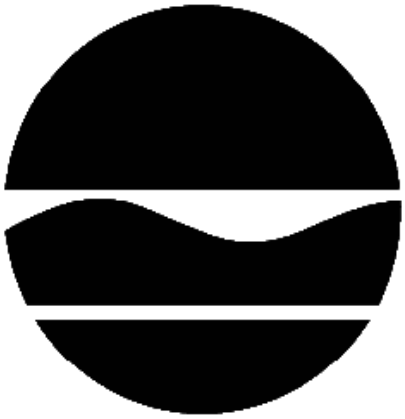
DECISION DOCUMENT

CE - E. 11th St. MGP
Operable Unit Number 03: St. Emeric's Property
Voluntary Cleanup Program
New York, New York County
Site No. V00534
March 2017



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

DECLARATION STATEMENT - DECISION DOCUMENT

CE - E. 11th St. MGP
Operable Unit Number: 03
Voluntary Cleanup Program
New York, New York County
Site No. V00534
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Statement of Purpose and Basis

This document presents the remedy for Operable Unit Number: 03 St. Emeric's Property of the CE - E. 11th St. MGP site, a voluntary cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and applicable guidance.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for Operable Unit Number: 03 of the CE - E. 11th St. MGP site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the remedy are as follows:

Due to the presence of buildings covering much of the site, and with only limited potential for public health exposures on the property to be addressed, the proposed remedy identifies both near term and future actions. Both near term and future actions will require voluntary agreements between the RP and respective property owners for site access and any other pertinent provisions to enable the installation and maintenance of cover systems, management of residual contamination, excavation, inspections, sampling, and/or any other requisite activities.

The near-term actions are intended to address a current potential exposure to utility workers and overall management of the site. Accordingly, the remedial elements are described below as near-term and long-term actions, to be implemented as access becomes available

Near-Term Actions:

1. Remedial Design:

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

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

2. Excavation/Solidification of accessible MGP Structures and Source Material:

Excavation and/or solidification of currently accessible areas where coal tar contamination has been observed at depths to approximately 20 feet below ground surface (bgs) (see Figure 3). The proposed areas will be further defined by test borings and/or test pits as part of the remedial design, and will be extended as dictated by this delineation. Excavated soil will be transported off-site to an appropriately permitted treatment or disposal facility. A demarcation barrier will be placed at the limit of the excavation to indicate the extent of where clean soil has been backfilled.

3. NAPL recovery:

Installation of approximately 3 product recovery wells in strategic locations (likely area shown on Figure 3). Coal tar recovery wells will be located and designed to address viscous non-aqueous phase liquid (NAPL). The wells will be designed to function passively, without active pumping, however active collection may be used in the future. NAPL will be allowed to accumulate in the wells and will be removed periodically for off-site treatment and disposal. Pre-design investigation or pilot testing may be necessary to determine the specifics of this NAPL recovery program. Additional product recovery wells may be required based on performance of the initial wells, new information, or a documented change in conditions.

4. Cover System:

A site cover currently exists and will be maintained to allow for restricted residential use of the site. The current site cover has areas which slightly exceed the SCOs for restricted-residential use, but are generally consistent with background levels for Manhattan soils. Any site redevelopment will maintain the site cover, which may consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable SCOs or background levels. Where a soil cover is required it will be a minimum of two feet of soil, meeting the restricted residential SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) or background levels. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the

identified site use as set forth in 6 NYCRR Part 375-6.7(d).

5. Institutional Controls:

Imposition of an institutional control in a form of an Environmental Easement for the controlled property (the site) that:

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

6. Site Management Plan:

A Site Management Plan is required for the site and the surrounding parcel. This Site Management Plan will include 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 5 above.

