DECISION DOCUMENT

Consumers Park Brewery Site
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224381
October 2024

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

DECLARATION STATEMENT - DECISION DOCUMENT

Consumers Park Brewery Site
Brownfield Cleanup Program
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Site No. C224381
October 2024

Statement of Purpose and Basis

This document presents the remedy for the Consumers Park Brewery 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 Consumers Park Brewery 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

Excavation and off-site disposal of all on-site soils which exceed unrestricted SCOs, as defined by 6 NYCRR Part 375-6.8. Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination. If a Track 1 cleanup is achieved, a Cover System will not be a required element of the remedy.

Approximately 33,000 cubic yards of contaminated soil will be removed from the site for remediation. 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 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

As needed, clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site.

4. Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the migration of vapors into the building from the subsurface. The system and any vapor intrusion monitoring must no longer be needed within 5 years of the date of the Certificate of Completion, or the remedy would result in a Track 2 restricted residential cleanup.

5. Soil Vapor Extraction (SVE)

Soil vapor extraction (SVE) will be implemented to remove volatile organic compounds (VOCs) from the subsurface and prevent the migration of vapors off-site. VOCs will be physically removed from the soil by applying a vacuum to wells that have been installed into the vadose zone (the area below the ground but above the water table). The vacuum draws air through the soil matrix which carries the VOCs from the soil to the SVE well. The air extracted from the SVE wells is then treated as necessary prior to being discharged to the atmosphere. Specifics about the installation of the SVE will be determined during the remedial design. The system and any soil vapor monitoring must no longer be needed within 5 years of the date of the Certificate of Completion, or the remedy would result in a Track 2 restricted residential cleanup.

6. In-Situ Chemical Oxidation

In-situ chemical oxidation (ISCO) will be implemented to treat groundwater contaminated with petroleum VOCs. RegenOx® will be injected into the subsurface to destroy the contaminants in the northern half of the site where petroleum VOCs were found to be elevated in groundwater. The method and depth of injection will be determined during the remedial design.

Prior to the full implementation of this technology, additional laboratory scale studies will be conducted, and additional geochemical data will be collected to define design parameters more clearly.

Monitoring will be required upgradient, downgradient, and within the treatment zone. Monitoring will be conducted for petroleum VOCs at all locations as well as for dissolved oxygen and oxidation/reduction potential upgradient and downgradient of the treatment zone. Existing monitoring wells will be used for monitoring the groundwater treatment, and if needed, additional wells will be installed.

7. In-Situ Chemical Reduction

In-situ chemical reduction (ISCR) will be implemented to treat chlorinated VOCs in groundwater no sooner than one month following the ISCO injection discussed in Remedy Element 6 above. Zero valent iron (ZVI) and electron donor will be injected into the subsurface to destroy the contaminants in the northern half of the site where chlorinated VOCs were found to be elevated in groundwater. The method and depth of injection will be determined during the remedial design.

Prior to the full implementation of this technology, additional laboratory scale studies will be conducted, and additional geochemical data will be collected to define design parameters more clearly.

Monitoring will be required upgradient, downgradient, and within the treatment zone. Monitoring will be conducted for chlorinated VOCs at all locations as well as for dissolved oxygen and oxidation/reduction potential upgradient and downgradient of the treatment zone. Existing monitoring wells will be used for monitoring the groundwater treatment, and if needed, additional wells will be installed.

8. Enhanced Bioremediation

In-situ enhanced biodegradation will be employed to treat chlorinated VOCs in groundwater in conjunction with the ISCR injection discussed in Remedy Element 7 above. Bio-Dechlor INOCULUM Plus (BDI PLUS®) will be injected into the subsurface to destroy the chlorinated VOCs found to be elevated in groundwater in the northern half of the site. The biological breakdown of contaminants through anaerobic reductive degradation will be enhanced by the injection of an electron donor, S-MicroZVI®. The method and depth of injection will be determined during the remedial design.

Prior to the full implementation of this technology, additional laboratory scale studies will be conducted, and additional geochemical data will be collected to define design parameters more clearly.

Monitoring will be required upgradient, downgradient, and within the treatment zone. Monitoring will be conducted for chlorinated VOCs at all locations as well as for dissolved oxygen and oxidation/reduction potential upgradient and downgradient of the treatment zone. Existing monitoring wells will be used for monitoring the groundwater treatment, and if needed, additional wells will be installed.

9. Local Institutional Controls

If no Environmental Easement (EE) or Site Management Plan (SMP) is needed to achieve soil, groundwater, or soil vapor remedial action objectives, then the following local use restriction will be relied upon to prevent ingestion of groundwater: Article 141 of the NYCDOHMH code, which prohibits potable use of groundwater without prior approval.

Conditional Track 1

The intent of the remedy is to achieve a Track 1 unrestricted use therefore, no environmental easement or site management plan is anticipated. If the remedial action objectives (RAOs) for groundwater and soil vapor intrusion are not achieved prior to completion of the Final Engineering Report, then a SMP and EE will be required, and a Track 1 cleanup can only be achieved if no engineering controls are needed and the RAOs are achieved within 5 years of the date of the Certificate of Completion.

