

DECISION DOCUMENT

333 Grand Avenue
Brownfield Cleanup Program
Johnson City, Broome County
Site No. C704062
November 2024



**Department of
Environmental
Conservation**

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

DECLARATION STATEMENT - DECISION DOCUMENT

333 Grand Avenue
Brownfield Cleanup Program
Johnson City, Broome County
Site No. C704062
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Statement of Purpose and Basis

This document presents the remedy for the brownfield cleanup site known as 333 Grand Avenue . The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the 333 Grand Avenue site and the public's input to the proposed remedy presented by NYSDEC.

Description of Selected Remedy

The selected remedy is referred to as the Excavation and Off-Site Disposal of Contaminated Soils, Site-Wide Cover System, and Vapor Mitigation remedy.

The elements of the selected remedy, as shown in Figures 3a and 3b are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance

ecological, economic and social goals;

- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise(TM) (available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

Excavation and off-site disposal of contaminant source areas, including soils which exceed the protection of groundwater soil cleanup objectives (PGSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards. At this site, these conditions apply only to areas of lead contamination in soil.

Approximately six cubic yards of lead contaminated soil will be removed from two areas on the site that are each approximately five feet by five feet at the surface and three feet deep. Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that PWSCOs for the site have been achieved. If confirmation sampling indicates that the soil cleanup objectives (SCOs) were not achieved at the stated remedial depth, the Applicant must notify NYSDEC, submit the sample results and, in consultation with DEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after

confirmation samples demonstrate that SCOs for the site have been achieved.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state and local laws, rules, and regulations and facility-specific permits.

3. Backfill

On-site soil which does not exceed the above excavation criteria may be used below the cover system described in remedy element 4 to backfill the excavation to the extent that a sufficient volume of on-site soil is available and establish the designed grades at the site.

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.

The site will be re-graded to accommodate installation of a cover system as described in remedy element 4.

4. Cover System

A site-wide cover will be required in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs), to allow for future restricted residential use of the site. Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

5. Vapor Mitigation

Any on-site buildings will be required to have an active 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 for the controlled property which will:

- Require the remedial party or site owner to complete and submit to the NYSDEC a periodic certification of institutional and engineering controls in accordance with Part

375-1.8 (h)(3);

- Allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- Restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- Require compliance with the NYSDEC approved Site Management Plan.

7. Site Management Plan

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

1. 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 remedy element 6 above.

Engineering Controls: The cover system discussed in remedy element 4 and the sub-slab depressurization system discussed in remedy element 5 above.

This plan includes, but may not be limited to:

- An Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- Descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- A provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in remedy element 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- A provision for evaluation of the potential for soil vapor intrusion for any new 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 NYSDEC notification; and
- The steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

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

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

3. An Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection, and reporting of any mechanical or physical components of the active vapor mitigation system. The plan includes, but is not limited to:

- Procedures for operating and maintaining the system; and
- Compliance inspection of the system to ensure proper O&M as well as providing the data for any necessary reporting.

Declaration

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

November 21, 2024

Date

Jason Pelton, Director
Remedial Bureau D

DECISION DOCUMENT

333 Grand Avenue
Johnson City, Broome County
Site No. C704062
November 2024

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, where a contaminant is present at levels exceeding the soil cleanup objectives or other health-based or environmental standards, criteria or guidance, based on the reasonably anticipated use of the property.

NYSDEC has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

NYSDEC seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by NYSDEC in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

DECInfo Locator - Web Application
<https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C704062>

Your Home Public Library
107 Main Street
Johnson City, NY 13790
Phone: 607-797-4816

Receive Site Citizen Participation Information By Email

Please note that NYSDEC's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at <http://www.dec.ny.gov/chemical/61092.html>

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:

The 333 Grand Avenue site is comprised of two tax parcels totaling 4.12 acres in the Village of Johnson City (see Figures 1 and 2). The western parcel has the address of 333 Grand Avenue and is 3.96 acres. The eastern parcel has the address of 154 Allen Street and is 0.16 acres. The site is in a suburban area and is situated between Grand Avenue on the south side and an inactive rail line on the north side. The site is approximately 0.25-mile northeast of the Johnson City traffic circle and approximately 0.5 mile east of the Susquehanna River.

Site Features:

The site is relatively flat and has no buildings, but the remnants of a former building and an asphalt paved parking lot remain. The remainder of the site consists of grassy areas with some trees. The site is currently fenced.

