

DECISION DOCUMENT

350 Rising
Brownfield Cleanup Program
New York City, Bronx County
Site No. C203153
March 2026



**Department of
Environmental
Conservation**

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - DECISION DOCUMENT

350 Rising
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Statement of Purpose and Basis

This document presents the remedy for the 350 Rising brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the 350 Rising site and the public's input to the proposed remedy presented by NYSDEC.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases 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 which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- 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; and

- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any 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.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise™(available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

Excavation and off-site disposal of contaminant source areas including:

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- non aqueous phase liquids (NAPL);
- soil with visual waste material or NAPL;
- soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards;
- any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination; and
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

Excavation and off-site disposal of all on-site soils which exceed restricted residential SCOs, as defined by 6 NYCRR Part 375-6.8 in the upper 15 feet. Depth of excavation will extend five feet

below ground surface across the entire site, and to depths ranging from eight to twenty-five feet below ground surface in petroleum-contaminated hot spots areas to remove PGWSCO exceedances. If a Track 2 restricted residential cleanup is achieved, a Cover System will not be a required element of the remedy. Approximately 18,500 cubic yards of contaminated soil will be removed from the site.

Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that SCOs for the site have been achieved. If confirmation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify NYSDEC, submit the sample results and, in consultation with NYSDEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state and local laws, rules, and regulations and facility-specific permits.

3. Backfill

Backfill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site.

4. Groundwater Extraction & Treatment

Dewatering will be performed to facilitate the excavation of contaminated soil. Contaminated groundwater from dewatering operations will be treated as necessary prior to discharge to the municipal sewer system.

5. Enhanced Bioremediation

In-situ enhanced biodegradation will be employed to treat petroleum-related VOCs in groundwater in the petroleum hotspot areas. The biological breakdown of contaminants through aerobic respiration will be enhanced by the placement of Regenesis Oxygen Release Compound® Advance (ORC) at the base of remedial excavation in the petroleum hotspots. The bioremediation program will be implemented by application of ORC directly to the one to two feet of the backfill material placed at the top portion of the water table in the petroleum hotspots. Approximately 2,600 pounds of ORC will be applied to these excavation areas and then mechanically mixed with the backfill material in these areas using an excavator, such that it will be evenly distributed to maximize contact with and treatment of petroleum-related VOCs dissolved in groundwater.

Groundwater monitoring will be required down-gradient of the petroleum hotspots area. Monitoring will be conducted for contaminants of concern as well as dissolved oxygen and oxidation/reduction potential.

6. Institutional Controls

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to NYSDEC a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3); allow the use and development of the controlled property for restricted residential use, commercial use, or industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH or NYCDOHMH; and
- require compliance with the NYSDEC approved Site Management Plan.

7. Site Management Plan

A Site Management Plan is required, which includes the following:

- a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
 - Institutional Controls: The Environmental Easement discussed in remedy element 6 above.
 - Engineering Controls: The groundwater monitoring wells described in remedy element 5 above, and the Cover System discussed in contingent remedy element 8 below.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
 - descriptions of the provisions of the environmental easement including any land use and/or groundwater restrictions;
 - a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
 - provisions for the management and inspection of the identified engineering controls;
 - maintaining site access controls and NYSDEC notification; and
 - the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.
- b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
 - monitoring of groundwater to assess the performance and effectiveness of the remedy;
 - a schedule of monitoring and frequency of submittals to NYSDEC; and
 - monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

Contingent Remedial Elements

In the event that Track 2 restricted residential cleanup is not achieved, the following contingent remedial elements will be required, and the remedy will achieve a Track 4 restricted residential cleanup.

8. Cover System

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used, it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration NYSDEC guidance, as appropriate. The remedy is protective of public health and the environment.

March 9, 2026

Date



Scott Deyette, Director
Remedial Bureau B

DECISION DOCUMENT

350 Rising
New York City, Bronx County
Site No. C203153
March 2026

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, where a contaminant is present at levels exceeding the soil cleanup objectives or other health-based or environmental standards, criteria or guidance, based on the reasonably anticipated use of the property.