In the event that Track 1 unrestricted use is not achieved, the following contingent remedial elements will be required, and the remedy will achieve a Track 2 restricted residential cleanup at a minimum.

10. 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 the 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 NYCDOHMH; and
- require compliance with the NYSDEC approved Site Management Plan.

11. 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 engineering controls remain in place and effective:

- Institutional Controls: The Environmental Easement discussed in Remedy Element 10 above.
- Engineering Controls: The sub-slab depressurization system discussed in Remedy Element 4 and the soil vapor extraction system discussed in Remedy Element 5 above.

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 groundwater use restrictions;

- 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, soil vapor, and indoor air to assess the performance and effectiveness of the remedy; and
- a schedule of monitoring and frequency of submittals to the NYSDEC.

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection, and reporting of any mechanical or physical components of the active vapor mitigation systems. The plan includes, but is not limited to:
- procedures for operating and maintaining the systems; and
- compliance inspection of the systems to ensure proper O&M as well as providing the data for any necessary reporting.

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.

October 29, 2024
Date

Scott Deyette, Director
Remedial Bureau B

DECISION DOCUMENT

Consumers Park Brewery Site
Brooklyn, Kings County
Site No. C224381
October 2024

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=C224381

Brooklyn Community Board #9
890 Nostrand Avenue
Brooklyn, NY 11225
Phone: (718) 778-9279

Brooklyn Public Library - Central Branch
10 Grand Army Plaza
Brooklyn, NY 11238
Phone: (718) 230-2100

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 Consumers Park Brewery Site is located at 122A, 124, 130 Montgomery Street in the Crown Heights section of Brooklyn, Kings County. The site occupies Block 1192, Lots 40, 41, and 46. The site is bounded to the north by Montgomery Street followed by a single-story auto repair shop and two attached dwellings, to the east by Franklin Avenue followed by a playground and public school, to the south by a vacant lot, then followed by two 6-story multi-family residential apartment buildings, and to the west by railroad tracks associated with the New York City Metropolitan Transit S subway line followed by a single-story retail building currently occupied by a day-care.

Site Features: The 1.558-acre fenced-in site is currently vacant. All onsite buildings were demolished by 2024.

Current Zoning and Land Use: The site is zoned as R6A residential and is currently vacant with no onsite buildings. The surrounding properties are characterized by residential, commercial, and mixed industrial buildings, some of which have institutional uses including a public school.

Past Use of the Site: The site was developed in 1888 with six small residences and several small stables and sheds situated around the site perimeter. By 1908, the Consumers Park Brewery occupied the site. The past uses of the site included residential, commercial, and light industrial including the brewery, showroom, wire-cutting shop, retail, and the most recent use being a spice factory. The Golombeck spice company reportedly ceased operations in 2019.

Site Geology and Hydrogeology: The site stratigraphy from the surface down consists of an urban fill layer extending to approximately 5 feet below grade (ft bg) across the majority of the site and down to approximately 13 ft bg in a limited area in the northeastern portion of the site generally consisting of limited brick and concrete mixed with silty sand. The fill layer is underlain by a potentially native layer consisting mainly of brown silty sand with some clay. According to the U.S. Geologic Survey, the site is situated within the Coastal Plain

physiographic province with bedrock estimated at a depth of 250 ft bg.

Groundwater was encountered at an average depth of 84 ft bg and was measured to flow southeast across the site. Regional groundwater flow is to the south-southwest.

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, an alternative which allows for 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) against 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 Department in consultation with NYSDOH has determined that this site poses a significant threat to public health or the environment; accordingly, an enforcement action is necessary.

NYSDEC will seek to identify any parties (other than the Volunteer) known or suspected to be responsible for contamination at or emanating from the site, referred to as Potentially Responsible Parties (PRPs). NYSDEC will bring an enforcement action against the PRPs. If an enforcement action cannot be brought or does not result in the initiation of a remedial program by any PRPs, NYSDEC will evaluate the off-site contamination for action under the State Superfund. The PRPs are subject to legal actions by the State for recovery of all response costs the State incurs or has incurred.

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:

benzo(a)anthracene
benzo(a)pyrene
benzo(b)fluoranthene
benzo(k)fluoranthene
chromium
chrysene
cis-1,2-dichloroethene
cymene
dibenz[a,h]anthracene
indeno(1,2,3-cd)pyrene
lead
mercury
tetrachloroethene (PCE)
trichloroethene (TCE)
perfluorooctane sulfonic acid
perfluorooctanoic acid
1,1,1-Trichloroethane (TCA)

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.

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.

Nature and Extent of Contamination:
Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), pesticides, per- and polyfluoroalkyl substances (PFAS), and 1,4- dioxane. Soil vapor was analyzed for VOCs. The primary contaminants of concern at the site include VOCs, SVOCs, and metals in soil, VOCs, SVOCs, metals, and PFAS in groundwater, and chlorinated and petroleum-related VOCs in soil vapor.

