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## REMEDIATION ACTION WORK PLAN

for

**SOUTH MAIN PETROLEUM SITE ASSEMBLAGE  
2, 14, and 16 South Main Street,  
15 East Broadway, and  
106 Westchester Avenue  
Port Chester, New York 10573  
NYSDEC BCP Site No. C360237**

*Prepared for:*

**2SM Development, LLC  
c/o Hyperion Group, LLC  
888 Biscayne Boulevard, Suite 101  
Miami, Florida 33132**

**Commented [CMA(1)]:** Not listed under site agreement - will need amendment if there is a new site owner

*Prepared by:*

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**DRAFT**

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**Jason Hayes, P.E.  
Principal**

**August 9, 2024  
Langan Project No. 170653201**

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**CERTIFICATION**

I, Jason Hayes, certify that I am currently a New York State (NYS) registered Professional Engineer and that this Remedial Action Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10).

I certify that all information and statements in this certification are true. I understand that a false statement made herein is punishable as Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

**DRAFT**

\_\_\_\_\_  
NYS Professional Engineer #089491

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

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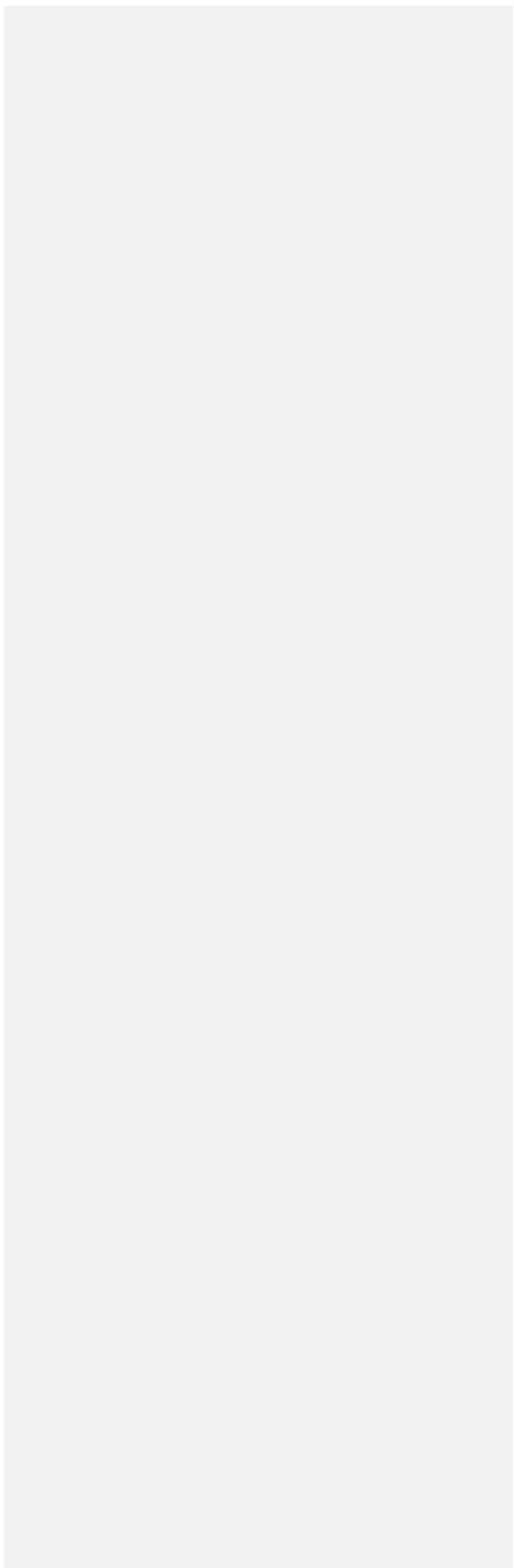
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**LIST OF ACRONYMS**

<b>Acronym</b>	<b>Definition</b>
AOC	Area of Concern
AST	Aboveground Storage Tank
BCA	Brownfield Cleanup Agreement
bcg	Below Cellar Grade
BCP	Brownfield Cleanup Program
bgs	Below Grade Surface
BMP	Best Management Practice
C&D	Construction and Demolition
CAMP	Community Air Monitoring Plan
CFR	Code of Federal Regulations
CHASP	Construction Health and Safety Plan
COC	Certificate of Completion
CP	Commissioner Policy
CQAP	Construction Quality Assurance Plan
CSM	Conceptual site model
CVA	Climate Vulnerability Assessment
CVOC	Chlorinated Volatile Organic Compound
DER	Division of Environmental Remediation
DER-10	Division of Environmental Remediation Program Policy: Technical Guidance for Site Investigation and Remediation, May 2010
DER-31	Division of Environmental Remediation Policy: Green Remediation Policy, January 2011
DMM	Division of Materials Management
Eastern	Eastern Environmental Solutions, Inc.
EC	Engineering Control
ECL	Environmental Conservation Law
EE	Environmental Easement
el	Elevation
ELAP	Environmental Laboratory Approval Program
ESA	Environmental Site Assessment
ESI	Environmental Site Investigation
FEMA	Federal Emergency Management Agency
FER	Final Engineering Report
FWRIA	United States Fish and Wildlife Resources Impact Analysis
GHG	Greenhouse Gas
GSR	Green and Sustainable Remediation
HASP	Health and Safety Plan
IC	Institutional Control



<b>Acronym</b>	<b>Definition</b>
Langan	Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
LEED	Leadership in Energy and Environmental Design
NOVA	NOVA Geophysical Services
NO <sub>x</sub>	Nitrogen Oxides
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSHA	Occupational Safety and Health Administration
PBS	Petroleum Bulk Storage
PCB	Polychlorinated Biphenyl
PE	Professional Engineer
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
PFAS	Per- and Polyfluoroalkyl Substances
PID	Photoionization Detector
PM10	Particulate Matter Less Than 10 Micrometers in Size
PPE	Personal Protective Equipment
PPM	Parts per Million
PVC	Polyvinyl Chloride
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
QEP	Qualified Environmental Professional
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCA	Recycled Concrete Aggregate
RE	Remedial Engineer
REC	Recognized Environmental Condition
RI	Remedial Investigation
RIR	Remedial Investigation Report
RUR	Restricted Use Residential
RURR	Restricted Use Restricted-Residential
SCG	Standards, Criteria, and Guidance
SCO	Soil Cleanup Objective
SGV	Standards and Guidance Values
SMMP	Soil/Materials Management Plan
SMP	Site Management Plan
SOE	Support of Excavation

<b>Acronym</b>	<b>Definition</b>
SO <sub>x</sub>	Sulphur Oxides
SPDES	State Pollutant Discharge Elimination System
STARS	Spills Technology and Remediation Series
SVOC	Semivolatile Organic Compound
SWPPP	Stormwater Pollution Prevention Plan
TAL	Target Analyte List
TCL	Target Compound List
TOGS	Technical and Operational Guidance Series
µg/m <sup>3</sup>	Microgram per Cubic Meter
UN/DOT	United Nations/Department of Transportation
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
UU	Unrestricted Use
VOC	Volatile Organic Compound
WCDOH	Westchester County Department of Health
York	York Analytical Laboratories, Inc.
6 NYCRR	Title 6 of the New York Codes, Rules, and Regulations

## EXECUTIVE SUMMARY

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) prepared this Remedial Action Work Plan (RAWP) on behalf of 2SM Development, LLC (the Volunteer) for the property at 2, 14, and 16 South Main Street, 15 East Broadway, and 106 Westchester Avenue in Port Chester, New York known as the South Main Petroleum Site Assemblage (the site). The Volunteer entered into the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) to remediate the site in accordance with a Brownfield Cleanup Agreement (BCA) Index No. C360237-12-23 executed on February 28, 2024 for Site No. C360237. Upon completion of the remedial action described herein and the subsequent construction, the site will be improved with a 12-story mixed-use residential and commercial building with commercial retail spaces, residential units, a mechanical bulkhead, and sub-grade parking. The proposed building will occupy the entire site footprint of approximately 26,900 square feet.

This RAWP identifies and evaluates remedial action alternatives and recommends a Track 1 remedy to address petroleum impacts in soil, groundwater, and soil vapor; semivolatile organic compounds (SVOC), metals, and pesticides in soil; chlorinated volatile organic compounds (CVOC) in soil vapor; and per- and polyfluoroalkyl substances (PFAS) contamination in soil and groundwater to the extent feasible based on background conditions. The proposed remedy was developed based on data gathered during the following Langan investigations:

- Phase II Environmental Site Investigation (ESI) conducted 2021 through 2023
- Remedial Investigation (RI) conducted April through May 2024

The recommended remedy described in this document is consistent with the procedures defined in the NYSDEC Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10) and complies with applicable standards, criteria and guidance. The recommended remedy also complies with applicable federal, state and local laws, regulations, and requirements. The Remedial Investigation Report was approved by the NYSDEC and the New York State Department of Health (NYSDOH) on DATE. As of the date of this report, the NYSDEC and NYSDOH have not determined whether this site poses a significant threat to human health and the environment. The Phase II ESI and RI did not identify impacts to fish and wildlife resources.

**Commented [Langan2]:** Final approval of the RIR is pending.

### Site Description/Physical Setting/Site History

The approximately 26,900-square-foot ( $\pm 0.62$ -acre) site comprises the following five lots in Port Chester, Westchester County, New York:

- 2 South Main Street (Tax ID 142.30-2-69) – formerly 2, 4, 6, 8, and .10 South Main Street and 7 East Broadway, on which the following structures are still present:
  - a vacant three-story formerly mixed-use commercial and residential building with a partial cellar

- a vacant three-story formerly mixed-use commercial and residential building with a partial cellar
- a vacant two-story formerly commercial and retail building
- a vacant two-story formerly mixed-use commercial and residential building with a partial cellar
- a vacant two-story formerly mixed-use commercial and residential building
- an inactive asphalt surface parking lot
- 14 South Main Street (Tax ID 142.30-2-48) – a vacant lot with construction and demolition (C&D) debris mixed with soil and building foundation from the former building that was subject to a fire on April 17, 2023 and demolished in 2023
- 16 South Main Street (Tax ID 142.30-2-47) – a vacant lot with C&D debris mixed with soil and building foundation from the former building that was subject to a fire on April 17, 2023 and demolished in 2023
- 15 East Broadway (Tax ID 142.30-2-58) – a vacant three-story residential building
- 106 Westchester Avenue (Tax ID 142.30-2-54) – a three-story mixed-use commercial and residential building (with one commercial and one residential tenant) with a partial cellar.

All parcels are owned by the Volunteer, except for the 106 Westchester Avenue parcel, which is still owned and occupied by tenants of the owner Sudershan Singla. Acquisition of this parcel is estimated for November 2024, after which the building will be vacated.

The site is in an urban setting that is characterized by residential, commercial, and mixed-use residential and commercial buildings. The site is bound to the north by Westchester Avenue followed by a two-story mixed-use commercial and residential building (101-111 Westchester Avenue); to the east by South Main Street followed by a five-story commercial and retail building (Waterfront Place/Westchester Avenue); to the south by vacant land (18 South Main Street); and to the west by a two-story mixed-use commercial and residential building (110 Westchester Avenue) and East Broadway, followed by the New Haven line of the Metro North Railroad (Metro North).

According to a May 24, 2021 Land Title Survey prepared by Langan, the site elevation (el) ranges from about el 12 to about el 36<sup>1</sup>. The topography of the site slopes from the west to the east in the general direction of Byram River. Adjacent properties to the west of the site are at generally higher elevations and adjacent properties to the east of the site are at generally lower elevations.

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<sup>1</sup> Elevations in this report are with respect to the North American Vertical Datum of 1988 (NAVD88).

## Summary of the Remedial Investigation

The RI was implemented from April 1 through May 31, 2024 to investigate the areas of concern (AOC), determine the nature and extent of contamination in soil, groundwater, and soil vapor, evaluate the nature of any impacts emanating from the site, and to design a remedy that will be protective of human health and the environment. Findings and conclusions of the RI are as follows:

1. **Stratigraphy:** The site has steep slopes with surface elevations varying from about el 32 along the western site border (in parking lot) to about el 12 – 13 along the South Main Street sidewalk. Fill consisting of fine to medium sand with varying amounts of silt, clay, gravel, wood, and anthropogenic materials (brick, concrete, glass, metal, and ceramics) was encountered across the site at varying depths to about 1 to 4 feet below basement slabs in the east part of the site (about el 4.5) to about 13 feet below grade surface (bgs)/el 19 in the western part of the site. Fine sand with varying amounts of silt, and gravel, was encountered beneath the fill. In some areas, the layer extends to bedrock. Bedrock was encountered across the site from about el 1 to 4 in the east part of the site to about el 17 to el 25 in the west part of the site.
2. **Hydrogeology:** Groundwater elevations measured in on-site overburden and bedrock wells ranged from el 3.88 to 27.60 with variability attributed to site grade changes and varying depths to bedrock. Groundwater contours were not prepared for the site bedrock groundwater data because water within bedrock fractures does not follow topography and contour modeling would not be representative of site conditions. Regional overburden water is expected to flow east to the Byram River. Regional groundwater flow is estimated to the east towards the Byram River.
3. **Petroleum Bulk Storage and Geophysical Findings:** According to the demolition contractor, the aboveground storage tanks (AST) at 14 and 16 South Main Street were removed following the April 2023 fire and prior to building demolition. The northeastern part of the site is registered as NYSDEC Petroleum Bulk Storage (PBS) Site No. 3-600479 and is associated with a 2,000-gallon steel underground storage tank (UST) that was closed and removed on November 18, 1993. Geophysical Engineering Survey Reports prepared by NOVA Geophysical Services in June 2021 and April 2024 identified a UST-like anomaly in the sidewalk immediately east of 8 South Main Street. The April 2024 survey identified a fill port and vent line within the sidewalk extending from the anomaly to the building at 8 South Main Street. The geophysical surveys also identified electric, sewer, gas, telecom, and water utilities beneath the sidewalks fronting the site along South Main Street, Westchester Avenue, and East Broadway. Electric, sewer, gas, telecom, and water utilities were also identified extending across 7 and 15 East Broadway.
4. **Petroleum- and/or Chemical-Impacted Soil, Groundwater, and Soil Vapor:** Nuisance petroleum odors, staining, yellow free-phase product, and photoionization detector (PID) readings above background were observed in the northeastern and southeastern parts of the site (AOC 1). The observed impacts to soil span an area of about 10,660 square feet at various depths between

about 0 and 9 feet bgs. Petroleum-related SVOCs were detected at concentrations exceeding the Title 6 of the New York Codes, Rules, and Regulations (6 NYCRR) Part 375 Unrestricted Use (UU) and/or Restricted Use – Residential (RUR) Soil Cleanup Objectives (SCO) in soil samples collected in the impacted area at depths of about 6 to 8 feet bgs. Volatile organic compounds (VOC) and SVOCs, including several petroleum-related compounds, were detected in groundwater above the NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values (SGV) for Class GA (drinking water) (collectively referred to as SGVs) within AOC 1. Petroleum-related VOCs were also detected in soil vapor. Petroleum-related contamination in soil, groundwater, and soil vapor at the site is attributed to former and abandoned PBS tanks.

5. SVOC-, Pesticide-, and Metals-Impacted Soil: SVOCs, pesticides, and metals were detected in soil/fill across the site at concentrations exceeding the UU and/or RUR SCOs to depths of up to 13 feet bgs. SVOC, pesticide, and metal impacts may be attributed to anthropogenic materials comingled in soil.
6. Soil Vapor: Chlorinated solvents and petroleum-related VOCs were identified in soil vapor samples. An on-site source of chlorinated solvents was not identified. Petroleum-related VOCs identified in soil vapor samples across the site may be attributed to a combination of former on-site petroleum bulk storage and/or off-site sources.
7. PFAS Impacts to Groundwater: The PFAS compounds perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) in groundwater samples exceeded the SGV in each groundwater sample analyzed for this parameter suite. The PFAS compound PFOS in soil samples exceeded the guidance UU SCOs (April 2023 PFAS Guidelines) in borings EB11, EB38, EB 39, and EB40, but did not exceed the guidance RUR SCOs (April 2023 PFAS Guidelines) except for soil samples from the bedrock interface in borings EB11 and EB38 in the western part of the site. Because there are no historic site uses associated with PFAS and perched groundwater elevations can fluctuate seasonally, the limited PFOS exceedances of RUR SCO in soil may be related to a groundwater condition. According to NYSDEC InfoLocator, PFAS results for groundwater samples are similar to results from other nearby NYSDEC remediation sites to the west, north, south, and northeast.

#### **Qualitative Human Health Exposure Assessment**

The following conclusions were developed from the human health exposure assessment:

1. Human exposure to site contaminants is currently limited because about 60 percent of the site is covered with an impermeable surface and access to site buildings and the parking lots is restricted to ownership and authorized visitors. The primary exposure pathways are dermal contact, ingestion, and inhalation of soil by site workers and site occupants. The exposure risks can be avoided or minimized by following the appropriate Construction Health and Safety Plan (CHASP)

and vapor and dust suppression measures, and by implementing a Community Air Monitoring Plan (CAMP) during any soil disturbance.

2. In the absence of mitigation measures and controls, there is potential for exposure during remediation. The primary exposure pathways are:
  - a. Dermal contact, ingestion, and inhalation of contaminated soil, groundwater, and/or soil vapor by remediation workers
  - b. Dermal contact, ingestion, and inhalation of soil (dust) and inhalation of soil vapor by the community in the vicinity of the site

These contacts can be avoided or minimized by implementing CAMP and by following the appropriate CHASP, vapor and dust suppression, soil erosion and sediment control, and site security measures, and following this RAWP.

3. The existence of a complete exposure pathway for site contaminants to human receptors during the proposed future use condition is unlikely, as all sources of contamination and some bedrock will be excavated, and the site will be dewatered.
4. Regional groundwater is not used as a potable water source in the Village of Port Chester; therefore, exposure to residual groundwater contaminants is unlikely.
5. It is possible that a complete exposure pathway exists for the migration of site contaminants to off-site human receptors during current and remediation conditions, but such potential exposure will be prevented or mitigated by implementation of monitoring and control measures. Monitoring and control measures have been and will continue to be used during investigation and remediation to prevent completion of this pathway. Under future conditions, engineering / institutional controls are not expected because the source of contamination will be removed. Following the planned Track 1 remedy, if achieved, the site would not be subject to a Site Management Plan.

