DECISION DOCUMENT

42-24 Orchard Street
Brownfield Cleanup Program
Queens, Queens County
Site No. C241256
January 2023

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

DECLARATION STATEMENT - DECISION DOCUMENT

42-24 Orchard Street
Brownfield Cleanup Program
Queens, Queens County
Site No. C241256
January 2023

Statement of Purpose and Basis

This document presents the remedy for the 42-24 Orchard Street 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 42-24 Orchard Street 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;
- 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 will include, at

a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

2. Excavation

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

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- any encountered underground storage tanks (USTs), or other underground structures associated with a source of contamination;
- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead; and
- 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.

Excavation and off-site disposal of all on-site soils which exceed restricted-residential SCOs, as defined by 6 NYCRR Part 375-6.8, to a depth of 15 feet or to bedrock in areas of shallow soil. Approximately 10,800 cubic yards of soil will be removed. Excavation will occur from the ground surface to depths ranging from 2 to 11 feet below grade for remediation purposes as presented on Figure 3. If a Track 2 cleanup is achieved, a Cover System will not be a required element of the remedy. 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 depths, the Applicant must notify DEC, submit the sample results and, 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.

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

3. Groundwater Extraction & Treatment

Groundwater extraction and treatment will be implemented to treat petroleum-related compounds to the extent practicable. The groundwater extraction system will be designed and installed so that the capture zone is sufficient to excavate the petroleum-impacted soil present at or below the water table. The extraction system will create a depression of the water table so that contaminated groundwater is directed toward the extraction wells. Extracted groundwater will be sampled and treated prior to discharge to the sewer system, under a permit. Off-site monitoring wells, known as sentinel wells, will be monitored during dewatering activities to ensure that no contamination is drawn in from off-site. Groundwater monitoring will be conducted to demonstrate the effectiveness of the dewatering remedy.

4. 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.

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 the Department 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 the Department approved Site Management Plan.

5. 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 4 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;
- 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;
- 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; and
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

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.

January 27, 2023
Date

Richard A. Mustico, Director
Remedial Bureau A

DECISION DOCUMENT

42-24 Orchard Street
Queens, Queens County
Site No. C241256
January 2023

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, that would be addressed by the remedy, has not resulted in threats to public health and the environment. 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 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:

DECInfo Locator - Web Application
https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C241256

Queens Public Library at Long Island City
37-44 21 Street
Long Island City, NY 11101
Phone: (718) 752-3700

Queens Community Board 2

43-22 50th Street
Woodside, NY 11377
Phone: (718) 533-8773

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 in Long Island City, Queens. The legal description of the site is Block 265, Lot 13. The site formerly consisted of four lots (Lots 1, 6, 13, and 23) and were recently merged into one lot encompassing approximately 1.89 acres. The site is bounded to the north by Jackson Avenue, followed by a hotel, a three-story vacant building, 42nd Road, and a commercial/office high-rise; to the east by Orchard Street, followed by a commercial/residential high-rise and a parking garage; to the south by the Amtrak Sunnyside Yard; and to the west by Queens Street, followed by a taxi stand/repair facility, automobile garages, and a commercial/residential high-rise. A subway tunnel passes under the northern portion of the site.

Site Features:

All on-site buildings were demolished in 2022 to facilitate remediation and redevelopment. The site is currently a vacant lot covered by an asphalt-paved parking lot and concrete building slabs.

Current Zoning and Land Use:

According to the New York City Department of City Planning (NYCDCP) Zoning Map 9b, the site is zoned M1-5/R9 for mixed-use (residential, light manufacturing, and commercial). Property uses in the vicinity of the site are commercial, residential, manufacturing, and transportation.

Past Use of the Site:

Historical records indicate that the site was sparsely developed with stores, residential dwellings, stables, and a laundry facility in 1898. The laundry facility operated until at least 1915. By 1915, the site was developed with a shoe manufacturer along Orchard Street, and various stores along Queens Street and Jackson Avenue. By 1936, the site was occupied by a paper box manufacturer (a furniture manufacturer a loft, a wood working facility, and warehouses. By 1947, the buildings on the northern portion of the site along Jackson Avenue were demolished and replaced with a

parking lot. A site building located on Queens Street was also listed on databases a historical registered dry cleaner.

