DECISION DOCUMENT

2002-2024 Cropsey Avenue Site
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224169
November 2019

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

DECLARATION STATEMENT - DECISION DOCUMENT

2002-2024 Cropsey Avenue Site
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224169
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Statement of Purpose and Basis

This document presents the remedy for the 2002-2024 Cropsey Avenue 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 (the Department) for the 2002-2024 Cropsey Avenue Site and the public's input to the proposed remedy presented by the Department.

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; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Cover System

A site cover currently exists in areas not occupied by buildings and will be maintained to allow for commercial use the site. Any site redevelopment will maintain the existing cover on the site. The site cover may include paved surface parking areas, sidewalks or soil where the upper one foot of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for commercial use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

3. Enhanced Bioremediation

In-situ enhanced biodegradation will be employed to treat chlorinated volatile organic compounds (VOCs) in groundwater at the site and downgradient of the site. The biological breakdown of contaminants through anaerobic reductive dechlorination will be enhanced by injecting a solution of electron donor materials into the subsurface to promote microbe growth. The method and depth of injection will be determined during the remedial design.

4. Institutional Control

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

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

5. Site Management Plan

A Site Management Plan is required for the site, 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 above.
   - Engineering Controls: The Site Cover, and Soil Vapor Extraction/Sub Slab Depressurization System discussed above.

This plan includes, but may not be limited to:

- 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 future buildings developed 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 Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
   - monitoring of groundwater to assess the performance and effectiveness of the remedy;
   - a schedule of monitoring and frequency of submittals to the Department;
   - monitoring for vapor intrusion for any future buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:
   - maintaining site access controls and Department notification;
   - compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting, and;
   - providing the Department access to the site and O&M records.

Declaration

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

November 18, 2019

Date

Gerard Burke, Director
Remedial Bureau B

DECISION DOCUMENT

2002-2024 Cropsey Avenue Site
Brooklyn, Kings County
Site No. C224169
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SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), 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, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

The Department 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 Department 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 the Department 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:

New Utrecht Branch Library
1743 86th Street
Brooklyn, NY 11214
Phone: 718-236-4086

Brooklyn Community Board 11
2214 Bath Avenue
Brooklyn, NY 11214
Phone: (718)-266-8800

Receive Site Citizen Participation Information By Email

Please note that the Department'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 site is located at 2002-2024 Cropsey Avenue in the Gravesend neighborhood of Brooklyn. It is denoted as Block 6467, Lot 1 on the New York City Tax Map. The site is bounded by Cropsey Avenue to the northeast; 20th Avenue to the northwest; a residential building with a subgrade parking to the southwest and Bay 25th Street to the southeast.

Site Features: The site is approximately 0.487 acres and consists of a single story, multi-tenant commercial/retail building on the south side of Cropsey Avenue, between Bay 20th St. and Bay 25th Ave. The building contains a full basement with a concrete floor. The on-site dry cleaner (GLY Cleaners) is located at 2022 Cropsey Avenue, towards the eastern section of the property. The basement of the dry cleaner currently contains a hot water boiler and motorized clothing racks. A concrete lined pit is present near the rear of the dry cleaner basement. No cracking or penetrations were observed in the pit. The exit door leads to a stairwell containing a floor drain. There is a small asphalt-paved area on the southeast corner of the building which is used for employee parking.

Current Zoning and Land Use: The site is zoned R6 which allows for both residential and commercial use, and is occupied by a single story, multi-unit commercial/retail building.

Past Use of the Site: The site was a vacant lot before 1950. A commercial building with various retail stores was constructed at the site in 1950, including a dry cleaner. The building configuration and site use have been relatively unchanged since 1950. The dry cleaner has operated under various names including Michael’s Cleaners and GLY Cleaners.

Site Geology and Hydrogeology: The site is approximately 20 feet above mean sea level. Surface topography slopes gently downward to the south towards Gravesend Bay, which is approximately 1,000 feet from the site. Throughout the site, up to 15 feet of urban fill overburden is present, with glacial alluvial outwash sands below. Groundwater flow is toward the south-southeast. Groundwater was encountered at a depth of approximately 19 to 20 feet below grade surface.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department 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 (or an alternative) that restrict(s) the use of the site to commercial use (which allows for industrial use) as described in Part 375-1.8(g) were/was 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 Participant. The Applicant has an obligation to address on-site and off-site contamination. Accordingly, no enforcement actions are necessary.