#### **Summary of the Remedy**

It is anticipated that the site will be remediated to meet Track 1 UU standards. The recommended Alternative I Track 1 remedy will include the following:

- Development and implementation of a CHASP and CAMP for the protection of on-site workers, visitors, the community, and the environment including during remediation and construction
- To facilitate site remediation, abatement of regulated building materials and subsequent demolition of the site buildings, structures, subsurface obstructions (e.g., remnant foundation elements), and surficial asphalt cover by the Contractor and management of removed asphalt as C&D debris in accordance with Part 360 and 361 regulations. Review and certification of C&D debris transport and disposal methodologies will be the responsibility of contractors performing

off-site transportation and disposal of C&D debris. The Remedial Engineer (RE) is responsible for documenting that C&D debris is not commingled with contaminated site soil and fill.

- Construction of the support of excavation (SOE) system to facilitate the Track 1 remedial excavation
- Site-wide excavation, with dewatering, and off-site disposal of contaminated soil exceeding the Part 375 UU SCOs (about 5,700 cubic yards) and up to about 10 feet of weathered and surficial bedrock across the site (about 9,960 cubic yards) to in part remove VOCs and PFAS in groundwater within shallow bedrock fractures
- Screening of excavated soil for indications of contamination by visual, olfactory, and instrumental methods
- Handling, transport, and off-site disposal of excavated soil in accordance with federal, state, and local rules and regulations for handling, transport, and disposal
- Decommissioning and removal of any encountered USTs and ASTs in accordance with 6 NYCRR Part 613 and NYSDEC DER-10 Section 5.5
- Decommissioning of existing on-site groundwater monitoring wells in accordance with NYSDEC Commissioner Policy-43 and installation of groundwater monitoring wells in locations accessible for sample collection
- Dewatering to reach remedial excavation depths, and treatment and discharge of dewatering fluids in accordance with applicable regulations and municipal permit requirements
- Import and placement of soil meeting the Part 375 UU SCOs and/or crushed virgin stone, as needed, for building subgrade - Requests for import are subject to NYSDEC review and approval and will include a Request to Import/Reuse Soil Form.
- Post-remediation groundwater sampling
- Green remediation principles and techniques, including installation of a vapor barrier, will be implemented to the extent feasible in the design and implementation of the remedy.

Remediation will be performed in accordance with this NYSDEC-approved RAWP and NYSDEC-issued Decision Document.



## 1.0 INTRODUCTION

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) prepared this Remedial Action Work Plan (RAWP) on behalf of 2SM Development, LLC (the Volunteer) for the for property at 2, 14, and 16 South Main Street, 15 East Broadway, and 106 Westchester Avenue in Port Chester, New York known as the South Main Petroleum Site Assemblage (the site). The site is also identified on the Westchester County Tax Map as Section 142.30, Block 2, Lots 47, 48, 54, 58, and 69.

The Volunteer entered into the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) to remediate the site in accordance with a Brownfield Cleanup Agreement (BCA) Index No. C360237-12-23 executed on February 28, 2024 for Site No. C360237.

This RAWP identifies and evaluates remedial action alternatives and recommends a Track 1 remedy to address petroleum impacts in soil, groundwater, and soil vapor; semivolatile organic compounds (SVOC), pesticides, and metals in soil; chlorinated volatile organic compounds (CVOC) in soil vapor; and per- and polyfluoroalkyl substances (PFAS) contamination in soil and groundwater. The proposed remedy was developed based on data gathered during the following Langan investigations:

- Phase II Environmental Site Investigation (ESI) conducted 2021 through 2023
- Remedial Investigation (RI) conducted April through May 2024

The recommended remedy described in this document is consistent with the procedures defined in the NYSDEC Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10) and complies with applicable standards, criteria and guidance. The recommended remedy also complies with applicable federal, state and local laws, regulations, and requirements. The Remedial Investigation Report (RIR) was approved by the NYSDEC and the New York State Department of Health (NYSDOH) on DATE. As of the date of this report, the NYSDEC and NYSDOH have not determined whether this site poses a significant threat to human health and the environment. The Phase II ESI and RI did not identify impacts to fish and wildlife resources.

Commented [Langan3]: Final approval of the RIR is pending.

### 1.1 Site Location and Description

The approximately 26,900-square-foot ( $\pm 0.62$ -acre) site comprises the following five lots in Port Chester, Westchester County, New York:

- 2 South Main Street (Tax ID 142.30-2-69) – formerly 2, 4, 6, 8, and .10 South Main Street and 7 East Broadway, which is still occupied by the following structures:
  - a vacant three-story formerly mixed-use commercial and residential building with a partial cellar
  - a vacant three-story formerly mixed-use commercial and residential building with a partial cellar
  - a vacant two-story formerly commercial and retail building

- a vacant two-story formerly mixed-use commercial and residential building with a partial cellar
- a vacant two-story formerly mixed-use commercial and residential building
- an inactive asphalt surface parking lot
- 14 South Main Street (Tax ID 142.30-2-48) – a vacant lot with construction and demolition (C&D) debris and building foundation from the former building that was subject to a fire on April 17, 2023 and demolished in 2023
- 16 South Main Street (Tax ID 142.30-2-47) – a vacant lot with C&D debris and building foundation from the former building that was subject to a fire on April 17, 2023 and demolished in 2023
- 15 East Broadway (Tax ID 142.30-2-58) – a vacant three-story residential building
- 106 Westchester Avenue (Tax ID 142.30-2-54) – a three-story mixed-use commercial and residential building (with one commercial and one residential tenant) with a partial cellar.

All parcels are owned by the Volunteer, except for the 106 Westchester Avenue parcel, which is owned and occupied by tenants of the owner Sudershan Singla. Acquisition of this parcel is estimated for November 2024, after which the building will be vacated.

## 1.2 Redevelopment Plan

The proposed redevelopment plan includes the demolition and removal of all existing structures and construction of a 12-story mixed-use residential and commercial building, with cellar and sub-cellar levels spanning the full site footprint. Sub-cellars will be used for residential and valet parking and utility connection/sprinkler rooms. The cellar will be occupied by the building lobby, commercial retail spaces, and building amenities (e.g., library, gymnasium, bicycle storage, garden, and pool). Floors 1 through 12 will consist of residential spaces. The roof plan includes outdoor recreational and green spaces, an elevator mechanical bulkhead, and a generator. A copy of the proposed redevelopment plans is included in Appendix A.

## 1.3 Description of Surrounding Properties

The site is in an urban setting that is characterized by residential, commercial, and mixed-use residential and commercial buildings. The site is bound to the north by Westchester Avenue followed by a two-story mixed-use commercial and residential building (101-111 Westchester Avenue); to the east by South Main Street followed by a five-story commercial and retail building (Waterfront Place/Westchester Avenue); to the south by vacant land (18 South Main Street); and to the west by a two-story mixed-use commercial and residential building (110 Westchester Avenue) and East Broadway, followed by the New Haven line of the Metro North Railroad (Metro North). A Site Location Map and Site Plan are provided as Figure 1 and Figure 2, respectively.

The following table summarizes surrounding property usage:

Direction	Westchester County Tax Parcel	Adjoining Properties	Surrounding Properties
North	142.30-2-24	Westchester Avenue 101-111 Westchester Avenue 2-story mixed-use residential & commercial building	Mixed-use residential and commercial buildings
		South Main Street Waterfront Place 5-story mixed-use residential & shopping center	
East	142.31-1-43.1	18 South Main Street Vacant Land	
South		142.30-2-67	
West	142.30-2-55	East Broadway followed by the New Haven Line of the Metro North	

Major infrastructure (storm drains, sewers, and underground utility lines) exists within the streets surrounding the site, including beneath the South Main Sidewalk fronting the site.

Land use within a half-mile of the site is urbanized and includes mixed-use buildings, light industrial and commercial buildings, and institutional facilities. Sensitive receptors, as defined in DER-10, located within a half-mile of the site include those listed below:

Name (Approximate distance from Site)	Address
Uceda Institute (approximately 0.27 miles north)	158 North Main Street Port Chester, NY 10573
Port Chester Head Start (approximately 0.31 miles northwest)	17 Spring Street Port Chester, NY 10573
Wisława Szymborska Polish School (approximately 0.35 miles north)	239 Willet Avenue Port Chester, NY 10573
Rosy's Little Angels Family Day Care (approximately 0.35 miles west)	43 Soundview Street Port Chester, NY 10573
John F. Kennedy Elementary School (approximately 0.36 miles southwest)	40 Olivia Street Port Chester, NY 10573
Magic Clouds Day Care (approximately 0.40 miles northwest)	18 Parker Street Port Chester, NY 10573
New Lebanon School (approximately 0.46 miles east)	25 Mead Avenue Greenwich, CT 06830

#### 1.4 Site History

##### 1.4.1 Historical Site Use

The site and surrounding area in an urban setting historically characterized by industrial and mixed-use residential and commercial buildings. The site was formerly ten separate tax lots. Historical uses for each former lot are presented below:

- 2 South Main Street (Tax ID 142.30-2-69) – Formerly 2, 4, 6, 8, and 10 South Main Street and 7 East Broadway – Grocery store (1902 to 1915), saloon (1902), stationary store (1915, 1950 to

2023), shoe repair shop (1992 to 2014), residential (1885 to 1990), furniture store (1902 to 1915), photo store (1930 to 1950), bank (1982 to 1996), commercial offices (1902 to 2023), commercial store (1934 to 2024), restaurant (1934 to 2024), laundry shop (1934 to 2024) and parking lot (1990 to present)

- 14 South Main Street (Tax ID 142.30-2-48) – Commercial shop (1885 to 1895), blacksmith (1902), commercial stores (1908), drug store (1915), commercial stores, restaurants, and offices (1934 to 2021)
- 16 South Main Street (Tax ID 142.30-2-47) – Residential (1885 to 1890), commercial stores, restaurants, and offices (1902 to 2021)
- 15 East Broadway (Tax ID 142.30-2-58) – Residential (1902 to 2024)
- 106 Westchester Avenue (Tax ID 142.30-2-54) – Saloon (1890 to 1895), barber (1902 to 1908), commercial stores and residential (1915 to present)

According to the NYSDEC Petroleum Bulk Storage (PBS) database, the building at 2 South Main Street previously contained a 2,000-gallon steel/carbon underground storage tank (UST) containing fuel oil that was removed on November 18, 1993. Details on installation date and/or containment are not provided in the PBS listing. Additionally, two out-of-service aboveground storage tanks (AST) and one in-service No. 2 fuel oil AST were identified at the site during the Phase I site reconnaissance in June 2021. The ASTs are not listed in the NYSDEC PBS database and information regarding installation and decommissioning dates, contents, and/or containment were not available to Langan at the time of the inspection. According to the demolition contractor, the ASTs were removed from the buildings prior to demolition (completed by the prior building owner) and documentation is pending. A UST-like anomaly, fill port, and vent line were identified in the sidewalk immediately east of 8 South Main Street during the June 2021 and April 2024 geophysical surveys, performed by NOVA Geophysical Services (NOVA) (discussed in further detail in Section 1.4.2).

The surrounding area was historically used for residential, commercial, and light industrial operations. Several surrounding properties have documented petroleum storage and releases. Historical operations and uses of environmental concern at adjoining and surrounding properties include auto service and repair, filling stations, and dry cleaning facilities.

#### **1.4.2 Previous Environmental Reports and Investigations**

Previous environmental reports (pre-RI) were reviewed and are summarized in chronological order below.

- May 19, 2021 Geotechnical Engineering Letter Report, prepared by Langan
- June 29, 2021 Phase I Environmental Site Assessment (ESA), prepared by Langan
- May 9, 2023 Phase II ESI Report, prepared by Langan

The following previous reports are included in Appendix B.

*May 19, 2021 Geotechnical Engineering Letter Report, prepared by Langan*

Langan completed a geotechnical investigation for the site from April 7 through May 7, 2021 to evaluate subsurface conditions within the proposed redevelopment area. The assessment included the advancement of four geotechnical borings up to 55 feet below grade surface (bgs) and installation of two permanent observation wells.

Borings indicated site stratigraphy consists of fine to coarse sand beneath surficial concrete and asphalt covered surfaces to depths of about 1 to 23 feet bgs. A fill layer was encountered beneath the sidewalk northeast of the site and consisted of medium to coarse sand, with varying amounts of silt and gravel extending from immediately below the concrete surface cover to about 9 feet bgs. A layer of weathered rock was encountered in three borings in the parking lot in the western part of the site). Competent bedrock was encountered in three borings either below the sand layer or the weathered bedrock layer, at depths from about 12 to 27 feet bgs.

The following previous environmental reports are appended to the RIR, which is included in Appendix B of this RAWP.

*June 29, 2021 Phase I ESA, prepared by Langan*

The Phase I ESA was prepared on behalf of 2SM Development, LLC for the site. The report was prepared in accordance with ASTM International Standard Practice for ESAs E1527-13, and identified the following recognized environmental conditions (REC):

**REC 1 – Petroleum Bulk Storage at the Subject Property**

Through interviews with site personnel during the site reconnaissance, Langan identified two out-of-service ASTs and one in-service No. 2 fuel oil AST at the site. The ASTs were not identified in the NYSDEC PBS database and details on installation and decommissioning dates, contents, and/or containment were not available at the time of the inspection. The NYSDEC PBS database details one 2,000-gallon UST that was previously removed from the northeastern part of the site. Details on installation date and/or containment are not provided in the PBS listing.

**REC 2 – Historical Use, Open NYSDEC Spill Incidents, and Petroleum Bulk Storage at Surrounding Properties**

Historical and current operations at surrounding properties have included petroleum storage, reported releases, and automotive repair which may have resulted in subsurface impacts at the site due to known releases, undocumented releases, or cumulative impacts. Historical uses of concern were identified at surrounding up-gradient properties including a filling station at 29 New Broad Street (1934), auto sales and service stations at 29 New Broad Street (1950-2006) and 5 New Broad Street (1990-1994), an auto repair shop and gas station at 28 Pearl Street (1969-2014), and a residential spill of No. 2 fuel oil at 25 East Broadway (2004).

Review of the NY SPILLS, NY PBS UST and AST, and Resource Conservation and Recovery Act database listings for the property at 28 Pearl Street (NYSDEC BCP Site No. C360214) revealed that six 2,000-gallon USTs were previously removed from the location, which had three to four 250- to 275-gallon active ASTs.

May 9, 2023 Phase II ESI Report, prepared by Langan

Langan implemented a Phase II ESI from June 16 through 30, 2021; September 21, 2021; and April 11 and 12, 2023 for the site. The investigations consisted of performing a geophysical survey to locate USTs, structures, and utilities; advancing 23 soil borings to depths up to 12 feet below existing cover; installing four permanent and two temporary monitoring wells and two sub-slab soil vapor points; and collecting and analyzing soil, groundwater, and sub-slab soil vapor samples. This investigation was performed before the former buildings occupying 14 and 16 South Main Street were subject to a fire on April 17, 2023 and then demolished. Field observations and laboratory analytical results are summarized below:

- The geophysical survey identified one UST-like anomaly in the sidewalk immediately east of 8 South Main Street.
- Fine to medium sand followed by weathered bedrock was observed immediately below the existing surface cover (concrete slab within buildings) to the boring termination depths within 2 South Main Street, former 8 South Main Street, 14 South Main Street, and 106 Westchester Avenue. Fine sand followed by silty sand was encountered below the existing surface cover (concrete slab within buildings) to the boring termination depths within 10 South Main Street and 15 East Broadway. Fill consisting of fine sand, with trace medium sand, and varying amounts of brick and glass followed by weathered bedrock was observed immediately below the existing surface cover (concrete slab within buildings) to the boring termination depths within 16 South Main Street. Refusal due to presumed bedrock was encountered between about 1 and 4 feet below cellar grade (bcg) in 2 South Main Street, 4 South Main Street, 8 South Main Street, 14-16 South Main Street, and 106 Westchester Avenue. Presumed bedrock was encountered between 4 and 12 feet bgs in former 6 South Main Street, former 10 South Main Street, and 15 East Broadway.
- Groundwater was encountered at about 0.5 to 2 feet bcg in 2 South Main Street, 4 South Main Street, 14 South Main Street, 16 South Main Street, and 106 Westchester Avenue.
- The following petroleum-like impacts were observed in soil and groundwater:
  - Petroleum-like impacts (odors, staining, and/or photoionization detector [PID] readings above background) were observed in soil borings in 2 South Main Street, 4 South Main Street, 14 South Main Street, 16 South Main Street, and 106 Westchester Avenue.
  - A petroleum-like odor was observed during the sampling of wells MW01 (2 South Main Street), MW03 and MW04 (14 South Main Street), and yellow free product was observed in MW03 and MW04. A sheen was observed during the sampling of temporary

monitoring wells TMW21 and TMW22 (16 South Main Street). Petroleum-related volatile organic compounds (VOC) were detected in groundwater in TMW21 and MW01 at concentrations above the NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values (SGV) for Class GA (drinking water) (collectively referred to as SGVs). Other petroleum-related VOCs were detected in groundwater, but results were below the SGVs.

- Soil Analytical Results:

- The SVOCs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene, exceeded the Title 6 of the New York Codes, Rules, and Regulations (6 NYCRR) Part 375 Restricted Use Restricted-Residential (RURR) Soil Cleanup Objectives (SCO) in soil at 16 South Main Street
- The metals arsenic, barium, cadmium, lead, and/or mercury exceeded RURR SCOs at various locations throughout the site.
- VOCs, pesticides, polychlorinated biphenyls (PCB), and PFAS were either not detected in soil samples or were reported below RURR SCOs.

- Groundwater Analytical Results:

- Groundwater contains VOCs and SVOCs at concentrations exceeding the NYSDEC SGVs.

- Sub-Slab Vapor Analytical Results:

- No regulatory standard currently exists for sub-slab soil vapor samples in New York State. Petroleum-related compounds and chlorinated solvents were detected in both soil vapor samples. Total VOCs were detected in sub-slab vapor samples SV01\_061721 and SV02\_061721 at 3,766.5 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) and 640.7  $\mu\text{g}/\text{m}^3$ , respectively. Benzene, toluene, ethylbenzene, and xylene concentrations in SV01\_061721 and SV02\_061721 were reported at 107.6  $\mu\text{g}/\text{m}^3$  and 72.8  $\mu\text{g}/\text{m}^3$ , respectively.

