DECISION DOCUMENT

Former Imperial Cleaners Site
Brownfield Cleanup Program
Lake Success, Nassau County
Site No. C130225
December 2022

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

DECLARATION STATEMENT - DECISION DOCUMENT

Former Imperial Cleaners Site
Brownfield Cleanup Program
Lake Success, Nassau County
Site No. C130225
December 2022

Statement of Purpose and Basis

This document presents the remedy for the Former Imperial Cleaners 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 Former Imperial Cleaners 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, 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.

As part of the site remedy, soils from two drywell structures located near the south-west corner of the site, and soils from beneath the basement floor slab of the on-site building will be excavated for off-site disposal. The drywell structures will be excavated to approximately 22 feet below grade. An approximately 10-foot by 10-foot area of the slab beneath the Former Imperial Cleaners space will be cut and removed to excavate a source area of contaminated soil to a depth of approximately four feet below the slab. Approximately 65-75 cubic yards of contaminated soil will be removed from the site. Collection and analysis of confirmation 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 the Department, submit the sample results and, in consultation with the Department, determine if further remedial excavation is necessary.

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.

3. Cover System:

A site cover currently exists in areas not occupied by buildings, and it will be maintained to allow for commercial use of 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).

4. Air Sparge with Soil Vapor Extraction (AS/SVE):

Air sparging will be implemented to address the groundwater plume contaminated by volatile organic compounds (VOCs). VOCs will be physically removed from the groundwater and soil below the water table (saturated soil) by injecting air into the subsurface. The injected air rising through the groundwater will volatilize and transfer the VOCs from the groundwater and/or soil into the injected air. The VOCs are carried with the injected air into the vadose zone (the area below the ground surface but above the water table) where a soil vapor extraction (SVE) system designed to remove the injected air will be installed. The SVE system will apply a vacuum to wells that have been installed into the vadose zone to remove the VOCs along with the air introduced by

the sparging process. The air extracted from the SVE wells will be treated as necessary prior to being discharged to the atmosphere.

At this site it is estimated five air injection wells will be installed throughout the site, as depicted on Figure 3, to a depth of approximately 40 feet, which is 10-12 feet below the water table. To capture the volatilized contaminants, it is estimated three SVE wells will be installed in the vadose zone at a depth of approximately 20 below ground surface (bgs) and screened from 10 to 20 feet bgs. The air containing VOCs extracted from the SVE wells will be treated by passing the air stream through activated carbon which removes the VOCs from the air prior to it being discharged to the atmosphere.

5. Vapor Mitigation:

The on-site building will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the migration of vapors into the building from soil and/or groundwater.

6. 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 4 commercial cleanup at a minimum.

Environmental Easement

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 commercial 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 County DOH; and
- require compliance with the Department approved Site Management Plan.

7. Site Management Plan:

A Site Management Plan is required, which includes the following:
A. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in Paragraph 6 above.

Engineering Controls: The Cover System discussed in paragraph 3 above, the AS/SVE system discussed in paragraph 4 above and the Vapor Mitigation system discussed in paragraph 5 above.

This plan includes, but may not be limited to:

- excavation plan which details the provisions for management of future excavations in areas of remaining contamination;
- provision for demolition of the on-site building if and when it becomes unsafe or inactive or vacant;
- provision should redevelopment occur to ensure no soil exceeding protection of groundwater concentrations will remain below storm water retention basin or infiltration structures;
- descriptions of the provisions of the environmental easement including any land use, or groundwater water use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any new buildings on the site, or any previously targeted offsite buildings, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 3 above will be placed in any areas where the upper one foot of exposed surface soil exceeds the applicable soil cleanup objectives (SCOs);
- 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 and soil vapor to assess the performance and effectiveness of the remedy;
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above; and
- a schedule of monitoring and frequency of submittals to the Department.

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:

- procedures for operating and maintaining the remedy;
- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
- maintaining site access controls and Department notification; 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.

December 6, 2022

Date

Richard A. Mustico, Director
Remedial Bureau A

DECISION DOCUMENT

Former Imperial Cleaners Site
Lake Success, Nassau County
Site No. C130225
December 2022

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, 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 repository:

DECInfo Locator - Web Application
https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C130225

Station Library
26 Great Neck Road
Great Neck, NY 11021
Phone: (516) 446-8055

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

Site Location:
The 0.328-acre site is located in a suburban/commercial area in the Village of Lake Success, Nassau County. The site is bounded by Lakeville Road to the east, commercial properties to the north and south, and residential properties to the west. The site is approximately 100 feet north of University Road and 600 feet south of Northern Boulevard.