Current Zoning and Land Use:

The site is currently vacant. The western parcel is zoned as industrial, and the eastern parcel is zoned as multi-family. Properties north of the site and north of the inactive rail line consist of commercial, vacant land, and residential properties. Properties to the east are vacant land and residential, and to the south/west are commercial and residential properties.

Past Uses of the Site:

Descriptions of past uses are listed below and are specific to each site parcel.

Western parcel - In 1918 the site was occupied by the Sweet Brothers Foundry - with a combination of 4-story, 2-story and 1-story attached structures with earthen floors and a 1-story storage structure located in the south-central section of 333 Grand Avenue. The property continued to be utilized as a foundry and associated operations through 1968. After the foundry closed in 1968 the property and structures were used by the Philadelphia Sales Corporation until 2000. By 2008 the property was vacant with no structures at 333 Grand Avenue.

Eastern parcel - In 1925 an automobile storage facility was constructed at the corner of Bennet Avenue and Allen Street. An additional multi-level apartment structure was constructed in 1931. The two structures at 154 Allen Street remained active through 2008. The structures were demolished in 2015.

Site Geology and Hydrogeology:

Subsurface soils at the site are comprised of silts, sands, clays, and gravels. Fill material included brick, coal fragments, coal ash, slag, and concrete to depths of 17 feet below ground surface (bgs). Bedrock was not encountered at the maximum drilling depths of 25 feet bgs. Groundwater depths ranges from 9 to 25 feet bgs. Groundwater flow is to the west towards the Susquehanna River.

A site location map is attached as Figure 1 and a Site Boundary Map is attached as Figure 2.

SECTION 4: LAND USE AND PHYSICAL SETTING

NYSDEC may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives that restrict the use of the site to restricted residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report (RIR).

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Volunteer. The Applicant does not have an obligation to address off-site contamination. However, NYSDEC has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation 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 completed to sample soil and/or waste 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 RIR is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. NYSDEC has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RIR contains a full discussion of the data. The contaminants of concern identified at this site are:

arsenic	benzo(b)fluoranthene
barium	benzo(k)fluoranthene
chromium	chrysene
lead	dibenz[a,h]anthracene
magnesium	indeno(1,2,3-cd)pyrene
mercury	heptane
benzo(a)anthracene	hexane
benzo(a)pyrene	

The contaminants of concern exceed the applicable SCGs for:

- groundwater
- soil

6.2: Interim Remedial Measures

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

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

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RIR 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), and pesticides. Soil vapor, and outdoor air samples were analyzed for VOCs.

Soil: Based on investigations conducted to date, the primary contaminants of concern detected in soil include SVOCs and metals. The contamination at the site was in shallow soils to a depth of 3 feet bgs with some localized areas where contamination extended to depths greater than 3 feet.

SVOCs were detected throughout the site in mostly shallow soils. Several SVOCs were detected at concentrations exceeding the restricted residential use SCOs (RRSCOs), including benzo(a)anthracene at a maximum of 17.7 parts per million (ppm), which exceeds its RRSCO of 1 ppm; benzo(a)pyrene at a maximum of 24 ppm which exceeds its RRSCO of 1 ppm; benzo(b)fluoranthene at a maximum of 33 ppm which exceeds its RRSCO of 1 ppm; benzo(k)fluoranthene at a maximum of 17.9 ppm which exceeds its RRSCO of 3.9 ppm; chrysene at a maximum of 22 ppm which exceeds its RRSCO of 3.9 ppm; dibenz(a,h)anthracene at a maximum of 3.2 ppm which exceeds its RRSCO of 0.33 ppm; indeno(1,2,3-c,d)pyrene at a maximum of 18.2 ppm which exceeds its RRSCO of 0.5 ppm. Data does not indicate that there are off-site impacts in soil related to this site.

No VOCs exceeded their respective RRSCOs and only one VOC exceeded its respective unrestricted use SCO, acetone at a maximum of 0.15 ppm (compared to unrestricted SCO of 0.05 ppm).