Soil
Exceedances of the unrestricted use soil cleanup objectives (UUSCOs) were primarily found in the historic fill layer which extends to approximately 5 feet below grade (ft bg) over a majority of the site and up to approximately 13 ft bg in the northeast portion of the site. In general, the highest concentrations were detected in the upper four feet of site soils with some deeper exceedances extending up to 20 ft bg.

VOCs detected at concentrations exceeding their respective UUSCOs include acetone up to 0.36 parts per million (ppm) (UUSCO of 0.05 ppm), and tetrachloroethene (PCE) up to 16 ppm (UUSCO of 1.3 ppm).

SVOCs detected at concentrations exceeding their respective UUSCOs include benzo(a)anthracene up to 16.2 ppm (UUSCO of 1 ppm), benzo(a)pyrene up to 14.6 ppm (UUSCO of 1 ppm), benzo(b)fluoranthene up to 17.7 ppm (UUSCO of 1 ppm), benzo(k)fluoranthene up to 6.53 ppm (UUSCO of 0.8 ppm), chrysene up to 17.5 ppm (UUSCO of 1 ppm), dibenz(a,h)anthracene up to 2.49 ppm (UUSCO of 0.33 ppm), and indeno(1,2,3-cd)pyrene up to 10.5 ppm (UUSCO of 0.5 ppm). 1,4-Dioxane was not detected above its respective UUSCO of 0.1 ppm.

Metals detected at concentrations exceeding their respective UUSCOs include arsenic up to 41.9 ppm (UUSCO of 13 ppm), barium up to 3,390 ppm (UUSCO of 350 ppm), trivalent chromium up to 43.2 ppm (UUSCO of 30 ppm), hexavalent chromium up to 3.02 ppm (UUSCO of 1 ppm), lead up to 3,200 ppm (UUSCO of 63 ppm), and mercury up to 47.9 ppm (UUSCO of 0.18 ppm).

Pesticides detected at concentrations exceeding their respective UUSCOs include 4,4'-DDD up to 0.01 ppm (UUSCO of 0.0033 ppm), 4,4'-DDE up to 0.006 ppm (UUSCO of 0.0033 ppm), and 4,4'-DDT up to 0.117 ppm (UUSCO of 0.0033 ppm).

Total PCBs were detected at concentrations up to 0.229 ppm compared to the UUSCO of 0.1 ppm.

PFAS detected at concentrations exceeding their respective UUSCOs include perfluorooctanoic acid (PFOA) up to 1.56 parts per billion (ppb) (UUSCO of 0.66 ppb) and perfluorooctanesulfonic acid (PFOS) up to 2.53 ppb (UUSCO of 0.88 ppb).

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

Groundwater

VOCs detected at concentrations exceeding Class GA Ambient Water Quality Standard and Guidance Values (AWQSGV) include PCE up to 22 ppb (AWQSGV of 5 ppb), 1,1,1-trichloroethane (1,1,1-TCA) up to 5.9 ppb (AWQSGV of 5 ppb), and p-cymene up to 370 ppb (AWQSGV of 5 ppb).

SVOCs detected at concentrations exceeding their respective AWQSGVs include benzo(a)anthracene up to 1.46 ppb (AWQSGV of 0.002 ppb), benzo(a)pyrene up to 1.2 ppb (AWQSGV of 0.002 ppb), benzo(b)fluoranthene up to 1.41 ppb (AWQSGV of 0.002 ppb), benzo(k)fluoranthene up to 0.674 ppb (AWQSGV of 0.002 ppb), chrysene up to 1.58 ppb (AWQSGV of 0.002 ppb), and indeno(1,2,3-cd)pyrene up to 0.632 ppb (AWQSGV of 0.002 ppb). 1,4-Dioxane was not detected above its respective AWQSGV.

Dissolved metals detected at concentrations exceeding their respective AWQSGVs include chromium up to 71.1 ppb (AWQSGV of 50 ppb) and lead up to 34.5 ppb (AWQSGV of 25 ppb). Naturally occurring minerals were also detected above AWQSGV including manganese and sodium and are not considered site related.

PFAS detected at concentrations exceeding their respective AWQSGVs include PFOA up to 55.6 parts per trillion (ppt) (AWQSGV of 6.7 ppt) and PFOS up to 14.2 ppt (AWQSGV of 2.7 ppt).

No PCBs or pesticides were detected above their respective AWQSGVs.

Data indicates that there is a potential for off-site impacts in groundwater related to this site.

Soil Vapor

Various chlorinated VOCs were detected in soil vapor including PCE up to 26,000 micrograms per cubic meter (µg/m³), trichloroethene up to 2,100 µg/m³, cis-1,2-dichloroethene up to 530 µg/m³, and 1,1,1-TCA up to 41 µg/m³.

Various petroleum-related VOCs were detected in soil vapor including benzene up to 160 µg/m³, toluene up to 650 µg/m³, ethylbenzene up to 560 µg/m³, o-xylene up to 190 µg/m³, and m,p-xylene up to 410 µg/m³.