Site Geology and Hydrogeology:

Fill material consisting of brown sand, gravel, silt, and trace building materials (*i.e*., brick, concrete, aggregate, asphalt, wood, ash) was encountered in soil borings at the site to maximum depths of approximately 13 feet below ground surface (bgs). The underlying material below the identified fill generally consists of tan fine sand with silty clay. Weathered bedrock and bedrock were encountered at depths ranging from approximately four to 12 feet bgs. The layer of weathered bedrock consists of compact to very compact, gray and white fine to coarse sand, green-gray clayey silt, some to trace silt, and gravel. Depth to weathered bedrock and competent bedrock dips from approximately the ground surface in the central portion of the site to maximum depths of 50 feet bgs in the northern portion of the site and 10 feet bgs in the southern portion of the site. Depth to groundwater varies from approximately 5.6 feet to 11 feet bgs at the site. The groundwater flow direction is towards the northwest.

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, an alternative 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) 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. However, the Department 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
- 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:

benzo(a)anthracene
benzo(a)pyrene
benzo(b)fluoranthene
benzo(k)fluoranthene
chrysene
dibenz[a,h]anthracene
naphthalene
indeno(1,2,3-cd)pyrene

arsenic	ethylbenzene
barium	toluene
lead	chlorobenzene
mercury	vinyl chloride
1,2,4-trimethylbenzene	trichloroethene (TCE)
1,3,5-trimethylbenzene	xylene
1,4-dichlorobenzene	1,1-biphenyl
benzene	acenaphthene

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

- groundwater
- soil
- soil vapor intrusion

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 samples were analyzed for volatile organic compounds (VOCs), including 1,4-dioxane, semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), pesticides, herbicides, and per- and polyfluoroalkyl substances (PFAS). Additionally, soil vapor and indoor air samples were analyzed for VOCs. Based upon investigations conducted to date, the primary contaminants of concern are metals and SVOCs in soil, VOCs in soil vapor, and petroleum-related VOCs in groundwater.

Soil - Exceedances of restricted residential SCOs (RRSCOs) are found mostly in surface to shallow soils across the site and at depth in several locations to a maximum depth of 19 feet bgs in a small area in the northern portion of the site. No VOCs, pesticides, or herbicides were detected above RRSCOs, and no PFAS were detected above the guidance values.

Maximum SVOC exceedances of RRSCOs include: benzo(a)anthracene at 26 parts per million (ppm) (RRSCO of 1 ppm), benzo(a)pyrene at 23 ppm (RRSCO of 1 ppm), benzo(b)fluoranthene at 30 ppm (RRSCO of 1 ppm), benzo(k)fluoranthene at 11 ppm (RRSCO of 3.9 ppm), chrysene at

23 ppm (RRSCO of 3.9 ppm), dibenzo(a,h)anthracene at 3.1 ppm (RRSCO of 0.33 ppm), indeno(1,2,3-cd)pyrene at 16 ppm (RRSCO of 0.5 ppm), and naphthalene at 250 ppm (Protection of Groundwater SCO of 12 ppm).

Maximum metal exceedances of RRSCOs include arsenic at 26.7 ppm (RRSCO of 16 ppm), barium at 973 ppm (RRSCO of 400 ppm), lead at 3,830 ppm (RRSCO of 400 ppm) and lead exceeding the hazardous waste threshold in the southwest corner of the site, and mercury at 26.4 ppm (RRSCO of 0.81 ppm).

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

Groundwater - Exceedances of Class GA Ambient Water Quality Standards (AWQS) on-site are found in shallow and deep groundwater. Numerous petroleum related VOCs and one chlorinated VOC were detected including 1,2,4-trimethylbenzene at 380 parts per billion (ppb) (AWQS of 5 ppb), 1,3,5-trimethylbenzene at 130 ppb (AWQS of 5 ppb), 1,4-dichlorobenzene at 25 ppb (AWQS of 3 ppb), benzene at 1,100 ppb (AWQS of 1 ppb), ethylbenzene at 480 ppb (AWQS of 5 ppb), naphthalene at 10,000 ppb (AWQS of 10 ppb), toluene at 1,800 ppb (AWQS of 5 ppb), xylene at 1,600 ppb (AWQS of 5 ppb), chlorobenzene at 190 ppb (AWQS of 5 ppb), and vinyl chloride at 11 ppb (AWQS of 5 ppb).

SVOCs detected above AWQS include 1,1'-biphenyl at 790 ppb (AWQS of 5 ppb), and acenaphthene at 860 ppb (AWQS of 20 ppb).