NYSDEC has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

NYSDEC seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by NYSDEC in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

DECInfo Locator - Web Application
<https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C203153>

New York Public Library - Woodstock Branch
761 E. 160th Street
Bronx, NY 10456
Phone: (718) 665-6255

Bronx Community Board District 1
3024 3rd Avenue
Bronx, NY 10455
Phone: (718) 585-7117

Receive Site Citizen Participation Information By Email

Please note that NYSDEC's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at <http://www.dec.ny.gov/chemical/61092.html>

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The 350 Rising site is located in an urban area of Bronx County with an address of 350 Grand Concourse, Bronx, NY and consists of the parcel identified as Block 2341, Lot 42 (f/k/a Lots 42 and 47) on the New York City Tax Map. The site is bounded by a three-story residential building followed by E. 144th St. to the north, a wooded vacant lot followed by MTA Metro North rail lines to the east, a nine-story hotel to the south, and Grand Concourse to the west.

Site Features: The site is 0.71-acres in size and was previously occupied by a vacant gasoline service station with a one-story convenience store, a sales kiosk, and a canopy covered gasoline pump dispenser area. The former gasoline station building and associated structures were demolished in 2022. The site is currently vacant.

Current Zoning and Land Use: The current zoning designation for the site is C6-2A, which is a commercial and residential district. The surrounding parcels are currently used for a combination of commercial and residential purposes.

Past Use of the Site: Historical records indicated that as early as 1891, the site was developed with several two- to four-story dwellings, and from 1908-1935 the southern portion of the site was depicted as the NYC and HR Railroad Co. with multiple two- to four-story structures. By 1935, the site was occupied by automotive related businesses/facilities and uses that included various gasoline filling stations, auto sales, and an auto body repair between 1944 and 2021.

Site Geology and Hydrology: The stratigraphy of the site consists of historic fill (silt with sand, brick, and gravel) ranging from 7 to 17 feet below grade generally underlain by either native soil (silt, sand, and clay with gravel) to the terminus of the borings (between 13 to 25 feet below grade) or weathered bedrock encountered between 7 to 20 feet below grade. Groundwater depth beneath the site ranges from 12 to 18 feet below grade. Regional groundwater flow is generally to the southwest towards Harlem River, which is approximately 1,000 feet to the west of the site.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

NYSDEC may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives that restrict the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Volunteer. The Applicant does not have an obligation to address off-site contamination. However, NYSDEC has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil

- soil vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. NYSDEC has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminants of concern identified at this site are:

ethylbenzene	chrysene
xylene (mixed)	dibenz(a,h)anthracene
n-propylbenzene	indeno(1,2,3-cd) pyrene
sec-butylbenzene	barium
benzene	cadmium
isopropylbenzene	copper
toluene	lead
MTBE (methyl-tert-butyl ether)	mercury
benzo(a)anthracene	cyclohexane
benzo(a)pyrene	heptane
benzo(b)fluoranthene	hexane

The contaminants of concern exceed the applicable SCGs for:

- groundwater
- soil

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

The following IRM has been completed at this site based on conditions observed during the RI.

IRM - Soil Excavation and UST Removal

IRM activities were performed at the site from 2022 through 2025, including: demolition of the existing site structures; closure and removal of three out-of-service USTs with associated fill ports and vent lines; removal of the former soil vapor extraction (SVE) system subgrade components; and excavation of a soil hotspot in the northern portion of the site containing elevated concentrations of lead (non-hazardous). These IRM activities were performed in accordance with the NYSDEC-approved work plan dated September 2022 and the IRM Modification Request letter dated February 20, 2025. The results of the IRM were documented in the approved IRM Construction Completion Report dated April 2025.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination:

Soil and groundwater samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), per- and polyfluoroalkyl substances (PFAS), and pesticides. Soil vapor samples were analyzed for VOCs. Based upon investigations conducted to date, the primary contaminants of concern for the site include VOCs, SVOCs, and metals in soil, and VOCs in groundwater and soil vapor.

Soil - Soil samples were collected at various depths (to a maximum depth of 24 feet) from borings advanced throughout the site. Elevated levels of VOCs, SVOCs (primarily polycyclic aromatic hydrocarbon, or PAHs) and metals were detected in site soils.