Data indicates that there is a potential for 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.*

The site is completely fenced, which restricts public access. However, people who enter the site could contact site contaminants the soil by walking on the site, 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 affected by site 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. Because there are no on-site buildings, inhalation of soil contaminants via soil vapor intrusion is not a current concern for the site. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion off-site as well as in any future on-site building development and occupancy.

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

- 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 Conditional Track 1 remedy.

The selected remedy is referred to as the Excavation, Vapor Mitigation, Soil Vapor Extraction, and Groundwater Treatment remedy.

The elements of the selected remedy, as shown in Figures 3 and 4 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

Excavation and off-site disposal of all on-site soils which exceed unrestricted SCOs, as defined by 6 NYCRR Part 375-6.8. Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination. If a Track 1 cleanup is achieved, a Cover System will not be a required element of the remedy.

Approximately 33,000 cubic yards of contaminated soil will be removed from the site for remediation. 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 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

As needed, clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site.

4. Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the migration of vapors into the building from the subsurface. The system and any vapor intrusion monitoring must no longer be needed within 5 years of the date of the Certificate of Completion, or the remedy would result in a Track 2 restricted residential cleanup.

5. Soil Vapor Extraction (SVE)

Soil vapor extraction (SVE) will be implemented to remove volatile organic compounds (VOCs) from the subsurface and prevent the migration of vapors off-site. VOCs will be physically removed from the soil by applying a vacuum to wells that have been installed into the vadose zone (the area below the ground but above the water table). The vacuum draws air through the soil matrix which carries the VOCs from the soil to the SVE well. The air extracted from the SVE wells is then treated as necessary prior to being discharged to the atmosphere. Specifics about the installation of the SVE will be determined during the remedial design. The system and any soil vapor monitoring must no longer be needed within 5 years of the date of the Certificate of Completion, or the remedy would result in a Track 2 restricted residential cleanup.

6. In-Situ Chemical Oxidation

In-situ chemical oxidation (ISCO) will be implemented to treat groundwater contaminated with petroleum VOCs. RegenOx® will be injected into the subsurface to destroy the contaminants in the northern half of the site where petroleum VOCs were found to be elevated in groundwater. The method and depth of injection will be determined during the remedial design.

Prior to the full implementation of this technology, additional laboratory scale studies will be conducted, and additional geochemical data will be collected to define design parameters more clearly.

Monitoring will be required upgradient, downgradient, and within the treatment zone. Monitoring will be conducted for petroleum VOCs at all locations as well as for dissolved oxygen and oxidation/reduction potential upgradient and downgradient of the treatment zone. Existing monitoring wells will be used for monitoring the groundwater treatment, and if needed,

additional wells will be installed.

7. In-Situ Chemical Reduction

In-situ chemical reduction (ISCR) will be implemented to treat chlorinated VOCs in groundwater no sooner than one month following the ISCO injection discussed in Remedy Element 6 above. Zero valent iron (ZVI) and electron donor will be injected into the subsurface to destroy the contaminants in the northern half of the site where chlorinated VOCs were found to be elevated in groundwater. The method and depth of injection will be determined during the remedial design.

Prior to the full implementation of this technology, additional laboratory scale studies will be conducted, and additional geochemical data will be collected to define design parameters more clearly.

Monitoring will be required upgradient, downgradient, and within the treatment zone. Monitoring will be conducted for chlorinated VOCs at all locations as well as for dissolved oxygen and oxidation/reduction potential upgradient and downgradient of the treatment zone. Existing monitoring wells will be used for monitoring the groundwater treatment, and if needed, additional wells will be installed.

8. Enhanced Bioremediation

In-situ enhanced biodegradation will be employed to treat chlorinated VOCs in groundwater in conjunction with the ISCR injection discussed in Remedy Element 7 above. Bio-Dechlor INOCULUM Plus (BDI PLUS®) will be injected into the subsurface to destroy the chlorinated VOCs found to be elevated in groundwater in the northern half of the site. The biological breakdown of contaminants through anaerobic reductive degradation will be enhanced by the injection of an electron donor, S-MicroZVI®. The method and depth of injection will be determined during the remedial design.

Prior to the full implementation of this technology, additional laboratory scale studies will be conducted, and additional geochemical data will be collected to define design parameters more clearly.

Monitoring will be required upgradient, downgradient, and within the treatment zone. Monitoring will be conducted for chlorinated VOCs at all locations as well as for dissolved oxygen and oxidation/reduction potential upgradient and downgradient of the treatment zone. Existing monitoring wells will be used for monitoring the groundwater treatment, and if needed, additional wells will be installed.

9. Local Institutional Controls

If no Environmental Easement (EE) or Site Management Plan (SMP) is needed to achieve soil, groundwater, or soil vapor remedial action objectives, then the following local use restriction will be relied upon to prevent ingestion of groundwater: Article 141 of the NYCDOHMH code,

which prohibits potable use of groundwater without prior approval.