Engineering Controls: The soil cover discussed in Paragraph 4 above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of limited excavations in areas of remaining contamination;
- a provision for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible. The nature and extent of contamination in areas where access was previously limited or unavailable will be immediately and thoroughly investigated pursuant a plan approved by the Department. Based on the investigation results and the determination by the Department of the need for a remedy, a Remedial Action Work Plan (RAWP) will be developed for the final remedy for the site, including removal and/or treatment of any source areas to the extent feasible. The Citizen Participation Plan (CPP) will continue to be in effect through this process. Any necessary remediation will be completed prior to, or in association with, redevelopment;
- a provision for evaluation of the potential for soil vapor intrusion for any existing buildings which are significantly modified, if use of an existing building changes, or for buildings which may be constructed on the site in the future, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification;

- descriptions of the provisions of the deed restriction including any land use and groundwater use restrictions;
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

Future Actions:

7. Additional Excavation/Solidification of MGP Structures and Source Material:

Excavation/Solidification and off-site treatment and/or disposal of contaminant source areas, including:

- MGP sub-surface structures and immediately adjacent source areas;
- soil containing visual coal tar or non-aqueous phase liquid;
- grossly contaminated soil, as defined in 6NYCRR Part 375-1.2(u);

will be required when the property becomes accessible, pursuant to the provisions of the SMP described in paragraph 4.

On-site soil which does not exceed the above excavation criteria may be used below the cover system described in remedy element 2 to backfill the excavation and establish the designed grades at the site. Additionally, clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) may be brought in to replace the excavated soil or 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.

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.

March 7, 2017

Date

George Heitzman, Director
Remedial Bureau C

DECISION DOCUMENT

CE - E. 11th St. MGP
New York, New York County
Site No. V00534
March 2017

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 Voluntary Cleanup Program (VCP) is a voluntary program. The goal of the VCP is to enhance private sector cleanup of brownfields by enabling parties to remediate sites using private rather than public funds and to reduce the development pressures on "greenfields." 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:

Manhattan Borough
Attn: Manhattan Borough President Gale Brewer's Office
1 Centre Street
19th Floor
New York, NY 10007
Phone: 212-669-8300

New York Public Library
Attn: Tompkins Square Branch
New York Public Library
331 E.10th Street
New York, NY 10009
Phone: 212-228-4747

Manhattan Community Board 3
Attn: Manhattan Community Board 3
59 East 4th Street
New York, NY 10003
Phone: 212-533-5300

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, Voluntary 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 on the lower East Side of the Borough of Manhattan in New York City. The site is bounded by East 13th Street to the north and East 10th Street to the south. South of 12th Street, the site extends from Avenue D to the East River and north of 12th Street the site extends from 250 ft east of Avenue C to the East River.

Site Features: The site is divided into three distinct areas; the first, designated the “Jacob Riis” Area, is located along the east side of Avenue D between East 11th and East 14th Streets. It includes the portion of the New York City Housing Authority’s (NYCHA) Jacob Riis Houses complex, encompassing the high-rise apartment buildings commonly known as 170 Avenue D, 178 Avenue D, 1115 FDR Drive, 1141 FDR Drive, 1223 FDR Drive and the adjacent New York City Department of Environmental Protection Manhattan Pumping Station. The second area, designated the “Saint Emeric’s Property”; is located along the western side of Avenue D between East 12th and East 13th Streets. This area encompasses the grounds of the Roman Catholic Church of St. Emeric, Escuela Hispania Montessori Head Start School (formerly Saint Emeric’s School) and the church/school’s parking lot and sidewalks. There are currently four buildings on the Saint Emeric’s property. The third area is designated as ”Haven Plaza”; which is directly to the west of the Saint Emeric's Property between E. 13th Street and the former E. 12th Street.

Current Zoning: New York City Planning Commission designates the properties as R7-2: Moderate to High-Density Residential District and includes land uses designated as multilevel elevator residential buildings, transportation and utility use, and public facilities and institutions.