Metals were detected throughout the site in both shallow and deep soils. Several metals were detected at concentrations exceeding the restricted residential use SCOs, including mercury at a maximum of 6.02 ppm which exceeds its RRSCO of 0.81 ppm; lead at a maximum of 1,110 ppm which exceeds its RRSCO of 400 ppm and its protection of groundwater SCO (PGSCO) of 450 ppm; barium at a maximum of 577 ppm which exceeds its RRSCO of 400 ppm; arsenic at a maximum of 22.9 ppm which exceeds its RRSCO of 15 ppm; chromium at a maximum of 182 ppm which exceeds its RRSCO of 110 ppm. Selenium exceeded its PGSCO of 4 ppm and its unrestricted use SCO of 3.9 ppm, with a maximum concentration of 20.7 ppm. Several other metals exceeded their unrestricted use SCOs, including cadmium at a maximum of 3.05 ppm, copper at a maximum of 185 ppm, nickel at a maximum of 110 ppm, silver at a maximum of 3.55 ppm, and zinc at a maximum of 448 ppm. Data does not indicate that there are off-site impacts in soil related to this site.

No PCBs exceeded their respective unrestricted use SCOs.

No pesticides/herbicides exceeded their respective RRSCOs. Only one pesticide/herbicide exceeded its respective unrestricted SCO, 4,4'-DDT at a maximum of 0.0138 ppm (compared to unrestricted SCO of 0.0033 ppm).

No PFAS exceeded their respective RRSCOs. Only one PFAS exceeded its respective unrestricted use SCO, perfluorooctanesulfonic acid (PFOS) at a maximum of 2.54 parts per billion (ppb) with an unrestricted use SCO of 0.88 ppb.

Groundwater: Based on investigations conducted to date, the primary contaminants of concern detected in groundwater include metals.

No VOCs, SVOCs, PCBs, Pesticides/herbicides, or PFAS were detected in groundwater above their applicable standards, criteria, and guidance (SCGs) values.

Metals were found in groundwater mostly in the north and western portions of the site. Selenium was detected at a maximum concentration of 10.7 part per billion (ppb) with an SCG of 10 ppb, magnesium was detected at a maximum concentration of 143,000 ppb with an SCG of 35,000 ppb, and lead was detected at a maximum concentration of 33.5 ppb with an SCG of 25 ppb. Data does not indicate that there are off-site impacts in groundwater-related to this site.

Soil Vapor: Based on investigations conducted to date, the primary contaminants of concern detected in soil vapor include CVOCs and petroleum related VOCs. 1,2,3-trimethylbenzene was detected at a maximum concentration of 24 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), 1,3,5-trimethylbenzene was detected at a maximum concentration of 6 $\mu\text{g}/\text{m}^3$, cyclohexane was detected at a maximum concentration of 160 $\mu\text{g}/\text{m}^3$, ethylbenzene was detected at a maximum concentration of 160 $\mu\text{g}/\text{m}^3$, m-p-xylene was detected at a maximum concentration of 480 $\mu\text{g}/\text{m}^3$, n-hexane was detected in soil vapor at a maximum concentration of 110,000 $\mu\text{g}/\text{m}^3$, n-heptane was detected in soil vapor at a maximum concentration of 44,000 $\mu\text{g}/\text{m}^3$, o-xylene was detected at a maximum concentration of 170 $\mu\text{g}/\text{m}^3$, PCE was detected at a maximum concentration of 45 $\mu\text{g}/\text{m}^3$, and toluene was detected at a maximum concentration of 84 $\mu\text{g}/\text{m}^3$. Data does not indicate that there are off-site impacts in soil vapor related to this site.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

Access is restricted by a fence. People who enter the site may come into contact with site-related soil and groundwater contamination if they dig below the surface. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater and/or soil may move into the soil vapor (air spaces within the soil), which in turn 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. Because the site is vacant, the inhalation of site-related contaminants due to soil vapor intrusion does not represent a current concern.

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.

RAOs for Environmental Protection

- Restore groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable.

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 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 Excavation and Off-Site Disposal of Contaminated Soils, Site-Wide Cover System, and Vapor Mitigation remedy.

The elements of the selected remedy, as shown in Figures 3a and 3b are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise(TM) (available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

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5. Vapor Mitigation

Any on-site buildings will be required to have an active 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 for the controlled property which will:

- Require the remedial party or site owner to complete and submit to the NYSDEC a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- Allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- Restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- Require compliance with the NYSDEC approved Site Management Plan.

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Institutional Controls: The environmental easement discussed in remedy element 6 above.

Engineering Controls: The soil cover discussed in remedy element 4 and the sub-slab depressurization system discussed in remedy element 5 above.