Conditional Track 1

The intent of the remedy is to achieve a Track 1 unrestricted use therefore, no environmental easement or site management plan is anticipated. If the remedial action objectives (RAOs) for groundwater and soil vapor intrusion are not achieved prior to completion of the Final Engineering Report, then a SMP and EE will be required, and a Track 1 cleanup can only be achieved if no engineering controls are needed and the RAOs are achieved within 5 years of the date of the Certificate of Completion.

In the event that Track 1 unrestricted use is not achieved, the following contingent remedial elements will be required, and the remedy will achieve a Track 2 restricted residential cleanup at a minimum.

10. 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 the 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 NYCDOHMH; and
- require compliance with the NYSDEC approved Site Management Plan.

11. 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 engineering controls remain in place and effective:

- Institutional Controls: The Environmental Easement discussed in Remedy Element 10 above.
- Engineering Controls: The sub-slab depressurization system discussed in Remedy Element 4 and the soil vapor extraction system discussed in Remedy Element 5 above.

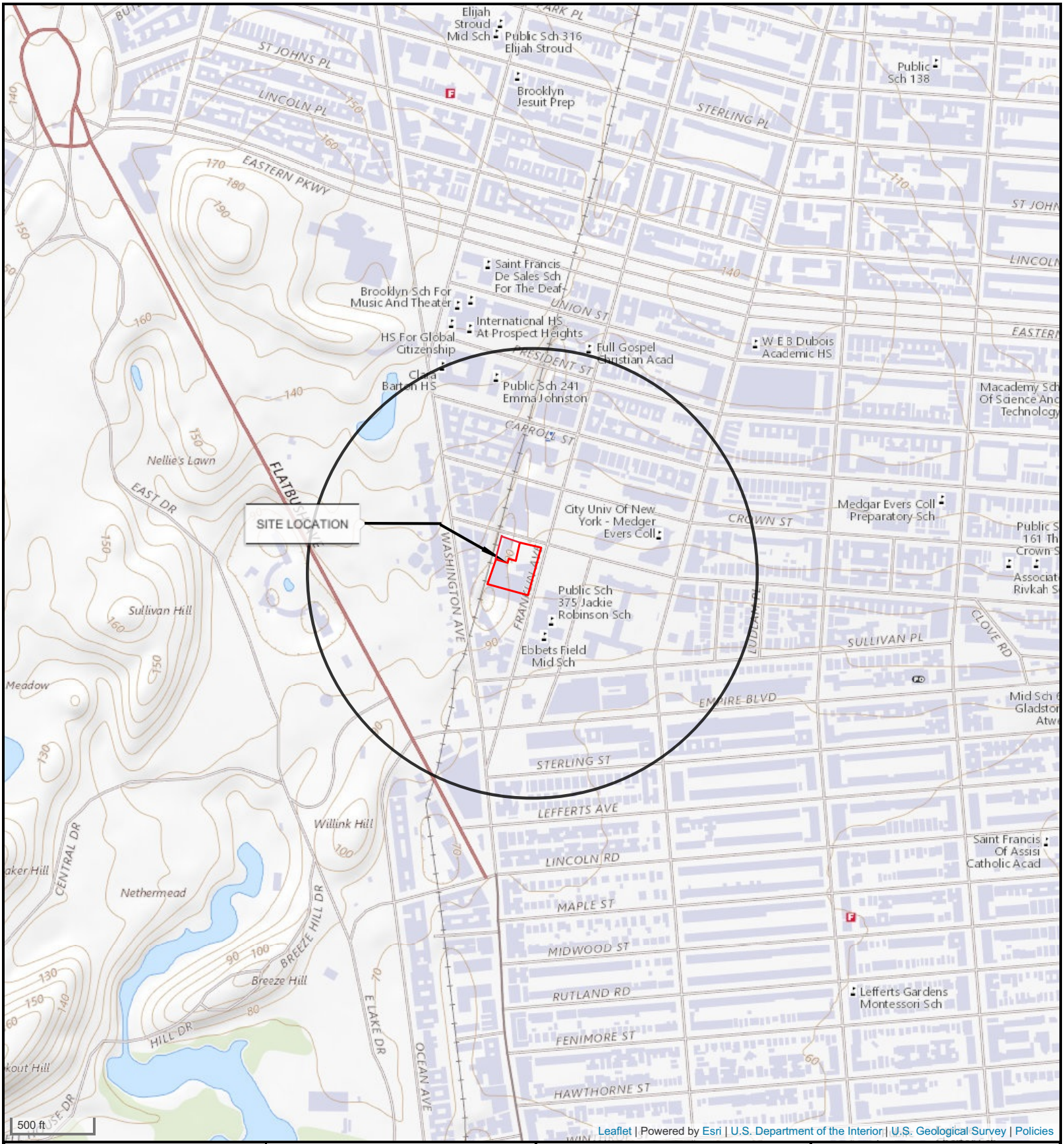
This plan includes, but may not be limited to:

- 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 groundwater use restrictions;
- 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, soil vapor, and indoor air to assess the performance and effectiveness of the remedy; and
   - a schedule of monitoring and frequency of submittals to the NYSDEC.