Metals were detected in filtered groundwater samples above their applicable Class GA standards. Maximum exceedances are as follows: iron at 7,620 ppb (AWQS of 300 ppb), manganese at 3,510 ppb (AWQS of 300 ppb), sodium at 234,000 ppb (AWQS of 20,000 ppb), magnesium at 38,000 ppb (AWQS of 35,000 ppb), selenium at 19.1 ppb (AWQS of 10 ppb), and lead at 87.8 ppb (AWQS of 25 ppb). These metals are naturally occurring in Long Island soil and groundwater except for lead, which appears to be site related.

The PFAS compounds perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were reported at concentrations of up to 180 and 151 parts per trillion (ppt), respectively, exceeding the maximum contaminant level (MCL) of 10 ppt each. PFAS compounds were detected at similar concentrations in upgradient and downgradient samples indicating that the site is not a source of these substances to the environment.

Data indicated that there is a VOC plume migrating onto the site from the east and continuing downgradient past the site to the west. This plume is associated with the adjacent Queens Plaza Residential Development BCP sites (BCP Site Nos. C241105 and C241151) located immediately east. The highest off-site VOC detections are present in a well located immediately upgradient of the site to the northeast and closest to the Queens Plaza Residential Development BCP sites. A groundwater extraction and treatment system at the Queens Plaza sites is undergoing design optimization in an attempt to prevent further migration of the plume.

Maximum VOC exceedances in upgradient, off-site groundwater include 1,2,4-trimethylbenzene at 29 parts per billion (ppb) (AWQS of 5 ppb), 1,3,5-trimethylbenzene at 8.3 ppb (AWQS of 5

ppb), 1,4-dichlorobenzene at 3.4 ppb (AWQS of 3 ppb), benzene at 260 ppb (AWQS of 1 ppb), ethylbenzene at 63 ppb (AWQS of 5 ppb), naphthalene at 580 ppb (AWQS of 10 ppb), toluene at 7.7 ppb (AWQS of 5 ppb), xylene at 110 ppb (AWQS of 5 ppb), and chlorobenzene at 57 ppb (AWQS of 5 ppb).

Sub-Slab Soil Vapor and Indoor Air - Soil vapor, sub-slab vapor, and co-located indoor air samples were collected from multiple buildings and locations on the site, prior to their demolition. Results indicated elevated levels of TCE under one building slab and vinyl chloride in two soil vapor samples. Vinyl chloride was detected in soil vapor at a maximum value of 0.588 ug/m^3. TCE was detected at 139 ug/m^3 in the sub-slab vapor and was not detected in indoor air, indicating actions are necessary to address potential exposures from soil vapor intrusion as per the Guidance for Evaluating Soil Vapor Intrusion (NYSDOH 2006, with updates).

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 covered by concrete, people will not come into contact with site related soil and groundwater contamination unless they dig below the surface. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a 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 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. Since there are no on-site buildings, inhalation of site contaminants in indoor air due to soil vapor intrusion does not represent a concern for the site in its current condition. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site development. In addition, environmental sampling indicates soil vapor intrusion 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.

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 Dewatering remedy.

The elements of the selected remedy, as shown in Figure 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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- 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 will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

2. Excavation

Excavation and off-site disposal of contaminant source areas, including:
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- any encountered underground storage tanks (USTs), or other underground structures associated with a source of contamination;
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- 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.

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

3. Groundwater Extraction & Treatment

Groundwater extraction and treatment will be implemented to treat petroleum-related compounds to the extent practicable. The groundwater extraction system will be designed and installed so that the capture zone is sufficient to excavate the petroleum-impacted soil present at or below the water table. The extraction system will create a depression of the water table so that contaminated groundwater is directed toward the extraction wells. Extracted groundwater will be sampled and treated prior to discharge to the sewer system, under a permit. Off-site monitoring wells, known as sentinel wells, will be monitored during dewatering activities to ensure that no contamination is drawn in from off-site. Groundwater monitoring will be conducted to demonstrate the effectiveness of the dewatering remedy.

4. 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.

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 the Department 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 the Department approved Site Management Plan.

