DECISION DOCUMENT

Crannell Square
Brownfield Cleanup Program
Poughkeepsie, Dutchess County
Site No. C314130
June 2020

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

DECLARATION STATEMENT - DECISION DOCUMENT

Crannell Square
Brownfield Cleanup Program
Poughkeepsie, Dutchess County
Site No. C314130
June 2020

Statement of Purpose and Basis

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

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Crannell Square 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 all on-site soils which exceed restricted-residential soil cleanup objectives (SCOs), as defined by 6 NYCRR Part 375-6.8 in the upper 15 feet. Approximately 7,500 cubic yards of contaminated soil will be removed from the site. Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination, if any.

3. Backfill

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.

4. Engineering and Institutional Controls

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 2 restricted residential cleanup at a minimum.

4a. Institutional Control

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

• require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
• allow the use and development of the controlled property for restricted-residential use or commercial use or industrial 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.

4b. 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 4a above.

Engineering Controls: Any engineering controls that may be required (e.g., sub-slab depressurization system).

This Site Management Plan (SMP) includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any future buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- provision 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:

- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

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

- procedures for operating and maintaining the system(s); and
- compliance inspection of the system(s) 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.

06/23/2020

Janet E Brown

Date

Janet Brown, Director
Remedial Bureau C

DECISION DOCUMENT

Crannell Square
Poughkeepsie, Dutchess County
Site No. C314130
June 2020

SECTION 1: SUMMARY AND PURPOSE

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

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

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

SECTION 2: CITIZEN PARTICIPATION

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

Poughkeepsie Public Library
Attn: Deborah Weltsch
93 Market Street
Poughkeepsie, NY 12601
Phone: (845) 485-3445

DECInfo Locator - Web Application/On-line Repository
https://www.dec.ny.gov/data/DecDocs/C314130

Please note that in-person repositories are temporarily unavailable due to COVID-19 precautions.

Receive Site Citizen Participation Information By Email

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

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The site is located at 35 Catharine Street in the City of Poughkeepsie, Dutchess County, New York, on a 1.22-acre parcel. The site is the entirety of tax lot parcel Section 6162, Block 78, Lot 157094. The site is a rectangular, with approximately 235 feet of frontage on the southern side of Mill Street (Route 44/55 arterial) and approximately 220 feet of frontage on the eastern side of Catharine Street. The site approximately 0.85 miles east of the Hudson River.

Site Features: The site currently contains a municipal parking lot with no buildings. The property is almost completely paved, with limited landscaped areas. The parking lot continues eastward into the adjoining city-owned property.

Current Zoning and Land Use: The site is zoned C-2 (Central Commercial District). C-2 zoning allows for multiple dwellings in new structures at urban density (R-6), provided that the first floor is devoted to retail or service use. Currently, the site is used as a municipal parking lot. The surrounding properties are zoned for commercial uses.

Past Use of the Site: The site has been used for commercial and residential purposes from as early as 1887 until circa 1960 when all former on-site structures were demolished. Previous uses included: an automotive repair facility, large private garage, warehouse, school, a hotel and multiple dwellings. Notable past commercial uses at adjoining properties and in the surrounding area include manufacturing and automotive repair facilities. The site was developed by the city as a municipal parking lot by 1963.

Site Geology and Hydrogeology: Site soils consist of a fill layer extending to 4 feet below ground surface (bgs), overlying brown medium sands to a depth of approximately 10 feet bgs. Soils greater than 10 feet bgs generally consist of native clayey silt. No bedrock was encountered during the investigation of the site, which included borings to a depth of 20 feet bgs. Groundwater depth ranges from 13.3 to 15.4 feet below grade. Groundwater generally flows to the northeast. No waterbodies or wet areas are on the site or in the immediate vicinity of the site.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

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

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

SECTION 5: ENFORCEMENT STATUS

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

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor

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:

lead	dibenz[a,h]anthracene
mercury	indeno(1,2,3-CD)pyrene
benzo(a)anthracene	chloroform
benzo(a)pyrene	arsenic
benzo(b)fluoranthene	trichloroethene (TCE)
benzo(k)fluoranthene	tetrachloroethene (PCE)
chrysene	carbon tetrachloride

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

- groundwater
- soil
- soil vapor

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.

Soil and groundwater samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), metals, total petroleum hydrocarbons (TPH), pesticides, and the emerging contaminants per-and-polyfluoroalkyl substances (PFAS) and 1,4-dioxane. Soil vapor samples were analyzed for VOCs. Based on investigations conducted to date, the primary contaminants of concern include metals and polycyclic aromatic hydrocarbons (PAHs) in soil and VOCs in groundwater and soil vapor.

