DECISION DOCUMENT

556 Baltic Street Site
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224375
December 2023

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

DECLARATION STATEMENT - DECISION DOCUMENT

556 Baltic Street Site
Brownfield Cleanup Program
Brooklyn, Kings County
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Statement of Purpose and Basis

This document presents the remedy for the 556 Baltic Street Site, a 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 556 Baltic Street 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^{TM} (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

The existing on-site buildings will be demolished and materials which cannot be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy.

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

- 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. If a Track 2 restricted residential cleanup is achieved, a Cover System will not be a required element of the remedy.

Approximately 6,900 cubic yards of contaminated soil will be removed from the site. Collection and analysis of confirmation and documentation samples at the remedial excavation depths will be used to verify that SCOs for the site have been achieved. If confirmation/documentation sampling indicates that SCOs were not achieved at the stated remedial depth (15 feet in the northern area, 18 feet in the southern), the Applicant must notify DEC, submit the sample results and, in consultation with DEC, 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
Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to establish the designed grades at the base of the excavation at the site.

4. In-Situ Chemical Oxidation
In-situ chemical oxidation (ISCO) will be implemented to treat petroleum contaminants in groundwater. A sodium and potassium persulfate, activated with ferrous sulfide will be mixed within backfill material at the groundwater interface at the base of the excavation in the southern portion of the site where gasoline-related compounds were elevated in the groundwater.

Monitoring will be required up-gradient, down-gradient, and within the treatment zone. Monitoring will be conducted for the contaminants of concern, which are volatile organic compounds, including 1,2,4 trimethylbenzene and 1,3,5 trimethylbenzene.

5. Engineering and Institutional Controls
Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 2 restricted residential cleanup at a minimum and will include imposition of a site cover (as a contingency if soil greater than 2 feet but less than 15 feet deep does not meet the restricted residential SCOs).

Institutional Control
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 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 the NYSDOH or NYCDOH; and
- require compliance with NYSDEC approved Site Management Plan.

6. 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 Paragraph 5 above.

– Engineering Controls: The cover system (as a contingency) discussed in Paragraph 7, and any groundwater wells installed to monitor effectiveness of groundwater remedy.

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; an excavation plan will not be needed if the remedy achieves residential SCOs in the upper 15 ft;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use 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 and indoor air 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 Track 4 Remedy

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

7. Cover System

A site cover will be required in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs), to allow for future restricted residential use of the site. 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.

December 19, 2023
Date

Scott Deyette, Director
Remedial Bureau B

DECISION DOCUMENT

556 Baltic Street Site
Brooklyn, Kings County
Site No. C224375
December 2023

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.

The 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

The 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=C224375

Brooklyn Public Library - Pacific Branch
25 Fourth Avenue at Pacific Street
Brooklyn, NY 11217

Brooklyn Community Board 6
250 Baltic Street

Brooklyn, NY 11201
Phone: 718-643-3027

Receive Site Citizen Participation Information By Email

Please note that the 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

Site Location:
The 556 Baltic Street Site's address is 151-169 Third Avenue, Brooklyn, NY 11217. The site is located in Kings County, and is labelled as Block 407, Lot 1 in the New York City tax map. It is approximately 0.27-acres in size (11,800 square feet). The site is bordered to the north by Baltic Street, to the east by multi-story residential buildings and a self-storage warehouse, to the south by Butler Street, and to the west by Third Avenue. The site is located within an urban area of Gowanus, Brooklyn, and the Gowanus Canal is located approximately 1,500 feet southwest of the site.

Site Features:
The site is paved with an impervious concrete surface. It is secured with a 10-foot-high locked construction fence. The site is currently vacant. A one-story building formerly used as a car wash on the northern portion of the site, and a one-story office building and three pump islands associated with the former gas station on the southern portion remain at the site.

Current Zoning and Land Use:
The site is located within a residential and manufacturing zoning district (M1-4/R7X). As part of the Gowanus Rezoning, the site has a Mandatory Inclusionary Housing (MIH) requirement. The proposed development of the property is consistent with the current zoning. The site was assigned an environmental E-Designation by New York City for hazardous materials, noise, and air quality effective March 2019 as part of the rezoning action.