## **2.0 DESCRIPTION OF REMEDIAL INVESTIGATION FINDINGS**

The RI was implemented from April 1 through May 31, 2024 to determine the nature and extent of contamination in soil, groundwater, and soil vapor, evaluate the nature of any impacts emanating from the site, and to design a remedy that will be protective of human health and the environment.

Langan completed the BCP RI in accordance with the NYSDEC-approved March 1, 2024 RIWP, prepared by Langan; 6 NYCRR Part 375-3.8; NYSDEC DER-10 (May 2010); the NYSDEC Draft BCP Guide (May 2004); the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006 and subsequent updates); and the Sampling, Analysis and Assessment of PFAS under NYSDEC's Part 375 Remedial Programs", dated April 2023. The July 26, 2024 DRAFT RIR is included in Appendix B.

### **2.1 Summary of the Remedial Investigation**

The RI consisted of the following:

#### Geophysical Survey

- Completion of a geophysical survey to identify subsurface anomalies consistent with USTs and to clear sample locations from physical and/or subsurface utilities and structures

#### Soil Borings and Sampling

- Advancement of 20 soil borings to a maximum depth of 14 feet bgs
- Continuous field screening of recovered soil for environmental impacts using visual and olfactory methods and with a PID equipped with a 10.6 electron volt lamp
- Collection of 30 grab soil samples (plus four quality assurance/quality control [QA/QC] samples) for laboratory analysis

#### Monitoring Well Installation and Sampling

- Installation and development of eight monitoring wells to a maximum depth of 25 feet bgs
- Collection of one groundwater sample from each newly installed monitoring well (nine samples) and one groundwater sample from each existing<sup>1</sup> monitoring well in working condition (four samples), for a total of 13 groundwater samples (plus two QA/QC samples) for laboratory analysis
- Surveying and gauging of existing and newly installed monitoring wells to evaluate groundwater elevation and the presence of non-aqueous phase liquid

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<sup>1</sup> Existing monitoring wells in accessible, working condition included MW01, MW02 and LB-4.



### Soil Vapor and Ambient Air Sampling

- Installation of one sub-slab soil vapor sampling point (SV05) one foot below the existing slab at 10 South Main Street (about the center of the site)
- Installation of four soil vapor sampling points (SV06 through SV09) to about 5 feet bgs in the southeastern and western parts of the site
- Collection of one soil vapor sample from each sub-slab vapor point and soil vapor point (plus QA/QC sample) for laboratory analysis

The findings and conclusions of the RI include:

1. Stratigraphy: The site has steep slopes with surface elevations varying from about el 32 along the western site border (in parking lot) to about el 12 – 13 along the South Main Street sidewalk. Fill consisting of fine to medium sand with varying amounts of silt, clay, gravel, wood, and anthropogenic materials (brick, concrete, glass, metal, and ceramics) was encountered across the site at varying depths to about 1 to 4 feet below basement slabs in the east part of the site (about el 4.5) to about 13 feet below grade surface (bgs)/el 19 in the western part of the site. Fine sand with varying amounts of silt, and gravel, was encountered beneath the fill. In some areas, the layer extends to bedrock. Bedrock was encountered across the site from about el 1 to 4 in the east part of the site to about el 17 to el 25 in the west part of the site.
2. Hydrogeology: Groundwater elevations measured in on-site overburden and bedrock wells ranged from el 3.88 to 27.60 with variability attributed to site grade changes and varying depths to bedrock. Groundwater contours were not prepared for the site bedrock groundwater data because water within bedrock fractures does not follow topography and contour modeling would not be representative of site conditions. Regional overburden water is expected to flow east to the Byram River. Regional groundwater flow is estimated to the east towards the Byram River.
3. Petroleum Bulk Storage and Geophysical Findings: According to the demolition contractor, the ASTs at 14 and 16 South Main Street were removed following the April 2023 fire and prior to building demolition. The northeastern part of the site is registered as NYSDEC PBS Site No. 3-600479 and is associated with a 2,000-gallon steel UST that was closed and removed on November 18, 1993. Geophysical Engineering Survey Reports prepared by NOVA in June 2021 and April 2024 identified a UST-like anomaly in the sidewalk immediately east of 8 South Main Street. The April 2024 survey identified a fill port and vent line within the sidewalk extending from the anomaly to the building at 8 South Main Street. The geophysical surveys also identified electric, sewer, gas, telecom, and water utilities beneath the sidewalks fronting the site along South Main Street, Westchester Avenue, and East Broadway. Electric, sewer, gas, telecom, and water utilities were also identified extending across 7 and 15 East Broadway.

4. Petroleum- and/or Chemical-Impacted Soil, Groundwater, and Soil Vapor: Nuisance petroleum odors, staining, yellow free-phase product, and PID readings above background were observed in the northeastern and southeastern parts of the site (Area of Concern [AOC] 1). The observed impacts to soil span an area of about 10,660 square feet at various depths between about 0 and 9 feet bgs. Petroleum-related SVOCs were detected at concentrations exceeding the Title 6 of the New York Codes, Rules, and Regulations (6 NYCRR) Part 375 Unrestricted Use (UU) and/or Restricted Use Residential (RUR) SCOs in soil samples collected in the impacted area at depths of about 6 to 8 feet bgs. VOCs and SVOCs, including several petroleum-related compounds, were detected in groundwater above the SGVs within AOC 1. Petroleum-related VOCs were also detected in soil vapor. Petroleum-related contamination in soil, groundwater, and soil vapor at the site is attributed to former and abandoned PBS tanks.
5. SVOC-, Pesticide-, and Metals-Impacted Soil: SVOCs, pesticides, and metals were detected in soil/fill across the site at concentrations exceeding the UU and/or RUR SCOs to depths of up to 13 feet bgs. SVOC, pesticide, and metals impacts may be attributed to anthropogenic materials comingled in soil/fill.
6. Soil Vapor: Chlorinated solvents and petroleum-related VOCs were identified in soil vapor samples. An on-site source of chlorinated solvents was not identified. Petroleum-related VOCs identified in soil vapor samples across the site may be attributed to a combination of former on-site petroleum bulk storage and/or off-site sources.
7. PFAS Impacts to Groundwater: The PFAS compounds perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) in groundwater samples exceeded the SGV in each groundwater sample analyzed for this parameter suite. The PFAS compound PFOS in soil samples exceeded UU SCOs (April 2023 PFAS Guidelines) in borings EB11, EB38, EB 39, and EB40, but did not exceed the guidance RUR SCOs (April 2023 PFAS Guidelines) except for soil samples from the bedrock interface in borings EB11 and EB38 in the western part of the site. Because there are no historic site uses associated with PFAS and perched groundwater elevations can fluctuate seasonally, the limited PFOS exceedances of RUR SCO in soil may be related to a groundwater condition. According to NYSDEC InfoLocator, PFAS results for groundwater samples are similar to results from other nearby NYSDEC remediation sites to the west, north, south, and northeast.

## 2.2 Significant Threat

A determination of whether the site poses a significant threat to human health and the environment will be made by NYSDEC and NYSDOH. A copy of the significant threat determination will be provided as Appendix C in the final RAWP.

## **2.3 Geological Conditions**

### **2.3.1 Regional and Site Geology**

The site is underlain by fill predominantly consisting of gray to tan to brown, fine- to medium sand with varying amounts of silt, clay, gravel, wood, and anthropogenic materials (brick, concrete, glass, metal, and ceramics) that extends from surface grade to 13 feet bgs. Tan- to brown, fine sand with varying amounts of silt, and gravel, was encountered beneath the fill. In some areas, the fill layer extends to bedrock. Weathered bedrock was encountered across the site at depths ranging from 1 to 15 feet bgs and competent bedrock consisting of gray gneiss was encountered between 12 and 27 feet bgs in the western part of the site, corresponding to el -10 and el 16. A more extensive geotechnical evaluation is planned for Summer 2024.

### **2.3.2 Regional and Site Hydrogeology**

Groundwater flow is typically topographically influenced, as shallow groundwater tends to originate in areas of topographic highs and flows toward areas of topographic lows such as rivers, stream valleys, ponds, and wetlands. A broader, interconnected hydrogeologic network often governs groundwater flow at depth or in the bedrock aquifer. Groundwater depth and flow direction are also subject to hydrogeologic and anthropogenic variables such as precipitation, evaporation, extent of vegetation cover, coverage by impervious surfaces, and subsurface structures. Other factors influencing groundwater include depth to bedrock, the presence of anthropogenic fill, and variability in local geology and groundwater sources or sinks.

Groundwater measurements were collected on May 31, 2024 from monitoring wells installed during the 2023 Phase II ESI and RI. Groundwater was encountered at elevations ranging from about el 3.88 to 27.60 (about 1.2 to 10 feet below top of casing). Groundwater contours were not prepared because water within bedrock fractures do not follow topography and contour modeling would not be representative of site conditions. Regional overburden water is expected to flow east to the Byram River. Groundwater in the Village of Port Chester is not used as a potable water source. Potable water is supplied by Suez North America.

### **2.3.3 Wetlands and Floodplain**

According to the United States Fish & Wildlife Service National Wetlands Inventory and NYSDEC regulated wetlands map, there are no wetlands at the site or adjacent to the site. The Byram River is about 500 feet east of the site and is identified as an estuarine and marine deep-water wetland with adjacent tidal wetlands. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Panel 36119C0356F shows that most of the site is outside the flood zone, with part of the site along South Main Street within Flood Hazard Zone X with a 0.2% annual chance of flood.

## **2.4 Contamination Conditions**

### **2.4.1 Conceptual Model of Site Contamination**

A conceptual site model (CSM) was developed based on the findings of the Phase II ESI and RI. The purpose of the CSM is to develop a simplified framework for understanding the distribution of impacted materials, potential migration pathways, and potentially complete exposure pathways.

#### *2.4.1.1 Potential Sources of Contamination*

Potential sources of contamination include:

- Petroleum-impacted soil and groundwater resulting from former or abandoned PBS tanks
- SVOC, metal, and pesticide impacts to soil from anthropogenic materials identified in soil/fill; and
- PFAS-impacts to soil and overburden and bedrock groundwater.

#### *2.4.1.2 Exposure Media*

Impacted media include soil, groundwater, and soil vapor. Visible impacts from petroleum were identified in soil and groundwater in the eastern part of the site. Analytical results indicate petroleum-related VOCs are present in groundwater and soil vapor. Chlorinated solvents were also detected in soil vapor, but an on-site source was not identified. Soil throughout the site also contains SVOCs, pesticides, and metals. PFAS are present in soil and groundwater.

#### *2.4.1.3 Receptor Populations*

Current receptor populations are limited to the community surrounding the site, commercial and residential tenants at 106 Westchester Avenue, and authorized individuals completing investigations. During site redevelopment, human receptors will be limited to construction and remediation workers, authorized guests, and the community and pedestrians adjacent to the site. Under future conditions, receptors will include the residential and commercial use occupants, employees, and the nearby community.

### **2.4.2 Description of Areas of Concern**

The following AOCs have been identified based on the results of the RI. AOC locations are shown on Figure 3.

#### *2.4.2.1 AOC 1: Petroleum and/or Chemical Impacts*

On-site petroleum and/or chemical impacts, as evidenced by odors, staining, and elevated PID readings above background were observed at depths from 0.5 to 4 feet bgs in the northeastern part of the site and from 7 to 9 feet bgs (below C&D debris) in the southeastern part of the site. During the Phase II ESI, a sheen was observed during the sampling of temporary monitoring wells TMW21 and TMW22 and yellow free-phase product was observed during the sampling of monitoring wells MW03 and MW04 in the southeastern part of the site; however, these wells were no longer present during the RI or were buried

under C&D debris as a result of building demolition following the April 2023 fires. Petroleum-related VOCs and SVOCs in groundwater exceeded SGVs in northeastern and southeastern parts of the site, respectively. Petroleum-related VOCs were also detected in soil vapor samples throughout the site. The noted petroleum impacts are attributed to former on-site petroleum bulk storage.

#### *2.4.2.2 AOC 2: SVOC-, Pesticide-, and Metals-Impacted Soil*

SVOC, pesticides, and metals impacts to soil were encountered throughout the site at varying depths to 13 feet bgs and may be anthropogenic materials comingled in soil.

#### *2.4.2.3 AOC 3: PFAS Impacts to Groundwater*

The PFAS compounds PFOS and PFOA in groundwater samples exceeded the SGVs in each groundwater sample analyzed for this parameter suite. The PFAS compound PFOS in soil samples exceeded UU SCOs (April 2023 PFAS Guidelines) in borings EB11, EB38, EB 39, and EB40, but did not exceed RUR SCOs (April 2023 PFAS Guidelines) except for soil samples from the bedrock interface in borings EB11 and EB38 in the western part of the site. Because there are no historic site uses associated with PFAS and perched groundwater elevations can fluctuate seasonally, the limited PFOS exceedances of RUR SCO in soil may be related to a groundwater condition.

### **2.4.3 Nature and Extent of Contamination**

This section summarizes the nature and extent of soil, groundwater, and soil vapor contamination.

#### *2.4.3.1 Soil Contamination*

Fine- to medium sand with varying amounts of silt, clay, gravel, wood, and anthropogenic materials (brick, concrete, glass, metal, and ceramics) was encountered across the site beneath the surface cover to varying depths with a maximum of about 13 feet bgs. Concentrations of SVOCs, metals, and pesticides were detected in soil across the site at concentrations exceeding the UU and/or RUR SCOs and are likely attributable to anthropogenic materials comingled in soil/fill at depths between 0 and 13 feet bgs. Petroleum-like staining, odors, and/or elevated PID readings were encountered in soil borings in the northeastern and southeastern parts of the site. The petroleum-impacted area is estimated to be an approximately 10,600-square-foot area at depths between about 0 and 9 feet bgs. PFAS were detected in five soil borings in the western part of the site at concentrations exceeding the UU and/or RUR SCOs (April 2023 PFAS Guidelines). The PFAS-impacted soil area is estimated at about in an approximately 1,430-square-foot area to about 3 to 4 feet bgs (the bedrock interface) in the western part of the site.

VOCs, SVOCs, metals, and pesticides were detected at concentrations above the UU and/or RUR SCOs. UU and RUR exceedances were encountered to depths of about 13 feet bgs. Soil sample analytical results are shown on Figures 4A, 4B, and 4C.

#### *2.4.3.2 Groundwater Contamination*

Groundwater impacts include VOCs, SVOCs, and PFAS (with incidental impacts to the bedrock interface from inferred perched water fluctuations). Petroleum-impacted soil and former and/or abandoned PBS

tanks in AOC 1 appear to be the source of VOCs and SVOCs in groundwater in AOC 1. PFOA and PFOS were detected in 8 groundwater samples above SGVs. An on-site source of PFAS was not identified. Groundwater sample analytical results are shown on Figures 5A, 5B, and 5C.

#### 2.4.3.3 Soil Vapor Contamination

Chlorinated and petroleum-related VOCs were identified in soil vapor samples. An on-site source or chlorinated solvents was not identified. Petroleum-related VOCs identified in soil vapor samples across the site may be attributed to a combination of former on-site petroleum bulk storage tanks and/or off-site sources. Soil vapor sample analytical results are shown on Figure 6.

## 2.5 Environmental and Public Health Assessments

### 2.5.1 Qualitative Human Health Exposure Assessment

Based on the CSM and review of environmental data, complete on-site exposure pathways appear to be present in the absence of remediation, monitoring and mitigation, or engineering controls (EC) (ex., Construction Health and Safety Plan [CHASP] with a Community Air Monitoring Plan [CAMP], capping system, etc.), in construction/remediation and future use conditions.

Complete exposure pathways have the following five elements: (1) a contaminant source; (2) a contaminant release and transport mechanism; (3) a point of exposure; (4) a route of exposure; and (5) a receptor population. A discussion of the five elements comprising a complete pathway as they pertain to the site is provided below.

#### 2.5.1.1 Current Conditions

Contaminant sources include 1) petroleum-impacted soil, 2) soil with varying concentrations of SVOCs, pesticides, metals, and PFAS; 3) groundwater containing varying concentrations of VOCs, SVOCs, and PFAS; and 4) VOCs in soil vapor.

Contaminant release and transport mechanisms include contaminated soil transported as dust (dermal, ingestion, inhalation). The potential receptors on-site include commercial and residential tenants at 106 Westchester Avenue and authorized individuals completing investigations. Under current conditions, the likelihood of exposure to humans is limited due to the following:

- The site footprint is approximately 60 percent covered by a concrete slab and/or asphalt pavement, which limits direct contact with soil, groundwater, and soil vapor. The on-site buildings are currently vacant except for the building at 106 Westchester Avenue. During the RI and Phase II ESI, total VOC in sub-slab/subsurface soil vapor ranged from 98.13  $\mu\text{g}/\text{m}^3$  in SV08 to 3,766.46  $\mu\text{g}/\text{m}^3$  in SV01 (the closest soil vapor sample to 106 Westchester Avenue). Indoor air samples were not collected during the RI as the buildings will be demolished prior to remediation and construction.
- Access to the site is restricted to ownership and authorized visitors for parcels owned by the Volunteer. The 106 Westchester Avenue parcel has not yet been acquired by the Volunteer and

is still occupied by commercial and residential tenants. Chain-link fencing fronts 14 and 16 South Main Street along both the South Main Street and East Broadway sidewalks. The Volunteer is currently constructing an additional fence between 16 South Main Street and the south-adjointing parcel to provide additional measures in restricting site access. The Volunteer provided on site personnel for 24/7 site security since first acquisitions began in August of 2021 until fully acquiring all parcels to date other than the 106 Westchester Avenue parcel. During that time, the security team has successfully secured the site from potential unauthorized persons / trespassers. Beginning earlier this year, the security detail has roving hours of security daily to continue to ensure the properties remain secure.

- Groundwater at the site is not a potable water source.