5. 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 4 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;
- 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;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

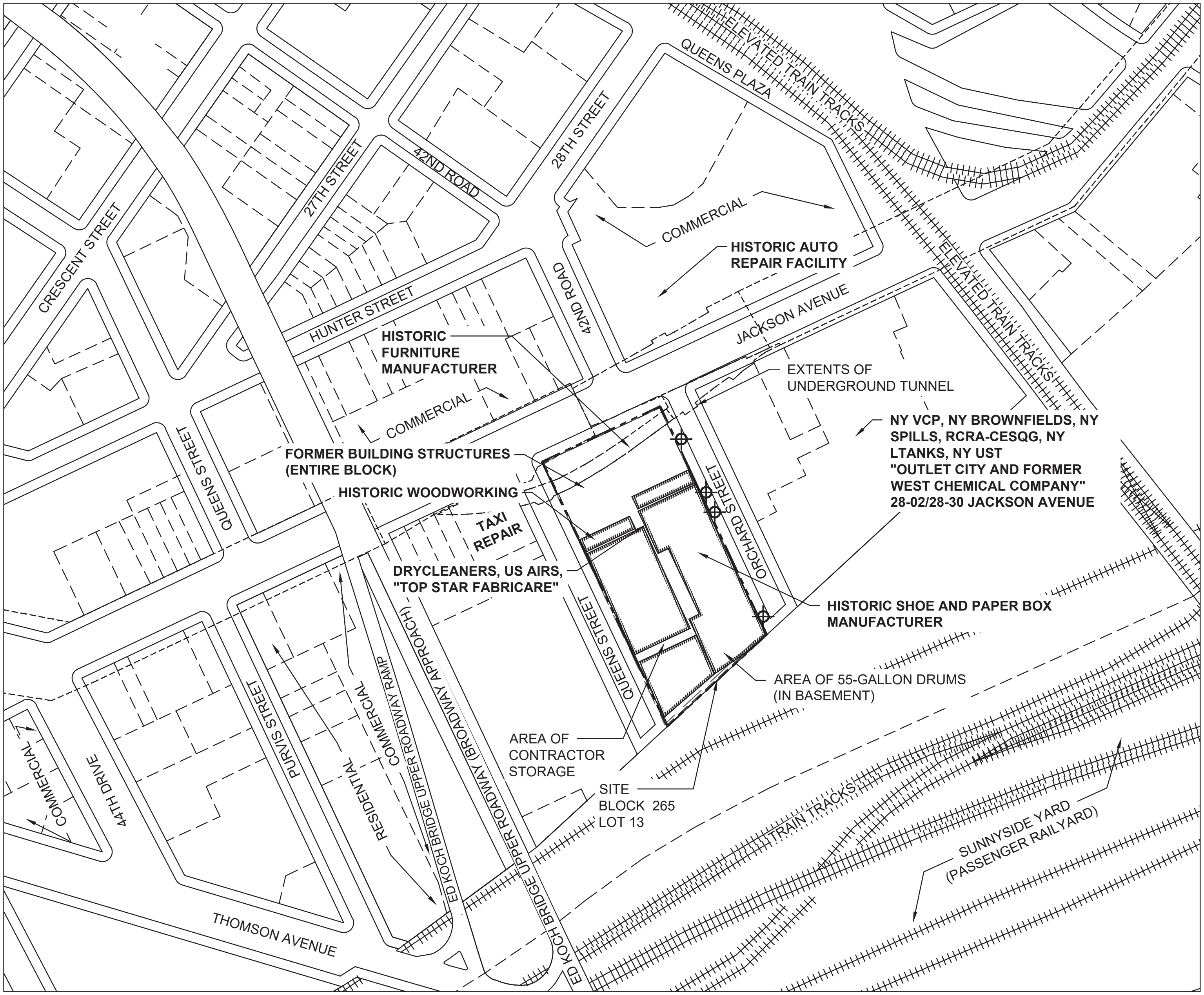
B. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any buildings on the site, as may be required by the

Institutional and Engineering Control Plan discussed above.

Figure 1: Site Location
C241256 - 42-24 Orchard Street
Long Island City, Queens County

11x17 --- ATTACHED XREF'S: RAWP_basemap_master (42-24) --- ATTACHED IMAGES: 13595 NYCT Submissiage + Environmental_2020-30-06 2; 13595-pl-RT107-SEC13-DWG.333.F2; Digital Tax Map (42-24); ESRI Database image 08.03.18 (42-24); ESRI Database image 08.03.18 (42-24)north; Figure 3 - Sample Location Plan; Offsite Well Location Figure; Prop. Shark Image (42-24); SRIWP - Proposed MW Locations;
DRAWING NAME: \\nyc-fp1\environmental\Shared\Projects\460578 - BLDG BCP\RAWP\Figures\TRC Working Drawings\ Fig 2 - Site Plan (42-24).dwg --- PLOT DATE: August 15, 2022 - 1:35PM --- LAYOUT: 11X17L



