil/fill was placed; and
5) Photographs documenting the importing and grading of the OER-approved clean cover soil/fill at the site.

Source Screening and Testing

Inspection of imported soil/fill material will include visual, olfactory, and PID screening for evidence of contamination. Soil/fill imported to the site will be subject to inspection, as follows:

- Trucks with imported soil/fill will be in compliance with applicable laws and regulations and will enter the site at designated locations;

- The P.E./QEP will certify that every truck load of imported soil/fill is inspected for evidence of contamination; and
- Soil/fill will be free of solid waste including pavement materials, debris, stumps, roots, and other organic matter, as well as ashes, oil, perishables or foreign matter.

Composite samples of imported soil/fill from the identified clean soil sources will be taken at a minimum frequency consistent with NYSDEC DER-10 Table 5.4(e)(10). One composite sample will be collected from each source of virgin quarried soil/fill or other soil/fill with an NYSDEC approved BUD, unless otherwise approved by OER. Once it is determined that the soil/fill meets imported backfill or cover soil chemical requirements, is non-hazardous, and lacks petroleum contamination, the soil/fill will be loaded onto trucks for delivery to the site.

RCA without fines may be imported from facilities permitted or registered by NYSDEC. A P.E./QEP is responsible for documenting that the facility is compliant with 6NYCRR Part 360 registration and permitting requirements for the period of acquisition of RCA. RCA imported from compliant facilities will not require additional testing, unless required by NYSDEC under its terms for operation of the facility. RCA imported to the site must be derived from recognizable and uncontaminated concrete. RCA is not acceptable for and will not be used as cover fill.

Fluids Management

Dewatering was necessary during the construction of the new building to accommodate excavation of foundation components extending below the groundwater table, including pile caps, sump pits, elevator pits, core excavation, and auto lift pits. The discharging of dewatering fluids to the NYC sewer system was authorized by NYCDEP permits (Permit Nos. C001507339, C001843647, and C002130837). If future construction requires dewatering, all liquids to be removed from the site, including dewatering fluids, will be handled, transported, and disposed in accordance with applicable laws and regulations. Liquids discharged into the NYC sewer system will receive prior approval by NYCDEP. The NYCDEP regulates discharges to the NYC sewers under Title 15, Rules of the City of New York Chapter 19. If discharge to the City sewer system is not feasible, the dewatering fluids will be managed by transportation and disposal at an off-site treatment facility or some other means compliant with applicable laws and regulations.

Discharge of water generated during remedial and/or post-remedial construction to surface waters (i.e., a stream or river) is prohibited without a State Pollutant Discharge Elimination System permit issued by NYSDEC. Dewatering fluids may also be containerized and disposed of off-site at a permitted receiving facility.

Stormwater Pollution Prevention

Applicable laws and regulations pertaining to storm-water pollution prevention will be addressed during site management. Existing stormwater management systems shall be inspected to document proper operation, as required.

Odor Control

All necessary means will be employed to prevent on- and off-site odor nuisances during site management operations. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) use of foams to cover exposed odorous soils. If odors develop and cannot be controlled by these means, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; and (e) use of chemical odorants in spray or misting systems.

The odor control plan must be capable of controlling emissions of nuisance 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. OER will be notified of all odor complaint events. The P.E./QEP will certify at the completion of the project that odor controls, including halt of work, were implemented in accordance with this plan.

Dust Control

Dust management during invasive on-site work will include, at a minimum:

- Use of a dedicated water spray methodology for roads, excavation areas and stockpiles;
- Use of properly anchored tarps to cover soil/fill stockpiles;
- Exercise extra care during dry and high-wind periods; and
- Use of gravel or RCA on egress and other roadways to provide a clean and dust-free road surface.

This dust control plan is capable of controlling emissions of dust. If nuisance dust emissions are identified, work will be halted and the source of dust will be identified and corrected. Work will not resume until all nuisance dust emissions have been abated. OER will be notified of all dust complaint events. The P.E./QEP will certify at the completion of the project that dust controls, including halt of work, were implemented in accordance with this plan.

Other Nuisances

Noise control will be exercised during the remedial program. All remedial work will conform, at a minimum, to NYC noise control standards.

Rodent control will be provided, during site clearing and grubbing, and during the future invasive on-site work, as necessary, to prevent nuisances.

7.7 Community Air Monitoring Plan

Real-time air monitoring for VOCs and particulate levels at the perimeter of the exclusion zone or work area will be performed during intrusive soil disturbance activities in areas with residual contamination (i.e., the courtyard). Continuous monitoring will be performed for ground intrusive activities and during the handling of contaminated or potentially contaminated media. Ground intrusive activities include, but are not limited to, soil/fill excavation and handling, test pit excavation or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be performed during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from monitoring wells. Periodic monitoring during sample collection, for instance, will consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. Depending upon the proximity of potentially exposed individuals, continuous monitoring may be performed during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in a public park, or adjacent to a school or residence. Exceedances of action levels observed during performance of the CAMP will be reported to the OER Project Manager.