#### 2.5.1.2 Remediation Activities

During the remedial excavation and foundation construction stage of redevelopment, points of exposure include disturbed and exposed soil and groundwater during excavation and possible dewatering, and dust and potential organic vapors generated during excavation. Routes of exposure include ingestion and dermal absorption of contaminated soil and groundwater, inhalation of potential organic vapors arising from contaminated groundwater and soil, and inhalation of dust originating from contaminated soil. The receptor population includes construction and remediation workers. The community adjacent to the site will be protected via implementation of the CHASP, CAMP, and other dust control measures to prevent off-site impacts.

The potential for completed on-site exposure pathways is present since all five elements exist; however, the risk can be avoided or minimized by applying appropriate health and safety measures during construction and remediation, such as monitoring the air for organic vapors and dust, using vapor and dust suppression measures, cleaning truck undercarriages and securing tarp covers before they leave the site to prevent off-site soil tracking, maintaining site security, and wearing the appropriate personal protective equipment. These measures are also designed to prevent off-site impacts.

A RAWP with a CHASP and a CAMP that include measures such as conducting a community air-monitoring program, donning personal protective equipment, covering soil stockpiles, altering work sequencing, restricting eating and drinking on-site, maintaining a secure construction entrance, proper housekeeping, and applying vapor and dust suppression measures to prevent off-site migration of vapors and particulates during construction will be implemented. Such measures will prevent completion of exposure pathways for soil, groundwater, and soil vapor contaminants.

#### 2.5.1.3 Proposed Future Conditions

Under the proposed future conditions, contamination will likely not remain on the site following remediation. The proposed remedy will include removal of the sources of soil, weathered bedrock, groundwater, and soil vapor contamination (proposed remedial excavation is shown on Figure 7). Additional bedrock (beyond remedial excavation) will be removed for the proposed development. Routes

of exposure and receptor populations are not applicable, as the source of contamination will be removed. Following the planned Track 1 remedy, if achieved, the site would not be subject to a Site Management Plan.

#### 2.5.1.4 Human Health Exposure Assessment Conclusions

1. Human exposure to site contaminants is currently limited because about 60 percent of the site is covered with an impermeable surface and access to the site is restricted to ownership and authorized visitors, and residential and commercial tenants at 106 Westchester Avenue. The primary exposure pathways are dermal contact, ingestion, and inhalation of soil by site workers and site occupants. The exposure risks can be avoided or minimized by following the appropriate CHASP and vapor and dust suppression measures, and by implementing a CAMP during any soil disturbance.
2. In the absence of mitigation measures and controls, there is potential for exposure during remediation. The primary exposure pathways are:
  - c. Dermal contact, ingestion, and inhalation of contaminated soil, groundwater, and/or soil vapor by remediation workers
  - d. Dermal contact, ingestion, and inhalation of soil (dust) and inhalation of soil vapor by the community in the vicinity of the siteThese contacts can be avoided or minimized by implementing CAMP and by following the appropriate CHASP, vapor and dust suppression, soil erosion and sediment control, and site security measures, and following a NYSDEC-approved RAWP.
3. The existence of a complete exposure pathway for site contaminants to human receptors during the proposed future use condition is unlikely, as all sources of contamination and additional bedrock will be excavated, and the site will be dewatered.
4. Regional groundwater is not used as a potable water source in the Village of Port Chester; therefore, exposure to regional groundwater contaminants is unlikely.
5. It is possible that a complete exposure pathway exists for the migration of site contaminants to off-site human receptors during current and remediation conditions, but such potential exposure will be prevented or mitigated by implementation of monitoring and control measures. Monitoring and control measures have been and will continue to be used during investigation and remediation to prevent completion of this pathway. Under future conditions, contaminant sources (and related exposure risk) would be removed.

#### 2.5.2 Fish & Wildlife Resources Impact Analysis

In addition to the human health exposure assessment, NYSDEC DER-10 requires an on-site and off-site United States Fish and Wildlife Resources Impact Analysis (FWRIA) if certain criteria are met. Based on



the requirements stipulated in Section 3.10 and Appendix 3C of DER-10, there was no need to prepare a FWRIA for the site.

**2.6 Remedial Action Objectives**

Based on the results of the Phase II ESI and RI, the following Remedial Action Objectives (RAO) have been identified:

RAOs	RAOs for Public Health Protection	RAOs for Environmental Protection
Soil	<ul style="list-style-type: none"> <li>Prevent ingestion/direct contact with contaminated soil</li> <li>Prevent inhalation of, or exposure to, contaminants volatilizing from contaminated soil</li> </ul>	<ul style="list-style-type: none"> <li>Prevent migration of contaminants that would result in groundwater contamination</li> </ul>
Groundwater	<ul style="list-style-type: none"> <li>Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards</li> <li>Prevent contact with, or inhalation of, volatiles emanating from contaminated groundwater</li> </ul>	<ul style="list-style-type: none"> <li>Restore groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable</li> <li>Remove the source of groundwater contamination</li> <li>Prevent the discharge of contaminants to surface water</li> </ul>
Soil Vapor	<ul style="list-style-type: none"> <li>Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at the site</li> </ul>	

**Commented [MC4]:** Should be removed, all others are approved.

### **3.0 DESCRIPTION OF REMEDIAL ACTION PLAN**

This section presents an evaluation of the proposed remedial alternatives. The proposed remedial alternatives are a Track 1 remedy for Alternative I and a Track 2 remedy for Alternative II. The proposed SCOs will be the UU SCOs for Alternative I (Track 1) and RUR SCOs for the Alternative II (Track 2).

The recommended remedial alternative, based on an evaluation of the alternatives, is a Track 1 UU cleanup.

This section is organized as follows:

- Section 3.1 describes the remedial standards, criteria, guidance, and objectives
- Sections 3.2 and 3.3 provide technical descriptions of:
  - Alternative I, a Track 1/UU remedy
  - Alternative II, a Track 2/RUR remedy
- Section 3.4 Describes green remediation standards
- Section 3.5 evaluates the remedial alternatives based on the BCP Remedy Selection Evaluation Criteria
- Section 3.6 discusses the recommended remedial alternative

#### **3.1 Standards, Criteria, and Guidance and Remedial Action Objectives**

In accordance with Environmental Conservation Law (ECL) § 27-1415 and DER-10, the objectives of the remedial action are to: 1) reduce the concentrations of contaminants of concern at the site to meet those levels that will protect public health and the environment, and 2) isolate the site from on-site migration of contaminated groundwater and soil vapor to the extent feasible, from potential off-site sources. In accordance with DER-10, the Volunteer will have no remedial responsibilities with respect to groundwater contamination migrating to the site from an off-site source; however, remedial alternatives will be developed for such a case that eliminate or mitigate on-site human exposures, to the extent feasible, resulting from potential off-site contamination entering the site since there are other suspect and known contaminated sites in the vicinity of this site. Where identifiable sources of contamination are found on the site, the sources will be removed or treated to the extent feasible.

Also, in accordance with DER-10, the RAOs for this site are defined as medium-specific objectives for the protection of public health and the environment and are developed based on contaminant-specific standards, criteria, and guidance (SCG), which include:

- 6 NYCRR Part 175 - Special Licenses and Permits--Definitions and Uniform Procedures
- 6 NYCRR Part 360 – Solid Waste Management Facilities General Requirements
- 6 NYCRR Part 361 - Material Recovery Facilities

- 6 NYCRR Part 364 – Waste Transporters
- 6 NYCRR Part 370 – Hazardous Waste Management System
- 6 NYCRR Part 371 – Identification and Listing of Hazardous Wastes
- 6 NYCRR Part 372 – Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities
- 6 NYCRR Subpart 374-1 – Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
- 6 NYCRR Subpart 374-2 – Standards for the Management of Used Oil
- 6 NYCRR Subpart 374-3 – Standards for Universal Waste
- 6 NYCRR Part 375 – Environmental Remediation Programs
- 6 NYCRR Part 376 – Land Disposal Restrictions
- 6 NYCRR Part 612 – Registration for Petroleum Storage Facilities (February 1992)
- 6 NYCRR Part 613 – Petroleum Bulk Storage
- 6 NYCRR Part 700-706 – Surface Water and Groundwater Classification Standards
- 6 NYCRR Part 750 – State Pollutant Discharge Elimination System (SPDES) Regulations
- 10 NYCRR Part 67 – Lead Poisoning Prevention and Control
- 12 NYCRR Part 56 – Industrial Code Rule 56 (Asbestos)
- Code of Federal Regulations (CFR) Title 29 Part 1910.120 – Hazardous Waste Operations and Emergency Response Standard
- CFR Title 29 Part 1926 – Safety and Health Regulations for Construction
- 40 CFR Part 280 – Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks
- 29 CFR Part 1910.120 – Hazardous Waste Operations and Emergency Response
- DAR-1 (formerly Air Guide 1) (1997) – Guidelines for the Control of Toxic Ambient Air Contaminants
- NYSDEC Title 6 of the New York Codes, Rules and Regulations
- NYSDEC – Permanent Closure of Petroleum Storage Tanks (July 1988)
- NYSDEC – Sampling, Analysis, and Assessment of PFAS Under NYSDEC’s Part 375 Remedial Programs (April 2023)

- NYSDEC – Spill Response Guidance Manual
- NYSDEC Commissioner Policy (CP)-43 – Groundwater Monitoring Well Decommissioning Policy (2009)
- NYSDEC CP-51 – Soil Cleanup Guidance (2010)
- NYSDEC DER-2 – Making Changes to Selected Remedies (Revised April, 2008)
- NYSDEC DER-10 – Technical Guidance for Site Investigation and Remediation (2010)
- NYSDEC DER-23 – Citizen Participation Handbook for Remedial Programs (March 2010)
- NYSDEC DER-31 – Green Remediation (August 2010)
- NYSDEC DER-32 – Brownfield Cleanup Program Applications and Agreements (June 2017)
- NYSDEC TOGS 1.1.1 – Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (1998)
- NYSDEC TOGS 1.3.8 – New Discharges to Publicly Owned Treatment Works
- TOGS 2.1.2 – Underground Injection/Recirculation at Groundwater Remediation Sites
- NYSDEC TOGS 5.1.8 – New York State Stormwater Management Design Manual (2008)
- NYSDEC TOGS 5.1.10 – New York Standards and Specifications for Erosion and Sediment Controls (2005)
- NYSDOH – Guidance for Evaluating Soil Vapor Intrusions in the State of New York (2006) and Subsequent Updates
- NYSDOH Environmental Health Manual CSFP-530 – “Individual Water Supplies - Activated Carbon Treatment Systems”
- NYSDEC Permanent Closure of Petroleum Storage Tanks (2003)
- Spills Technology and Remediation Series (STARS) #1 – Petroleum-Contaminated Soil Guidance Policy (1992) (Sections III and IV have been replaced by CP-51)
- STARS #2 – Biocell and Biopile Designs for Small-Scale Petroleum-Contaminated Soil Projects (1996)
- NYSDEC Spill Response Guidance Manual (1995)
- Technical and Administrative Guidance Memorandum 3028 – “Contained In” Criteria for Environmental Media: Soil Action Levels (August 1997)
- TOGS 1.1.1 – Ambient Water Quality Standards & Guidance Values and Groundwater Effluent Limitations (1998, Addenda 2000 and 2004)

- Title 10 of the Official Compilation of Codes, Rules and Regulations of the State of New York, Chapter 1, Part 5-1 – Drinking Water Supplies, Public Water Systems
- United States Environmental Protection Agency (USEPA) Title 40, Code of Federal Regulations

### 3.2 Alternative I – Technical Description

Alternative I, a Track 1 remedy, would include the following remedial elements:

- Development and implementation of a CHASP and CAMP for the protection of on-site workers, visitors, the community, and the environment including during remediation and construction
- To facilitate site remediation, abatement of regulated building materials and subsequent demolition of the site buildings, structures, subsurface obstructions (e.g., remnant foundation elements), and surficial asphalt cover by the Contractor and management of removed asphalt as C&D debris in accordance with Part 360 and 361 regulations. Review and certification of C&D debris transport and disposal methodologies would be the responsibility of contractors performing off-site transportation and disposal of C&D debris. The Remedial Engineer (RE) is responsible for documenting that C&D debris is not commingled with contaminated site soil and fill.
- Construction of the support of excavation (SOE) system to facilitate the Track 1 remedial excavation
- Site-wide excavation, with dewatering, and off-site disposal of contaminated soil exceeding the Part 375 UU SCOs (about 5,700 cubic yards) to depths of 3 to 14 feet bgs and up to about 10 feet of weathered and surficial bedrock across the site (about 9,960 cubic yards) to in part remove VOCs and PFAS in groundwater within shallow bedrock fractures
- Screening of excavated soil for indications of contamination by visual, olfactory, and instrumental methods
- Handling, transport, and off-site disposal of excavated soil in accordance with federal, state, and local rules and regulations for handling, transport, and disposal
- Decommissioning and removal of any encountered USTs and ASTs in accordance with 6 NYCRR Part 613 and NYSDEC DER-10 Section 5.5
- Decommissioning of existing on-site groundwater monitoring wells in accordance with NYSDEC CP-43 and installation of groundwater monitoring wells in locations accessible for sample collection
- Dewatering to reach remedial excavation depths, and treatment and discharge of dewatering fluids in accordance with applicable regulations and municipal permit requirements

- Import and placement of soil meeting the UU SCOs and/or crushed virgin stone as needed for building subgrade - Requests for import are subject to NYSDEC review and approval and would include a Request to Import/Reuse Soil Form.
- Green remediation principles and techniques, including a vapor barrier, would be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31.

**Commented [MCS]:** Does a vapor barrier have anything to do with preventing recontamination or the remedy?

The Track 1 SCOs are presented in Table 1. The Alternative I remediation extent is shown on Figure 7 and the requirements for each of the Alternative I tasks are described below.

### 3.2.1 On-Site Worker, Public Health, and Environmental Protection

A site-specific CHASP would be implemented during excavation and foundation construction to protect on-site Langan personnel from accidents and acute and chronic exposures to the identified contaminated media. Contractors performing RAWP operations would be required to develop and enforce their own HASP that is consistent with Occupational Safety and Health Administration (OSHA) requirements and, at a minimum, meets the requirements of the CHASP. Public health would be protected by implementing and enforcing dust, odor, and organic vapor control and monitoring procedures included in the CAMP. The CAMP would include continuous perimeter monitoring of dust and organic vapor using DustTrak aerosol monitors and PIDs capable of recording data and calculating 15-minute averages. Field personnel would monitor perimeters for visible dust and odors. The environment would be further protected by implementing and enforcing soil erosion prevention measures.

The CHASP is included in Appendix D. A site-specific CAMP was developed in accordance with the NYSDOH Generic CAMP, which includes special requirements if there are occupied structures within 20 feet, is provided as Appendix E.

### 3.2.2 Excavation, SOE, and Contaminated Soil and Fill Removal

Fill was identified from surface grade to depths of up to 13 feet bgs across the site and contains VOCs, SVOCs, pesticides, metals, and PFAS at concentrations exceeding the UU SCOs. To achieve a Track 1 remedy, soil exceeding the UU SCOs, as defined by 6 NYCRR Part 375-6.8, would be excavated and disposed of off-site. An extensive SOE system would be necessary to facilitate the Track 1 remedial excavation below the groundwater table.

The estimated remedial excavation would extend to between about 3 and 14 feet bgs<sup>1</sup> (about el 4.5 in the east part of the site to about el 19 in the west part of the site to remove fill/soil and an additional 10 feet to remove weathered bedrock. The estimated removal volume that would require off-site disposal is

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<sup>1</sup> 3-foot below cellar grade excavations in the northeast part of the site will require SOE installed to about 11 feet below the sidewalk to remove soil. Additional SOE would be necessary to remove the first 10 feet of weathered bedrock.

about 5,700 cubic yards of fill/soil and about 9,900 cubic yards of weathered bedrock. The estimate is based on the removal of soil/fill across the site to apparent bedrock. Impacted weathered bedrock, if observed, would also be removed as part of the Track 1 remedy. These depths were established based on the Phase II ESI and the RI sample concentrations that exceeded the UU SCOs and depth of refusal/presumed top of weather bedrock below. The proposed Track 1 excavation is presented on Figure 7.

C&D debris, with no observable contamination (e.g., petroleum), generated during the remedial excavation would be handled, transported, and disposed of in accordance with federal, state, and city regulations (including 6 NYCRR Part 360 Series regulations). Review and certification of regulated building materials and C&D debris transport and disposal methodologies would be the responsibility of contractors performing demolition and off-site transportation and disposal of C&D debris. The RE is responsible for documenting that C&D debris is not commingled with contaminated soil and fill.

### 3.2.3 Excavation Dewatering and Treatment

To achieve a Track 1 remedy, dewatering would be required to remove site fill/soil to about 3 to 14 feet bgs and up to about 10 feet of weathered bedrock. Dewatering would also act as a method of groundwater remediation in conjunction with source removal. The dewatering and treatment system would be designed, operated, and maintained by the Contractor's New York State-licensed PE. Prior to dewatering, the Contractor and their PE would obtain approval from the Village of Port Chester Engineer to discharge dewatering fluids to the municipal sewer. It is anticipated that pretreatment for VOCs and total suspended solids would be required, at a minimum. In the event a discharge to surface water is needed, the contractor must obtain a SPDES permit.

Commented [MC6]: Need SPDES or no?

### 3.2.4 UST Removal

A UST-like anomaly was identified in the sidewalk in front of 8 South Main Street during the June 2021 and April 2024 geophysical surveys, which also identified subgrade electric lines running on top of and immediately adjacent to the anomaly. Based on proximity to electric lines, removal is not proposed; however, the contractor shall complete hand digging to expose the tank and decommission in place, with a licensed tank contractor, via pumping out contents, if present, and cleaning.

Any USTs and/or associated appurtenances found during redevelopment would be decommissioned, disposed of off-site, and registered with the Westchester County Department of Health (WCDOH) and the NYSDEC PBS unit in accordance with 6 NYCRR Part 613.9, NYSDEC CP-51, and other applicable NYSDEC tank closure requirements including DER-10 Section 5.5. If encountered, petroleum-impacted soil and/or weathered bedrock would be excavated. Excavated petroleum-impacted soil would be stockpiled separately from non-petroleum-impacted soil, characterized, and disposed of off-site at a permitted disposal facility in accordance with applicable regulations. Because the site-wide remedial excavation would extend into bedrock, confirmation endpoint samples would not be collected from UST excavations.