This plan includes, but may not be limited to:

- An Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- Descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- A provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in remedy element 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- A provision for evaluation of the potential for soil vapor intrusion for any new 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 NYSDEC notification; and
- The steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

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

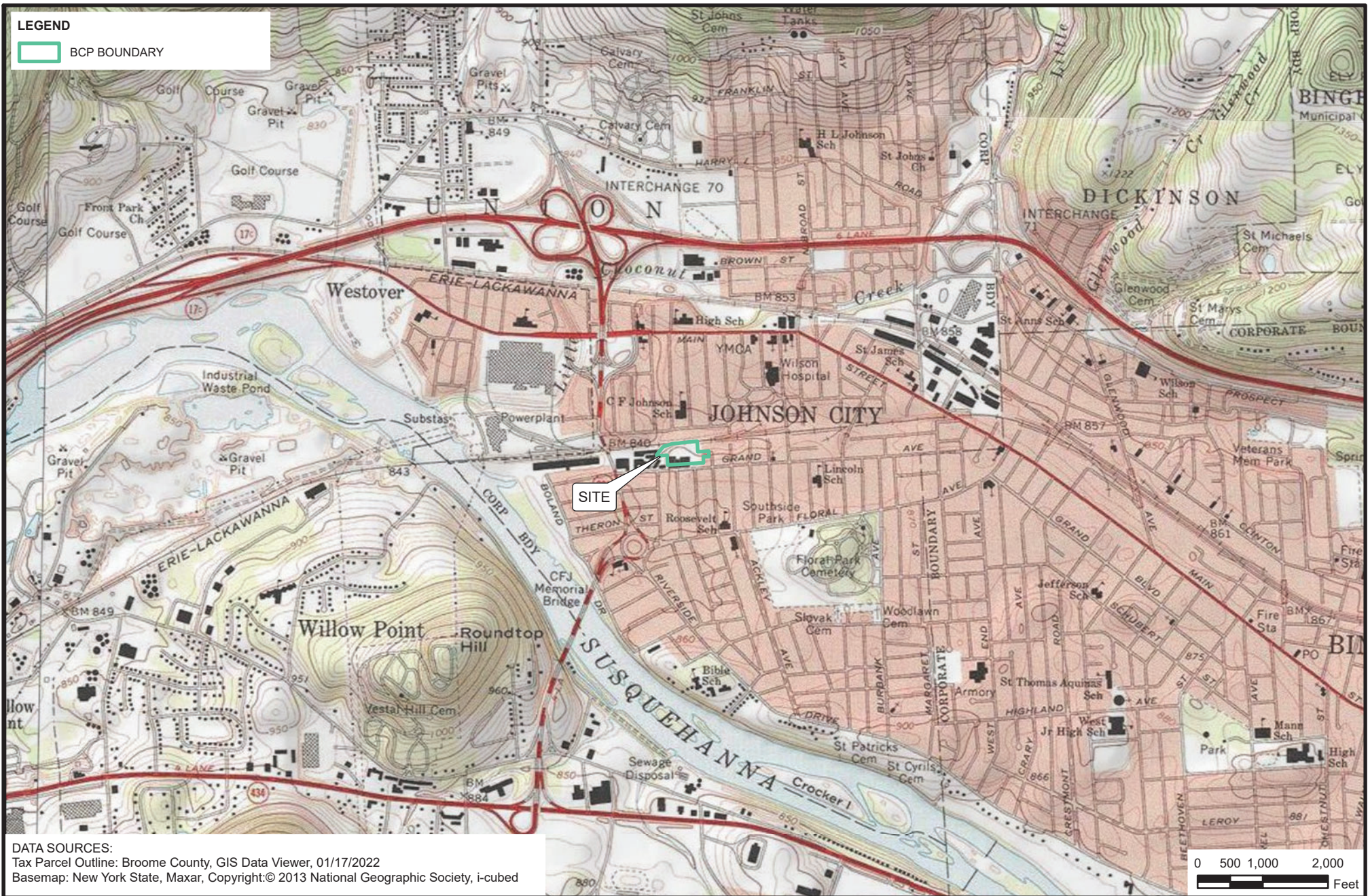
- Monitoring of indoor air to assess the performance and effectiveness of the remedy;
- A schedule of monitoring and frequency of submittals to the NYSDEC; and
- Monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed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

3. An Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection, and reporting of any mechanical or physical components of the active vapor mitigation system. The plan includes, but is not limited to:

- Procedures for operating and maintaining the system; and
- Compliance inspection of the system to ensure proper O&M as well as providing the data for any necessary reporting.