The Department and the NYSDOH have determined that this site poses a significant threat to human health and the environment.

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
- indoor air
- sub-slab 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. The Department 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 contaminant(s) of concern identified at this site is/are:

tetrachloroethene (PCE)
trichloroethene (TCE)
1,2-dichloroethene

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil
- soil vapor intrusion
- indoor air

6.2: Interim Remedial Measures

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

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

Soil Vapor Extraction/Sub-Slab Depressurization System
An SVE/sub-slab depressurization system was installed in October 2017 beneath the shopping center to remediate source material in soil and to mitigate the migration of contaminated soil

vapor into the other shopping center tenant spaces from contaminated soil and/or contaminated groundwater. It is currently in operation and consists of two vacuum extraction points in the basement of the shopping center and one outside the rear wall, providing negative pressure underneath the shopping center slab. The March 2018 SSDS Startup Report noted that 2 out of 4 vapor monitoring points had minimal vacuum and the remaining 2 points were not accessible. Post mitigation indoor air sampling showed an increase in PCE levels at one location from 16 micrograms per cubic meter (ug/m3) to 82 ug/m3. Continued optimization of the SSDS is necessary and ongoing based on the February 2019 indoor air sampling data. Additionally, below grade parking garage ventilation system upgrades were completed off-site at the adjacent residential building parking garages to bring the system into compliance with NYC Mechanical Code requirements for ventilated parking. The IRM completion was documented in a Construction Completion Report, which is currently under review.

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), and pesticides. Based upon the investigations conducted to date, the primary contaminants of concern for the site include Tetrachloroethene (PCE) and its degradation products.

Soil - PCE was the only chlorinated VOC detected in on-site soil immediately beneath the dry cleaner tenant space at a maximum concentration of 14 parts per million (ppm) at a depth of 3 to 4 feet below the basement slab as compared to the protection of groundwater soil cleanup objective of 1.3 ppm. Data does not indicate any off-site impacts in soil related to this site.

Groundwater - Chlorinated VOCs were found in groundwater in multiple locations on-site and off-site at concentrations exceeding the ambient water quality standards (AWQS). Prior to the IRM, the maximum concentration of PCE, trichloroethene (TCE) and cis-1,2-dichloroethene (DCE) detected in on-site groundwater samples were 63,000 parts per billion (ppb), 9.7 ppb and 6.7 ppb, respectively, compared to their AWQSs of 5 ppb. In off-site, downgradient groundwater PCE was identified at a maximum concentration of 3,490 ppb, TCE was detected at a maximum concentration of 130 ppb, and DCE was detected at a maximum concentration of 1,300 ppb. The high proportion of degradation product (DCE) in relation to the original compound (TCE) indicates that biodegradation is occurring in the aquifer.

Sub-slab Soil Vapor and Indoor Air - PCE has been detected in on-site sub-slab soil vapor as high as 420,000 micrograms per cubic meter (µg/m3), and indoor air samples as high as 100 µg/m3 prior to the IRM. TCE was detected in on-site sub-slab soil vapor at a maximum concentration of 6,600 µg/m3 and in indoor at 18 µg/m3. The indoor air levels of PCE and TCE

exceeded applicable NYSDOH air guidelines of 30 µg/m3 and 2 µg/m3, respectively. In off-site areas, the highest sub-slab soil vapor concentration for PCE and TCE underlying the residential property to the south were 210,000 µg/m3 and 790 µg/m3, respectively, while the indoor air concentrations (collected in the parking garage) were 2.9 µg/m3 for PCE and 1.9 µg/m3 for TCE. The distribution and abundance of PCE and TCE in soil vapor and sub-slab vapor samples is consistent with the presence of these compounds in soil and in groundwater. These conditions have been addressed by the IRM conducted in 2017 and by the construction of subgrade parking garages with ventilation at affected off-site properties.

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.*

Direct contact with contaminants in the soil is unlikely because the site is covered with buildings and pavement. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in soil vapor (air spaces within the soil) may move into overlying buildings and affect the indoor air quality. This process which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Actions have been taken on and off-site to address potential exposures associated with soil vapor intrusion.

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.
- Prevent the discharge of contaminants to surface water.