Site Features:
The property features include a small commercial strip mall, with four tenant spaces (three vacant and one occupied), surrounded by parking areas in the front (east side) and back (west side) of the building.

Current Zoning and Land Use:
The site property is zoned for "Business B" commercial use by the Village of Lake Success. Surrounding parcels are currently used for a combination of commercial and residential uses.

Past Use of the Site:
The site has been occupied by a number of tenants historically, including a deli, bridal shop, and a dry-cleaning facility (the former Imperial Cleaners facility). In 1995, when a tetrachloroethene (PCE) release to soil and groundwater was identified, the on-site dry-cleaning operations ceased, and the business converted to a clothing drop off only facility. The PCE contamination was suspected to originate from floor drains within the space formerly occupied by Imperial Cleaners and from a leaching pool and dry wells associated with the dry-cleaning operations at the property.

Site Geology and Hydrogeology:
The site sits on top of a perched water table located approximately 30 feet below grade, underlain by a confining clay layer approximately 35 to 50 feet below grade. The groundwater flow direction varies on-site from west to west-northwest.

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

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 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 was accepted into the BCA as a Volunteer, but with off-site responsibilities. The Department has determined that this site poses a significant threat to human health and the environment and there are off-site impacts that require remedial activities.

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) cis 1,2-dichloroethene (cis-DCE)

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 or is underway at this site based on conditions observed during the RI.

Remedial Program – Soil Vapor Intrusion (SVI) Mitigation at Three Off-Site Properties

Three off-site properties have been found to exhibit the potential for inhalation exposure *via* soil vapor intrusion attributed to site contamination. To address potential exposure, Sub-slab Depressurization Systems (SSDS) are being installed at these properties.

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), per-and polyfluoroalkyl substances (PFAS), herbicides and pesticides. Sub-slab soil vapor and indoor air were analyzed for VOCs. Based upon investigations conducted to date, the contaminants of concern for the site are tetrachloroethylene (PCE), cis-1,2-dichloroethene and trichloroethylene (TCE) in soil, groundwater and soil vapor.

Soils: VOCs were detected in soil samples at levels exceeding protection of groundwater SCOs (PGWSCOs) in samples taken from the 14.5 to 15.5 feet bgs interval near a stormwater drywell and beneath the slab of the on-site building. VOCs exceeding PGWSCOs include tetrachloroethene (PCE) at a maximum concentration of 43 parts per million (PPM) compared to the PGWSCO of 0.47 ppm. Data does not indicate that off-site soils have been impacted by site contamination.

Groundwater: Several VOCs were detected in groundwater samples at concentrations above the New York State Ambient Water Quality Standards (AWQS) at the majority of sample locations throughout the site. PCE was detected at up to 140 parts per billion (ppb) compared to the AWQS of 5 ppb, cis-1,2-dichloroethene (cis-DCE) at up to 17 ppb (AWQS 5 ppb) and trichloroethene (TCE) at up to 17 ppb (AWQS 5 ppb). Cis-DCE and TCE are breakdown products of PCE and are considered site-related contamination. Methyl tert-butyl ether (MTBE) was also detected in groundwater samples above standards, at up to 58 ppb (AWQS 10 ppb), but was not detected in any soil samples, indicating it is likely from an off-site source. The MTBE is not considered a site-related contaminant and is most likely a vestige of two spills from a nearby gas station reported in the early 1990s. Spill No. 9109463 was reported December 5, 1991, and closed December 21, 2000. Spill No. 9304468 was reported July 9, 1993, and closed August 23, 2007. 1,4-Dioxane was not detected in any groundwater samples.

The PFAS compounds, perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were detected in all four groundwater samples analyzed at values ranging from 17 parts per trillion (ppt) up to 41 ppt for PFOA and 3.0 ppt up to 28 ppt for PFOS. The maximum contaminant level, or MCL (drinking water standard) for both compounds is 10 ppt. However, groundwater in this area is not used as drinking water. PFOA was not detected in any soil or drywell sediment samples. PFOS was detected at trace amounts in sediment samples in the dry wells at up to 0.775 ppb, below its unrestricted use soil cleanup objective of 0.88 ppb. The sitewide presence of PFAS indicates an area-wide groundwater condition that is not specifically site-related.

Data indicates that off-site groundwater has been impacted by site-related VOC contamination.

