DECISION DOCUMENT

Review Avenue Development I
Brownfield Cleanup Program
Long Island City, Queens County
Site No. C241089
December 2015

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

DECLARATION STATEMENT - DECISION DOCUMENT

Review Avenue Development I
Brownfield Cleanup Program
Long Island City, Queens County
Site No. C241089
December 2015

Statement of Purpose and Basis

This document presents the remedy for the Review Avenue Development I 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 Review Avenue Development I 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; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. LNAPL Recovery System

Site wide LNAPL recovery will be implemented by using a combination of 23 single-phase and 10 vacuum enhanced recovery wells. These 33 wells will be connected by piping installed in trenches four feet below the ground surface. The LNAPL collected will be conveyed to an enclosed treatment system located on the adjacent RAD II site. The treated water will then be conveyed via underground piping and discharged to a storm sewer located on the RAD I site. The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.

3. Cover System

A site cover currently exists and will be maintained to allow for commercial use of the site. Any site redevelopment will maintain a 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 one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. 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).

4. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property 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 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 NYSDOH or NYCDOH; and
- requires compliance with the Department approved Site Management Plan.

5. Site Management Plan

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

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in Paragraph 4 above.

Engineering Controls: The cover system discussed in Paragraph 3 above.

This plan includes, but may not be limited to:

o an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
o descriptions of the provisions of the environmental easement including any land use, and/or groundwater use restrictions;
o a provision for evaluation of the potential for soil vapor intrusion for any change in use of the current on-site building or for buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
o provisions for the management and inspection of the identified engineering controls;
o maintaining site access controls and Department notification; and
o 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:

o monitoring of groundwater to assess the performance and effectiveness of the remedy;
o a schedule of monitoring and frequency of submittals to the Department;
o monitoring for vapor intrusion for any change in use of the current on-site building or for buildings developed 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, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

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

Declaration

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

December 2, 2015

Date

Robert Cozzy, Director
Remedial Bureau B

DECISION DOCUMENT

Review Avenue Development I
Long Island City, Queens County
Site No. C241089
December 2015

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 comments on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

Queens Borough Public Library
Attn: Librarian
Sunnyside Branch
4306 Greenpoint Ave.
Long Island City, NY 11104
Phone: (718) 784-3033

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 Review Avenue Development I (RAD I) property is located at 37-30 Review Avenue, Long Island City, Queens County. This site is 3 acres in size and is northwest and adjacent to the Review Avenue Development II (aka Former Quanta Resources C241005) Site, separated only by Preston Alley which is an access alley/paper street that is part of the RAD I property. The Long Island Railroad tracks border the property along the southwest, Review Avenue and Calvary Cemetery border the property to the northeast and and industrial property borders the property to the northwest.

Site Features:
The majority of the site is paved with only a very small portion of the property along the Long Island Railroad tracks being unpaved. There are two brick buildings currently in use on site. The larger building, referred to as Building #1 is located toward the back of the property near the Long Island Railroad tracks. It has large overhead doors and is a commercial/industrial building. The smaller building, referred to as Building # 2, is located at the front of the property, on Review Avenue, and is a two story commercial office building.

Current Zoning/Uses:
The site is currently zoned for commercial and industrial uses. Building #1 is currently being leased by a truck repair shop and other commercial business. Building #2 is being used primarily as commercial office space with the lowest level of the building being used for warehousing and maintenance. Warehousing and maintenance has included the construction of movie sets, with paints, polyurethane, and lacquers being used on a regular basis. The open parking areas are being used as a commercial bus parking area and for utility contractor parking as well as for parking for the tenant of the buildings. All of the surrounding properties are in commercial or industrial use.

Historic Uses:
The earliest Sanborn map (1898) shows the parcel as part of the Eastern Distilling Company. No further development records are provided on the Sanborn maps until 1950 when the Site was shown as being occupied by the Van Iderstine Company poultry feed building. The Sanborn maps indicate that between 1979 and 1993, various operations, including Bekins Trucking and Nanco Contracting, leased the site from the Van Iderstine Company. Since approximately 1993 the site has been used for other purposes, mostly similar to the current uses described above (truck repair, bus parking area, commercial office space, warehouse space).