### 3.2.5 Confirmation Endpoint Soil Sampling

Confirmation endpoint samples are not proposed because the Track 1 site-wide remedial excavation would extend into bedrock. If soil is left in place, confirmation endpoint soil samples would be collected from the remedial excavation base at a frequency of one per 900 square feet. Sidewall samples would not be collected because the proposed SOE (e.g., sheeting, lagging, or secant piles) would preclude access to soil sidewalls.

**Commented [MC7]:** Side wall samples are required if soil left in place

### 3.2.6 Post-Remediation Groundwater Sampling

Prior to pouring foundations, one round of groundwater samples would be collected from dewatering sumps prior to treatment and discharge to the sewer to evaluate VOC and PFAS concentrations in groundwater. Groundwater samples would be analyzed for Part 375-lists VOCs and/or the NYSDEC list of PFAS via USEPA Method 1633 by a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified laboratory and collected in accordance with the NYSDEC Guidelines for Sampling and Analysis of PFAS Under NYSDEC's Part 375 Remedial Programs, April 2023. If no groundwater is present following remedial excavation and bedrock removal, no groundwater samples will be collected.

**Commented [MC8]:** Need SPEDS permit for this?

### 3.2.7 Backfilling

In the event imported backfill is required to prepare the sub-grade for foundation construction, pre-approval by the RE and NYSDEC is required prior to transporting to the site. Imported material would consist of soil that meets the UU SCOs, or crushed virgin stone from a NYSDEC-permitted mine or quarry that demonstrates via sieve testing that less than 10% passes a size No. 10 sieve.

## 3.3 Alternative II – Technical Description

Alternative II, a Track 2 remedy, would include implementation of the following remedial elements:

- Development and implementation of a CHASP and CAMP for the protection of on-site workers, visitors, the community, and the environment including during remediation and construction
- To facilitate site remediation, abatement of regulated building materials and subsequent demolition of the site buildings, structures, subsurface obstructions (e.g., remnant foundation elements), and surficial asphalt cover by the Contractor and management of removed asphalt as C&D debris in accordance with Part 360 and 361 regulations - Review and certification of C&D debris transport and disposal methodologies would be the responsibility of contractors performing off-site transportation and disposal of C&D debris. The RE is responsible for documenting that C&D debris is not commingled with contaminated site soil and fill.
- Construction of the SOE system to facilitate the Track 2 remedial excavation
- Site-wide excavation, with dewatering, and off-site disposal of contaminated soil exceeding the Part 375 RUR SCOs (about 4,100 cubic yards) to depths of up to 14 feet bgs



- Screening of excavated soil for indications of contamination by visual, olfactory, and instrumental methods
- Handling, transport, and off-site disposal of excavated soil in accordance with federal, state, and local rules and regulations for handling, transport, and disposal
- Decommissioning and removal of any encountered USTs and ASTs in accordance with 6 NYCRR Part 613 and NYSDEC DER-10 Section 5.5
- Decommissioning of existing on-site groundwater monitoring wells in accordance with NYSDEC CP-43 and installation of groundwater monitoring wells in locations accessible for sample collection
- Dewatering to reach remedial excavation depths, and treatment and discharge of dewatering fluids in accordance with applicable regulations and municipal permit requirements
- Post-remediation groundwater sampling
- Import and placement of crushed virgin stone, recycled concrete aggregate (RCA), or equivalent, as needed for building subgrade - Requests for import are subject to NYSDEC review and approval and would include a Request to Import/Reuse Soil Form.
- Green remediation principles and techniques, including a soil vapor barrier, would be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31.

The Alternative II remediation extent is shown on Figure 8 and the requirements for each of the Alternative II tasks are described below.

### **3.3.1 On-Site Worker, Public Health, and Environmental Protection**

A site-specific CHASP would be implemented during excavation and foundation construction to protect on-site Langan personnel from accidents and acute and chronic exposures to the identified contaminated media. Contractors performing RAWP operations would be required to develop and enforce their own HASP that is consistent with OSHA requirements and, at a minimum, meets the requirements of the CHASP. Public health would be protected by implementing and enforcing dust, odor, and organic vapor control and monitoring procedures included in the CAMP. The CAMP would include continuous perimeter monitoring of dust and organic vapor using DustTrak aerosol monitors and PIDs capable of recording data and calculating 15-minute averages. Field personnel would monitor perimeters for visible dust and odors. The environment would be protected by implementing and enforcing soil erosion prevention measures.

The CHASP is included in Appendix D. A site-specific CAMP was developed in accordance with the NYSDOH Generic CAMP included as Appendix E.

### 3.3.2 Excavation, SOE, and Contaminated Soil and Fill Removal

Under a Track 2 remedy, RUR SCOs would be the established soil remedial goals for the site. There were no RUR exceedances identified in the center of the site during prior investigations to date, so a Track 2 remedial excavation would be limited to the northeast, southeast, and western parts of the site to depths of about 3 to 14 feet bgs. These depths were established based on the Phase II ESI and the RI sample concentrations that exceeded the RUR SCOs and the clean interval, or presumed bedrock, below. An SOE system would be necessary to facilitate the Track 2 remedial excavation. The estimated volume of soil that would require off-site for disposal for Track 2 is about 4,100 cubic yards. The proposed Track 2 excavation is presented on Figure 8.

C&D debris generated during the remedial excavation would be handled, transported, and disposed of in accordance with federal, state, and city regulations (including 6 NYCRR Part 360 Series regulations). Review and certification of regulated building materials and C&D debris transport and disposal methodologies would be the responsibility of contractors performing demolition and off-site transportation and disposal of C&D debris. The RE is responsible for documenting that C&D debris is not commingled with contaminated site soil and fill.

### 3.3.3 Excavation Dewatering and Treatment

To achieve the Track 2 remedy, dewatering would be required to remove site fill/soil to about 3 to 14 feet bgs (about el 4.5 in the east part of the site to about el 19 in the west part of the site). The dewatering and treatment system would be designed, operated, and maintained by the Contractor's New York State-licensed PE. Prior to dewatering, the Contractor would obtain approval from the Village of Port Chester Engineer to discharge dewatering fluids to the municipal sewer. It is anticipated that pretreatment for VOCs and total suspended solids would be required, at a minimum. In the event a discharge to surface water is needed, the contractor must obtain a SPDES permit.

Commented [MC9]: Is this correct?

### 3.3.4 UST Removal

A UST-like anomaly was identified in the sidewalk in front of 8 South Main Street during the June 2021 and April 2024 geophysical surveys, which also identified subgrade electric lines running on top of and immediately adjacent to the anomaly. Based on proximity to electric lines, removal is not proposed; however, the contractor shall complete hand digging to expose the tank and decommission in place, with a licensed tank contractor, via pumping out contents, if present, and cleaning.

Any USTs and/or associated appurtenances, if found during redevelopment, would be decommissioned, disposed of off-site, and registered with the WCDOH and the NYSDEC PBS unit in accordance with 6 NYCRR Part 613.9, NYSDEC CP-51, and other applicable NYSDEC tank closure requirements including DER-10 Section 5.5. If encountered, petroleum-impacted soil and/or weathered bedrock would be excavated. Excavated petroleum-impacted soil would be stockpiled separately from non-petroleum-impacted soil, characterized, and disposed of off-site at a permitted disposal facility in accordance with applicable

regulations. Because the site-wide remedial excavation would extend into bedrock, confirmation endpoint samples would not be collected from UST excavations.

### 3.3.5 Confirmation Endpoint Soil Sampling

General construction excavation (after remedial excavation) would extend into bedrock; therefore, confirmation endpoint samples are not proposed for the Alternative II remedy. If soil is left in place, confirmation endpoint soil samples would be collected from the remedial excavation base at a frequency of one per 900 square feet. Sidewall samples would not be collected because the proposed SOE (e.g., sheeting, lagging, or secant piles) would preclude access to soil sidewalls.

**Commented [MC10]:** So wouldn't it be track 1 remedy then?

**Commented [MC11]:** Would side wall samples be required regardless or no because they are not responsible for offsite contamination?

### 3.3.6 Post-Remediation Groundwater Sampling

Prior to pouring foundations, one round of groundwater samples would be collected from dewatering sumps prior to treatment and discharge to the sewer to evaluate VOC and PFAS concentrations in groundwater. Groundwater samples would be analyzed for Part 375-lists VOCs and/or the NYSDEC list of PFAS via USEPA Method 1633 by a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified laboratory and collected in accordance with the NYSDEC Guidelines for Sampling and Analysis of PFAS Under NYSDEC's Part 375 Remedial Programs, April 2023. If no groundwater is present following remedial excavation and bedrock removal, no groundwater samples will be collected.

### 3.3.7 Backfilling

In the event imported backfill is required to prepare the sub-grade for foundation construction, pre-approval by the RE and NYSDEC is required prior to transporting to the site. Because the anticipated backfill depth would be within groundwater, only the following import material is acceptable:

- Soil that meets the lower of Part 375 RUR and Protection of Groundwater SCOs
- Crushed virgin stone from a NYSDEC-permitted mine or quarry that demonstrates via sieve testing that less than 10% passes a size No. 10 sieve.

## 3.4 Green Remediation Program

The green and sustainable remediation (GSR) components that would be considered for the selected alternative are as follows:

- Environmental impacts of treatment technologies and remedy stewardship over the long term
- Reducing direct and indirect greenhouse gasses (GHG) and other emissions
- Increasing energy efficiency and minimizing use of non-renewable energy
- Conserving and efficiently managing resources and materials
- Reducing waste, increasing recycling, and increasing reuse of materials that would otherwise be considered a waste

- Maximizing habitat value and creating habitat when possible, including maximizing the planning of trees, shrubs, and other carbon dioxide sinks in redevelopment
- Fostering green and healthy communities and working landscapes which balance ecological, economic, and social goals
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development with respect to the remedy
- Incorporating the GSR principles and techniques to the extent feasible in the future development at this site (i.e., future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York [or most recent edition] to improve energy efficiency as an element of construction)

To evaluate the remedy with respect to GSR principles as part of the remedial program, a Best Management Practice (BMP) assessment was conducted in accordance with the ASTM Guide for Standard Cleanups, and an environmental footprint analysis was conducted for each remedial alternative using SiteWise™. The results of the environmental footprint analysis are provided in Appendix F.

BMPs for the project related to these GSR metrics, and BMPs for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, would be incorporated into the remedial program, as appropriate. The project design specifications would include detailed requirements, including implementation of the BMPs described in Section 4.1.10. A BMP assessment and an environmental footprint analysis would also be conducted at the completion of the remedy. As practicable, water consumption, GHG emissions, renewable and non-renewable energy use, waste reduction, and material use would be estimated at the end of the remediation phase. Progress with respect to GSR metrics would be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER).

A climate screening assessment was conducted for the site which concluded that the site is vulnerable to severe storms, flooding, and sea level rise; however, the proposed redevelopment would reduce these vulnerabilities and mitigate the effects of climate change at the site. The climate screening checklist is provided in Appendix G.

### 3.5 Evaluation of Remedial Alternatives

The following is an evaluation of the proposed remedy based on the NYSDEC BCP remedy evaluation criteria listed below. The first two criteria are considered “threshold” criteria and must be satisfied for an alternative to qualify as a selection. The remaining criteria are considered “balancing” criteria, which are used to compare the advantages and disadvantages of each alternative. A remedial alternative must satisfy the threshold criteria before qualifying for further evaluation under the balancing criteria.

- A. Protection of human health and the environment
- B. Compliance with SCGs

- C. Short-term effectiveness and impacts
- D. Long-term effectiveness and permanence
- E. Reduction of toxicity, mobility, or volume of contaminated media
- F. Implementability
- G. Cost effectiveness
- H. Community Acceptance
- I. Green and sustainable remediation (including climate resiliency)
- J. Land use

### 3.5.1 Protection of Public Health and the Environment

Alternative I – The Track 1 remedy would mitigate exposure pathways from on-site contaminated media by removing soil that exceeds the Track 1 UU SCOs. Contaminant concentrations in groundwater would be reduced through removal of contaminated soil and weathered bedrock, and dewatering during the remedial phase, and post-remediation groundwater sampling to evaluate VOCs and PFAS concentrations in groundwater. Groundwater in the Village of Port Chester is not used as a potable water source. VOCs in soil vapor would be remediated by source removal (all site soil would be excavated). This remedy would effectively achieve the RAOs for public health and environmental protection by eliminating the possibility for ingestion, inhalation, or dermal contact.

Alternative II – The Track 2 remedy would mitigate the potential for complete exposure pathways through the removal of soil/fill exceeding the Track 2 RUR SCOs (to a maximum depth of about 14 feet bgs). Although not part of a Track 2 remediation, all site soil and some bedrock would be excavated and disposed of off-site as part of construction. Contaminant concentrations in groundwater would be reduced through removal of contaminated soil, and dewatering during the remedial phase. Groundwater in the Village of Port Chester is not used as a potable water source. VOCs in soil vapor would be remediated by source removal (all site soil would be excavated for remediation and general construction). This remedy would effectively achieve the RAOs for public health and environmental protection by eliminating the possibility for ingestion, inhalation, or dermal contact.

Public health would be protected during remediation under all remedial alternatives by implementing the CAMP during site work and enforcing dust, odor, and organic vapor control. The environment would be protected by implementing and enforcing soil erosion and sediment controls as needed.

### 3.5.2 Compliance with Standards, Criteria, and Guidance

Each alternative would be in compliance with all applicable SCGs listed in Section 3.1 by eliminating the sources of contamination to achieve the RAOs. While implementing any combination of the proposed remedies, protection of public health and the environment would be maintained by enforcing a site-

specific CHASP and CAMP. OSHA requirements for on-site construction safety would be followed by all site contractors performing work.

### **3.5.3 Short-Term Effectiveness and Impacts**

The most significant short-term adverse impacts and risks to the community would be through the migration of contaminants carried in soil, vapor, and dust generated during construction. Additional short-term adverse impacts and risks to the community include the potential complications and risk involved with constructing SOE for the buildings and structures adjoining the site, and potential impositions on roadway and pedestrian traffic associated with construction.

The estimated volume of soil/fill requiring removal and off-site disposal is about 5,670 cubic yards for Alternative I, about 1.3 times more than Alternative II, which is about 4,100 cubic yards. Truck traffic would be less under Alternative II, due to the decrease in exports from remedial excavation.

Under these remedial alternatives, dust would be controlled by the on-site application of water spray as needed. ECs, such as slowing the pace of work, applying foam and/or dust suppressant, and/or covering portions of the excavation would be used to suppress odors/dust when required. Work would be modified or stopped according to the action levels defined in the CAMP. There would be fewer short-term impacts for Alternative II than Alternative I.

### **3.5.4 Long-Term Effectiveness and Impacts**

Alternative I – The Track 1 remedy would eliminate the potential exposure pathways by removal of contaminated media. Post-remediation groundwater sampling would evaluate VOC and PFAS concentrations in groundwater. Groundwater in the Village of Port Chester is not used as a potable water source; therefore, the long-term effectiveness of this remedy would eliminate risks and satisfy the objectives of this criterion. A Site Management Plan (SMP) and Environmental Easement (EE) would not be required.

Future site use would be unrestricted; therefore, the long-term effectiveness of this remedy would eliminate known environmental risks and satisfy the objectives of this criterion.

Alternative II – The Track 2 remedy would remove soil/fill exceeding the Track 2 RUR SCOs. Future site use would be restricted for residential use. Groundwater in the Village of Port Chester is not used as a potable water source; therefore, the long-term effectiveness of this remedy would eliminate risks and satisfy the objectives of this criterion. An SMP and EE would not be required.

### **3.5.5 Reduction of Toxicity, Mobility, or Volume of Contaminated Soil/Fill**

Alternative I – The Track 1 remedy would permanently and entirely reduce the toxicity, mobility, and volume of contamination through excavation and off-site disposal of soil exceeding the Track 1 UU SCOs. Contaminant concentrations in groundwater would be reduced through source removal and dewatering required for the remedial excavation. Removal of all site soil and construction of building slabs with a soil vapor barrier within groundwater would eliminate the soil vapor infiltration risk.

**Alternative II** – The Track 2 remedy would reduce the toxicity, mobility, and volume of contamination through excavation and off-site disposal of soil exceeding the Track 2 RUR SCOs. Contaminant concentrations in groundwater would be reduced through source removal and dewatering required for the remedial excavation. Removal of all site soil (for general construction) and construction of building slabs with a soil vapor barrier within groundwater would eliminate the soil vapor infiltration risk.

### 3.5.6 Implementability

**Alternative I** – Implementing the Track 1 remedy is feasible and implementable with conventional construction and earthmoving methods and equipment, including the use of standard bucket excavators and SOE. Implementing a Track 1 remediation would require higher remediation costs and longer duration of remedial activity, as the Track 1 remedy includes the removal of up to 10 feet of bedrock beneath the site and post-remediation groundwater sampling.

**Alternative II** – Implementing the Track 2 remedy is feasible and implementable with conventional construction and earthmoving methods and equipment, including the use of standard bucket excavators and SOE. Implementing Track 2 remediation would be less expensive and time consuming than the Track 1 remedy.

### 3.5.7 Cost Effectiveness

The estimated remediation cost of each remedy track is:

- Alternative I – Track 1 remedy: approximately \$8.9 million
- Alternative II – Track 2 remedy: approximately \$5.9 million

Although Alternative II would result in a lower cost, Alternative I would result in a more effective and permanent cleanup, which is recommended by the BCP.

### 3.5.8 Community Acceptance

The remedial alternatives are expected to be acceptable to the community in the long-term because the potential exposure pathways to contamination from the on-site sources would be eliminated or significantly reduced upon completion of the remedial actions. The end-use of the site would provide new commercial and residential spaces. Any selected remedy would be subject to a 45-day public comment period in accordance with the Citizen Participation Plan, and any substantive public comments would be addressed before the remedy is approved by NYSDEC.