Soil Vapor Intrusion: PCE, TCE and cis-DCE were found at levels requiring actions to address potential exposures *via* soil vapor intrusion. The maximum concentrations of PCE, TCE and cis-DCE in indoor air were 16.9 micrograms per cubic meter (ug/m^3), $0.25 ug/m^3$ and $0.23 ug/m^3$ respectively. The maximum concentrations of PCE, TCE and cis-DCE in sub-slab vapor were

43,400 ug/m^3, 1,770 ug/m^3 and 1,550 ug/m^3 respectively. Therefore, PCE exceeded the NYSDOH recommendation for mitigation established in Soil Vapor/Indoor Air Matrix B (1,000 ug/m^3 and above for sub-slab vapor concentrations compared to < 3 ug/m^3 for indoor air concentrations). TCE and cis-DCE exceeded the NYSDOH recommendation for mitigation established in Soil Vapor/Indoor Air Matrix A (60 ug/m^3 and above for sub-slab concentrations compared to < 0.2 ug/m^3 for indoor air concentrations). Existing off-site data indicates that actions to address potential exposures from soil vapor intrusion are required in three off-site buildings. The potential exposures from soil vapor intrusion in the three off-site buildings is currently being addressed through an IRM.

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 covered by buildings and pavement, 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 may move into the soil vapor (air spaces within the soil), which in turn 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. Environmental sampling indicates that the potential exists for the inhalation of site contaminants due to soil vapor intrusion for the on-site building and several off-site structures. Additional offsite structures were offered sampling to evaluate soil vapor intrusion. Due to declination of sampling and/or non-responsiveness, potential exposure in these structures is unknown.

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 VOCs from the perched groundwater and vadose (unsaturated) zone to the extent practicable.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

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

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site and off-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 generic soil cleanup objectives remedy.

The selected remedy is referred to as the Excavation, Groundwater Treatment, and Vapor Mitigation remedy. Additionally, vapor mitigation will be accomplished at three off-site properties via an IRM, referenced in Section 6.2 above.

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;
- 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, 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.

As part of the site remedy, soils from two drywell structures located near the south-west corner of the site, and soils from beneath the basement floor slab of the on-site building will be excavated for off-site disposal. The drywell structures will be excavated to approximately 22 feet below grade. An approximately 10-foot by 10-foot area of the slab beneath the Former Imperial Cleaners space will be cut and removed to excavate a source area of contaminated soil to a depth of approximately four feet below the slab. Approximately 65-75 cubic yards of contaminated soil will be removed from the site. Collection and analysis of confirmation 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 the Department, submit the sample results and, in consultation with the Department, determine if further remedial excavation is necessary.

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.

3. Cover System:

A site cover currently exists in areas not occupied by buildings, and it will be maintained to allow for commercial use of 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).

4. Air Sparge with Soil Vapor Extraction (AS/SVE):

Air sparging will be implemented to address the groundwater plume contaminated by volatile organic compounds (VOCs). VOCs will be physically removed from the groundwater and soil below the water table (saturated soil) by injecting air into the subsurface. The injected air rising through the groundwater will volatilize and transfer the VOCs from the groundwater and/or soil into the injected air. The VOCs are carried with the injected air into the vadose zone (the area below the ground surface but above the water table) where a soil vapor extraction (SVE) system designed to remove the injected air will be installed. The SVE system will apply a vacuum to wells that have been installed into the vadose zone to remove the VOCs along with the air introduced by the sparging process. The air extracted from the SVE wells will be treated as necessary prior to being discharged to the atmosphere.

At this site it is estimated five air injection wells will be installed throughout the site, as depicted on Figure 3, to a depth of approximately 40 feet, which is 10-12 feet below the water table. To capture the volatilized contaminants, it is estimated three SVE wells will be installed in the vadose zone at a depth of approximately 20 below ground surface (bgs) and screened from 10 to 20 feet bgs. The air containing VOCs extracted from the SVE wells will be treated by passing the air stream through activated carbon which removes the VOCs from the air prior to it being discharged to the atmosphere.

5. Vapor Mitigation:

The on-site building will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the migration of vapors into the building from soil and/or groundwater.

6. 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 4 commercial cleanup at a minimum.

Environmental Easement

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 commercial 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 County DOH; and
- require compliance with the Department approved Site Management Plan.

7. Site Management Plan:

A Site Management Plan is required, which includes the following:
A. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in Paragraph 6 above.

Engineering Controls: The Cover System discussed in paragraph 3 above, the AS/SVE system discussed in paragraph 4 above and the Vapor Mitigation system discussed in paragraph 5 above.