Past Uses of the Site: The East 11th Street Works began operations sometime between 1859 and 1868 and was shut down in approximately 1933. During its operational period, the manufactured gas plant (MGP) consisted of 17 gas holders ranging in capacity from approximately 50,000 cubic feet (cu ft.) to 5,000,000 cu ft. Several of the gas holders were converted from gas storage to liquid storage of naphtha, tar or gas oil. The original gas holders built in the late 1800s were most likely

constructed with below grade bottoms. Many of these were replaced by large gas holders built on grade, with storage capacities greater than 1,000,000 cu ft. of gas. Other production and storage facilities that were present at the former MGP included retorts, fuel/gas oil tanks, tar separators, purifying houses, condensers and scrubbers.

Site Geology and Hydrogeology: Overburden materials at the site comprise three primary stratigraphic units: fill, alluvium and glacial deposits. The Fill Unit is the uppermost unit encountered and is the present day surface of the site. The Fill Unit consists of typical urban debris, including reworked gravel, sand and clay, as well as various types of anthropogenic material, such as, but not limited to, concrete, brick, ash, cinder and glass. The Fill Unit is underlain by the Sand-Silt Unit, which is underlain by the Silty-Clay Unit. Beneath the overburden lies gneiss bedrock, which is located at least 90 feet below ground surface (ft bgs).

The Fill Unit and the Sand-Silt Unit, represent a shallow unconfined aquifer (or water-table aquifer) and the Silty-Clay Unit appears to be semi-confining to groundwater. Shallow groundwater, found at approximately 10 ft bgs, appears to flow in a radial pattern from a groundwater mound centered in the southern portion of the site generally toward the East River.

The site has been divided into four operable units (OUs). An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. The OUs are defined as follows:

OU1 - Jacob Riis Property
OU2 - Off-site East River Park and East River sediments
OU3 - St. Emeric's Property
OU4 - Haven Plaza

Operable Unit (OU) Number 03 is the subject of this document.

A Decision Document will be issued for OU 01, 02, and 04 in the future.

A site location map is attached as Figure 1. A site map with former and existing site features 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, at a minimum, alternatives (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in DER-10, Technical Guidance for Site Investigation and Remediation were/was evaluated.

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 Department and Consolidated Edison (the responsible party, or RP) entered into an Order on Consent D2-0002-02-08 in August 2002. The Order obligates RP to implement a full remedial program.

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
- surface water
- soil
- sediment
- 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 for this Operable Unit at this site is/are:

coal tar	xylene (mixed)
benzene	polycyclic aromatic hydrocarbons (PAHS),
toluene	total
ethylbenzene	naphthalene

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

- groundwater
- soil
- sediment

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.

Based upon investigations conducted to date, the primary contaminant of concern in all four operable units is coal tar. Coal tar is a dark, oily liquid which was produced as a byproduct of MGP operations, and this liquid leaked from subsurface structures and pipes into the surrounding soils and bedrock.

Coal tar belongs to a category of environmental contaminants known as non-aqueous phase liquids (NAPLs). Although NAPLs do not readily dissolve in water, they can dissolve to a small degree

over long time periods, thus contaminating the groundwater which comes into contact with them. This contaminated water can then move along with natural groundwater flow beyond the contaminated source areas. This dissolution process takes place very slowly, so much of the tar remains as a liquid in the areas where it originally leaked. Coal tar contains both volatile and semi-volatile organic compounds. Specific volatile organic compounds (VOCs) of concern are benzene, toluene, ethylbenzene and xylenes (BTEX). Specific semi-volatile organic compounds (SVOCs) of concern are polycyclic aromatic hydrocarbons (PAHs). The most common PAH is naphthalene. In general the highest concentrations of MGP constituents (BTEX and PAHs) are associated with soils exhibiting visual tar impacts. Impacts are often found within or adjacent to the former MGP structures; some of these structures have been identified and remain in place in the sub-surface at this site.