LEGEND

 BCP BOUNDARY




DATA SOURCES:
 Tax Parcel Outline: Broome County, GIS Data Viewer, 01/17/2022
 Basemap: New York State, Maxar, Copyright:© 2013 National Geographic Society, i-cubed



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SITE LOCATION MAP

333 GRAND AVENUE & 154 ALLEN STREET
 VILLAGE OF JOHNSON CITY
 BROOME COUNTY, NEW YORK

PROJECT NO. 202110308	FIGURE 1
	DATE: 06/2/2024
	SCALE: AS INDICATED
	PROJECTION: STATE PLANE NAD83 NY EAST
	ALL LOCATIONS APPROXIMATE

- LEGEND**
- BCP BOUNDARY
 - TAX PARCEL OUTLINE



DATA SOURCES:
 Tax Parcel Outline: Broome County, GIS Data Viewer, 01/17/2022
 Basemap: New York State, Maxar, NYS ITS Geospatial Services, Westchester County GIS



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Site Boundary Map

333 GRAND AVENUE & 154 ALLEN STREET
 VILLAGE OF JOHNSON CITY
 BROOME COUNTY, NEW YORK

PROJECT NO.

202110308



FIGURE 2

DATE: 06/2/2024

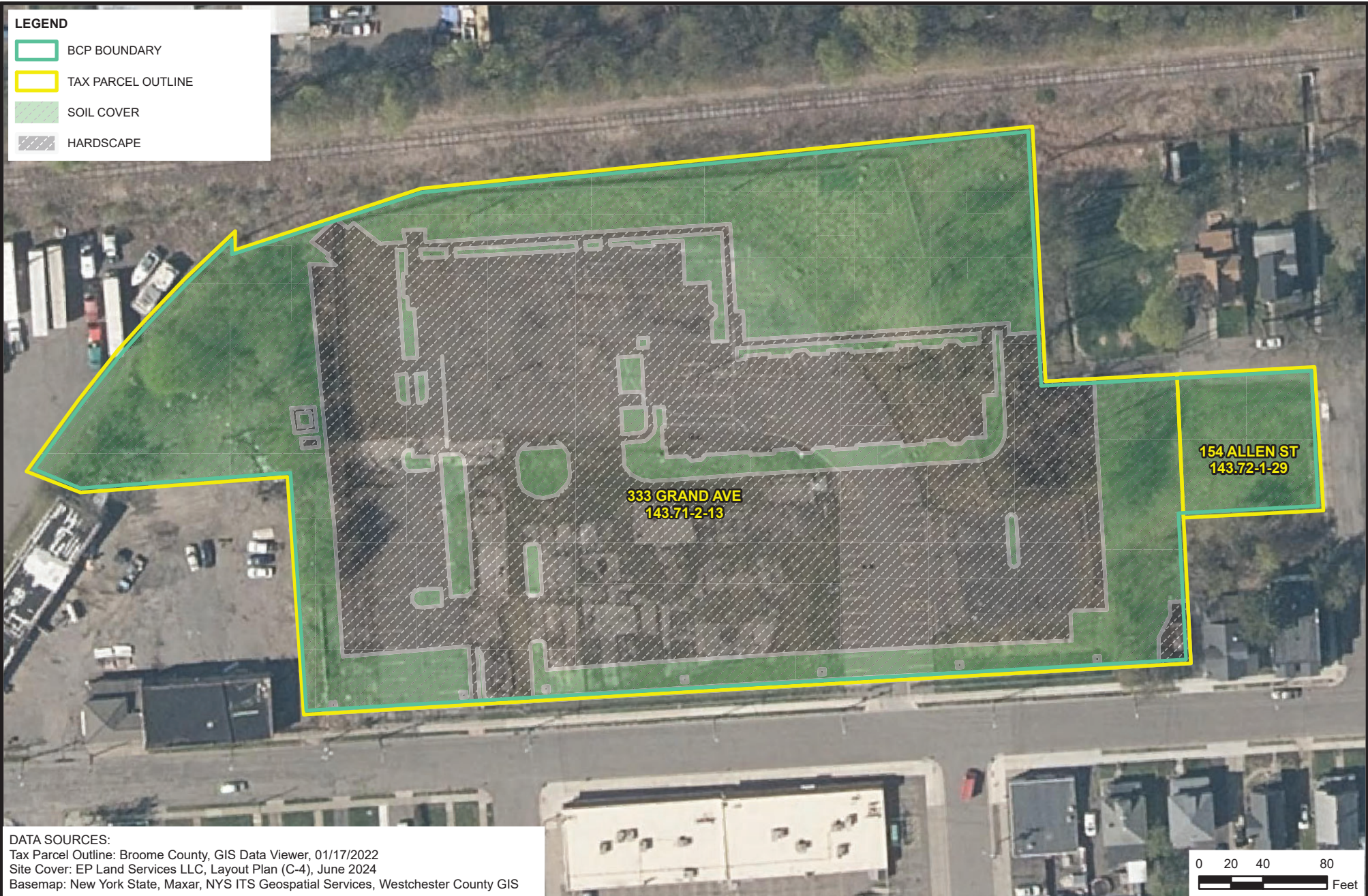
SCALE: AS INDICATED

PROJECTION: STATE PLANE NAD83 NY EAST

ALL LOCATIONS APPROXIMATE

LEGEND

-  BCP BOUNDARY
-  TAX PARCEL OUTLINE
-  SOIL COVER
-  HARDSCAPE



DATA SOURCES:
 Tax Parcel Outline: Broome County, GIS Data Viewer, 01/17/2022
 Site Cover: EP Land Services LLC, Layout Plan (C-4), June 2024
 Basemap: New York State, Maxar, NYS ITS Geospatial Services, Westchester County GIS



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SITE WIDE COVER SYSTEM TYPES & LOCATIONS

333 GRAND AVENUE & 154 ALLEN STREET
 VILLAGE OF JOHNSON CITY
 BROOME COUNTY, NEW YORK

PROJECT NO.

202110308



FIGURE 3a






DATE: 06/28/2024

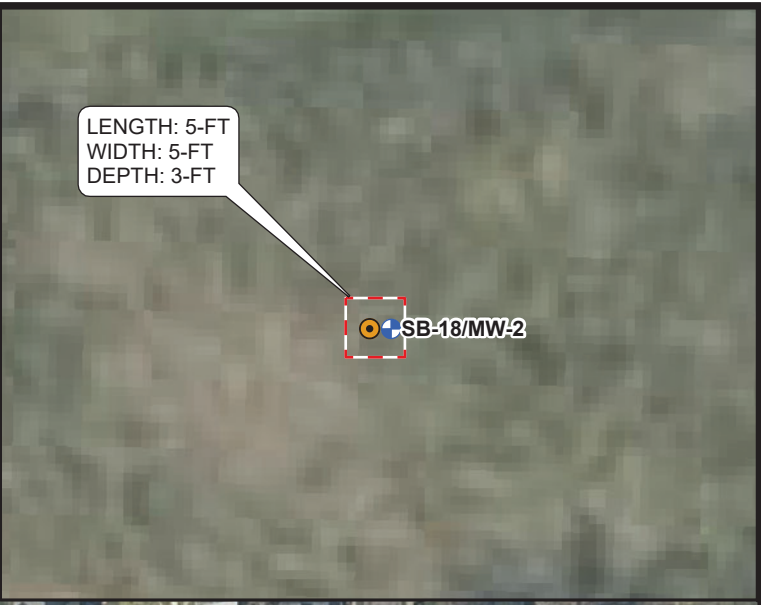
SCALE: AS INDICATED

PROJECTION: STATE PLANE NAD83 NY EAST

ALL LOCATIONS APPROXIMATE

LEGEND

-  SOIL BORING / TEMPORARY MONITORING WELL
-  SURFACE SOIL
-  LEAD SOIL REMOVAL LOCATION
-  BCP BOUNDARY
-  TAX PARCEL OUTLINE




DATA SOURCES:
 Tax Parcel Outline: Broome County, GIS Data Viewer, 01/17/2022
 Basemap: NYS ITS Geospatial Services, Westchester County GIS



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**TRACK 4 CLEANUP
 (LEAD SOIL REMOVAL LOCATIONS)**

333 GRAND AVENUE & 154 ALLEN STREET
 VILLAGE OF JOHNSON CITY
 BROOME COUNTY, NEW YORK

PROJECT NO. 202110308	FIGURE 3b
	DATE: 06/28/2024
	SCALE: AS INDICATED
	PROJECTION: STATE PLANE NAD83 NY EAST
	ALL LOCATIONS APPROXIMATE