Site Geology and Hydrogeology:
The site is underlain by several feet of urban fill. The fill overlies unconsolidated glacial deposits, predominately interbedded fine to coarse sand with some laterally discontinuous layers of silt and clay. Groundwater occurs at a depth of about 15 to 20 feet below ground surface. The general direction of groundwater flow is to the south-southwest, toward the Newtown Creek.

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 commercial use (which allows for 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:

vinyl chloride	tetrachloroethene (PCE)
benzene	cis-1,2-dichloroethene
toluene	petroleum products
xylene (mixed)	PCB aroclor 1260
trichloroethene (TCE)	PCB aroclor 1242

The contaminant(s) 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.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

Tank Removal IRM

The RAD I IRM for underground storage tank (UST) removal was conducted on site in May 2006. The IRM consisted of excavation and removal of four USTs, a concrete trench and sump. Objectives of the IRM were to (a) remove the tanks and soils that had been visibly impacted by tank related contents; (b) remove targeted portions of the sump and surrounding soils, clean the remaining portions of the sump and backfill with clean fill: and (c) clean and inspect the trench and close in-place. Results of the IRM included the excavation and disposal of two (2) 4,000 gallon out of service fuel USTs, excavation and disposal of two (2) 275 gallon waste oil USTs, the decommissioning of the concrete and brick sump, and excavation and disposal of visually impacted soils from each of the excavations. This work was documented by ELM in the Final Report for Underground Storage Tank (UST) and Sump Removal Interim Remedial Measure (IRM) dated January 2007.

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) and metals.
The analytical data collected on this site includes data for:

Groundwater – The Remedial Investigation completed in June 2005, as well as prior investigations included groundwater monitoring wells on both the RAD I and RAD II property. Shallow groundwater monitoring wells MW-1, MW-2 and MW-4R were installed on the RAD I property. These wells were used to help determine the extent/distribution of petroleum products in the form of a light non-aqueous phase liquid (LNAPL) which is present on the water table over much of the site.

Additional monitoring wells were installed to isolate the monitoring zones for LNAPL and groundwater. Groundwater wells GAGW-07 and GAGW-08 were double cased through the LNAPL zone to obtain representative samples of groundwater not impacted by the LNAPL. LNAPL wells were installed with screens in the LNAPL zone so LNAPL samples could be obtained. Below is a summary of the groundwater and LNAPL data that was collected.

Groundwater samples were collected from groundwater monitoring wells GAGW-07 and GAGW-08 as part of the RAD II remedial investigation. Samples were analyzed for VOCs, SVOCs, PCBs, metals and natural attenuation parameters. Groundwater sampling results indicated the presence of 1,2 dichloroethene at 12 parts per billion (ppb) and trichloroethene at

14 ppb exceeding the groundwater standard of 5 ppb for each VOC. No other site related contaminants appear to be impacting groundwater above standards.

LNAPL – LNAPL samples were collected from LNAPL monitoring wells MW-10, GAL-10, GAL-11, GAL-12, GAL-13, GAL-18, GAL-21, GAL-22, GAL-23, and GAL-24. LNAPL samples were analyzed for VOCs, SVOCs, PCBs, and metals. Results of VOC LNAPL analysis indicated the presence of benzene at .025 parts per million (ppm) toluene at 1.8 ppm, xylene at 1.4 ppm, trichlorethene at .054 ppm, and tetrachloroethene at .056 ppm,. In addition, PCB-aroclor 1242 was detected at 19 ppm and PCB-aroclor 1260 was detected at 15 ppm.