Soil: A total of 44 soil samples were collected at 16 locations at depths ranging from 0 to 20 feet below ground surface (bgs). Several SVOCs and metals were identified in soils at concentrations that exceed their restricted residential soil cleanup objectives (RRSCOs) and unrestricted soil cleanup objectives (USCOs) including benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-c,d)pyrene, lead, mercury, and arsenic. The highest concentration of an SVOC encountered was chrysene at a concentration of 7.77 parts per million (ppm) at a depth of 5 feet bgs compared to the RRSCO of 3.9 ppm. The highest concentrations of metals encountered were 3,110 ppm of lead at 3 feet bgs, compared to the RRSCO of 400, 3.94 ppm of mercury at 4 feet bgs compared to the RRSCO of 0.81 ppm, and 32.2 ppm of arsenic at 15 feet bgs compared to the RRSCO of 16. Metal exceedances were generally encountered within the top 5 feet bgs, with some deeper exceedances of arsenic extending up to 20 feet bgs. PFAS were detected in soil samples throughout the site to depths of 20 feet bgs. The greatest concentration of total PFAS encountered in soil was 1.54 parts per billion (ppb) at the 0-5 feet bgs interval. There were no VOCs, PCBs or pesticides detected in site soils. There is no indication that site-related soil contamination extends off-site.

Groundwater: Groundwater samples were collected from six monitoring wells located throughout the site. The VOC chloroform was detected in one monitoring well in exceedance of groundwater standards at a concentration of 13 parts per billion (ppb), compared to the groundwater quality standard of 7 ppb; this is a common by-product of chlorination and may be indicative of leaking water lines in the area. The only other VOCs detected in groundwater were at trace levels as follows: carbon tetrachloride in one well at an estimated concentration 0.32 ppb, and trichloroethene (TCE) in one well as an estimated concentration of 0.29 ppb, compared to their groundwater standard of 5 ppb for each. The laboratory reported these concentrations as estimated values because they are detected below the laboratory's contract required quantitation limit and therefore can only be confirmed as present, but not quantified. One SVOC, benzo(b) fluoranthene was detected at 0.01 ppb compared to a standard of 0.002 ppb. For metals, magnesium, manganese, and/or sodium were detected in several overburden wells across the site above their respective groundwater standards, while there was one marginal detection each for cobalt (total 6.7 ppb compared to a standard of 5 ppb), and thallium (total 0.73 ppb compared to a standard of 0.5 ppb). The SVOC and metals are considered to represent typical urban background conditions (associated with presence of historic fill), are naturally occurring, or are due to road salt application. No exceedances were found above the 10 parts per trillion (ppt) screening level for either perfluorooctanoic acid (PFOA) or perfluorooctanesulfonic acid

(PFOS). The highest detection of PFOS and PFOA were 9.14 ppt and 6.04 ppt, respectively in one well at the southeast corner of the site. Based on the soil data and the northeasterly groundwater flow direction, and there is no apparent on-site source for PFOA/PFOS in site groundwater. Overall, groundwater quality appears to reflect typical urban background conditions and is likely of similar condition in off-site areas. As such, there is no concern for off-site migration.

Soil Vapor: Nine soil vapor samples were collected across the site under the parking lot area. Trace to low level VOC contamination was noted in site soil vapor, with levels up to 5.3 micrograms per cubic meter (ug/m3) of tetrachloroethylene (PCE), 0.67 ug/m3 of trichloroethene (TCE), and 0.51 ug/m3 of carbon tetrachloride.

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 are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by site-related contamination. The site is used as parking and covered with asphalt, however, people who enter the site may come into contact with soil and groundwater contamination if they dig below the ground surface. The site is currently vacant of occupied structures, so inhalation of site contaminants in indoor air via soil vapor intrusion is not a current concern. Environmental sampling also indicates that soil vapor intrusion is not a concern for off-site buildings.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of groundwater contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

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

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 2: Restricted use with generic soil cleanup objectives remedy.

The selected remedy is referred to as the Restricted Residential Soil Excavation remedy.

The elements of the selected remedy, as shown in Figure 2, 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 all on-site soils which exceed restricted-residential Soil Cleanup Objectives (SCOs), as defined by 6 NYCRR Part 375-6.8 in the upper 15 feet. Approximately 7,500 cubic yards of contaminated soil will be removed from the site. Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination, if any.

3. Backfill

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.