### 3.5.9 Green and Sustainable Remediation (Including Climate Resiliency)

To assess potential remedial alternatives with respect to GSR principles, an environmental footprint analysis was conducted for each remedial alternative using SiteWise™. The environmental footprint analyses assess the environmental footprint at each stage of remediation (site preparation, excavation, and restoration). The following metrics were quantified:

- GHG Emissions

- Total Energy Used
- Water Consumption
- Electrical Usage
- Total Nitrogen Oxides (NO<sub>x</sub>) Emissions
- Total Sulphur Oxides (SO<sub>x</sub>) Emissions
- Total Particulate Matter Emissions (specifically particulate matter less than 10 microns in diameter [PM10])

Alternative I would produce more GHG emissions, SO<sub>x</sub> emissions, NO<sub>x</sub> emissions, and PM10 emissions than Alternative II. Alternative I would use more total energy, water, and electricity than Alternative II.

Alternative I would achieve the Part 375 UU SCOs and remediate all on-site contamination, while Alternative II would achieve the Part 375 RUR SCOs and leave soil contamination exceeding Part 375 UU SCOs in place. Alternative I would reduce contaminant concentrations in groundwater through dewatering during the remedial phase, and post-remediation groundwater sampling to evaluate VOCs and PFAS concentrations in groundwater. Alternative II does not include post-remediation groundwater sampling.

The selected Track I remedy (Alternative I) provides a greater level of effectiveness in protecting public health and the environment as no contamination would remain in place following remediation. Although Alternative II would result in a lower environmental footprint, GSR cannot be used to justify minimizing the cleanup to Alternative II given that Alternative I would be in the best interest of the stakeholders involved, as discussed in the ASTM's Standard Guide for Greener Cleanups – ASTM E2893; however, BMPs would be implemented to reduce the overall footprint of the project under both alternatives.

Environmental footprint summaries for each alternative are provided in Appendix F. GSR measures would be implemented per DER-31 under both alternatives.

### 3.5.10 Land Use

The current, intended, and reasonably anticipated future land use of the site and its surroundings are compatible with the alternatives. The future proposed development includes mixed-use residential and commercial buildings. Review of previous environmental and public documents led to the following conclusions:

1. The current and proposed use of the site and its surroundings would be compatible with the selected remedy.
2. The proposed site use conforms to applicable zoning requirements.
3. The proposed site use conforms to historical and/or recent development patterns in the area.
4. The site does not fall within the boundaries of an existing Brownfield Opportunity Area.



5. The site is in an urban setting that is characterized by residential, commercial, and light industrial buildings. There are no areas zoned for agricultural use in the proximity of the site.
6. There are no federal or state land designations.
7. The population growth patterns and projections support the proposed land use.
8. The site is accessible to existing infrastructure.
9. The site is not near important cultural resources, including federal or state historic or heritage sites or Native American religious sites.
10. The nearest ecological receptor is the Byram River, which is located about 500 feet east of the site.
11. Groundwater is not used as a potable water source in the Village of Port Chester; therefore, groundwater from the site would not affect municipal water supply wells or recharge areas. Potable water provided to the Village of Port Chester is derived from surface impoundments in the Catskill and Delaware watersheds.
12. According to the FEMA National Flood Insurance Rate Map (Panel No. 36119C0356F), the majority of the site is located outside the flood zone, and the eastern-most part of the site along South Main Street is located within an area of 0.2% annual chance flood (Zone X).
13. The site geology is described in Section 2.3.1.
14. There are no known ICs currently in effect at the site.

### 3.6 Summary of the Selected Remedy

Alternative I is the recommended remedial alternative for this site that includes the following:

- Development and implementation of a CHASP and CAMP for the protection of on-site workers, visitors, the community, and the environment including during remediation and soil intrusive construction
- To facilitate site remediation, abatement of regulated building materials and subsequent demolition of the site buildings, structures, subsurface obstructions (e.g., remnant foundation elements), and surficial asphalt cover by the Contractor and management of removed asphalt as C&D debris in accordance with Part 360 and 361 regulations. Review and certification of C&D debris transport and disposal methodologies will be the responsibility of contractors performing off-site transportation and disposal of C&D debris. The RE is responsible for documenting that C&D debris is not commingled with contaminated site soil and fill.
- Construction of the SOE system to facilitate the Track 1 remedial excavation
- Site-wide excavation, with dewatering, and off-site disposal of contaminated soil exceeding the Part 375 UU SCOs (about 5,700 cubic yards) to depths of 3 to 14 feet bgs and up to about 10 feet

of weathered and surficial bedrock across the site (about 9,960 cubic yards) to in part remove VOCs and PFAS in groundwater within shallow bedrock fractures

- Screening of excavated soil for indications of contamination by visual, olfactory, and instrumental methods
- Handling, transport, and off-site disposal of excavated soil in accordance with federal, state, and local rules and regulations for handling, transport, and disposal
- Decommissioning and removal of any encountered USTs and ASTs in accordance with 6 NYCRR Part 613 and NYSDEC DER-10 Section 5.5
- Decommissioning of existing on-site groundwater monitoring wells in accordance with NYSDEC CP-43 and installation of groundwater monitoring wells in locations accessible for sample collection
- Dewatering to reach remedial excavation depths, and treatment and discharge of dewatering fluids in accordance with applicable regulations and municipal permit requirements
- Import and placement of soil meeting the Part 375 UU SCOs and/or crushed virgin stone, as needed, for building subgrade - Requests for import are subject to NYSDEC review and approval and will include a Request to Import/Reuse Soil Form.
- Post-remediation groundwater sampling
- Green remediation principles and techniques, including a soil vapor barrier, will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31.

## **4.0 REMEDIAL ACTION PROGRAM**

### **4.1 Governing Documents**

The primary documents governing the remedial action are summarized in this section. As referenced, copies of the full plans are provided in the appendices.

#### **4.1.1 Green Remediation Principals and Best Management Practices**

The NYSDEC DER-31 Green Remediation Policy requires that green remediation concepts and techniques be considered during all stages of the remedial program, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology.

Green remediation principles and techniques will be implemented to the extent feasible in the remediation phase of the remedy per DER-31. The green remediation components that will be evaluated are as follows:

- Waste Generation
- Energy Usage
- Emissions
- Water Usage
- Land and/or Ecosystems

The remedy will include the implementation of several BMPs related to these green remediation components. The BMPs are outlined below.

#### Waste Generation

Waste generation considers the management of waste associated with remedial activities and any waste reduction projects including, but not limited to, material reuse and recycling. Several waste streams will be generated during implementation of the remedy (e.g., dewatering fluids, soil, polyethylene sheets used for stockpile coverage and separating types of contamination, nitrile gloves for endpoint sampling, disposable sample ware, acetate liners from drilling operations, tubing and buckets from groundwater performance monitoring, decontamination materials). When possible, an effort will be made to minimize consumption/generation of such materials. If possible, decontamination and reuse of applicable materials will be considered. Electronic methods of data collection (e.g., tablets) will also be used to reduce paper consumption when possible.

#### Electrical Energy Use

Energy usage considers the electricity usage needed for remediation activities. Energy will be required for charging equipment (e.g., PIDs, air monitoring equipment, groundwater sampling equipment). Battery-powered equipment will be turned off when not in use to limit charging activities.

### Emissions

Emissions tracking considers fuel usage for transportation of personnel to and from the site, trucks used for export of contaminated material or import of backfill material, equipment and laboratory sample couriers, and construction equipment.

To reduce fuel usage, trucks and heavy machinery operators will be encouraged to reduce idling time and shut down vehicles or equipment when not in use. Ultra-low sulfur diesel (ULSD) fuel and the best available technology (BAT) for reducing emissions will be used for construction vehicles. The Contractor will also be encouraged to perform routine, on-time maintenance such as oil changes to improve fuel efficiency.

When possible, personnel will be encouraged to take public transport and equipment/sample deliveries and pickups will be consolidated to reduce transport needs.

### Water Usage

Water usage considers sources of water for tasks such as decontamination, irrigation, etc. The public water supply will be used when water is required for decontamination activities or dust suppression. This will be required for effective implementation of the remedy and the protection of human health. Water will only be consumed when necessary, and consumption will be in accordance with local regulations.

### Land and/or Ecosystems

The site is within a heavily urbanized area and no ecosystems will be disturbed during construction.

Generally, although Alternative II will result in a lower environmental footprint, GSR cannot be used to justify minimizing the cleanup to Alternative II given that Alternative I would be in the best interest of the stakeholders involved, as discussed in the ASTM guide for greener cleanups. However, BMPs will be implemented to reduce the overall footprint of the project. Environmental footprint summaries are provided in Appendix F.

#### *4.1.1.1 Climate Change Impacts*

Although the proposed Alternative I remedy will produce more GHG emissions, produce more waste, use more energy, and use more water as compared to Alternative II, Alternative I provides a greater level of effectiveness in protecting public health and the environment long-term.

#### **4.1.2 Site-Specific Construction Health and Safety Plan (CHASP)**

The RE oversaw the preparation of a site-specific CHASP, which is provided as Appendix D. The CHASP requires that all remedial work performed under this plan will be in full compliance with governmental requirements, including site and worker safety requirements mandated by Federal OSHA. The CHASP provides a mechanism for establishing on-site safe working conditions, safety organization, procedures, and PPE. The CHASP meets the requirements of 29 CFR 1910 and 29 CFR 1926 (which includes 29 CFR

1910.120 and 29 CFR 1926.65, respectively). The CHASP includes, but is not limited to, the following components:

- Organization and identification of key personnel
- Training requirements
- Medical surveillance requirements
- List of site hazards
- Excavation safety
- Drill rig safety
- Work zone descriptions and monitoring procedures
- Personal safety equipment and protective clothing requirements
- Decontamination requirements
- Standard operating procedures
- Contingency plan
- CAMP
- Safety data sheets

The Volunteer and associated parties preparing the remedial documents submitted to the State and those performing the construction work are completely responsible for the preparation of an appropriate CHASP and for the appropriate performance of work according to the CHASP and applicable laws. All contractors performing work on the site must prepare and implement their own HASP that, at a minimum, meets the requirements of the CHASP in Appendix D. The RE is not responsible for the health and safety of the contractor's workers.

The CHASP and requirements defined in this RAWP pertain to all remedial and invasive work performed at the site until the issuance of a Certificate of Completion (COC). The Langan Site Safety Coordinator will be William Bohrer. If required, confined space entry will comply with all OSHA requirements to address the potential risk posed by combustible and toxic gasses. Langan personnel will not enter confined spaces.

#### **4.1.3 Quality Assurance Project Plan (QAPP)**

The RE oversaw preparation of a QAPP that describes the quality assurance and quality control components employed so that the proposed remedy accomplishes the remedial goals and RAOs and is completed in accordance with the design specifications. The QAPP is provided as Appendix H and includes:

- Responsibilities of key personnel and their organizations for the proposed remedy;

- Qualifications of the quality assurance officer;
- Sampling requirements including methodologies, quantity, volume, locations, frequency, and acceptance and rejection criteria; and
- Description of reporting requirements for quality assurance activities including weekly quality assurance review reports, periodic quality assurance and quality control audits, and other report and data submissions.

#### 4.1.4 Construction Quality Assurance Plan (CQAP)

The RE oversaw the preparation of a CQAP that describes the quality control components employed so that the proposed remedy accomplishes the remedial goals and RAOs and is completed in accordance with design specifications. Because the remedy is being accomplished concurrent with redevelopment, the Contractor and construction manager will have the primary responsibility to provide construction quality. A list of engineering personnel involved in implementation of the CQAP and procedures that will be carried out by the remedial engineering team are identified below.

Role	Contact
RE:	Jason Hayes, PE
Project Manager:	Jennifer Armstrong, CHMM
Langan Health & Safety Officer:	Tony Moffa Jr., CHMM
Site Safety Coordinator:	William Bohrer, PG
Quality Assurance Officer/QEP:	Ryan Manderbach, CHMM
Field Team Leader:	Laura Grose

Project personnel résumés are provided in Appendix I.

A Qualified Environmental Professional (QEP) or the RE will directly supervise field personnel that will be on-site during the remedial action to monitor particulates and organic vapor in accordance with the CAMP. Daily reports will be submitted to NYSDEC and NYSDOH and will include reporting of CAMP results that exceed the specified action levels (if any).

A QEP or the RE will directly supervise field personnel that will meet with the Construction Superintendent on a daily basis to discuss the plans for that day and schedule upcoming activities. The field personnel will document remedial activities in daily reports.

A QEP or the RE will directly supervise field personnel that will screen the excavation with a PID during intrusive activities. All readings will be noted in the record. Elevated readings will be reported to NYSDEC and NYSDOH in the daily reports. The field personnel will collect documentation soil samples in accordance with this RAWP.

A photo log will be kept to document construction activities by still photos. The photo log may also be used to record activities recorded in the daily report.

The project field notebook will be used to document all sampling activities and how they correspond to the RAWP. All observations and field and laboratory tests will be recorded in the project field notebook or on separate logs. Recorded field observations may take the form of notes, charts, sketches, or photographs.

The Field Team Leader will maintain the current field book and original field paperwork during the performance of work. The Project Manager will maintain the field paperwork after completion and will maintain submittal document files.

#### **4.1.5 Soil/Materials Management Plan (SMMP)**

The RE oversaw preparation of an SMMP that includes detailed plans for managing contaminated soil, fill, and liquids that are disturbed at the site, including excavation, handling, storage, transport and disposal. It also includes controls that will be applied to these efforts to facilitate effective, nuisance-free, to the extent practical, performance in compliance with applicable federal, state, and local laws and regulations. The SMMP is provided as Section 5.4.

#### **4.1.6 Stormwater Pollution Prevention Plan (SWPPP)**

Because the site is smaller than one acre, a SWPPP is not required. BMPs will be employed to mitigate erosion and prevent the migration of sediment off-site throughout construction. Dewatering is required during construction of the sub-cellar, and will be permitted by the Village or Port Chester, who administers the local MS4 under the SPDES program. Components of sediment and erosion control are further described in Section 4.3.2.

#### **4.1.7 Community Air Monitoring Plan**

A site-specific CAMP was developed in accordance with the NYSDOH Generic CAMP included as Appendix E. Community air monitoring will be conducted as outlined in Section 5.4.12.

#### **4.1.8 Contractors Site Operations Plan**

The RE will review plans and submittals for this remedial project (including those listed above as well as the Contractor and subcontractor document submittals) and document their compliance with this RAWP. The RE is responsible for documenting that the Contractor and subcontractor document submittals are compliant with this RAWP. Remedial documents will be submitted to the NYSDEC and the NYSDOH in a timely manner and before the start of work.

#### **4.1.9 Citizen Participation Plan**

A certification of mailing will be sent by the Volunteer to the NYSDEC project manager following the distribution of all Fact Sheets and notices that includes: 1) certification that the Fact Sheets were mailed; 2) the date they were mailed; 3) a copy of the Fact Sheet; 4) a list of recipients (contact list); and 5) a statement that the repository was inspected on (specific date) and that it contained all of the applicable project documents.

No changes will be made to NYSDEC-approved Fact Sheets authorized for release by NYSDEC without written consent from the NYSDEC. No other information, such as brochures and flyers, will be included with the Fact Sheet mailing.

A document repository was established at the following location, as proposed in the BCP Application, and will contain all applicable project documents:

Port Chester-Rye Brook Public Library  
1 Haseco Avenue  
Port Chester, New York 10573  
(914)939-6710

## **4.2 General Remedial Construction Information**

### **4.2.1 Project Organization**

This section presents the anticipated project organization and associated roles, including key personnel, descriptions of duties and lines of authority in the management of the RAWP. Information regarding the organization/personnel and their associated responsibilities is provided below.

#### **4.2.2 Remedial Engineer**

The RE for this project will be Jason Hayes, P.E. The RE is a registered PE licensed by the State of New York. The RE will have primary direct responsibility for implementation of the remedial program for the South Main Petroleum Site Assemblage project (BCP Site No. C360237). The RE will certify in the FER that the remedial activities were observed by qualified environmental professionals under his supervision and that the remediation requirements set forth in the RAWP and any other relevant provisions of ECL 27-1419 have been achieved in accordance with this RAWP. Other RE certification requirements are listed later in this RAWP.

The RE and their team will document the work of remediation contractors and subcontractors involved in all aspects of remedial construction, including soil excavation, stockpiling, characterization, removal and disposal, air monitoring, emergency spill response services, import of backfill, and management of waste transport and disposal. Deviations from the procedures identified in the RAWP that are observed by Langan will be brought to the attention of the Contractor, who will remedy the deviation(s). The RE, the QEP, or the Project Manager under supervision of the RE, will be responsible for all communication with NYSDEC and NYSDOH.

The RE will review all pre-remedial plans submitted by remediation contractors for compliance with this RAWP and will certify compliance in the FER.

In the FER, the RE will provide the certifications listed in Section 8.1 of this RAWP.



#### **4.2.3 Remedial Action Construction Schedule**

The anticipated remedial action construction schedule is discussed below in Section 9.0 and provided in Appendix J. The NYSDEC will be promptly notified of proposed changes, delays, or deviations to the schedule.

#### **4.2.4 Work Hours**

The hours of operation of remedial construction will conform to the Village of Port Chester construction code requirements or according to specific variances issued by that agency. The NYSDEC will be notified by the Volunteer of any variances issued by the Village of Port Chester. The NYSDEC reserves the right to deny alternate remedial construction hours.

#### **4.2.5 Site Security**

The site perimeter will be secured with gated and signed fencing with restricted points of entry. The purpose of the fencing is to limit site access to authorized personnel, protect pedestrians from site activities, and maintain site security.

#### **4.2.6 Traffic Control**

Site traffic will be controlled through designated points of access along South Main Street or East Broadway. Access points will be continuously monitored and, if necessary, a flagging system will be used to protect workers, pedestrians, and authorized guests. Traffic will also adhere to applicable local, state, and federal laws.

#### **4.2.7 Contingency Plan**

The contingency plans described below have been developed to address unexpected discoveries of additional contaminated media and/or USTs.

##### *4.2.7.1 Discovery of Additional Contaminated Soil*

During remediation and construction, soil will be continuously monitored by the RE's field representative(s) using a PID as well as visual and olfactory field screening to identify previously unknown contamination and soil that may not be suitable for the selected disposal facility(ies). Impacted soil/fill will be segregated and sampled for lab analysis in accordance with disposal facility requirements (typically VOCs, SVOCs, PCBs, pesticides, herbicides, and metals). If the facility is not permitted to receive the sampled soil, the soil will be disposed of off-site at a permitted facility able to receive the soil based on the characterization data. Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to the NYSDEC Project Manager. These findings will be detailed in daily reports and subsequent monthly BCP progress reports. Potential additional remedial measures will be coordinated with NYSDEC.