LEGEND (SYMBOLS NOT TO SCALE):

- SITE BOUNDARY
- LOT BOUNDARY
- BUILDING FOOTPRINT
- EXTENTS OF UNDERGROUND TUNNEL

CESQG	CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR
LTANKS	LEAKING STORAGE TANK INCIDENT REPORT
RCRA	RESOURCE CONSERVATION AND RECOVERY ACT
UST	UNDERGROUND STORAGE TANK
VCP	VOLUNTARY CLEANUP PROGRAM
⌖	EXISTING MONITORING WELL LOCATIONS ASSOCIATED WITH ADJACENT BCP

NOTE:

1. RECOGNIZED ENVIRONMENTAL CONDITIONS ARE SHOWN IN **BOLD** FONT.

0 150' 300'

SCALE: 1" = 150'
SHEET SIZE: 11" BY 17"

ASSUMED GROUNDWATER FLOW DIRECTION

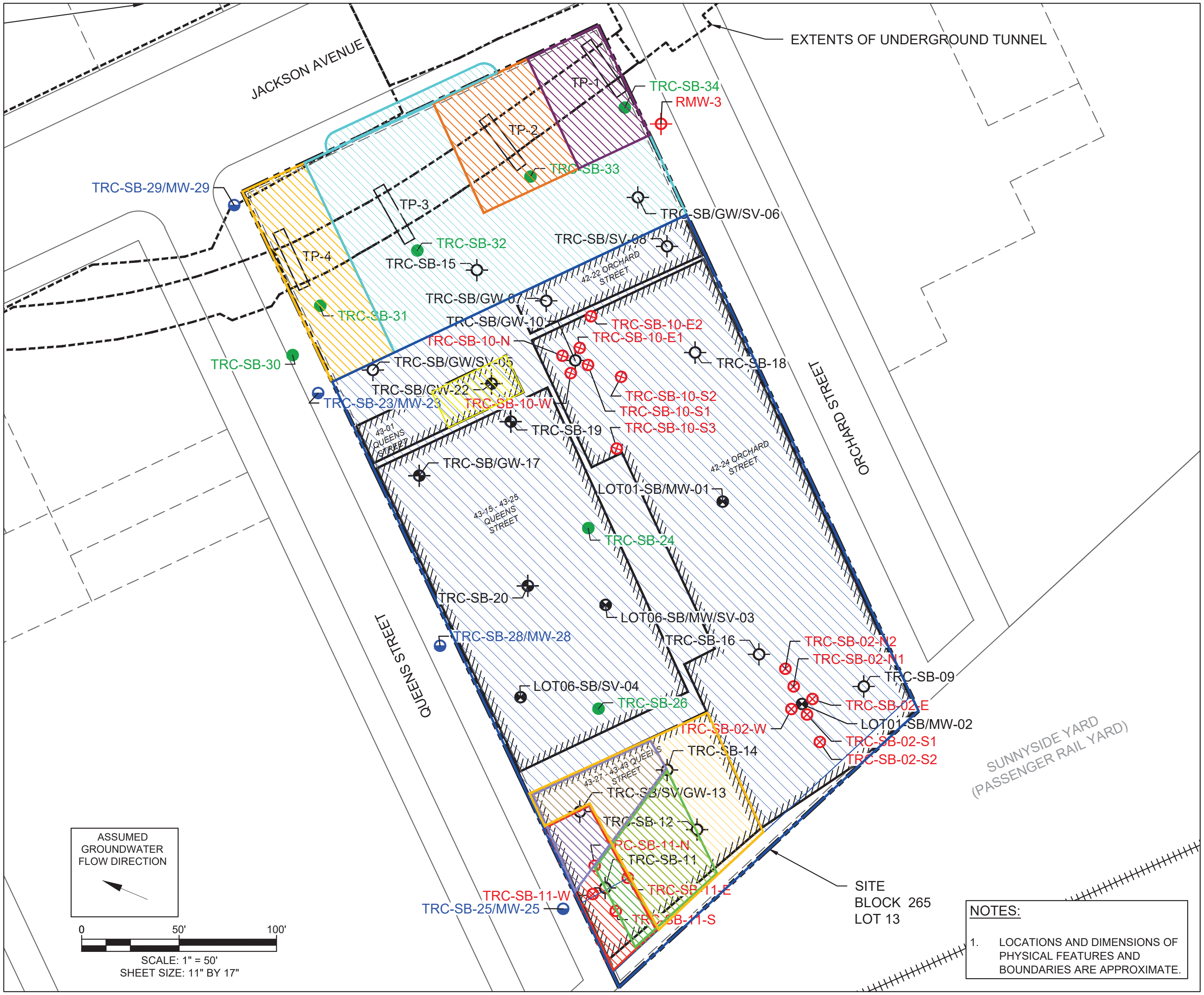
PROJECT:
BLDG ORCHARD LLC
42-24 ORCHARD STREET
BCP SITE NO. C241256
LONG ISLAND CITY, QUEENS, NEW YORK 11101