Past Use of the Site:
The site was initially developed with multiple four-story commercial stores in the 1920s. By 1978, a car wash was constructed on the northern portion of the site. The site operated as a gasoline service station, auto rental, and car wash from the 1970s until the cessation of operations in 2022. The two 4,000-gallon underground storage tanks (USTs) for gasoline storage have been emptied, but the tanks, installed in 1972, remain in place at the site. Additionally, a 550-gallon UST, installed in 1974, was reportedly closed and removed in 1997.

Site Geology and Hydrogeology:
The site is underlain by fill predominantly consisting of brown to dark brown, coarse to medium sand with varying amounts of gravel, concrete, brick, and silt, from surface grade to depths of approximately 8 to 10 feet below ground surface (bgs). The fill is underlain by brown fine silty sand. The topography of the site and the surrounding area slopes gently downward from north to west southwest towards the Gowanus Canal. The ground level elevation on the property is approximately 21 feet above mean sea level. Groundwater is located at 14.49-15.69 feet bgs, and groundwater contours indicate flow from northwest to southeast.

A site location map is attached as Figure 1 and a site layout map is attached as Figure 2.

SECTION 4: LAND USE AND PHYSICAL SETTING

The 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 restricts 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, the 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:

xylene (mixed)
lead
mercury
benzene
tetrachloroethene (PCE)
naphthalene
ethylbenzene
1,2,4-trimethylbenzene
1,3,5-trimethylbenzene
n-propylbenzene
sec-butyl benzene
benzo(a)anthracene
benzo(a)pyrene
benzo(b)fluoranthene
benzo(k)fluoranthene
chrysene
indeno(1,2,3-cd)pyrene
arsenic
barium
copper

The contaminants of concern exceed the applicable SCGs for:

- soil
- groundwater

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.

There were no IRMs performed at this site during the RI.

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.

Soil and groundwater samples were collected for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total metals, PCBs, pesticides, and per- and polyfluoroalkyl substances (PFAS). Soil vapor samples were analyzed for VOCs. Based on the investigations conducted to date, the primary contaminants of concern include petroleum VOCs, SVOCs and metals in soil, and VOCs in groundwater and soil vapor. The findings from the 2022 Remedial Investigation are summarized below.

Soil - Petroleum-related volatile organic compounds (VOCs) were detected in soil to a depth of 16 feet below ground surface (bgs) at levels exceeding protection of groundwater soil cleanup objectives (PGSCOs) but were below restricted residential soil cleanup objectives (RRSCO). PGSCOs are used for comparison when the same compounds are found in soil and in groundwater above the ambient water quality standard (AWQS). These included: 1,2,4 trimethylbenzene up to 30 parts per million (ppm) (PGSCO is 3.6 ppm); 1,3,5 trimethylbenzene up to 9 ppm (PGSCO is 8.4 ppm); benzene 3.9 ppm (PGSCO is 0.06 ppm); ethylbenzene 10 ppm (PGSCO is 1 ppm), xylenes 11 ppm (PGSCO is 1.6 ppm); naphthalene 25 ppm (PGSCO is 12 ppm); sec-butyl benzene 53 ppm (PGSCO is 11 ppm); and n-propyl benzene 160 ppm (PGSCO is 3.9 ppm, RRSCO 100 ppm).

Multiple semi-volatile organic compounds (SVOCs) were detected above their respective RRSCOS and/or PGSCOs up to a depth of 12 feet, including: benzo(a)pyrene 15 ppm (RRSCO is 1 ppm, PGSCO is 22 ppm); benzo(a)anthracene 20 ppm (RRSCO and PGSCO is 1 ppm); benzo(b)fluoranthene 16 ppm (RRSCO 1 ppm, PGSCO is 1.7 ppm); benzo(k)fluoranthene 4 ppm (RRSCO is 3.9 ppm, PGSCO is 1.7 ppm); chrysene 18 ppm (RRSCO is 3.9 ppm, PGSCO is 1 ppm); and indeno(1,2,3-cd)pyrene 8.6 ppm (RRSCO is 0.5 ppm, PGSCO is 8.2 ppm) were identified sitewide in soil samples at depths up to 8 feet below ground surface (bgs), and slightly deeper (to 16 feet) in isolated areas.