OU3 Saint Emeric's Property:

Soils: This property primarily housed gas purification equipment and several MGP gas holders, some of which were built as replacements for earlier holders. Subsurface investigation on this property has been limited by the presence of the site buildings. It appears from the investigation that the foundations of the earliest gas holders remain in the subsurface, at least some of which contain MGP tar-contaminated material. Tar contamination was also identified in subsurface soil surrounding the gas holder foundations. Visible MGP impacts are mainly found between 10 – 30 ft. bgs, but some limited shallower impacts have been observed. The deepest visible impacts at St. Emeric's were observed at 33 ft. bgs and consist of heavy sheens and visible NAPL. Although no exceedances of the restricted-residential SCOs for VOCs were noted in the subsurface soils, significant SVOC (primarily PAHs) contamination was found throughout the property. The highest concentration of naphthalene detected was 400 ppm (20-21 ft. bgs) along E. 12th Street. Concentrations of PAHs found in surface soils slightly exceed the soil cleanup objectives (SCOs) for restricted-residential use, but are generally consistent with the background levels for Manhattan soils. Soil contamination is present in areas outside of OU3 and will be investigated as part of the other OUs.

Groundwater: Benzene has been detected above ambient groundwater quality standards in 5 out of 6 groundwater samples. Three of those wells also have exceeded other VOCs and SVOCs, including naphthalene. As is the case elsewhere on the site, groundwater contamination is mostly concentrated in areas where visible tar contamination was found. Only limited migration of dissolved groundwater contamination has been noted.

Soil Vapor, Sub-slab Vapor, and Indoor Air: Sub-slab vapor, soil vapor, and indoor air samples were collected in the Escuela Hispana Montessori School and the Church on the St. Emeric's property. Indoor air concentrations of VOCs (including BTEX) potentially associated with MGP residuals are consistent with background levels. BTEX was found in soil vapor and sub-slab vapor samples in OU-3 at concentrations up to 270 micrograms per cubic meter (mcg/m3) for benzene, 1,800 mcg/m3 for toluene, 440 mcg/m3 for ethylbenzene, and up to 2,800 mcg/m3 for xylenes. Concentrations of VOCs in soil vapor and sub-slab vapor were highest near areas of subsurface contamination.

Indoor air concentrations of VOCs (including BTEX) potentially associated with MGP residuals are consistent with levels typically found in fuel oil heated homes.

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.*

People may contact contaminants in the soil if 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 the groundwater 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. Currently the concentrations of site-related contaminants in indoor air are consistent with background levels; however, additional actions are needed to ensure that elevated concentrations of site-related contaminants in sub-slab vapor do not affect the indoor air quality in the future. Any actions that are determined to be needed to address soil vapor intrusion outside of Operable Unit 3 will be implemented as part of other operable units.

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.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation.

The selected remedy is referred to as the MGP Source Area Excavation and Institutional Controls remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

Due to the presence of buildings covering much of the site, and with only limited potential for public health exposures on the property to be addressed, the proposed remedy identifies both near term and future actions. Both near term and future actions will require voluntary agreements between the RP and respective property owners for site access and any other pertinent provisions to enable the installation and maintenance of cover systems, management of residual contamination, excavation, inspections, sampling, and/or any other requisite activities.

The near-term actions are intended to address a current potential exposure to utility workers and overall management of the site. Accordingly, the remedial elements are described below as near-term and long-term actions, to be implemented as access becomes available

Near-Term Actions:

1. Remedial Design:

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

•Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
•Reducing direct and indirect greenhouse gases and other emissions;
•Increasing energy efficiency and minimizing use of non-renewable energy;
•Conserving and efficiently managing resources and materials;

•Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
•Maximizing habitat value and creating habitat when possible;
•Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
•Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation/Solidification of accessible MGP Structures and Source Material:

Excavation and/or solidification of currently accessible areas where coal tar contamination has been observed at depths to approximately 20 feet below ground surface (bgs) (see Figure 3). The proposed areas will be further defined by test borings and/or test pits as part of the remedial design, and will be extended as dictated by this delineation. Excavated soil will be transported off-site to an appropriately permitted treatment or disposal facility. A demarcation barrier will be placed at the limit of the excavation to indicate the extent of where clean soil has been backfilled.