VOC Monitoring, Response Levels, and Actions

VOCs will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis during ground intrusive work. Upwind concentrations will be used to establish background conditions. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities

will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less, but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shut down.

All 15-minute readings must be recorded and be available for OER personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

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

All readings will be recorded, downloaded at the end of the day, and available for OER personnel to review.

Contingency Plan

This contingency plan is developed for the remedial construction or repair work to address the discovery of unknown structures or contaminated media during excavation. Identification of

unknown contamination source areas during invasive site work will be promptly communicated to OER's Project Manager. Petroleum spills will be reported to the NYSDEC Spill Hotline. If previously unidentified contaminant sources are found during on-site remedial excavation or development-related excavation, sampling will be performed on contaminated source soil/fill and surrounding soils and reported to OER. Chemical analytical testing will be performed for TCL/Part 375 VOCs, SVOCs, pesticides/herbicides, PCBs, and metals, as appropriate.

Emergency Telephone Numbers

In the event of any emergency condition pertaining to these remedial systems, the Owner's representative(s) should contact the appropriate parties from the contact list below. The Owner should immediately contact Jason J. Hayes of Langan. These emergency contact lists must be maintained in an easily accessible location at the site at all times.

Emergency Contact Numbers

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

Contact Numbers

Jason J. Hayes (Langan)	(212) 479-5427
Office of Environmental Remediation	(212) 788-8841; 311

8.0 SUSTAINABILITY REPORT

This remedial action provided for sustainable remediation and redevelopment through a variety of means that are defined in this Sustainability Report.

8.1 Reuse of Clean, Recyclable Materials and Conservation of Natural Resources

Reuse of clean, recyclable materials (imported backfill from 6 NYCRR Part 360 recycling and/or composting facilities) reduced consumption of non-renewable virgin resources and provided energy savings and greenhouse gas reduction since these materials were locally derived. No excavated on-site non-native fill was reused on-site.

Conservation of non-renewable resources was achieved by exporting clean soil to the NYC Clean Soil Bank (CSB). A total of 760 CY of clean soil (as approved by OER) was recycled by transferring to the NYC CBS for reuse in other NYC construction projects. This reduced the number of highway miles haulers needed to drive soil for off-site transfer, as well as reducing highway miles required for the subsequent construction project accepting the soil, as compared to importing soil from sources outside of NYC.

8.2 Reduced Energy Consumption and Promotion of Greater Energy Efficiency

Reduced energy consumption lowers greenhouse gas emissions, improves local air quality, lessens in-city power generation requirements, and can lower traffic congestion and provide substantial cost savings. Direct transportation routes were selected for trucks hauling soil, fill, and waste to minimize fuel consumption.

8.3 Conversion to Clean Fuels

Use of clean fuel improves NYC's air quality by reducing harmful emissions. Mechanical systems in the new building utilize electricity instead of natural gas and fuel oil.

8.4 Recontamination Control

Recontamination after cleanup and redevelopment is completed undermines the value of work performed, may result in a property that is less protective of public health or the environment, and may result in additional cleanup work later that could impede future redevelopment. Recontamination can arise from future releases that occur within the property or by influx of existing contamination from off-site. The construction of the foundation slab within the groundwater table and WP/VB membrane system adds a protective measure to prevent migration of vapors into the structure in the future. The composite cover will prevent exposure to residual soil/fill. Therefore, the entire site footprint contains recontamination controls.

8.5 Stormwater Management

Stormwater management improves water quality by lowering the peak rate of combined stormwater and sewer discharges to the NYC's sewage treatment plants during periods of precipitation.

Stormwater at Parcel E1 will be detained on-site and discharged to storm and/or combined sewers on West Street and Dupont Street.

8.6 Paperless Brownfield Cleanup Program

Greenpoint Landing Lot 6 LLC participated in OER's paperless VCP. Under this program, submission of electronic documents replaces submission of hard copies for the review of project documents, communications and milestone reports. An estimate of the mass (pounds) of paper saved under this plan is 30 pounds.

8.7 Trees and Plantings

Trees and other plantings provide habitat and add to New York City's environmental quality in a wide variety of ways. Native plant species and native habitat provide optimal support to local fauna, promote local biodiversity, and require less maintenance. Approximately 8 trees and 28 shrubs (a mix of native and adaptive species), a multitude of perennial, bulb, and fern species, and grassy lawn areas will be planted as a part of the Parcel E1 development.