Metals were identified sitewide above RRSCOs including arsenic 51 ppm (16 ppm RRSCO); barium 676 ppm (400 ppm RRSCO); copper 324 ppm (270 ppm RRSCO); mercury 30 ppm (0.81 ppm RRSCO); lead 5930 ppm (400 ppm RRSCO).

Emerging contaminants perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) exceeded protection of groundwater guidance values. PFOA was detected at 1.07 parts per billion (ppb) (compared to 0.8 ppb) and PFOS was detected at 3.91 ppb (compared to 1.0 ppb).

PCBs and pesticides did not exceed RRSCOs.

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

Groundwater - Petroleum-related volatile organic compounds (VOCs) were detected in groundwater at levels exceeding the ambient water quality standards and guidance values (AWQSGVs) including (maximum concentrations): 1,2,4 trimethylbenzene (33 ppb); 1,3,5 trimethylbenzene (13 ppb); 1,2,4,5-tetramethylbenzene (63 ppb); isopropylbenzene (140 ppb); methyl tert-butyl ether (MTBE) (12 ppb); benzene (170 ppb); ethylbenzene (19 ppb); xylenes (15 ppb); naphthalene (13 ppb); sec-butyl benzene (22 ppb); n-butylbenzene (19 ppb) and n-propyl benzene (220 ppb). The AWQSGV for these is 5 ppb. A chlorinated, non-petroleum compound, cis-1,2-dichloroethene was detected at 5.3 ppb compared to AWQSGV of 5 ppb.

Several SVOCs were detected above the AWQSGVs in groundwater samples including: benzo(a)pyrene (0.13 ppb), benzo(a)anthracene (0.14 ppb), benzo(b)fluoranthene (0.15 ppb), benzo(k)fluoranthene (0.05 ppb), chrysene (0.13 ppb) and indeno(123)pyrene (0.08 ppb), all of which have a water quality standard of 0.002 ppb. These samples were not filtered, and concentrations may be related to particulates in the sample.

1,4-dioxane was detected at a maximum concentration of 1.23 ppb compared to AWQSGV of 0.35 ppb.

PFOA and PFOS were detected in groundwater. The highest value of PFOA was 67.5 parts per trillion (ppt) compared to the AWQSGV of 6.7 ppt and the highest value of PFOS was 108 ppt, compared to the AWQSGV of 2.7 ppt. There are no public water supply wells within a half mile of the site, and there is a municipal prohibition on the use of groundwater underlying the site.

Three dissolved metals were detected above the AWQSGVs in groundwater samples collected during the RI. These include iron, manganese and sodium, which are naturally occurring and are not associated with site operations.

Data does not indicate any off-site groundwater impacts related to the site.

Soil Vapor - Chlorinated VOCs were detected throughout the site. The maximum concentration of tetrachloroethene (PCE) detected was 464 micrograms per cubic meter (ug/m3). Petroleum VOCs were significantly higher. The highest compound detected was 2,2,4-trimethylpentane at a maximum concentration of 251,000 ug/m3. Additional compounds included hexane 3,320 ug/m3, cyclohexane 3,130 ug/m3 and heptane 2,020 ug/m3. These elevated values may indicate potential source material near the sample point.

Data does not indicate any off-site soil vapor impacts related to the 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.*

Since the site is fenced and access is restricted, people will not come into contact with site-related soil and groundwater contamination unless they dig below the surface. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in soil vapor (air spaces within the soil) may move into 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 vacant so inhalation of site contaminants in indoor air via vapor intrusion is not a current concern. However, the potential exists for inhalation of site contaminants due to soil vapor intrusion for any future on-site development. In addition, 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 or surface 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 or surface water 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 Groundwater Treatment remedy.

The elements of the selected remedy, as shown in Figure 3, are as follows:

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^{TM} (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

The existing on-site buildings will be demolished and materials which cannot be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy.