3. NAPL recovery:

Installation of approximately 3 product recovery wells in strategic locations (likely area shown on Figure 3). Coal tar recovery wells will be located and designed to address viscous non-aqueous phase liquid (NAPL). The wells will be designed to function passively, without active pumping, however active collection may be used in the future. NAPL will be allowed to accumulate in the wells and will be removed periodically for off-site treatment and disposal. Pre-design investigation or pilot testing may be necessary to determine the specifics of this NAPL recovery program. Additional product recovery wells may be required based on performance of the initial wells, new information, or a documented change in conditions.

4. Cover System:

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5. Institutional Controls:

Imposition of an institutional control in a form of a Environmental Easement for the controlled property (the site) that:

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

6. Site Management Plan:

A Site Management Plan is required for the site and the surrounding parcel. This Site Management Plan will include 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 5 above.

Engineering Controls: The soil cover discussed in Paragraph 4 above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of limited excavations in areas of remaining contamination;
- a provision for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible. The nature and extent of contamination in areas where access was previously limited or unavailable will be immediately and thoroughly investigated pursuant a plan approved by the Department. Based on the investigation results and the determination by the Department of the need for a remedy, a Remedial Action Work Plan (RAWP) will be developed for the final remedy for the site, including removal and/or treatment of any source areas to the extent feasible. The Citizen Participation Plan (CPP) will continue to be in effect through this process. Any necessary remediation will be completed prior to, or in association with, redevelopment;
- a provision for evaluation of the potential for soil vapor intrusion for any existing buildings which are significantly modified, if use of an existing building changes, or for buildings which may be constructed on the site in the future, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification;
- descriptions of the provisions of the deed restriction including any land use and groundwater use restrictions;
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

Future Actions:

7. Additional Excavation/Solidification of MGP Structures and Source Material:

Excavation/Solidification and off-site treatment and/or disposal of contaminant source areas, including:

- MGP sub-surface structures and immediately adjacent source areas;
- soil containing visual coal tar or non-aqueous phase liquid;
- grossly contaminated soil, as defined in 6NYCRR Part 375-1.2(u);

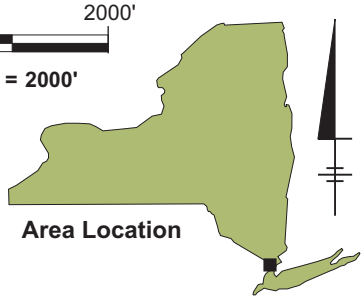
will be required when the property becomes accessible, pursuant to the provisions of the SMP described in paragraph 4.

On-site soil which does not exceed the above excavation criteria may be used below the cover system described in remedy element 2 to backfill the excavation and establish the designed grades at the site. Additionally, clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) may be brought in to replace the excavated soil or 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.

REFERENCE: BASE MAP USGS 7.5 MIN. QUAD., BROOKLYN, NEW YORK, 1967, PHOTOREVISED 1979.

2000' 0 2000'

Approximate Scale: 1" = 2000'