This plan includes, but may not be limited to:

- excavation plan which details the provisions for management of future excavations in areas of remaining contamination;
- provision for demolition of the on-site building if and when it becomes unsafe or inactive or vacant;
- provision should redevelopment occur to ensure no soil exceeding protection of groundwater concentrations will remain below storm water retention basin or infiltration structures;
- descriptions of the provisions of the environmental easement including any land use, or groundwater water use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any new buildings on the site, or any previously targeted offsite buildings, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 3 above will be placed in any areas where the upper one foot of exposed surface soil exceeds the applicable soil cleanup objectives (SCOs);
- 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 and soil vapor to assess the performance and effectiveness of the remedy;
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above; and
- a schedule of monitoring and frequency of submittals to the Department.

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:

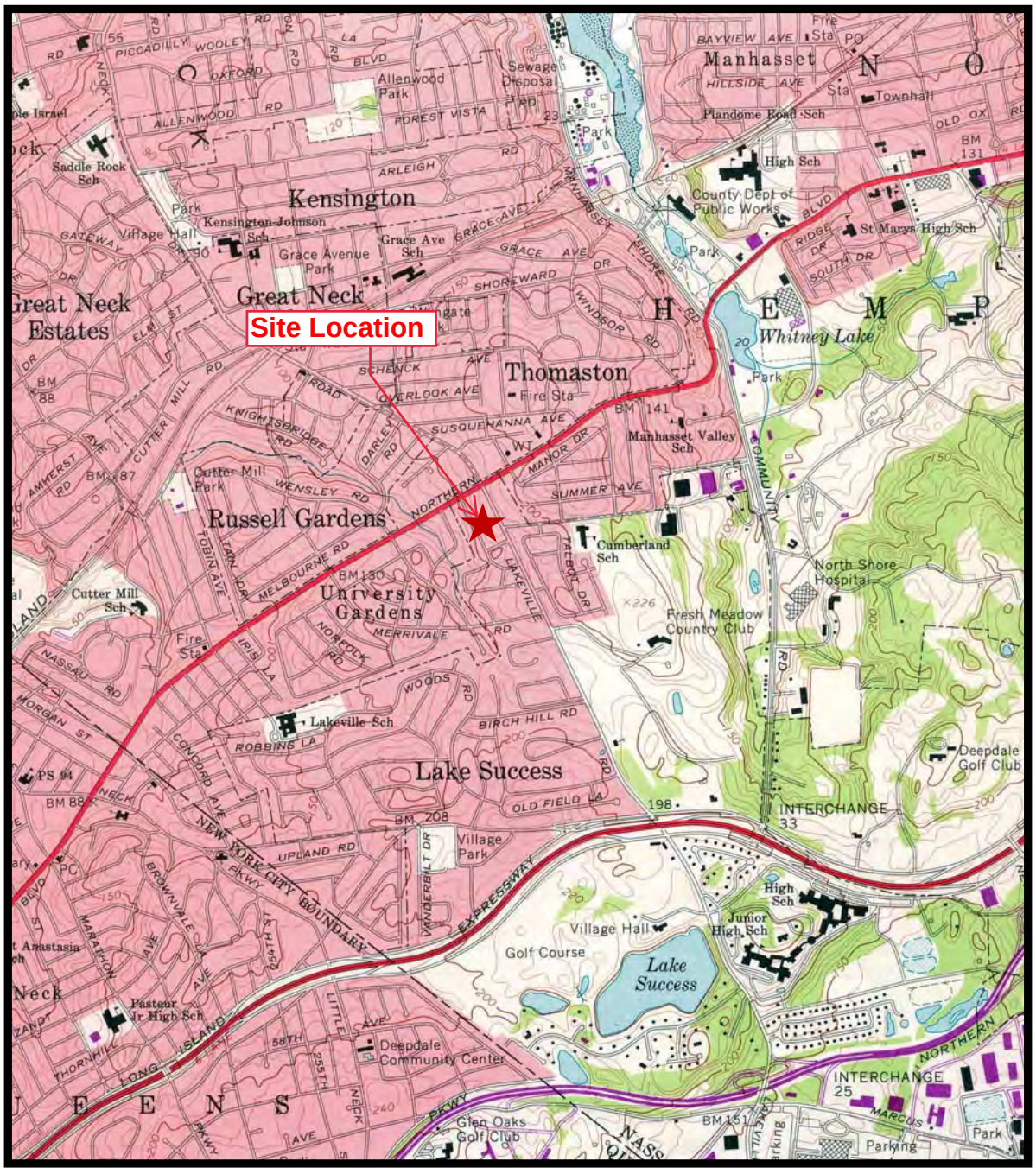
- procedures for operating and maintaining the remedy;
- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
- maintaining site access controls and Department notification; and
- providing the Department access to the site and O&M records.