Soil - The majority of RAD I property is currently paved. Soil sampling was conducted in connection with UST, concrete trench and sump removals (IRM) from the property. The post excavation samples collected as part of this work indicated that residual soil contaminant concentrations were well below commercial use soil cleanup objectives (CSCOs). This included VOCs and SVOCs associated with the former UST and fuel system that was removed. Toluene was detected at 4.8 ppm and total xylene was detected at 12.1 ppm well below the CSCO for these compounds of 500 ppm. Benzo(a)anthracene was detected at 1.4 ppm below the CSCO of 5.6 ppm and chrysene was detected at 1.5 ppm below the CSCO of 56 ppm.. Some contaminated subsurface soils are likely to remain within the residual LNAPL impacted area after the implementation of the area-wide LNAPL recovery remedy presented in the ROD for former Quanta Resources (a.k.a. RAD II) property. Data does not indicate any off-site impacts in soil related to this site.

Soil Vapor - The Record of Decision for the Quanta Resources (RAD II) Site required a soil vapor intrusion study (Data Gap Investigation) on the RAD I property. This Data Gap Investigation was performed by Geosyntec in October 2010 to investigate baseline soil vapor conditions on the RAD I property and assess the potential for soil vapor intrusion concerns within buildings existing on the RAD I property.

The soil vapor survey collected baseline soil vapor conditions beneath the RAD I parcel at 10 paved locations outside of the existing building perimeters. The results indicated the presence of vinyl chloride (ND to 2,300 ug/m3) and TCE (ND to 860 ug/m3) at various depths in the soil vapor and within close proximity to the onsite buildings. Sub-slab soil vapor sampling was then conducted in building #2 following building inspections performed at both buildings on the property. Building #1 was (and continues) to be used as open warehouse and a diesel truck mechanics shop, so no further sampling was conducted there. Building #2 is primarily office space with lower level storage and maintenance. The results of the sub-slab sampling conducted in building #2 indicate the presence of several compounds above guidance thresholds. This includes cis-1,2 dichloroethene (ND to 1,700 ug/m3), tetrachloroethene (ND to 21ug/m3), trichloroethene (680 to 1,700 ug/m3) and vinyl chloride (ND to 790 ug/m3). However, further actions were not required at the time due to the use of solvents within the building by the occupants.

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.*

Direct contact with contaminants in the soil is unlikely because the site is covered with a building and pavement. 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. Sampling indicates soil vapor intrusion is not a concern for the on-site building based on its current use. However, an additional soil vapor intrusion evaluation is recommended if the building use changes and solvents are no longer being used. Sampling has indicated that soil vapor intrusion is not an off-site 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.
- 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 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 Area-Wide LNAPL Recovery and Cover System 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; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. LNAPL Recovery System

Site wide LNAPL recovery will be implemented by using a combination of 23 single-phase and 10 vacuum enhanced recovery wells. These 33 wells will be connected by piping installed in trenches four feet below the ground surface. The LNAPL collected will be conveyed to an enclosed treatment system located on the adjacent RAD II site. The treated water will then be conveyed via underground piping and discharged to a storm sewer located on the RAD I site. The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.

3. Cover System

A site cover currently exists and will be maintained to allow for commercial use of the site. Any site redevelopment will maintain a 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 one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. 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).

4. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property 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 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 NYSDOH or NYCDOH; and
- requires compliance with the Department approved Site Management Plan.

5. Site Management Plan

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

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in Paragraph 4 above.

Engineering Controls: The cover system discussed in Paragraph 3 above.