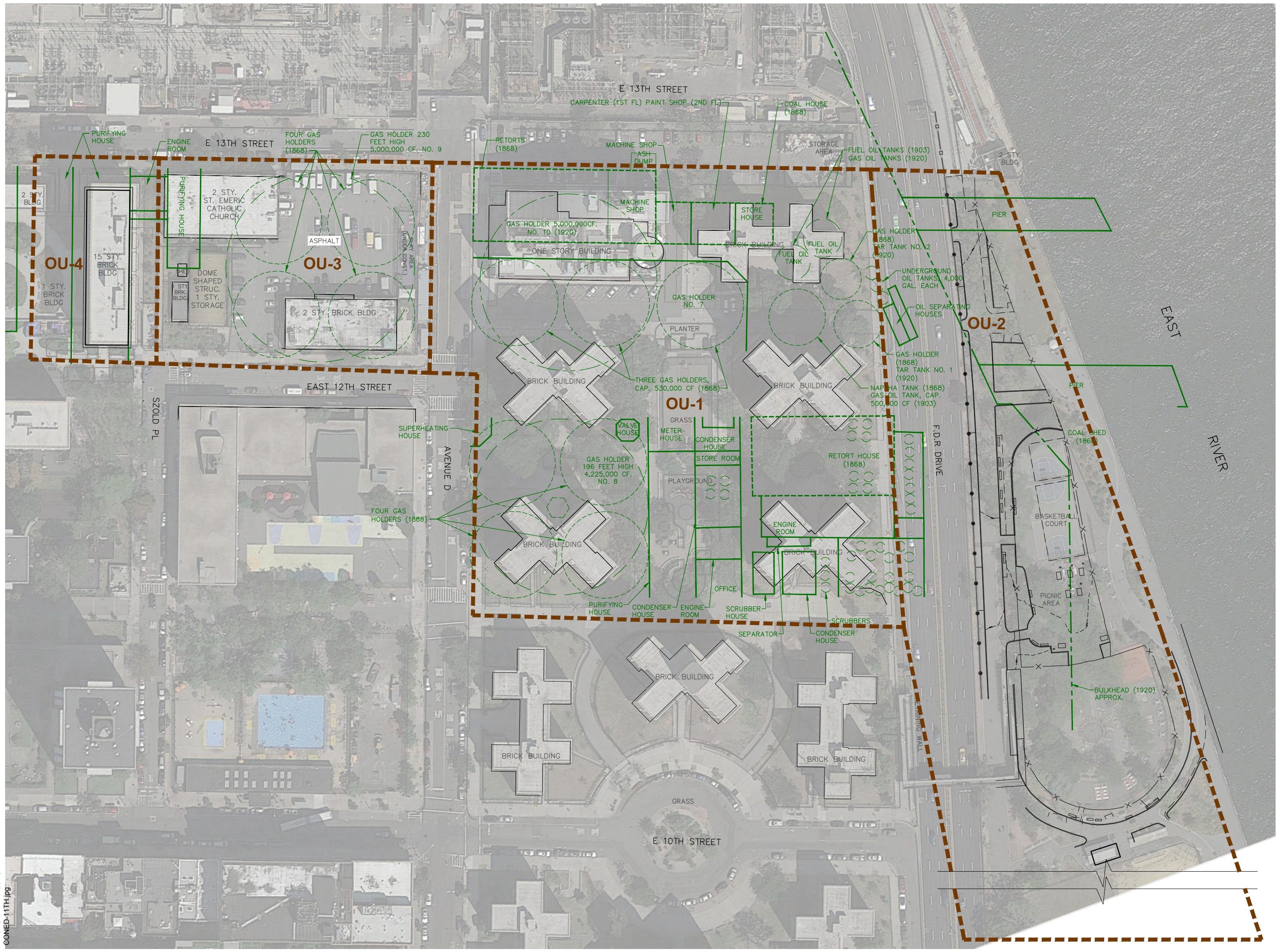
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
FORMER EAST 11TH STREET WORKS
MANHATTAN, NEW YORK
ST. EMERIC'S (OU-3)