Former Imperial Cleaners Site
BCP Site #C130225
218 Lakeville Road
Lake Success, New York

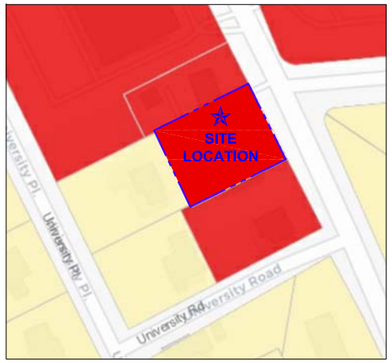
FIGURE 1

SITE LOCATION MAP

N



(USGS QUAD Sea Cliff, New York) (Scale 1:24000)



SOURCE: http://www.longislandindexmaps.org/

LAND USE MAP

SCALE: 1" = 200'-0"

0 100 200 400 600

SCALE: 1"=200'

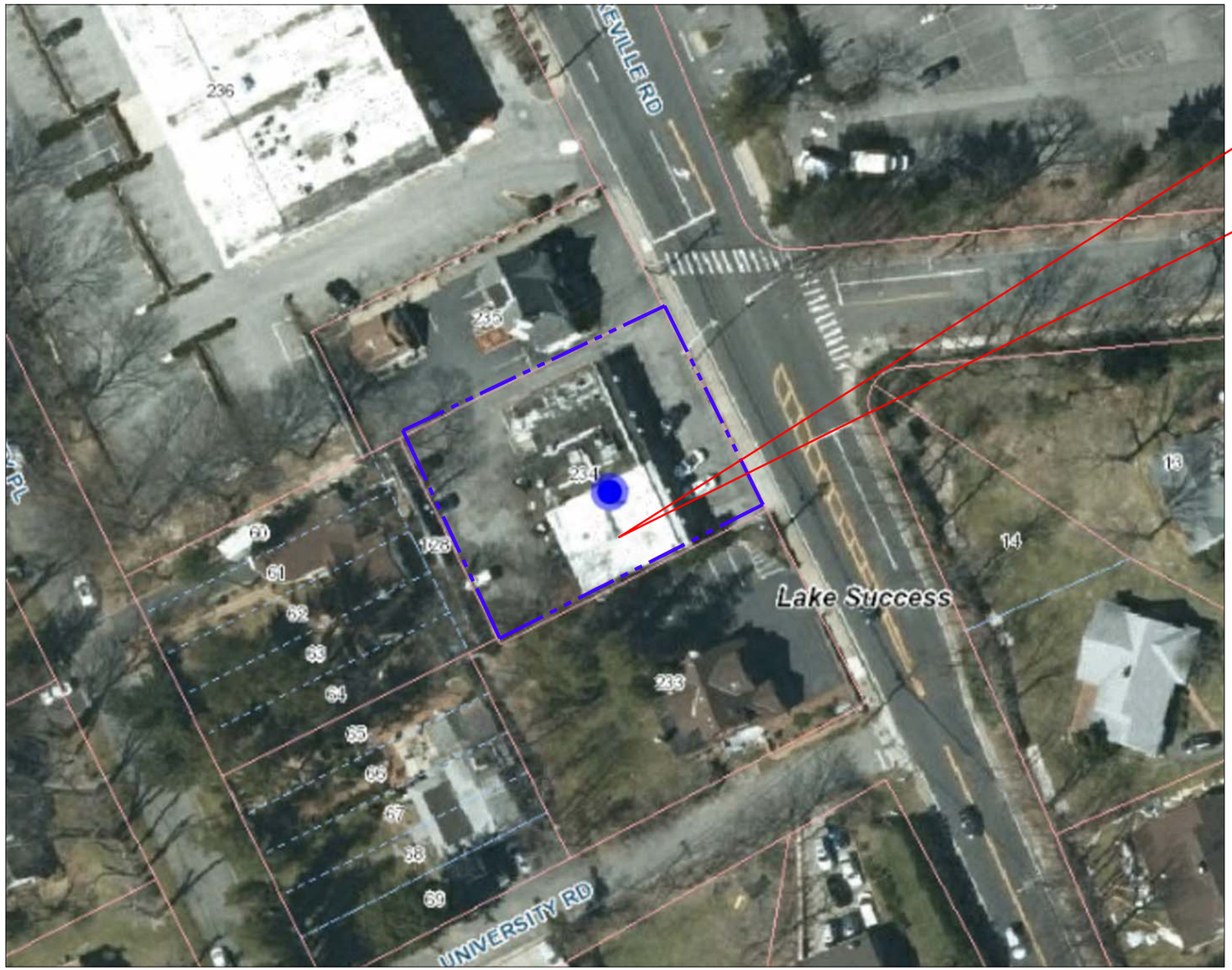
LAND USE LEGEND

- COMMERCIAL USE
- SINGLE FAMILY RESIDENTIAL USE

LEGEND

- SITE BOUNDARY
- NASSAU COUNTY TAX PARCELS

N



SUBJECT SITE
SECTION: 2, BLOCK: 106, LOT: 234
218 LAKEVILLE RD.
LAKE SUCCESS, N.Y. 11020

SOURCE: https://lrv.nassaucountyny.gov/map/?s=2&b=106&l=234

0 30 60 120 180

SCALE: 1"=60'

SITE PLAN

SCALE: 1" = 60'-0"

Walden Environmental Engineering

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16 SPRING STREET
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P: (516) 624-7200 F: (516) 624-3219