4. Engineering and Institutional Controls

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 2 restricted residential cleanup at a minimum.

4a. Institutional Control

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

• require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
• allow the use and development of the controlled property for restricted-residential use or commercial use or industrial 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.

4b. 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 4a above.

Engineering Controls: Any engineering controls that may be required (e.g., sub-slab depressurization system).

This Site Management Plan (SMP) includes, but may not be limited to:

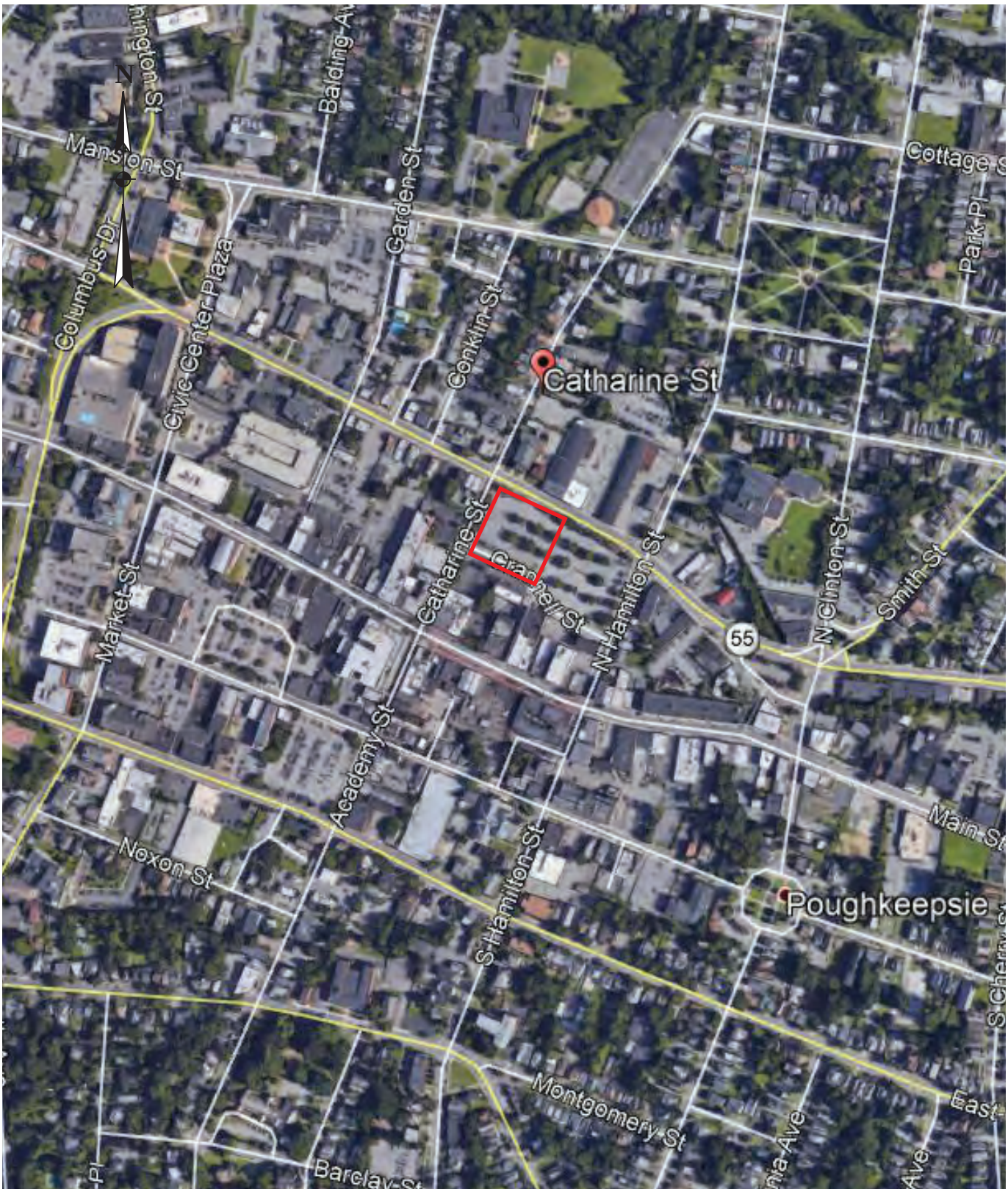
- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any future buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- provision 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:

- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

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

- procedures for operating and maintaining the system(s); and
- compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting.