##### *4.2.7.2 Discovery of Unexpected USTs*

Previously unidentified USTs may be encountered during excavation. Unexpected USTs encountered during remediation or construction will be decommissioned in accordance with 6 NYCRR Parts 612.2 and

613.9 and NYSDEC DER-10 Section 5.5. Under the selected Track 1 remedy, the site-wide remedial excavation will extend into bedrock; therefore, confirmation endpoint samples will not be collected from UST excavations. Petroleum impacts at the groundwater table will be addressed through excavation. Excavated petroleum-impacted soil/fill will be stockpiled separately from non-petroleum-impacted soil/fill, characterized, and disposed of off-site at a permitted disposal facility in accordance with applicable regulations. UST closure documentation, including contractor affidavits, waste manifests, and tank disposal receipts, will be included as appendices to the FER. USTs will be registered and decommissioned with the WCDOH and the NYSDEC PBS unit, as necessary.

If USTs are encountered during invasive site work, the findings will be promptly communicated to the NYSDEC Project Manager and detailed in daily reports and subsequent monthly BCP progress reports.

#### **4.2.8 Worker Training and Monitoring**

Worker training and monitoring will be conducted in accordance with the CHASP, which is provided in Appendix D.

#### **4.2.9 Agency Approvals**

Permits or government approvals required for remedial construction will be obtained before the start of remedial construction. The planned end use for the site as mixed-use commercial and residential buildings and parkland space conforms to the current zoning for the property as determined by the Village of Port Chester. Certificates of Occupancy will not be issued for the project unless conformance with the zoning designation is demonstrated.

#### **4.2.10 NYSDEC BCP Signage**

Signs are optional for BCP sites and should be discussed with the NYSDEC Project Manager. If a sign is to be displayed, it must follow NYSDEC specifications for design and content. The NYSDEC Project Manager can provide details on signage protocol.

#### **4.2.11 Pre-Construction Meeting with NYSDEC**

Prior to the onset of construction, a meeting will be held between the NYSDEC, RE, Volunteer, construction manager, and contractor to discuss project roles, responsibilities, and expectations associated with this RAWP. Notice will be provided to the NYSDEC at least seven days prior to site mobilization.

#### **4.2.12 Emergency Contact Information**

An emergency contact sheet with names and phone numbers is included in the CHASP, provided as Appendix D. That document will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency.

#### **4.2.13 Remedial Action Costs**

The estimated preliminary engineering and contractor cost of the preferred remedy is about \$8.9 million.

### **4.3 Site Preparation**

The RE will work with the Volunteer and their contractors so that site development will not interfere with, or otherwise impair or compromise, the remediation proposed in this RAWP.

#### **4.3.1 Mobilization**

Before commencing remedial construction, the Contractor will mobilize to the site and prepare for remediation. Mobilization and site preparation activities may include the following:

- Identifying the location of all aboveground and underground utilities (e.g., power, gas, water, sewer, telephone), equipment, and structures (as necessary to implement the remediation);
- Mobilizing necessary remediation personnel, equipment, and materials to the site;
- Constructing one or more stabilized construction entrances consisting of crushed virgin stone, RCA, or equivalent, at or near the site exit, which takes into consideration the site setting and site perimeter;
- Constructing a decontamination pad for trucks, equipment, and personnel that come into contact with impacted soil/fill during remedial activities;
- Installing erosion and sedimentation control measures, as necessary; and
- Installing temporary fencing or other temporary barriers to limit unauthorized access to areas where remediation will be conducted.

#### **4.3.2 Erosion and Sedimentation Controls**

Based on the size of the site and the planned excavation, common erosion and sedimentation control practices (i.e., perimeter silt fencing, inlet protection, stabilized construction entrances, dust control via water sprinkling, etc.) will be necessary and will be implemented in accordance with BMP. BMPs for soil erosion will be selected to minimize erosion and sedimentation off site from the start of the remediation to the completion of development.

#### **4.3.3 Monitoring Well Decommissioning**

Existing groundwater monitoring wells will be decommissioned in accordance with NYSDEC policy CP-43. If required, well decommissioning will be performed by an experienced driller and logged by the driller and Langan personnel. Decommissioning documentation will be provided in the FER.

#### **4.3.4 Stabilized Construction Entrance(s)**

Stabilized entrance areas will be constructed to prevent decontaminated trucks from being re-contaminated by site soil before exiting. The areas will be covered with crushed virgin stone or RCA and graded so that runoff water will be directed onto the site. The Contractor will protect and maintain the existing sidewalks and roadway at site entrance points.

#### **4.3.5 Utility Marker and Easements Layout**

The Volunteer and their contractors are solely responsible for the identification of utilities that might be affected by work under the RAWP and implementation of required health and safety measures during performance of work under this RAWP. The Volunteer and their contractors are solely responsible for safe execution of all invasive and other work performed under this RAWP. The Volunteer and their contractors must obtain any local, state, or federal permits or approvals pertinent to such work that may be required to perform work under this RAWP. Approval of this RAWP by NYSDEC does not constitute satisfaction of these requirements.

#### **4.3.6 Sheeting and Shoring**

Management of structural stability of on-site or off-site structures during on-site activities including excavation is the sole responsibility of the Volunteer and their contractors. The Volunteer and their contractors are solely responsible for safe execution of all invasive and other work performed under this RAWP. The Volunteer and their contractors must obtain any local, state, or federal permits or approvals that may be required to perform work detailed in this RAWP.

#### **4.3.7 Equipment and Material Staging**

The contractor will notify the RE and the Volunteer, in writing with receipt confirmed, of pending site work mobilization at least 30 calendar days in advance. During mobilization, construction equipment will be delivered to the site, temporary facilities constructed, and temporary utilities installed as needed. The Contractor will place and maintain temporary toilet facilities within the work areas for usage by all site personnel. The Contractor will provide drinking water for all site personnel.

#### **4.3.8 Truck Inspections/Decontamination Area**

The contractor will construct decontamination pads/truck inspection stations at each site entrance/exit planned for construction vehicle usage. Before exiting the site, trucks will be required to stop at a truck inspection station and will be examined for evidence of contaminated soil on the undercarriage, body, and wheels. If observed, soil or debris will be removed. Brooms, shovels, and/or potable water will be utilized for the removal of soil from vehicles and equipment, as necessary. The location of decontamination pads may change periodically to accommodate the contractor's sequencing of work. When required, the pads will be constructed by the Contractor to collect wastewater for off-site disposal or treatment and discharge, if generated during decontamination activities. The design will consider adequate space to decontaminate site equipment and vehicles and sloping and liners to facilitate collection of wastewater. Any collected truck rinse water and decontamination wastewater shall be either discharged in accordance with a municipal permit, or tested and transported to an off-site disposal facility that is permitted to accept this waste, in accordance with applicable local, state, and federal regulations. The remediation contractor is responsible for collecting soil that is tracked immediately off-site and returning the soil to the site. The RE's on-site representative will document that trucks leaving the site are properly decontaminated. The Contractor will maintain the decontamination pad(s) throughout the

duration of site work. Prior to demobilization, the Contractor will deconstruct the pads and dispose of materials as required.

If the Contractor uses high pressure washing methods, the Contractor shall provide splash protection around the vehicle decontamination facility to prevent splatter and mist migrating off-site during the vehicle decontamination process. Splash protection shall be temporary and stable and capable of being dismantled in the event of high winds.

#### **4.3.9 Site Fencing**

The site perimeter will be secured with gated and signed fencing. The purpose of the fencing is to limit site access to authorized personnel, protect pedestrians from site activities and maintain site security.

#### **4.3.10 Demobilization**

The Contractor will be responsible for demobilizing all labor, equipment, and materials not designated for off-site disposal. The RE will be responsible to document that the Contractor performs follow-up coordination and maintenance for the following activities:

- Restoration of areas that may have been disturbed to accommodate support areas (e.g., staging areas, decontamination areas, storage areas, temporary water management areas, and access areas);
- Removal of temporary access areas (whether on-site or off-site) and restoration of disturbed access areas to pre-remediation conditions;
- Removal of sediment and erosion control measures and disposal of materials in accordance with acceptable rules and regulations;
- Equipment decontamination; and
- General refuse disposal.

#### **4.4 Reporting**

Daily and monthly reports and an FER will be required to document the remedial action and will be included as appendices to the FER. In addition to the periodic reports and the FER, copies of relevant contractor documents will be submitted to the NYSDEC.

##### **4.4.1 Daily Reports**

Daily reports will be submitted to NYSDEC and NYSDOH Project Managers by the end of each day following the reporting period (or at a frequency acceptable to them) and will include:

- An update of progress made during the reporting day;
- Locations of work and quantities of soil/fill imported to and exported from the site;
- References to alpha-numeric map for site activities;

- A summary of any and all complaints with relevant details (names, phone numbers);
- A summary of CAMP findings, including corrective actions for instances where action levels were exceeded;
- An explanation of notable site conditions;
- A description of anticipated site activities; and
- The NYSDEC-assigned project number.

Daily reports are not intended to be the mode of communication for notification to the NYSDEC of emergencies (accident, spill), requests for changes to the RAWP, or other sensitive or time-critical information. However, such conditions must also be included in the daily reports. Emergency conditions and changes to the RAWP will be addressed directly to the NYSDEC Project Manager via personal communication.

Daily reports will include a description of daily activities keyed to an alpha-numeric map for the site that identifies work areas. These reports will include a summary of air sampling results, odor and dust problems and corrective actions, and all complaints received from the public.

#### **4.4.2 Monthly Reports**

Monthly reports will be submitted to NYSDEC and NYSDOH Project Managers by the tenth of the month following the reporting period. The monthly reports will include the following information, as well as any additional information required by the BCA:

- Activities relative to the site during the previous reporting period and those anticipated for the next reporting period, including a quantitative presentation of work performed (i.e., tons of soil/fill exported and imported, etc.);
- Description of approved activity modifications, including changes of work scope and/or schedule;
- Sampling results received following internal data review and validation, as applicable; and
- An update of the remedial schedule including the percentage of project completion, unresolved delays encountered or anticipated that may affect the future schedule, and efforts made to mitigate such delays.
- Tracking of GSR metrics determined during the design process should be included in monthly reports.

#### **4.4.3 Other Reporting**

Photographs will be taken of all remedial activities and submitted to NYSDEC in digital format. Photographs will illustrate all remedial program elements and will be of acceptable quality. Representative photos of the site before any remedial actions and of each contaminant source, source area, and site structure before, during, and after remediation will be provided. Photographs will be

included in the daily reports as needed, and a comprehensive collection of photos will be included in the FER.

Progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the FER. Regular updates to the metrics used (Spreadsheets for Environmental Footprint Analysis [SEFA], SiteWise™, or another Department-approved method) should be included.

Site records for remedial work will be appropriately documented and maintained on-site during the project and be available for inspection by NYSDEC and NYSDOH staff.

#### 4.4.4 Complaint Management Plan

The management plan for documenting complaints is detailed below.

Item	Description
Approach	Complaints regarding remediation or construction activities/operations will be minimized and mitigation measures will be implemented to reduce the incidence of complaints.
Objective	To manage environmental complaints from the community regarding construction or remediation.
Implementation Strategy/Mitigation Measures	<p>All complaints will be documented on a complaint register. The register will be maintained as an ongoing record.            Each entry will include the following information:</p> <ul style="list-style-type: none"> <li>• Time, date and nature of complaint</li> <li>• Type of communication (telephone, letter, personal, etc.)</li> <li>• Name, contact address and contact number</li> <li>• Response and investigation undertaken as a result of the complaint and action taken with the signature of the responsible person</li> </ul> <p>Each complaint will be investigated as soon as practicable in relation to the requirements.</p>
Monitoring	A representative from the Volunteer or the RE will follow up on the complaint within two weeks of receipt to ensure it has been resolved.
Reporting	Upon receipt and following the complaint investigation and resolution, the NYSDEC will be notified. Complaints and resolutions will be documented in the daily reports.
Corrective Action	<p>Should an incident or failure to comply occur in relation to the management of environmental complaints, one or more of the following corrective actions will be undertaken as appropriate:</p> <ul style="list-style-type: none"> <li>• Conduct additional training of staff to handle environmental complaints</li> <li>• Investigate why the environmental complaint was not addressed within the specified time frame</li> <li>• Investigate the complaint and action follow-up according to the investigation results</li> </ul>

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#### **4.4.5 Deviations from the RAWP**

Necessary deviations from the RAWP will be coordinated with the NYSDEC in advance. Notification will be provided to the NYSDEC by telephone/email for conditions requiring immediate action (e.g., conditions judged to be a danger to the surrounding community). Based on the significance of the deviation, an addendum to this RAWP may be necessary and will include:

- Reasons for deviating from the approved RAWP;
- Approval process to be followed for changes/editions to the RAWP; and
- Effect of the deviation(s) on the overall remedy.

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## **5.0 REMEDIAL ACTION: SOURCE MATERIAL REMOVAL**

### **5.1 Soil Cleanup Objectives**

A Track 1 remediation is proposed; therefore, the SCOs for the site will be the NYSDEC Part 375 UU SCOs listed in the in 6 NYCRR Part 375-6.8(a).

Soil management will be conducted in accordance with the SMMP described below (Section 5.4). Closure of any USTs, if encountered, will conform to the criteria defined in 6 NYCRR Part 613.9, NYSDEC CP-51, and other applicable NYSDEC UST closure requirements including DER-10 Section 5.5.

### **5.2 Estimated Soil/Fill Removal Quantities**

The following remedial excavation of soil/fill and weathered bedrock will be completed:

- Site-wide excavation and off-site disposal of contaminated soil exceeding the Part 375 UU SCOs (about 5,700 cubic yards) to depths of 3 to 14 feet bgs
- Excavation, stockpiling, off-site transport, and disposal of up to about 10 feet of weathered bedrock across the site (about 9,960 cubic yards) to in part remove VOCs and PFAS in groundwater within shallow bedrock fractures

### **5.3 Post-Excavation End-Point Sampling**

Because the remedial excavation extends into weathered bedrock across the site, and the general redevelopment required deeper excavation of rock, endpoint soil samples will not be collected.

### **5.4 Soil/Materials Management Plan**

This section presents the approach to management, disposal and reuse of soil and fill excavated from the site. This plan is based on the current knowledge of site conditions, and will be augmented with the additional data collected during remediation. Field personnel, under the direction of the RE or QEP, will monitor and document the handling and transport of contaminated soil/fill removed from the site for disposal as a regulated solid waste. Field personnel, under the direction of the RE or QEP, will assist the remedial contractor in identifying impacted soil during excavation, determining soil suitable for direct load-out versus temporary on-site stockpiling, selection of samples for waste characterization, and determining the proper off-site disposal facility. Separate stockpile areas will be constructed as needed to stage various excavated soil types with the intent to more efficiently manage and characterize the soil and to avoid commingling of impacted soil with non-impacted soil.

#### **5.4.1 Soil Screening Methods**

Visual, olfactory, and PID soil screening and assessment will be performed by field personnel under the direction of the RE during all remedial and development excavations into known or potentially contaminated soil and weathered bedrock. Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during the remedy through removal of 10 feet of weathered bedrock (prior to issuance of the COC).

Field screening will be performed by field personnel under the direct supervision of the RE or QEP. Résumés will be provided for all personnel responsible for field screening (i.e., those representing the RE) of invasive work for known or unknown contaminant sources during remediation and development work.

#### **5.4.2 Stockpile Methods**

Soil stockpile areas, if needed for different soil and fill, will be constructed for staging of site soil, pending loading or waste characterization testing. Separate stockpile areas will be constructed to avoid commingling differing waste types. Stockpile areas will meet the following minimum requirements:

- The excavated soil will be placed onto an impermeable surface or on minimum thickness of 8-mil low-permeability plastic sheeting or tarps of sufficient strength to prevent puncture during use; separate stockpiles will be created where soil/fill types are different. The use of multiple layers of thinner liners is permissible.
- Equipment and procedures will be used to place and remove the soil to minimize the potential to jeopardize the integrity of the liner.
- Stockpiles will be covered at the designated times (see below) with minimum 8-mil plastic sheeting or tarps, which will be securely anchored to the ground. Stockpiles will be routinely inspected and broken sheeting covers will be promptly replaced.
- Stockpiles that have reached their capacity will be appropriately covered until they are ready for loading for off-site transport.
- Active stockpiles (e.g., stockpiles that have not reached their capacity) will be covered at the end of each workday.
- Each stockpile area will be encircled with silt fences and hay bales, as needed, to contain and filter particulates from rainwater that has drained off the soil, and to mitigate the potential for surface water run-off off-site.
- Stockpiles will be inspected at a minimum once each day and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC.

#### **5.4.3 Soil/Fill Characterization, Excavation and Load Out**

Excavated soil will be characterized for off-site disposal in a manner suitable to the receiving facility and in conformance with applicable permits. Sampling and analytical methods, sampling frequency, and analytical results will be reported in the FER. All data available for soil/fill to be disposed of at a given facility must be submitted to the disposal facility for review and approval before shipment and receipt.

The Volunteer and their contractors are solely responsible for safe execution of invasive work, the structural integrity of excavations, structures that may be affected by excavations, and other work performed under this RAWP. Field personnel under the direct supervision of the RE or QEP will oversee

all invasive work and the excavation and loading of excavated soil. Development-related grading cuts and fills will not be performed without NYSDEC approval of the RAWP, and the RE will provide that site development activities will not interfere with, or otherwise impair or compromise, remedial activities proposed in this RAWP.

The RE will be responsible for monitoring egress points for truck and equipment transport from the site and ensuring that the Contractor is notified of their obligation to immediately clean the sidewalks and or streets of soil or fill derived from the site during site remediation and development. Non-compliance will be reported to the NYSDEC. Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site sediment tracking. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived soil/fill. Loaded vehicles leaving the site will be lined, securely covered, manifested, and placarded in accordance with federal, state, and local (Westchester County Department of Transportation) requirements, and all other applicable transportation requirements. Mesh truck covers (typically used on non-remediation sites) are not acceptable. Trucks hauling soil/fill will not be lined unless the soil/fill exhibits free liquids, is grossly-impacted, or is determined to be hazardous. On-site mechanical processing of fill and contaminated soil is prohibited unless otherwise approved by the NYSDEC.