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

- 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. If a Track 2 restricted residential cleanup is achieved, a Cover System will not be a required element of the remedy.

Approximately 6900 cubic yards of contaminated soil will be removed from the site. Collection and analysis of confirmation and documentation samples at the remedial excavation depths will be used to verify that SCOs for the site have been achieved. If confirmation/documentation sampling indicates that SCOs were not achieved at the stated remedial depth (15 feet in the

northern area, 18 feet in the southern), the Applicant must notify DEC, submit the sample results and, in consultation with DEC, 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
Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to establish the designed grades at the base of the excavation at the site.

4. In-Situ Chemical Oxidation or Reduction
In-situ chemical oxidation (ISCO) will be implemented to treat petroleum contaminants in groundwater. A sodium and potassium persulfate, activated with ferrous sulfide will be mixed within backfill material at the groundwater interface at the base of the excavation in the southern portion of the site where gasoline-related compounds were elevated in the groundwater.

Monitoring will be required up-gradient, down-gradient, and within the treatment zone. Monitoring will be conducted for the contaminants of concern, which are volatile organic compounds, including 1,2,4 trimethylbenzene and 1,3,5 trimethylbenzene.

5. Engineering and Institutional Controls
Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 2 restricted residential cleanup at a minimum and will include imposition of a site cover (as a contingency if soil greater than 2 feet but less than 15 feet deep does not meet the restricted residential SCOs).

Institutional Control
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 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 the NYSDOH or NYCDOH; and
- require compliance with NYSDEC approved Site Management Plan.

6. 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 Paragraph 5 above.

– Engineering Controls: The cover system (as a contingency) discussed in Paragraph 7, and any groundwater wells installed to monitor effectiveness of groundwater remedy.

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; an excavation plan will not be needed if the remedy achieves residential SCOs in the upper 15 ft;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use 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:

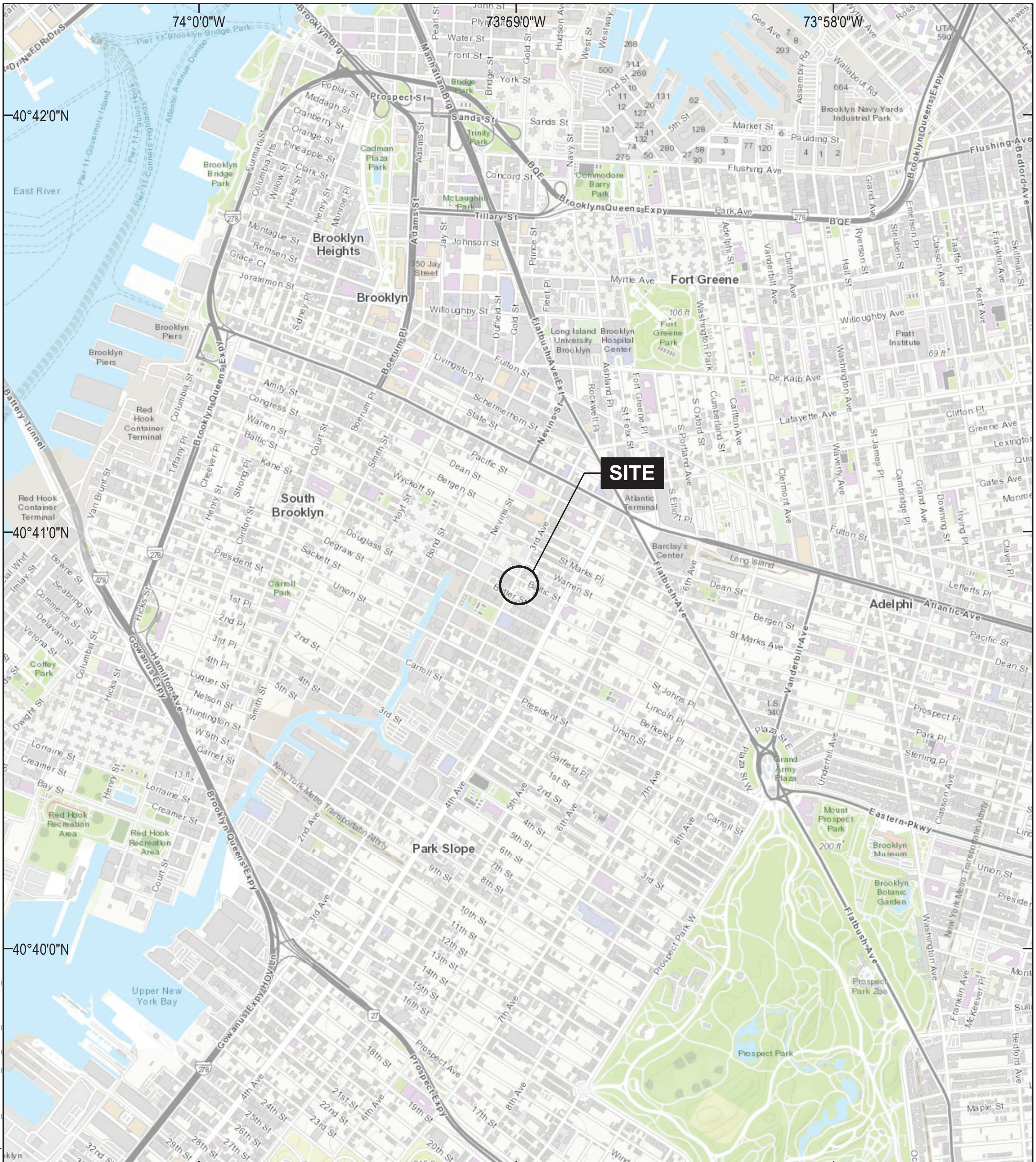
- monitoring of groundwater and indoor air to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to NYSDEC; and
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan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