All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Figure 1: Site Location Map

35 Catharine Street
City of Poughkeepsie
Dutchess County, New York

Legend: subject property border

Longitude = -73°55'25.489"W
Latitude = 41°42'9.447"N

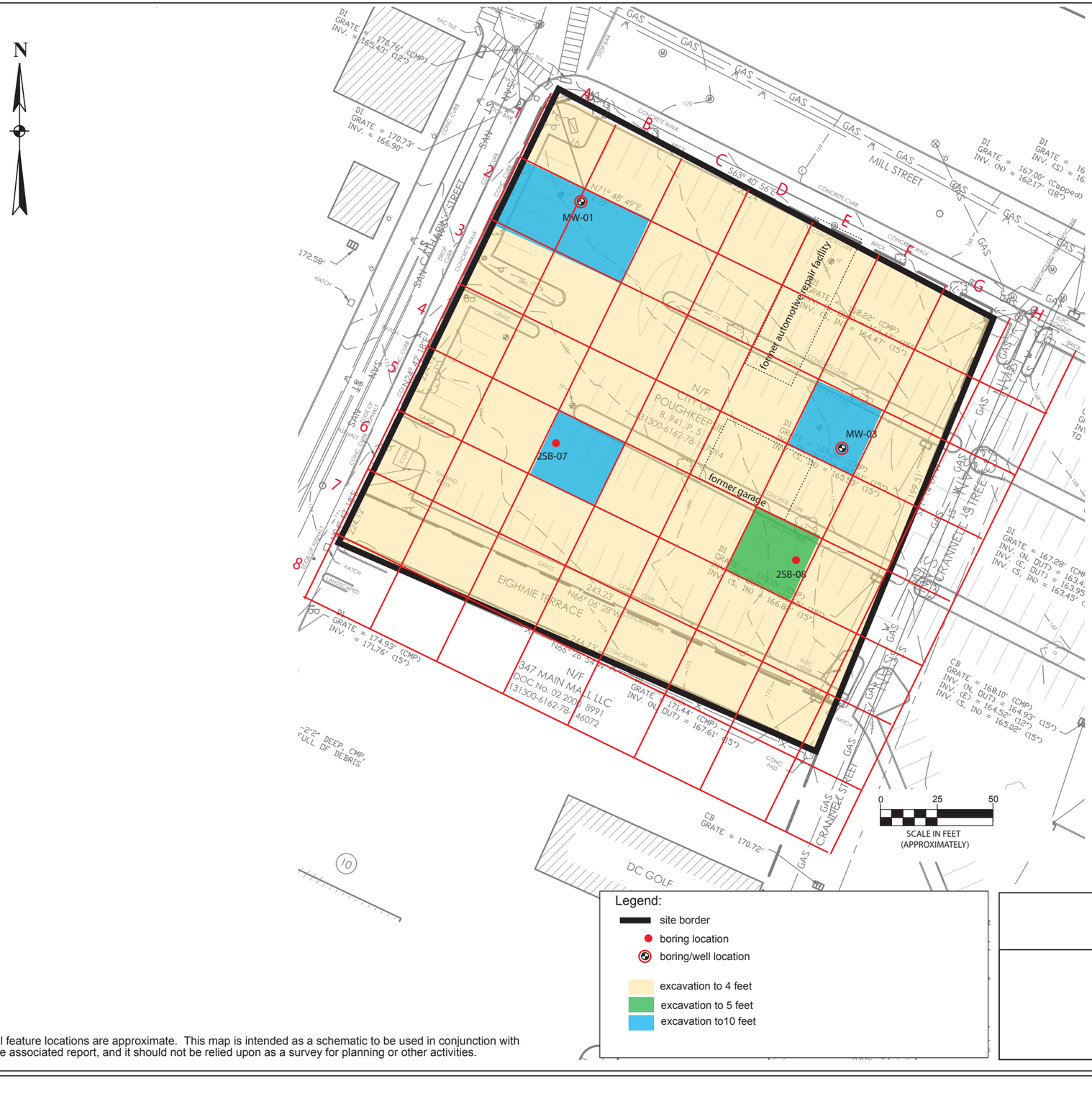
0 250 500
SCALE IN FEET (APPROXIMATELY)

File: KP19007

March 2020

Figures

GALLAGHER BASSETT | TECHNICAL SERVICES



Legend:

- site border
- boring location
- boring/well location
- excavation to 4 feet
- excavation to 5 feet
- excavation to10 feet

All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Figure 3: Soil Excavation Plan

Crannell Square - BCP ID: C314130
35 Catharine Street
City of Poughkeepsie
Dutchess County, New York

File: KP19007

Scale as shown

March 2020 | Figures