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1

07/19/2016 SYRACUSE, DIV/GROUP: ENV/IM-DV DJHOWES
B0043013/0001/00013/CDR/43013N01.CDR


OU-1
OU-2
OU-3
OU-4
E 13TH STREET
EAST 12TH STREET
E. 10TH STREET
AVENUE D
SZOLD PL
F.D.R. DRIVE
EAST
RIVER
PURIFYING HOUSE
ENGINE ROOM
FOUR GAS HOLDERS (1868)
GAS HOLDER 230 FEET HIGH 5,000,000 CF. NO. 9
RETORTS (1868)
MACHINE SHOP
ASH DUMP
CARPENTER (1ST FL) PAINT SHOP (2ND FL)
COAL HOUSE (1868)
STORAGE AREA
FUEL OIL TANKS (1903)
GAS OIL TANKS (1920)
2 STY. ST. EMERIC CATHOLIC CHURCH
ASPHALT
15 STY. BRICK BLDG
1 STY. BRICK BLDG
DOME SHAPED STRUC. 1 STY. STORAGE
2 STY. BRICK BLDG
GAS HOLDER 5,000,000CF. NO. 10 (1920)
ONE STORY BUILDING
STORE HOUSE
FUEL OIL TANK
GAS HOLDER NO. 7
PLANTER
UNDERGROUND OIL TANKS, 4,000 GAL. EACH
OIL SEPARATING HOUSES
BRICK BUILDING
THREE GAS HOLDERS, CAP. 530,000 CF (1868)
VALVE HOUSE
GRASS
METER HOUSE
CONDENSER HOUSE
STORE ROOM
PLAYGROUND
GAS HOLDER 196 FEET HIGH 4,225,000 CF NO. 8
SUPERHEATING HOUSE
FOUR GAS HOLDERS (1868)
RETORT HOUSE (1868)
NAPHTHA TANK (1868)
GAS OIL TANK, CAP. 500,000 CF (1903)
ENGINE ROOM
OFFICE
PURIFYING HOUSE
SCRUBBER HOUSE
SEPARATOR
SCRUBBERS
PIER
COAL SHED
BASKETBALL COURT
PICNIC AREA
BULKHEAD (1920) APPROX.

LEGEND:

- APPROXIMATE LIMITS OF OPERABLE UNITS
- FORMER SITE FEATURES (FIRST OCCURRENCE–1868)
- FORMER SITE FEATURES (FIRST OCCURRENCE–1903)
- FORMER SITE FEATURES (FIRST OCCURRENCE–1920)

NOTES:

1. BASE MAP AND SURVEY CONTROL WAS TAKEN FROM ORIGINAL SURVEY DATED 9/3/2004; SUBMITTED BY B.B.L. ON 8/25/2006.
2. AERIAL IMAGE DOWNLOADED FROM GOOGLE EARTH PRO, DATED 9/6/2015.