Maximum detections in comparison to applicable protection of groundwater or restricted residential use soil cleanup objectives (PGWSCO/RRSCO) are as follows: ethylbenzene at 9.8 ppm (PGWSCO of 1 ppm), benzo(a)anthracene at 4.4 ppm (RRSCO of 1.0 ppm), benzo(a)pyrene at 4 ppm (RRSCO of 1 ppm), benzo(b)fluoranthene at 4.5 ppm (RRSCO of 1 ppm), chrysene at 4.5 ppm (RRSCO of 3.9 ppm), dibenz(a,h)anthracene at 0.63 ppm (RRSCO of 0.33 ppm), indeno(1,2,3-cd)pyrene at 2.6 ppm (RRSCO of 0.5 ppm), barium at 1,630 ppm (RRSCO of 400 ppm), cadmium at 4.5 ppm (RRSCO of 4.3 ppm), copper at 282 ppm (RRSCO of 270 ppm), lead at 1,240 ppm (PGWSCO of 450 ppm, RRSCO of 400 ppm), and mercury at 43.2 ppm (RRSCO of 0.81 ppm).

Evidence of soils grossly-impacted by petroleum and containing NAPL were encountered in several borings throughout the site, mostly in portions of the site historically used for petroleum distribution. These impacts extend to 24 feet below surface grade. The PAHs and most metals contamination in soils is likely related to the presence of historic fill or historical operations at the site.

PFAS were detected in four of fourteen soil samples, with perfluorooctane sulfonic acid (PFOS) detected at 3.21 parts per billion (ppb), which is below the restricted residential use guidance value of 44 ppb and the protection of groundwater guidance value of 3.7 ppb. Perfluorooctanoic acid (PFOA) was detected at 0.92 ppb which exceeds the protection of groundwater guidance value of 0.8 ppb but is below the restricted residential use guidance value of 33 ppb.

PCBs, pesticides, and 1,4-dioxane did not exceed applicable soil cleanup objectives or guidance values in soil.

Data does not indicate any off-site impacts in soil related to this site.

Groundwater - Groundwater samples were collected from monitoring wells installed throughout the site. Analytical results of groundwater sampling revealed levels of VOCs, SVOCs (PAHs) and metals above Ambient Water Quality Standards and Guidance Values (AWQSGVs). Maximum detections are as follows: benzene at 32 ppb (AWQSGVs is 1 ppb), isopropylbenzene at 16 ppb (AWQSGVs is 5 ppb), m,p-xylenes at 28 ppb (AWQSGVs is 5 ppb), methyl tert-butyl ether (MTBE) at 13 ppb (AWQSGVs is 10 ppb), n-propylbenzene at 14 ppb (AWQSGVs is 5 ppb), sec-butylbenzene at 5.2 ppb (AWQSGVs is 5 ppb), toluene at 7.8 ppb (AWQSGVs is 5 ppb), benzo(a)anthracene at 0.91 ppb (AWQSGVs is 0.002 ppb), benzo(a)pyrene at 0.62 ppb (AWQSGVs is ND), phenol at 3.3 ppb (AWQSGVs is 1 ppb), and lead at 34.4 ppb [total] / 1.2 ppb [dissolved] (AWQSGVs is 25 ppb). The presence of petroleum-related VOCs in groundwater is likely related to the site's historical use for petroleum distribution. The presence of SVOCs in groundwater is likely due to the presence of entrained sediments in groundwater samples and not site soils. Several metals were detected in groundwater above AWQS including manganese, magnesium, selenium and sodium, however these concentrations are consistent with regional background concentrations.

There were no exceedances of AWQSGVs for pesticides, PCBs, or 1,4-dioxane.

The highest detection of PFOA in groundwater was 38.9 parts per trillion (ppt) which exceeds the AWQSGV of 6.7 ppt, and the highest detection of PFOS was 25.9 ppt which exceeds the AWQSGV of 2.7 ppt. Based on the soil data, there is no apparent on-site source for PFAS to site groundwater and similar concentrations of PFAS were present in off-site groundwater samples.