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection, and reporting of any mechanical or physical components of the active vapor mitigation systems. The plan includes, but is not limited to:
   - procedures for operating and maintaining the systems; and
   - compliance inspection of the systems to ensure proper O&M as well as providing the data for any necessary reporting.



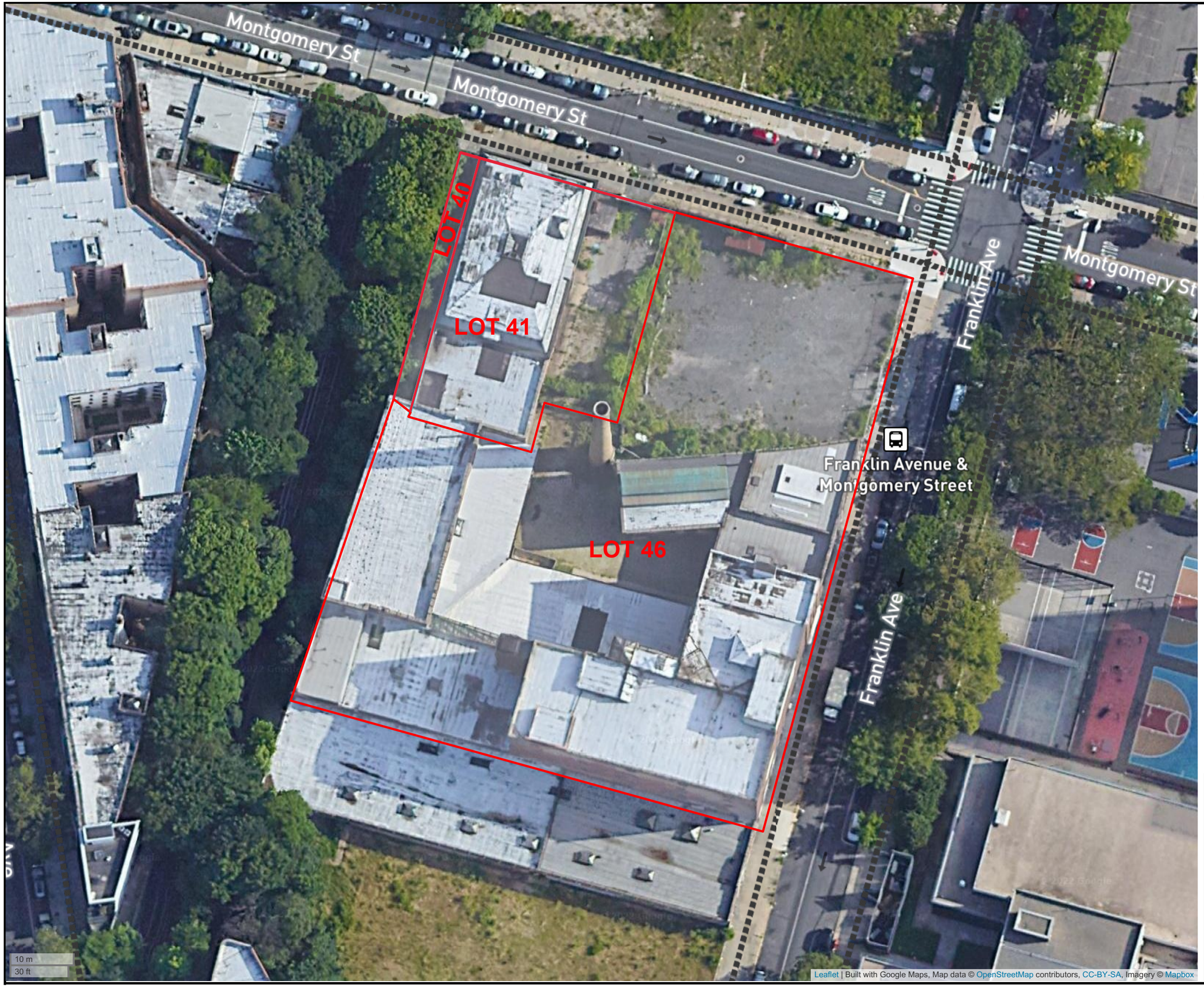
Latitude: 40.66579
Longitude: -73.95989

N
W E
S

vEKtor consultants

Consumer Park Brewery Site
BCP# C224381

Figure 1
Site Location Map
Remedial Investigation Report
960 Franklin Avenue Brooklyn, New York