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FOR: FORMER IMPERIAL CLEANERS SITE BCP Site No. C130225 218 Lakeville Road Lake Success, New York 11020	DRAWING TITLE: SITE PLAN			FIGURE NO: 2	ISSUED REVISION NO: 0
DESIGNED BY: NMB	DRAWN BY: LS	CHECKED BY: NMB	JOB NO: IMPL0115.6	DATE: 7/8/22	11x17 SHEET NO: 1 of 1
APPROVED BY: NMB	SCALE: AS NOTED		CAD FILE NAME: Z:\IMPL0115 (Imperial Cleaners)\IMPL0115.6 - 2019 Pre-Design Investigation\Figures		

LEGEND

SUBJECT SITE BOUNDARY

SUB-SLAB DEPRESSURIZATION SYSTEM

DW #1 — STORMWATER DRYWELL

LP — SANITARY LEACHING POOL

FD-1 — FLOOR DRAIN

APPROXIMATE EXISTING PIPING CONNECTION (SANITARY SYSTEM/STORMWATER/ROOF DRAINAGE)

VAPOR PIN MONITORING POINT

SUB SLAB DEPRESSURIZATION WELL POINT

SSDS RADIUS OF INFLUENCE (ASSUMED 40 FT BASED ON SOIL CONDITIONS; TO BE CONFIRMED BY PILOT TESTING)

SSDS PIPING

SOIL VAPOR EXTRACTION/ AIR SPARGE SYSTEM

SOIL VAPOR EXTRACTION WELL

SVE RADIUS OF INFLUENCE (ASSUMED 50 FT)