Contingent Track 4 Remedy

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

7. Cover System
A site cover will be required in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs), to allow for future restricted residential

use of the site. 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.



MAP SOURCE: ESRI
SITE COORDINATES: 40°40'52"N, 73°58'59"W

HALEY ALDRICH

556 BALTIC STREET

BROOKLYN, NY

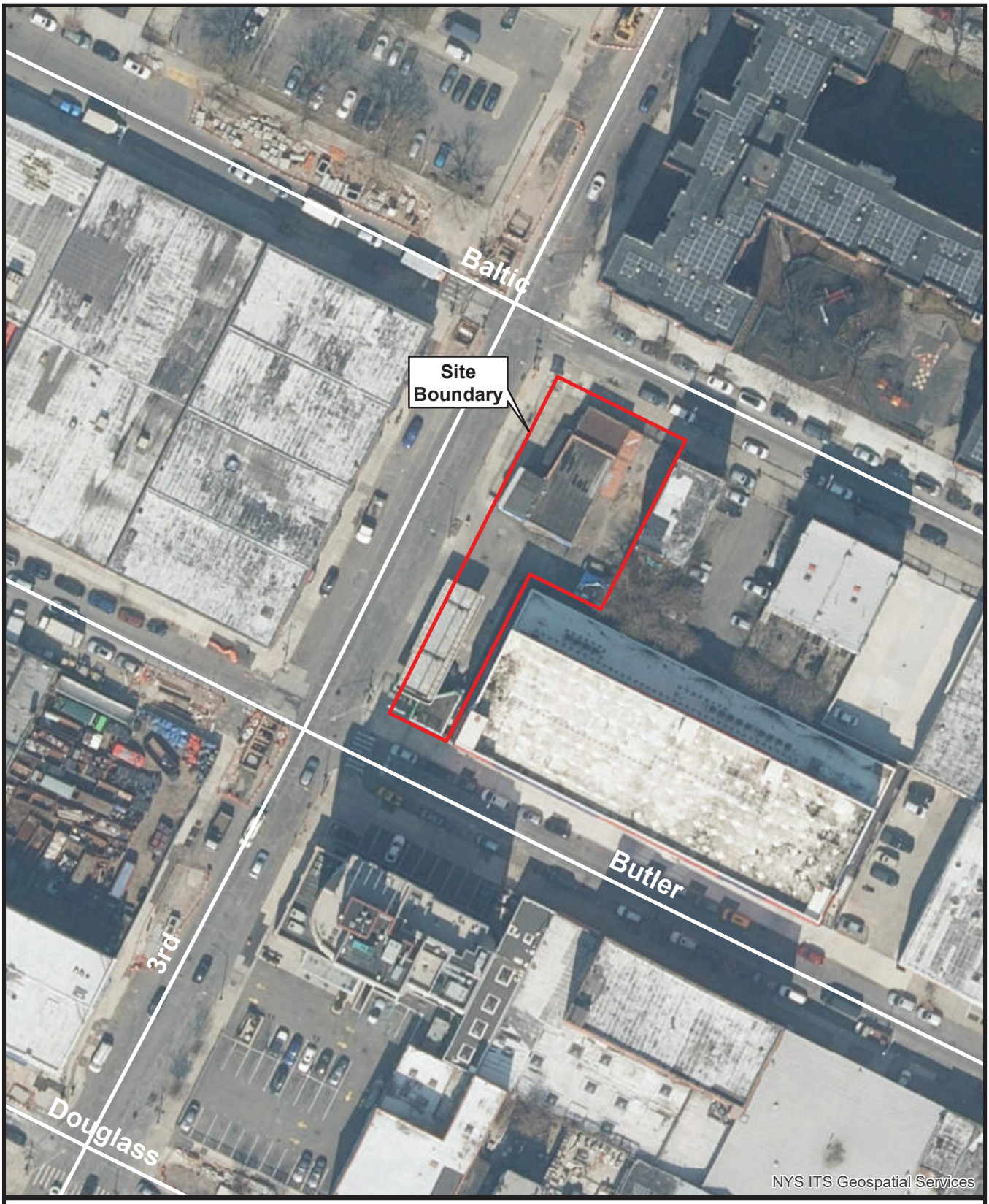
SITE LOCATION MAP

556 BALTIC STREET SITE

APPROXIMATE SCALE: 1 IN = 2000 FT
MARCH 2023

FIGURE 1

GIS: \\haleyaldrich.com\share\CF\Projects\0204090\GIS\Maps\2021_12\204090_000_0001_PROJECT_LOCUS.mxd - anichols - 1/28/2022 1:39:47 PM



N
W E
S

0 45 90
Feet

Figure 2
Site Map

556 Baltic Street Site
151-169 Third Avenue
Brooklyn, NY
Site No. C224375

NEW YORK STATE | Department of Environmental Conservation

LEGEND

Remedial Excavation Depth in Feet Below Ground Surface (bgs)

- SITE BOUNDARY
- 15 FEET