#### **5.4.4 Transport Off-Site**

Transport of soil/fill will be performed by licensed haulers in accordance with appropriate local, state, and federal regulations, including 6 NYCRR Part 364. Haulers will be licensed and permitted and trucks properly placarded. Trucks will enter and exit the site using dedicated ingress/egress points. Trucks loaded with soil/fill will exit the vicinity of the site using only approved truck routes. Trucks will be prohibited from stopping and idling unnecessarily in the neighborhood outside the site. To the extent possible, queuing of trucks will be performed on-site to minimize off-site disturbance. Off-site queuing will be minimized.

Proposed inbound and outbound truck routes to the site are shown on Figure 9. These routes take into account:

- Limiting transport through residential areas and past sensitive sites
- Use of city-mapped truck routes
- Minimization of off-site queuing of trucks entering the facility, to the extent possible
- Limiting total distance to major highways
- Promoting safety in access to highways
- Overall safety in transport

A truck wash/cleaning area will be operated on site. The RE will be responsible for documenting that outbound trucks are washed and cleaned at the truck wash before leaving the site until the remedial

construction is complete. Locations where vehicles enter or exit the site will be inspected daily for evidence of off-site sediment tracking.

If loads contain wet soil/fill capable of producing free liquid, truck liners will be used. The RE will be responsible for documenting that egress points for truck and equipment transport from the site are clean of soil or fill derived from the site during remediation and redevelopment. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived soil/fill.

#### **5.4.5 Disposal Off-Site**

Excavated soil and fill removed from the site will be handled, transported, and disposed of in accordance with local, state (including 6 NYCRR Parts 360), and federal regulations. If disposal of soil/fill is proposed for unregulated disposal (i.e., clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC's Project Manager. Unregulated off-site management of soil/fill from this site is prohibited without formal NYSDEC approval.

Excavated non-hazardous contaminated soil and weathered bedrock and hazardous waste (if encountered) must be disposed of at a facility licensed to accept the soil/fill. Non-hazardous fill can be sent to a C&D debris handling and recovery facility only with written approval from the NYSDEC. Hazardous waste is prohibited from being sent to a C&D debris handling and recovery facility (6 NYCRR Part 361-5). Hazardous waste derived from the site will be managed, transported, and disposed of in compliance with applicable local, state, and federal regulations.

The following documentation will be obtained and reported by the RE for each off-site disposal location used in this project to fully demonstrate and document that the disposal of soil/fill derived from the site conforms to applicable laws:

1. A letter from the RE or Volunteer to the receiving facility describing the soil/fill to be disposed and requesting formal written acceptance of the soil/fill. This letter will state that soil/fill to be disposed of is contaminated soil/fill generated at an environmental remediation site in New York State. The letter will provide the project identity and the name and phone number of the RE. The letter will include as an attachment a summary of all analytical data for the soil/fill being transported (including site characterization data); and
2. A letter from each receiving facility stating it is in receipt of the correspondence (above) and is approved to accept the soil/fill. These documents will be included in the FER.

The FER will include an account of the destination of all contaminated soil, fill, and liquids removed from the site during the remedy, including excavated soil/fill, hazardous waste (if any), non-regulated soil, and fluids. Documentation associated with disposal must also include records (i.e., manifests and scale tickets) and approvals for receipt by the facilities. This information will also be presented in the FER.

#### **5.4.6 On-site Reuse**

Excavated soil and bedrock will not be reused on site.

#### 5.4.7 Fluids Management

Remedial and development-related excavation will extend below the groundwater table and dewatering will be required to lower the groundwater table below the required excavation depths. A temporary dewatering and treatment system will be designed by the Remediation Contractor's NYS-licensed PE. Liquids to be removed from the site, including dewatering fluids, will be handled, transported, and disposed of in accordance with applicable local, state, and federal regulations. Liquids discharged into the Village of Port Chester sanitary sewer system (if any) will be addressed through approval by the Village of Port Chester. Dewatering to excavate all site soil and up to about 10 feet of weathered bedrock is considered part of the remediation.

During remedial excavation, sediment and erosion controls will be implemented to prevent groundwater encountered during excavation in saturated soil from flowing outside of the site. Trucks will be lined to contain free liquids in saturated soil from leaking out of the truck beds.

Dewatering fluids will not be recharged back to the land surface or subsurface. Dewatering fluids will be managed off-site. Discharge of water generated during remedial construction to surface waters (i.e., a local pond, stream, and/or river) is prohibited without a SPDES permit.

#### 5.4.8 Backfill

In the event imported backfill is required to prepare the sub-grade for foundation construction, pre-approval by the RE and NYSDEC is required prior to transporting to the site. Because the anticipated backfill depth would be within groundwater, only the following import material is acceptable:

- Soil that meets Part 375 UU SCOs, as demonstrated by samples collected at a frequency consistent with NYSDEC CP-51. The samples will be analyzed for Part 375 VOCs, SVOCs, pesticides/herbicides, PCBs, cyanide, metals including trivalent and hexavalent chromium, 1,4-dioxane and PFAS by a NYSDOH ELAP-certified laboratory
- Crushed virgin stone from a NYSDEC-permitted mine or quarry that demonstrates via sieve testing that less than 10% passes a size No. 10 sieve.

Prior to import to the site, a Request to Import/Reuse Fill or Soil form, which can be found at <http://www.dec.ny.gov/regulations/67386.html> will be prepared and submitted to the NYSDEC Project Manager allowing a minimum of five business days for review.

#### 5.4.9 SWPPP

Because the site is less than one acre, a SWPPP is not required, but BMPs will be implemented. Silt fencing or hay bales will be installed around the perimeter of the remedial construction area, as required. Barriers and hay bale checks will be installed and inspected once a week and after every storm event; necessary repairs shall be made immediately. Results of inspections will be recorded in a logbook maintained at the site and available for inspection by the NYSDEC. Accumulated sediments will be removed as required to keep the barrier and hay bale check functional. Undercutting or erosion of the silt fence toe anchor shall

be repaired immediately with appropriate backfill. Manufacturer's recommendations will be followed for replacing silt fence damaged due to weathering. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Implementation of the BMPs will mitigate the discharge of erosional sediment to Village of Port Chester sewer system.

#### **5.4.10 Contingency Plan**

If USTs or other previously unidentified contaminant sources are found during on-site remedial excavation or development-related construction, sampling will be performed on free product, if encountered, and surrounding subsurface materials (e.g., sediment, soil, stone). Chemical analytical work will be for NYSDEC CP-51 VOCs and SVOCs.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated to NYSDEC's Project Manager. These findings will be also detailed in daily and subsequent monthly BCP progress reports.

#### **5.4.11 Extreme Storm Preparedness and Response Contingency Plan**

Damage from flooding or storm surge can include dislocation of soil and stockpiled materials, dislocation of site structures and construction materials and equipment, and dislocation of SOE structures. Damage from wind during an extreme storm event can create unsafe or unstable structures, damage safety structures and cause downed power lines creating dangerous site conditions and loss of power. In the event of emergency conditions caused by an extreme storm event, the Volunteer will undertake the following steps for site preparedness prior to the event and response after the event.

##### Storm Preparedness

Preparations in advance of an extreme storm event will include the following: containerized hazardous materials and fuels will be removed from the property; loose materials will be secured to prevent dislocation and blowing by wind or water; heavy equipment such as excavators and generators will be removed from excavated areas, trenches and depressions on the property to high ground or removed from the property; an inventory of the property with photographs will be performed to establish conditions for the site and equipment prior to the event; stockpile covers for soil and fill will be secured by adding weights such as sandbags for added security and worn or ripped stockpile covers will be replaced with competent covers; stockpiled hazardous wastes will be removed from the property; stormwater management systems will be inspected and fortified, including, as necessary: clean and reposition silt fences, hay bales; clean storm sewer filters and traps; and secure and protect pumps and hosing.

##### Storm Response

At the conclusion of an extreme storm event, as soon as it is safe to access the property, a complete inspection of the property will be performed. A site inspection report will be submitted to NYSDEC at the

completion of site inspection and after the site security is assessed. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. Damage from storm conditions that result in acute public safety threats, such as downed power lines or imminent collapse of buildings, structures or equipment will be reported to public safety authorities via appropriate means such as calling 911.

Petroleum spills will be reported to NYSDEC within 2 hours of identification and consistent with State regulations. Public safety structures, such as construction security fences will be repaired promptly to eliminate public safety threats. Debris will be collected and removed.

Dewatering will be performed in compliance with existing laws and regulations and consistent with emergency notifications, if any, from proper authorities. Eroded areas of soil including unsafe slopes will be stabilized and fortified. Dislocated materials will be collected and appropriately managed. SOE structures will be inspected and fortified as necessary. Impacted stockpiles will be contained and damaged stockpile covers will be replaced. Stormwater control systems and structures will be inspected and maintained as necessary.

If soil or fill materials are discharged off site to adjacent properties, property owners and NYSDEC will be notified, and corrective measure plan designed to remove and clean dislocated material will be submitted to NYSDEC and implemented following approval by NYSDEC and granting of site access by the property owner. Impacted offsite areas may require characterization based on site conditions, at the discretion of NYSDEC.

If onsite petroleum spills are identified, a qualified environmental professional will determine the nature and extent of the spill and report to NYSDEC's spill hotline at (800) 4577362 within statutory defined timelines. If the source of the spill is ongoing and can be identified, it should be stopped if this can be done safely. Potential hazards will be addressed immediately, consistent with guidance issued by NYSDEC.

#### Storm Response Reporting

A site inspection report will be submitted to NYSDEC at the completion of site inspection. An inspection report will be used for this purpose. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. The site inspection report will be sent to the NYSDEC project manager and will include the site name, address, tax block and lot, site primary and alternate contact name and phone number.

Damage and soil release assessment will include: whether the project had stockpiles; whether stockpiles were damaged; photographs of damage and notice of plan for repair; report of whether soil from the site was dislocated and whether any of the soil left the site; estimates of the volume of soil that left the site, nature of impact, and photographs; description of erosion damage; description of equipment damage; description of damage to the remedial program or the construction program, such as damage to the SOE; presence of onsite or offsite exposure pathways caused by the storm; presence of petroleum or other

spills and status of spill reporting to NYSDEC; description of corrective actions; schedule for corrective actions.

This report should be completed and submitted to NYSDEC project manager with photographs within 24 hours of the time of safe entry to the property after the storm event.

#### **5.4.12 Community Air Monitoring Plan**

Community air monitoring will be conducted in compliance with the NYSDOH Generic CAMP outlined below and included in Appendix E. CAMP will be implemented during instructive work within site soil and the first 10 feet of weathered bedrock. CAMP will cease after the removal of the defined remedial excavation unless a new, deeper source of contamination is identified.

The CAMP includes real-time monitoring for VOCs and particulates at the downwind perimeter of ground-intrusive activities. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling and advancement of trenches and test pits. Periodic monitoring for VOCs is required during non-intrusive activities such as the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of collecting a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well bailing/purging, and collecting a reading before leaving a sample location.

CAMP monitoring for VOC levels will be conducted with PIDs, and monitoring for dust/particulates will be conducted with particulate sensors equipped with filters to detect particulate matter less than 10 microns in diameter (PM10). Monitoring for particulates and odors will be conducted during all ground intrusive activities by the RE's field inspector. The work zone is defined as the general area in which machinery is operating in support of remediation. A portable PID will be used to monitor the work zone and for periodic monitoring of VOCs during activities such as soil and groundwater sampling. The site perimeter will be visually monitored for fugitive dust emissions.

The following actions will be taken based on measured VOC levels:

- If total VOC levels exceed 5 parts per million (ppm) above background for the 15-minute average at the perimeter, work will be temporarily halted and monitoring continued. If levels readily decrease (per instantaneous readings) below 5 ppm above background, work will resume with continued monitoring.
- If total VOC levels at the downwind perimeter of the work zone persist at levels in excess of 5 ppm above background but less than 25 ppm, work will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps work will resume provided that the total organic vapor level 200 feet downwind of the work 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 above background for the 15-minute average.



- If the total VOC level is above 25 ppm at the perimeter of the work zone, work will be shut down.

The following actions will be taken based on measured particulate levels and visual dust observations:

- If the downwind particulate level is  $100 \mu\text{g}/\text{m}^3$  greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work zone, then dust suppression must be employed. Work may continue with dust suppression techniques provided that 15-minute average downwind PM10 levels do not exceed  $150 \mu\text{g}/\text{m}^3$  above the background level and provided that no visible dust is migrating from the work zone.
- If, after implementation of dust suppression techniques, 15-minute average downwind PM10 levels are greater than  $150 \mu\text{g}/\text{m}^3$  above the background level, work must be stopped and a re-evaluation of work initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind 15-minute average PM10 concentration to within  $150 \mu\text{g}/\text{m}^3$  of the upwind level and in preventing visible dust migration.

Concentrations above action levels established in the CAMP will be reported to the NYSDEC and NYSDOH Project Managers and included in the daily report. In addition, a map showing the locations of the downwind and upwind CAMP stations will be included in the daily report.

#### **5.4.13 Odor, Dust and Nuisance Control Plan**

Dust, odor, and nuisance control will be accomplished by the Contractor as described in this section. Invasive development work will be conducted in accordance with dust and odor suppression methodology defined in the RAWP.

##### *5.4.13.1 Odor Control Plan*

This odor control plan is capable of controlling emissions of nuisance odors off-site. Specific odor control methods to be used on a routine basis will include application of foam suppressants or tarps over the odorous or VOC source areas. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until nuisance odors are abated. The NYSDEC and NYSDOH will be notified of all odor events and of all other complaints about the project. Documentation of odor and vapor controls, including notifying the Contractor and owner of potential halt of work conditions, will be the responsibility of the RE, who is responsible for certifying the FER. Application of odor controls is the responsibility of the Contractor.

All necessary means will be employed to prevent on- and off-site nuisances. If odors develop and cannot be otherwise controlled, means to eliminate nuisance conditions may include: (a) shrouding open excavations with tarps and other covers; (b) use of odor-suppressing foam; (c) use of chemical odorants in spray or misting systems; and, (d) use of staff to monitor odors in the surrounding neighborhood.

5.4.13.2 *Dust Control Plan*

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

- Dust suppression will be achieved through the use of dedicated on-site water spraying for road wetting. The water source will be equipped with a water cannon, as required, capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, un-vegetated soil vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water spraying.

5.4.13.3 *Other Nuisances*

A plan for rodent control will be developed and employed by the Contractor prior to and during site clearing and site grubbing, and during all remedial work.

A plan will be developed and employed by the Contractor for all remedial work and will conform, at a minimum, to Village of Port Chester noise control standards.

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## **6.0 REMAINING CONTAMINATION**

Long-term management, such as ECs/ICs, will not be required to protect human health and the environment because no remaining contaminated soil, groundwater, and soil vapor will exist above applicable standards or screening levels after the remedy is complete.

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## **7.0 ENGINEERING AND INSTITUTIONAL CONTROLS**

Following completion of the remedy, it is anticipated that the site will achieve a Track 1 UU remedy and no contamination above the site-specific SCOs will remain in place requiring short or long term management; therefore, ECs and ICs will not be required as part of the remedial action.

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## **8.0 FINAL ENGINEERING REPORT**

An FER will be submitted to NYSDEC following implementation of the Remedial Action defined in this RAWP. The FER provides the documentation that the remedial work required under this RAWP has been completed and has been performed in compliance with this plan. The FER will provide a comprehensive account of the locations and characteristics of all material removed from the site including the surveyed map(s) of all sources. The FER will include as-built drawings for all constructed elements, calculation and manufacturer documentation for treatment systems, certifications, manifests, bills of lading as well as the complete SMP. The FER will provide a description of the changes in the Remedial Action from the elements provided in the RAWP and associated design documents. The FER will provide a tabular summary of all performance evaluation sampling results and all material characterization results and other sampling, and chemical analysis performed as part of the Remedial Action. The FER will provide test results demonstrating that all mitigation and remedial systems are functioning properly. The FER will be prepared in conformance with DER-10.

The FER will include written and photographic documentation of all remedial work performed under this remedy and an estimate of remedial costs.

The FER will provide a thorough summary of all residual contamination left on the site after the remedy is complete. Residual contamination includes all contamination that exceeds the Track 1 Unrestricted Use SCO in 6NYCRR Part 375-6. A table that shows exceedances from Track 1 Unrestricted SCOs for all soil/fill remaining at the site after the Remedial Action and a map that shows the location and summarizes exceedances from Track 1 Unrestricted SCOs for all soil/fill remaining at the site after the Remedial Action will be included in the FER.

The FER will include an accounting of the destination of all material removed from the site, including excavated contaminated soil, historic fill, solid waste, hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material. It will provide an accounting of the origin and chemical quality of all material imported onto the site.

The FER must include a discussion of the green remediation practices/technologies employed throughout the remedial program. A final footprint analysis using a DER accepted model, and any tracking methods used through the construction including restoration activities. Before approval of a FER and issuance of a COC, all project reports must be submitted in digital form on electronic media (PDF).

### **8.1 Certifications**

The following certification will appear in front of the Executive Summary of the FER. The certification will be signed by the RE, Jason Hayes, who is a Professional Engineer registered in New York State. This certification will be appropriately signed and stamped. The certification will include the following statements:

I, \_\_\_\_\_, am currently a registered professional engineer licensed by the State of New York, I had primary direct responsibility for implementation of the remedial program activities, and I certify that the RAWP was implemented and that all construction activities were completed in substantial conformance with the Department-approved RAWP.

I certify that the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set forth in the RAWP and in all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established for the remedy.

I certify that all data generated in support of this report have been submitted in accordance with the Department's electronic data deliverable and have been accepted by the Department.

I certify that all information and statements in this certification are true. I understand that a false statement made herein is punishable as Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as Owner's Designated Site Representative (and if the site consists of multiple properties): [and I have been authorized and designated by all site owners to sign this certification] for the site.

It is a violation of Article 145 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 145, New York State Education Law.

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## 9.0 SCHEDULE

Implementation of the remedy is anticipated to begin in 2025 and be completed in 2026. After completion of remediation, an FER will be submitted to the NYSDEC as detailed in Section 8.0. A remedial action construction schedule is included in Appendix J.

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