SVE PIPING

AIR SPARGE WELL

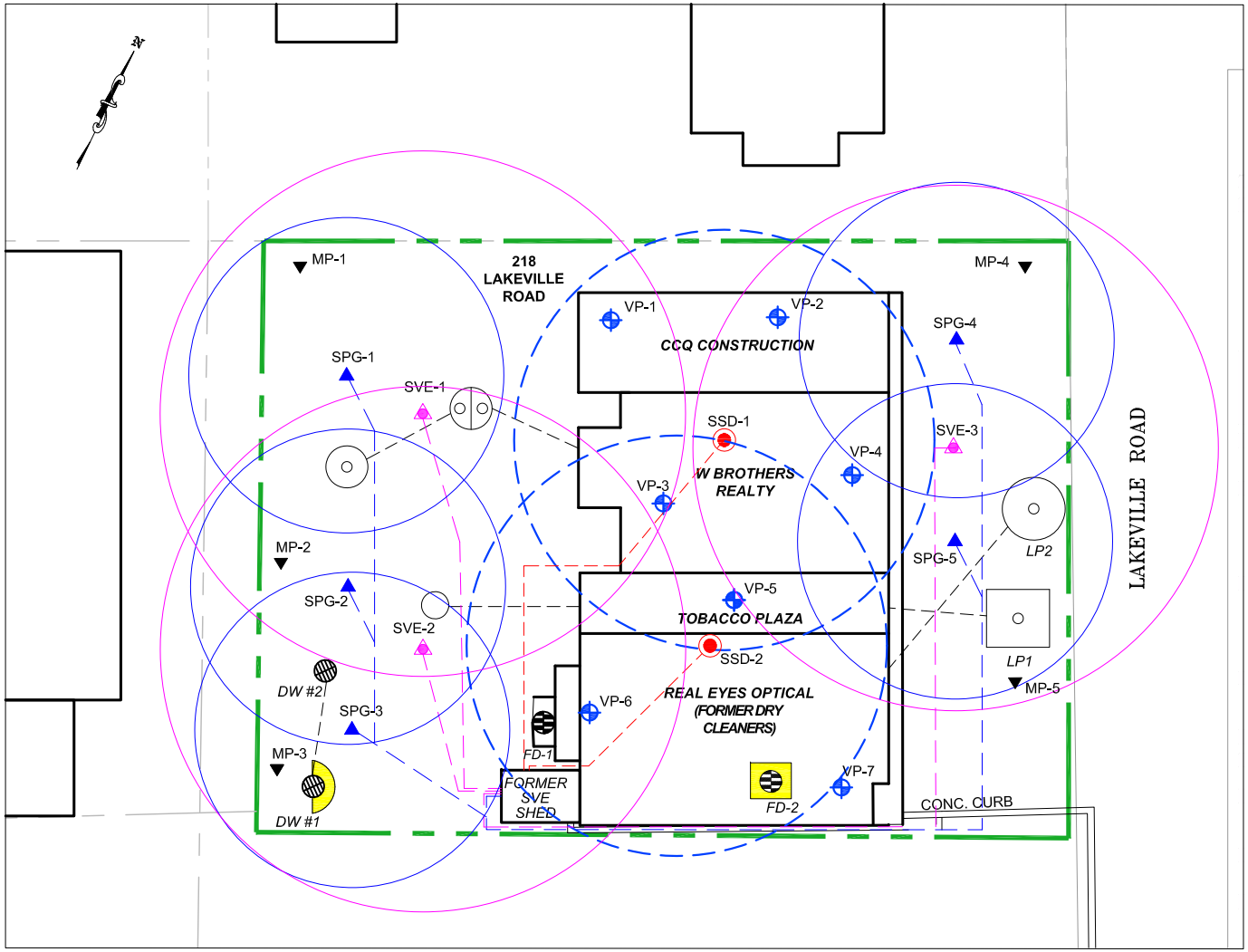
AIR SPARGE RADIUS OF INFLUENCE (ASSUMED 30 FT)

AIR SPARGE PIPING

AS/SVE SYSTEM MONITORING POINT

ON-SITE SOIL EXCAVATION AREAS

APPROXIMATE LATERAL EXTENT OF SOIL XCAVATION



SELECTED REMEDY

SCALE: 1" = 30'-0"

0 15 30 60 90

SCALE: 1"=30'-0"

SELECTED REMEDY NOTES

THE SSD SYSTEM COMPONENTS AND ROI ARE SHOWN FOR SCHEMATIC PURPOSES ONLY. THE SVE AND AIR SPARGE WELL ROIS ARE ASSUMED BASED ON PUBLISHED DESIGN INFORMATION TYPICAL FOR SITES WITH SANDY SOILS, SIMILAR TO ON-SITE SOIL CONDITIONS. THE ACTUAL SYSTEM LAYOUTS AND EQUIPMENT SPECIFICATIONS WILL BE DETERMINED BASED ON ON-SITE PILOT TESTING RESULTS AND FINAL DESIGN.

THE ON-SITE SOIL REMOVAL WILL BE GUIDED BASED ON FIELD OBSERVATIONS AND SCREENING. SOIL WILL BE EXCAVATED FROM BENEATH THE BOTTOM OF DW #1 AND SURROUNDING THE EAST SIDE OF DW #1 TO AN ESTIMATED DEPTH OF APPROXIMATELY 22 FT BELOW GRADE. A 10 FT BY 10 FT (APPROXIMATE) SECTION OF THE SLAB IN THE AREA OF FD-2 WILL BE REMOVED AND UNDERLYING SOILS WILL BE EXCAVATED TO A DEPTH OF APPROXIMATELY 4 FT BELOW THE SLAB. VOC-IMPACTED SOIL WILL BE DISPOSED OF AT AN APPROPRIATE OFF-SITE DISPOSAL FACILITY.

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NOTES

1. SITE BASE MAP WAS DERIVED FROM A PROPERTY SURVEY PREPARED BY WELSH ENGINEERING & LAND SURVEYING, P.C., 343 MANVILLE ROAD, PLEASANTVILLE, NY 10570, REVISED ON 7/14/00.