- 18 FEET; APPLICATION AREA FOR PERSULFATE ACTIVATED WITH TSI-FSA™
- PROPOSED ELEVATOR PIT; WILL GENERATE 55 CY OF NON-REMEDIAL SOIL
- PROPOSED POST REMEDY GROUNDWATER GRAB SAMPLE LOCATION
- PROPOSED OFFSITE SENTINEL WELL LOCATION

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: NEARMAP, 19 OCTOBER 2021

N

0 30 60

SCALE IN FEET

HALEY ALDRICH

REMEDIAL INVESTIGATION WORK PLAN
556 BALTIC STREET
BROOKLYN, NEW YORK

(modified by NYSDEC)

Alternative II - Remedial Excavation Plan

FIGURE 3

LEGEND

- ENDPOINT BOTTOM SAMPLE SITE
- BOUNDARY
- CONFIRMATION SAMPLE GRID BOUNDARIES

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: NEARMAP, 19 OCTOBER 2021
3. CONFIRMATION SAMPLES TOWARDS AREAS OF CONTAMINATION
4. CONFIRMATION SAMPLE GRID BOUNDARIES DRAWN FOR AT LEAST ONE SAMPLE PER 900 SQUARE FEET

N

0 30 60

SCALE IN FEET

HALEY ALDRICH

REMEDIAL INVESTIGATION WORK PLAN
556 BALTIC STREET
BROOKLYN, NEW YORK
(modified by NYSDEC)

Remedial Confirmation Sample Location Plan

FIGURE 4