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 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the Groundwater Treatment, Continued Operation of Interim Remedial Measures and Site Cover remedy.

The elements of the selected remedy, as shown in Figures 2 and 3, 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;
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- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Cover System

A site cover currently exists in areas not occupied by buildings and will be maintained to allow for commercial use the site. Any site redevelopment will maintain the existing cover on the site. The site cover may include paved surface parking areas, sidewalks or soil where the upper one foot of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for commercial use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

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4. Institutional Control

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

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

5. Site Management Plan

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

d. 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 above.
   - Engineering Controls: The Site Cover, and Soil Vapor Extraction/Sub Slab Depressurization System discussed above.

This plan includes, but may not be limited to:

- 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 future buildings developed 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 Department notification; and

- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

e. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
   - monitoring of groundwater to assess the performance and effectiveness of the remedy;
   - a schedule of monitoring and frequency of submittals to the Department;
   - monitoring for vapor intrusion for any future buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

f. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:
   - maintaining site access controls and Department notification;
   - compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting, and;
   - providing the Department access to the site and O&M records.

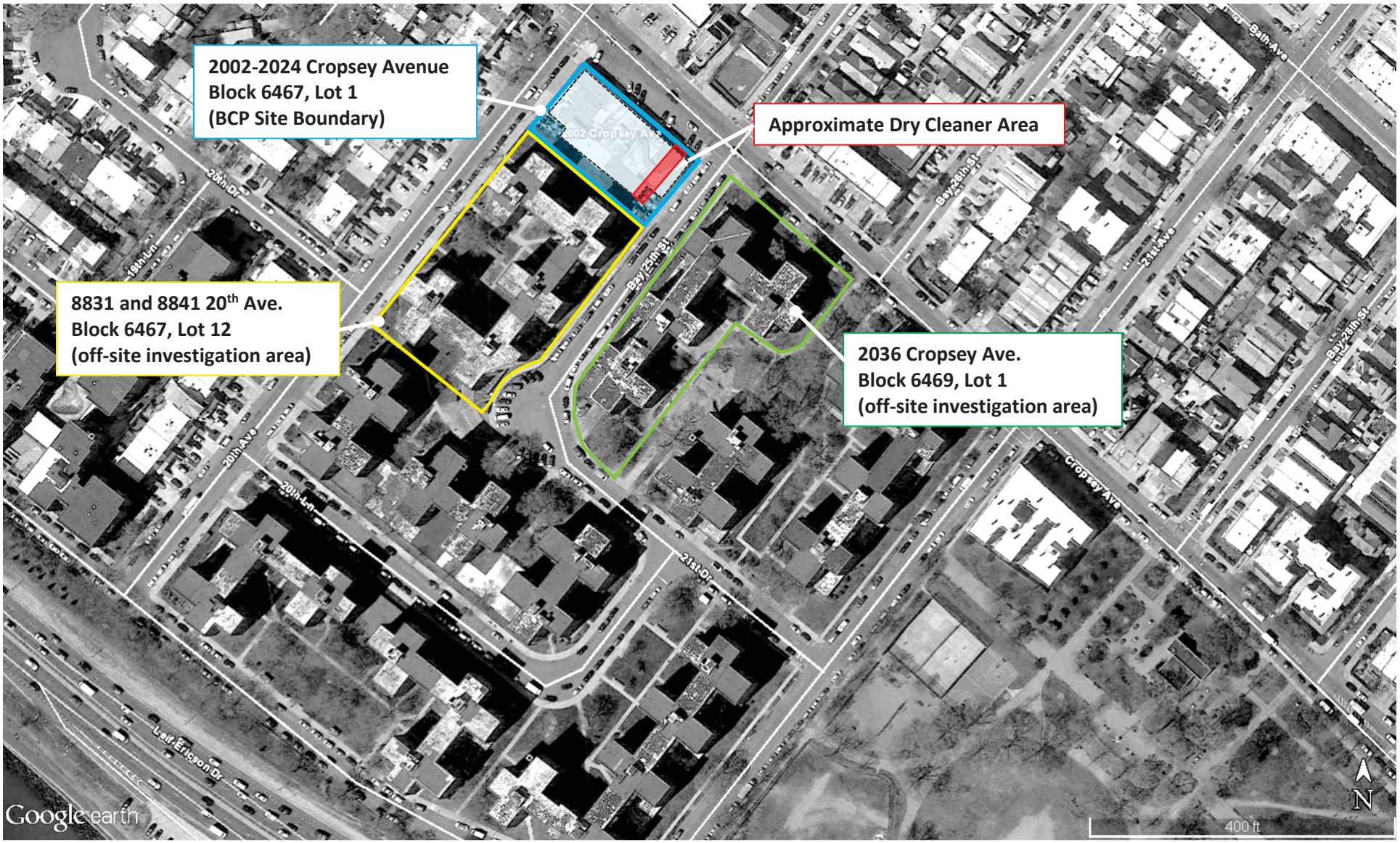

Figure 1
2002-2024 Cropsey Avenue Area Site Plan

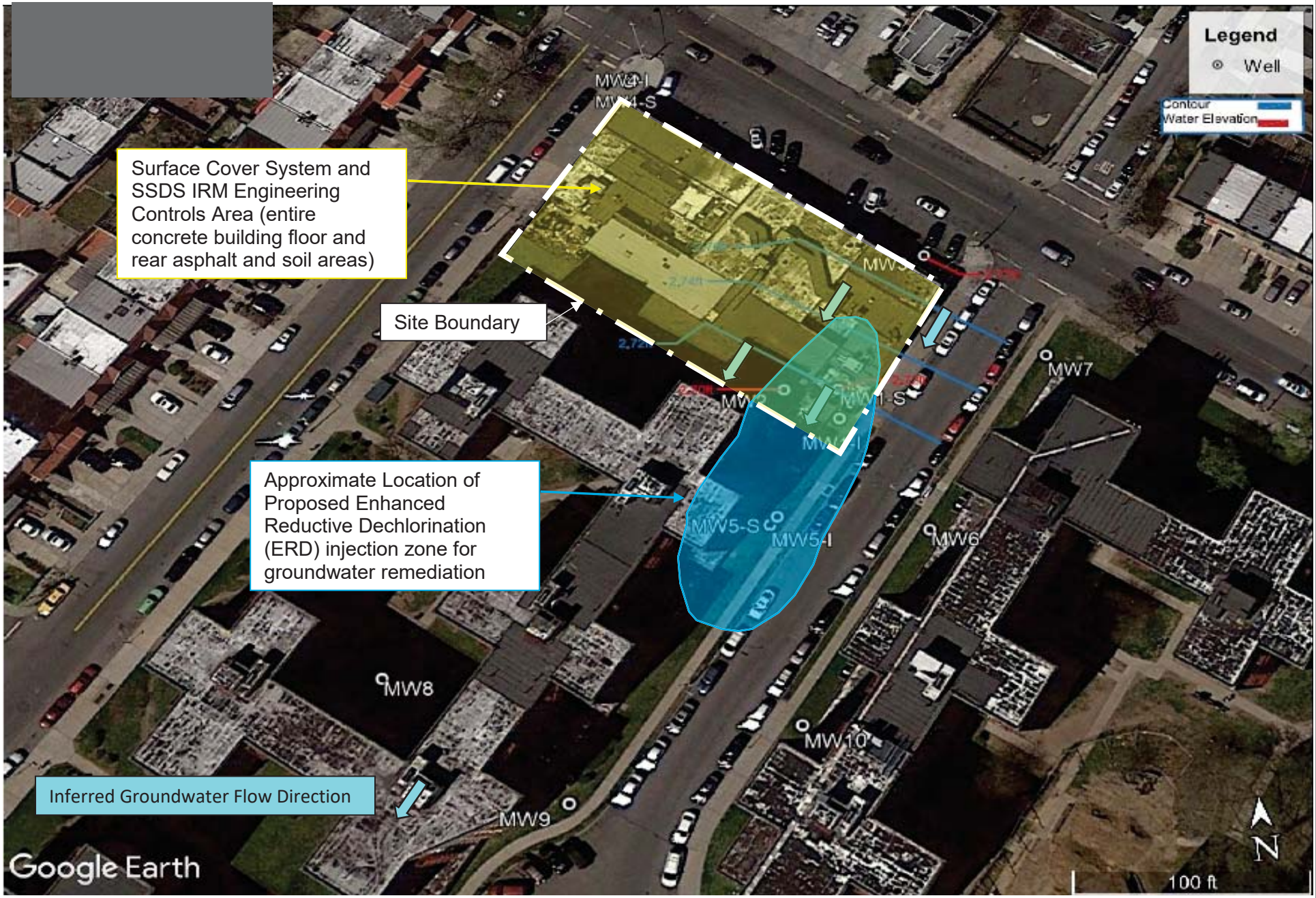

Figure 2
Overview of Proposed Remedy

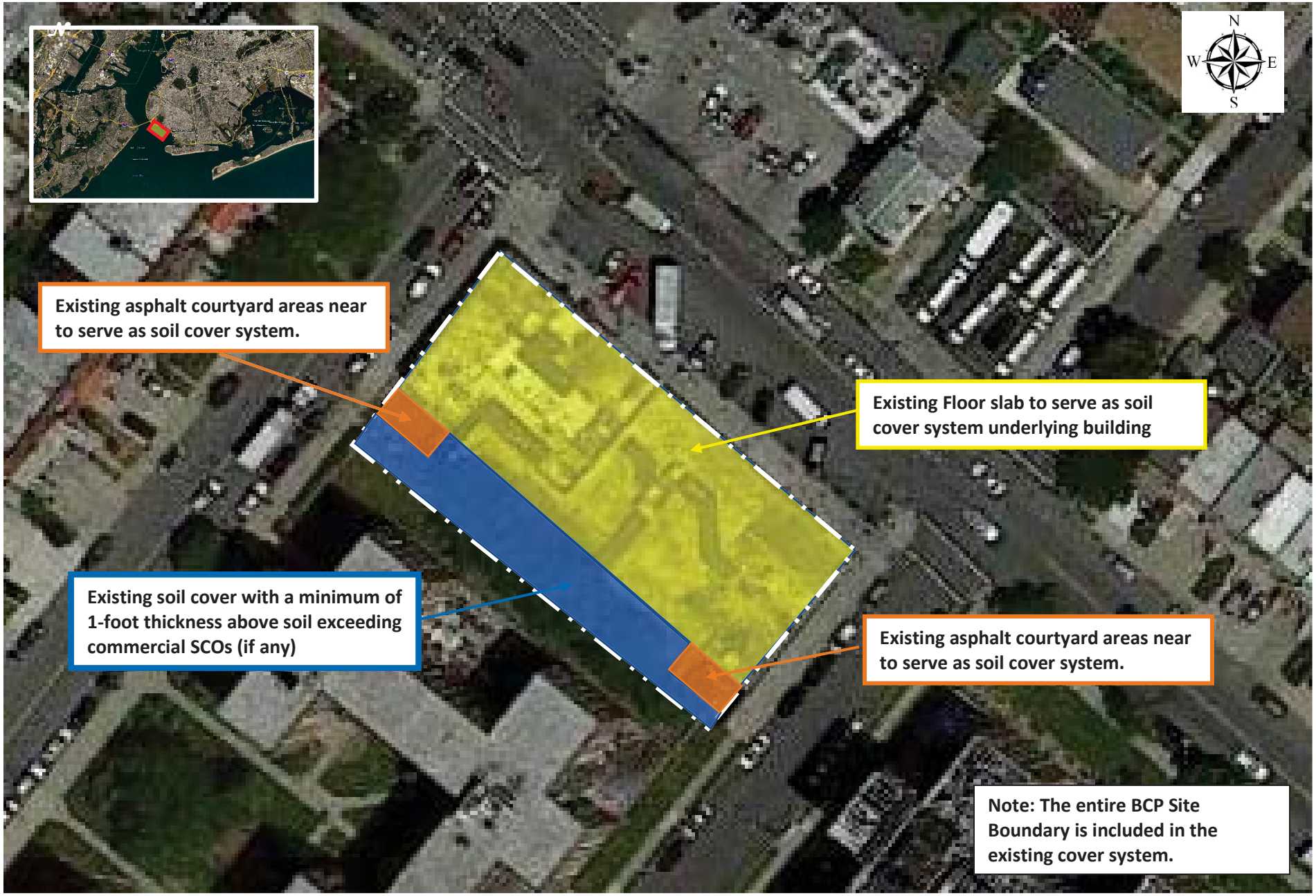

Figure 3
Soil Cover Engineering Control Area
2002-2024 Cropsey Avenue, Brooklyn, NY