TITLE:
SITE PLAN

DRAWN BY:	H. DELGADO	PROJ NO.:	460578
CHECKED BY:	E. EBERT	**FIGURE 2**	
APPROVED BY:	K. BOGER		
DATE:	AUGUST 2022		

TRC
1430 Broadway, 10th Floor
New York, NY 10018
Phone: 212.221.7822
www.TRCcompanies.com

FILE NO.: Fig 2 - Site Plan (42-24).dwg



NOTES:

1. LOCATIONS AND DIMENSIONS OF PHYSICAL FEATURES AND BOUNDARIES ARE APPROXIMATE.

LEGEND (SYMBOLS NOT TO SCALE):

Symbol	Description
	SITE BOUNDARY
	LOT BOUNDARY
	BUILDING FOOTPRINT
	EXTENTS OF UNDERGROUND TUNNEL
LOT0#-SB/MW/SV-##	SOIL BORING, TEMPORARY MONITORING WELL, AND/OR SOIL VAPOR SAMPLING LOCATION AND IDENTIFICATION NUMBER (AUGUST 2020)
TRC-SB/GW/SV-##	SOIL BORING, TEMPORARY MONITORING WELL, AND/OR SOIL VAPOR SAMPLING LOCATION AND IDENTIFICATION NUMBER (JANUARY 2021)
TRC-SB/GW/SV-##	SOIL BORING, TEMPORARY MONITORING WELL, AND/OR SOIL VAPOR SAMPLING LOCATION AND IDENTIFICATION NUMBER (FEBRUARY 2021)
TP-#	TEST PIT LOCATION AND IDENTIFICATION NUMBER (MARCH 2021)
RMW-##	OFFSITE MONITORING WELL LOCATION AND IDENTIFICATION NUMBER (ROUX JUNE 2020)
TRC-SB-##/MW-##	SOIL BORING AND PERMANENT MONITORING WELL LOCATION AND IDENTIFICATION NUMBER
TRC-SB-##-#	DELINEATION SOIL BORING LOCATION AND IDENTIFICATION NUMBER
TRC-SB-##	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
	HAZARDOUS LEAD EXCAVATION TO 6' BGS
	NON-HAZARDOUS EXCAVATION TO 2' BGS
	NON-HAZARDOUS EXCAVATION TO 6' BGS (EXCEEDANCES OF RRSCOS)
	NON-HAZARDOUS EXCAVATION 0-4' BGS AND 8-13' BGS (EXCEEDANCES OF RRSCOS)
	NON-HAZARDOUS EXCAVATION TO 4' BGS (EXCEEDANCES OF RRSCOS)
	NON-HAZARDOUS EXCAVATION TO 10' BGS (EXCEEDANCES OF RRSCOS)
	NON-HAZARDOUS EXCAVATION 6-8' BGS (EXCEEDANCES OF RRSCOS)
	NON-HAZARDOUS EXCAVATION 6-10' BGS (EXCEEDANCES OF RRSCOS)
	NON-HAZARDOUS EXCAVATION 5-11' BGS (EXCEEDANCES OF RRSCOS)

PROJECT:

BLDG ORCHARD LLC
42-24 ORCHARD STREET
BCP SITE NO. C241256
LONG ISLAND CITY, QUEENS, NEW YORK 11101

TITLE:

PROPOSED EXCAVATION AREAS

DRAWN BY:	H. DELGADO	PROJ NO.:	460578
CHECKED BY:	E. EBERT		
APPROVED BY:	K. BOGER		**FIGURE 3**
DATE:	AUGUST 2022		

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FILE NO.: Fig 12 - Prop. Excav.Areas_Combined.dwg