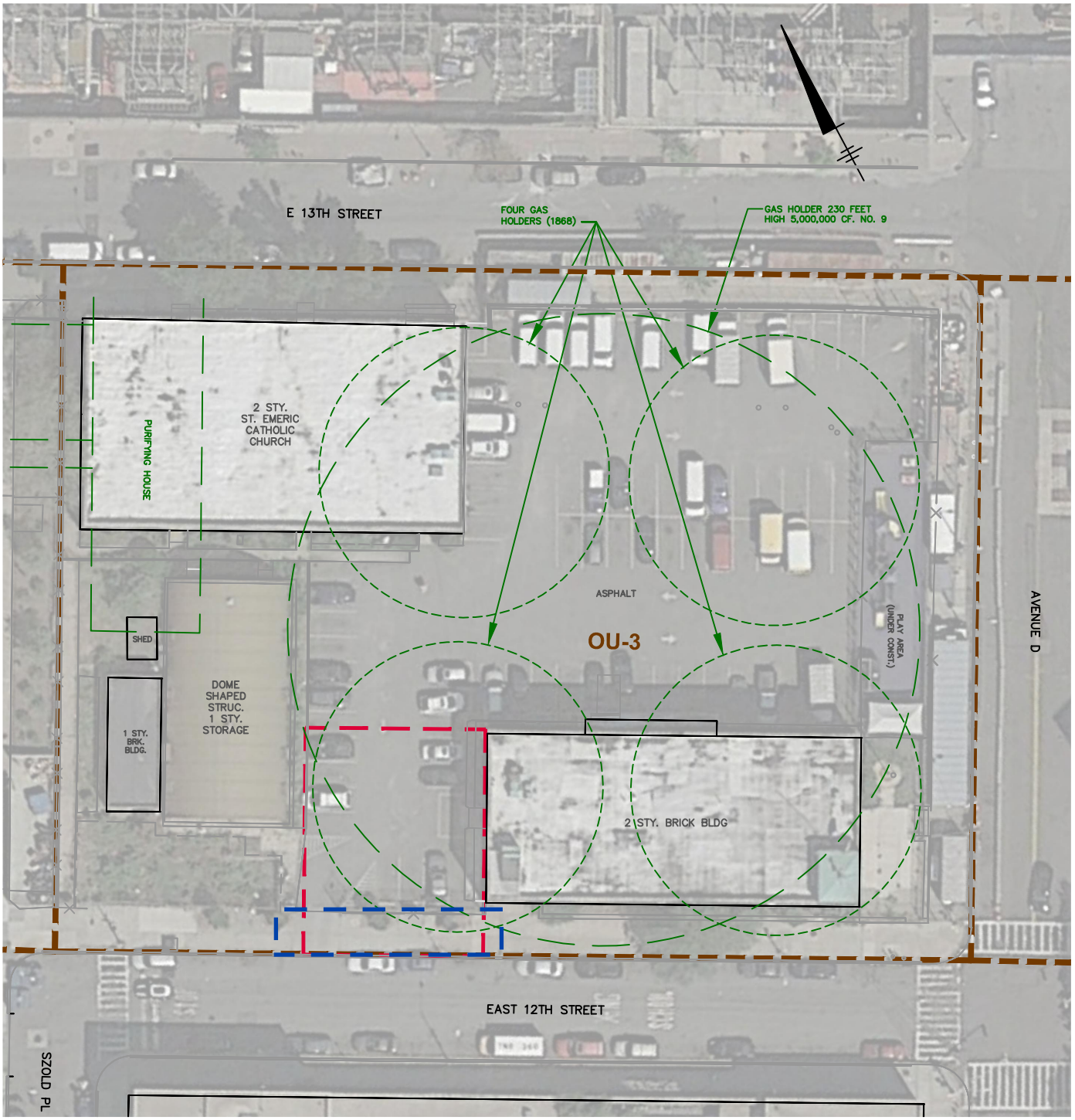
0 120' 240'
GRAPHIC SCALE

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
FORMER EAST 11TH STREET WORKS
MANHATTAN, NEW YORK
E. 11th STREET SITE

SITE MAP WITH FORMER AND EXISTING SITE FEATURES

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2



LEGEND:

- APPROXIMATE LIMITS OF OPERABLE UNITS
- FORMER SITE FEATURES (FIRST OCCURRENCE–1868)
- FORMER SITE FEATURES (FIRST OCCURRENCE–1903)
- AREA OF KNOWN TAR IMPACTS
- LIKELY PRODUCT RECOVERY WELL AREA

NOTES:

1. BASE MAP AND SURVEY CONTROL WAS TAKEN FROM ORIGINAL SURVEY DATED 9/3/2004; SUBMITTED BY B.B.L. ON 8/25/2006.
2. AERIAL IMAGE DOWNLOADED FROM GOOGLE EARTH PRO, DATED 9/6/2015.

0 50' 100'

GRAPHIC SCALE

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
FORMER EAST 11TH STREET WORKS
MANHATTAN, NEW YORK
E. 11th STREET SITE

ST. EMERIC'S (OU-3) WITH FORMER AND EXISTING FEATURES

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3

CITY: SYRACUSE, NY DIV/GROUP: ENVCAD-141 DB:AMS, (NYC-85-MW), R.ALLEN LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0043013\0001\0001\3\DWG\OU-AND-SF43013B12.dwg LAYOUT: 4 SAVED: 11/14/2016 9:44 AM ACADVER: 19.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: ACAD.CTB PLOTTED: 11/14/2016 9:46 AM BY: ALLEN, ROYCE
XREFS: IMAGES: PROJECTNAME: ---
43013X01 CONED-11TH.jpg
43013XAP