N
W E
S

Legend

Site Property Boundary

Notes:
1. Property consists of three tax parcels
2. LOT XX: Lot Number

Latitude: 40.66602, Longitude: -73.96040

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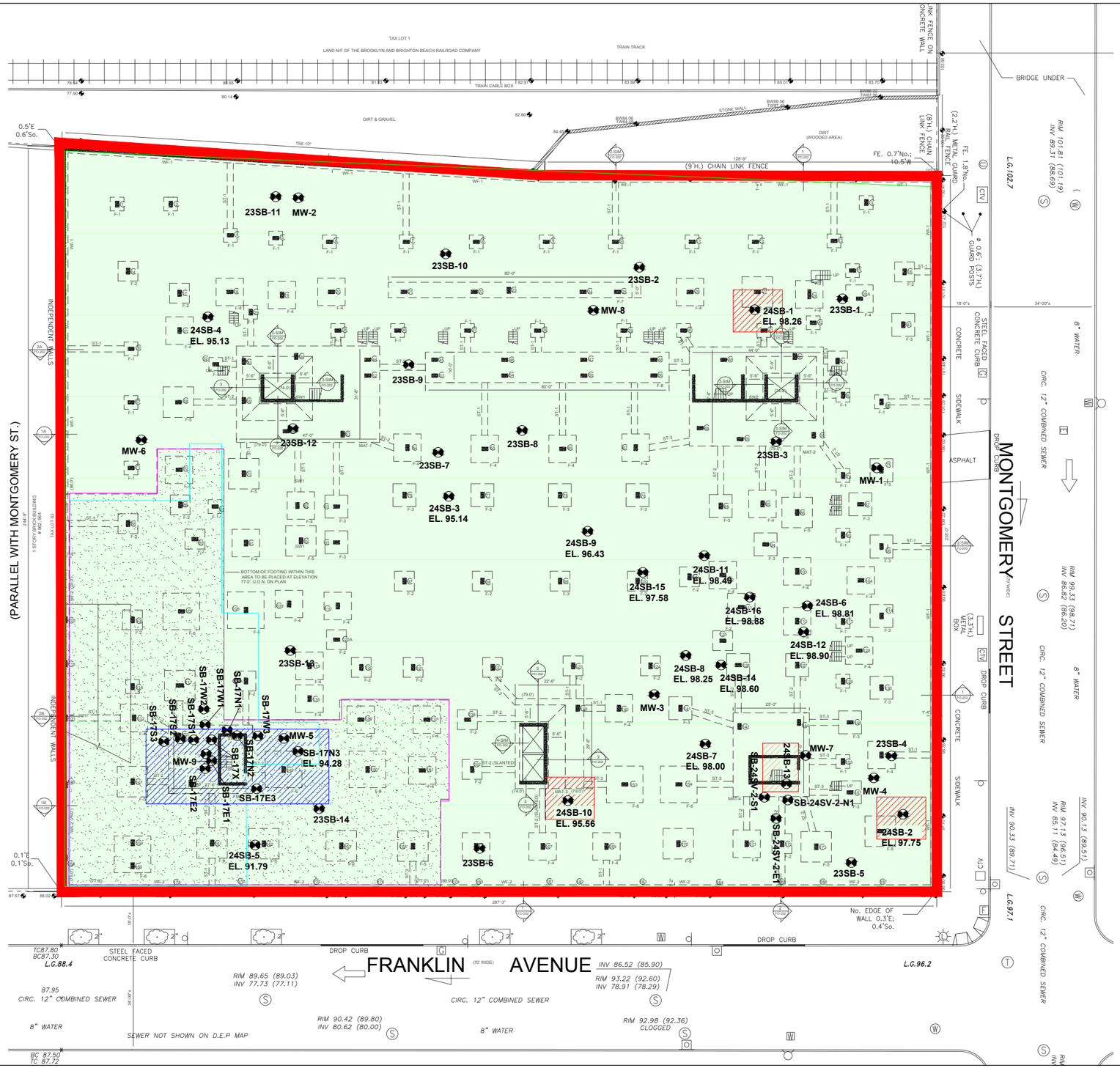
FIGURE 2
SITE BOUNDARY MAP

Site Name:	Consumer Park Brewery Site
BCP#:	C224381
Site Address:	960 Franklin Avenue
	Brooklyn, New York



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Legend:

- BCP Site Boundary
- RI & SRI Soil Borings and Monitoring Wells
- Approximate Footprint of Former Cellar (Backfilled to grade during demolition)

Remedial Excavation between 13 to 20 feet due to elevation difference:

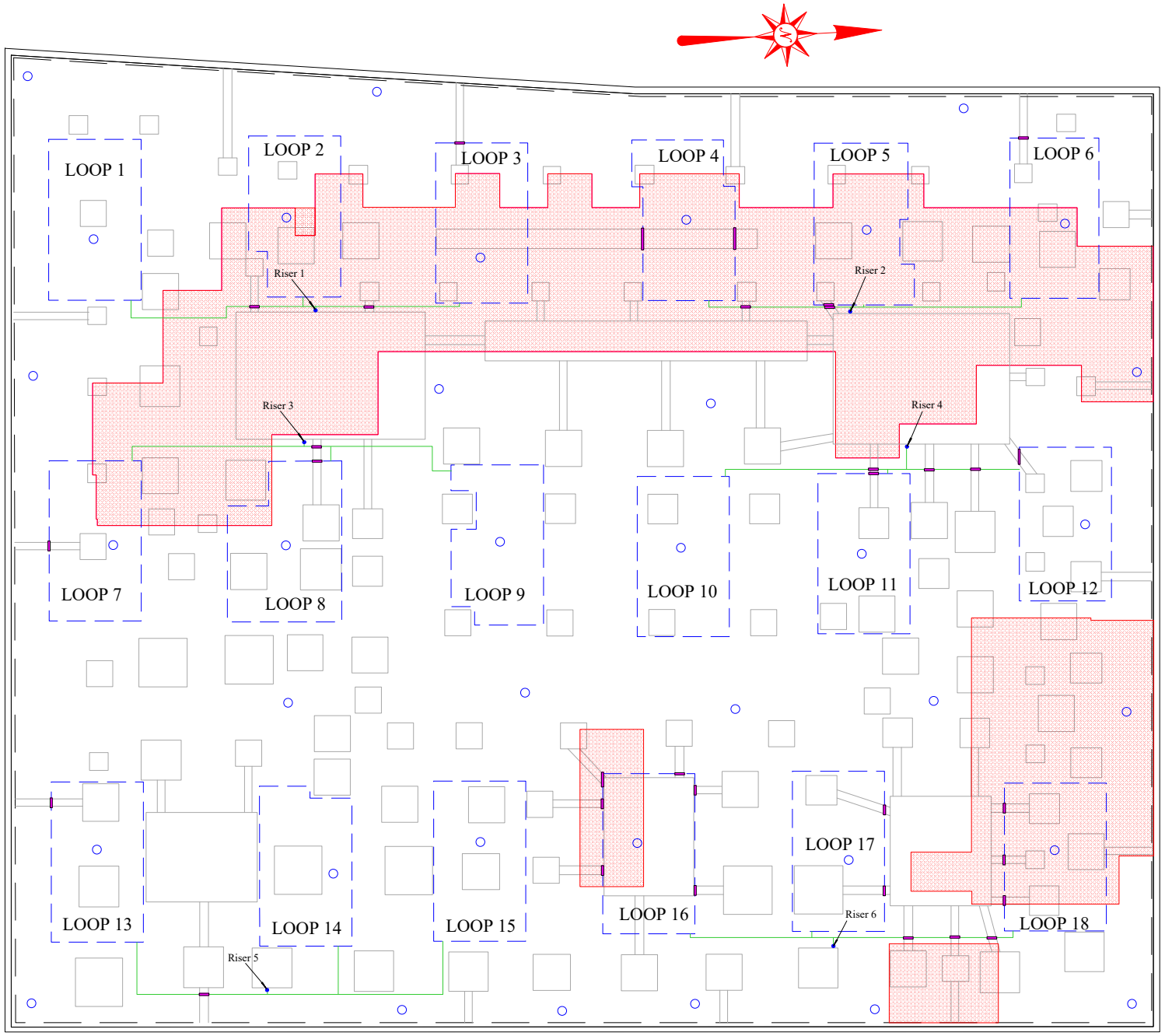
- ~13 feet excavation (el. ~93-95 NAVD88) to ~20 feet excavation (el. ~100 NAVD88)
- Bottom of Footings el. 77 NAVD88 in this section
- Metals Hotspot: below 20 feet to be excavated
- Mercury Hotspot: 18 feet excavation (el. 75 NAVD)

Notes:

1. All locations are approximate based on surveys
2. RI data is validated and qualifiers updated
3. SRI data is not validated yet, and qualifiers will be updated
4. Top of slab will be at elevation 82.5 NAVD88
5. 24SB-1 and 24SB-10 - nickel hotspot to be removed
6. 24SB-2 - chromium hexavalent and nickel hotspot to be removed
7. 24SB-13 - chromium hexavalent hotspot to be removed
8. SB-17X - mercury hotspot to be removed (el. 75 NAVD88)

Scale: 0 50' 100'

Figure No.	3
Figure Name:	Alternative 1 - Track 1 Excavation Depths
Report:	RAWP
Date:	5/24/24
Drawn By:	KB
Site Address:	960 Franklin Avenue Brooklyn, New York



SITE PLAN

0' 25' 50'

LEGEND

- Occupied Spaces
- SSVS Pipe: 4" perforated, corrugated HPDE or equal (subslab install.)
- SSVS Pipe: 4" or 6" solid pipe, Sch. 40 PVC (subslab), or CI (above slab)
- Sleeve
- Riser Location
- Monitoring Locaiton

AMC ENGINEERING PLLC
18-36 42nd Street
Astoria, NY 11105
(718) 545-0474

PROJECT
960 FRANKLIN AVENUE
BROOKLYN, NY 11225
BLOCK: 1192 LOT: 46

TITLE:
FIGURE 4
FLR. CELLAR SSDS
FLOOR PLAN

SEAL & SIGNATURE:

DATE: JUN 10, 2024
PROJECT No:
DRAWING BY: AH
CHK BY:
DWG No:
SSDS - 1
CADD FILE No:
1 of 2