Soil Vapor - Six soil vapor points were sampled during the RI at locations throughout the site. RI results revealed elevated levels of multiple VOCs in soil vapor, including petroleum-related compounds such as benzene, toluene, cyclohexane, n-heptane, and n-hexane, with concentrations of 3.7 micrograms per cubic meter (ug/m³), 15 ug/m³, 32,000 ug/m³, 44,000 ug/m³, and 240,000 ug/m³ respectively. Chlorinated VOCs were detected at maximum concentrations of 11 ug/m³ for PCE, and 4.5 ug/m³ for cis-1,2-dichloroethene. Data does not indicate any off-site impacts in soil vapor related to this site.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

Access to the site is unrestricted and people who enter the site could contact contaminants in the soil by walking on the soil, digging or otherwise disturbing the soil. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not contaminated by the site. Volatile organic compounds in the soil vapor (air spaces within the soil) may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The site is currently vacant; however, the potential exists for people to inhale site contaminants in indoor air due to soil vapor intrusion within future on-site buildings. Environmental sampling indicates soil vapor intrusion from site contamination is not a concern for off-site buildings.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of ground water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 2: Restricted use with generic soil cleanup objectives remedy.

The selected remedy is referred to as the Excavation and Enhanced Bioremediation remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases 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 which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- 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; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any 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.

As part of the remedial design program, to evaluate the remedy with respect to green and

sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise™(available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

Excavation and off-site disposal of contaminant source areas including:

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- non aqueous phase liquids (NAPL);
- soil with visual waste material or NAPL;
- soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards;
- any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination; and
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

Excavation and off-site disposal of all on-site soils which exceed restricted residential SCOs, as defined by 6 NYCRR Part 375-6.8 in the upper 15 feet. Depth of excavation will extend five feet below ground surface across the entire site, and to depths ranging from eight to twenty-five feet below ground surface in petroleum-contaminated hot spots areas to remove PGWSCO exceedances. If a Track 2 restricted residential cleanup is achieved, a Cover System will not be a required element of the remedy. Approximately 18,500 cubic yards of contaminated soil will be removed from the site.

Collection and analysis of confirmation samples at the remedial excavation depth will be used to

verify that SCOs for the site have been achieved. If confirmation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify NYSDEC, submit the sample results and, in consultation with NYSDEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

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3. Backfill

Backfill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site.

4. Groundwater Extraction & Treatment

Dewatering will be performed to facilitate the excavation of contaminated soil. Contaminated groundwater from dewatering operations will be treated as necessary prior to discharge to the municipal sewer system.

5. Enhanced Bioremediation

In-situ enhanced biodegradation will be employed to treat petroleum-related VOCs in groundwater in the petroleum hotspot areas. The biological breakdown of contaminants through aerobic respiration will be enhanced by the placement of Regenesys Oxygen Release Compound® Advance (ORC) at the base of remedial excavation in the petroleum hotspots. The bioremediation program will be implemented by application of ORC directly to the one to two feet of the backfill material placed at the top portion of the water table in the petroleum hotspots. Approximately 2,600 pounds of ORC will be applied to these excavation areas and then mechanically mixed with the backfill material in these areas using an excavator, such that it will be evenly distributed to maximize contact with and treatment of petroleum-related VOCs dissolved in groundwater.

Groundwater monitoring will be required down-gradient of the petroleum hotspots area. Monitoring will be conducted for contaminants of concern as well as dissolve oxygen and oxidation/reduction potential.

6. Institutional Controls

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to NYSDEC a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);

allow the use and development of the controlled property for restricted residential use, commercial use, or industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;

- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH or NYCDOHMH; and
- require compliance with the NYSDEC approved Site Management Plan.

7. Site Management Plan

A Site Management Plan is required, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

- Institutional Controls: The Environmental Easement discussed in remedy element 6 above.
- Engineering Controls: The groundwater monitoring wells described in remedy element 5 above, and the Cover System discussed in contingent remedy element 8 below.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use and/or groundwater restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and NYSDEC notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to NYSDEC; and
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

Contingent Remedial Elements

In the event that Track 2 restricted residential cleanup is not achieved, the following contingent remedial elements will be required, and the remedy will achieve a Track 4 restricted residential cleanup.

8. Cover System

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used, it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.