2. THE WELSH ENINGEERING NORTH ARROW WAS CORRECTED BASED ON 1999 NASSAU COUNTY GIS BASEMAP.

FOR: FORMER IMPERIAL CLEANERS SITE BCP Site No. C130225 218 Lakeville Road Lake Success, New York 11020			DRAWING TITLE: SELECTED REMEDY		FIGURE NO: 3
DESIGNED BY: NMB	DRAWN BY: LS	CHECKED BY: NMB	JOB NO: IMPL0115.6	DATE: 10/3/22	8½x11 SHEET 1 of 1
APPROVED BY: NMB	SCALE: AS NOTED		CAD FILE NAME: Z:\IMPL0115 (Imperial Cleaners)\IMPL0115.6 - 2019 Pre-Design Investigation\Figures for Decision Document\ACAD\IMPL0115.6_Selected Remedy_Figure 3 (10-3-22) LS.dwg		

LEGEND

SUBJECT SITE BOUNDARY

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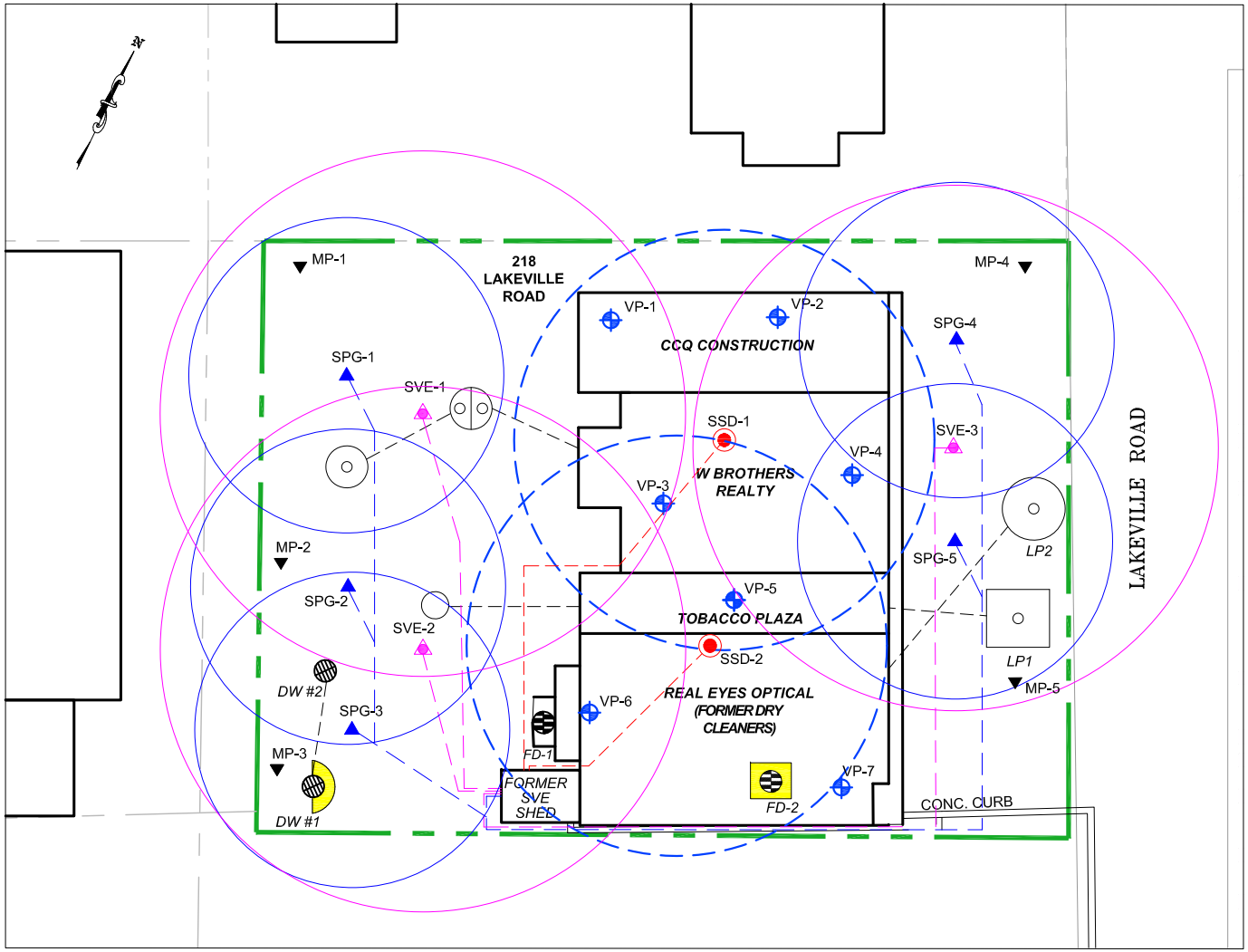

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