This plan includes, but may not be limited to:

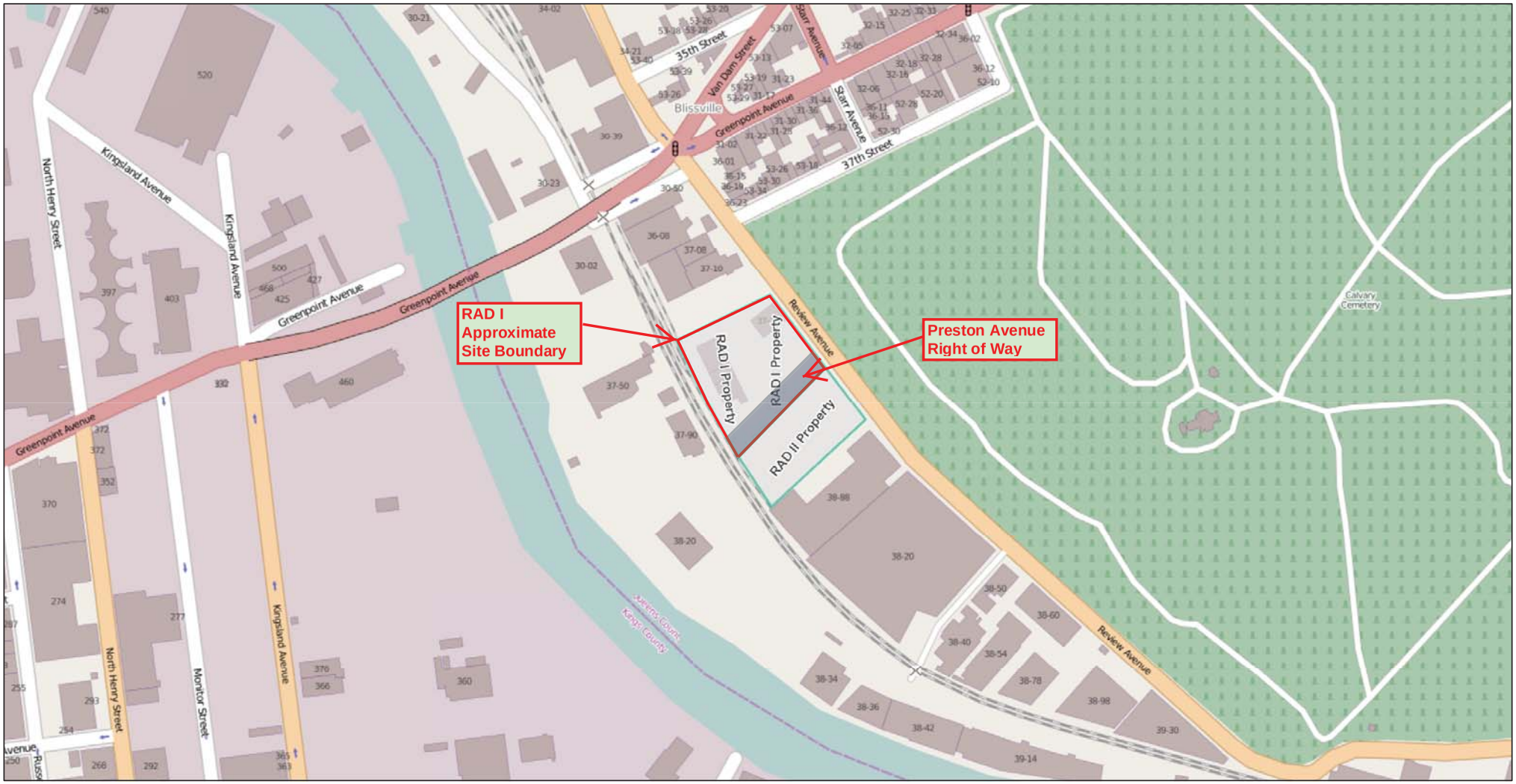
o an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
o descriptions of the provisions of the environmental easement including any land use, and/or groundwater use restrictions;
o a provision for evaluation of the potential for soil vapor intrusion for any change in use of the current on-site building or for buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
o provisions for the management and inspection of the identified engineering controls;
o maintaining site access controls and Department notification; and
o 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:

o monitoring of groundwater to assess the performance and effectiveness of the remedy;
o a schedule of monitoring and frequency of submittals to the Department;
o monitoring for vapor intrusion for any change in use of the current on-site building or for buildings developed 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, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

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



Site Boundary

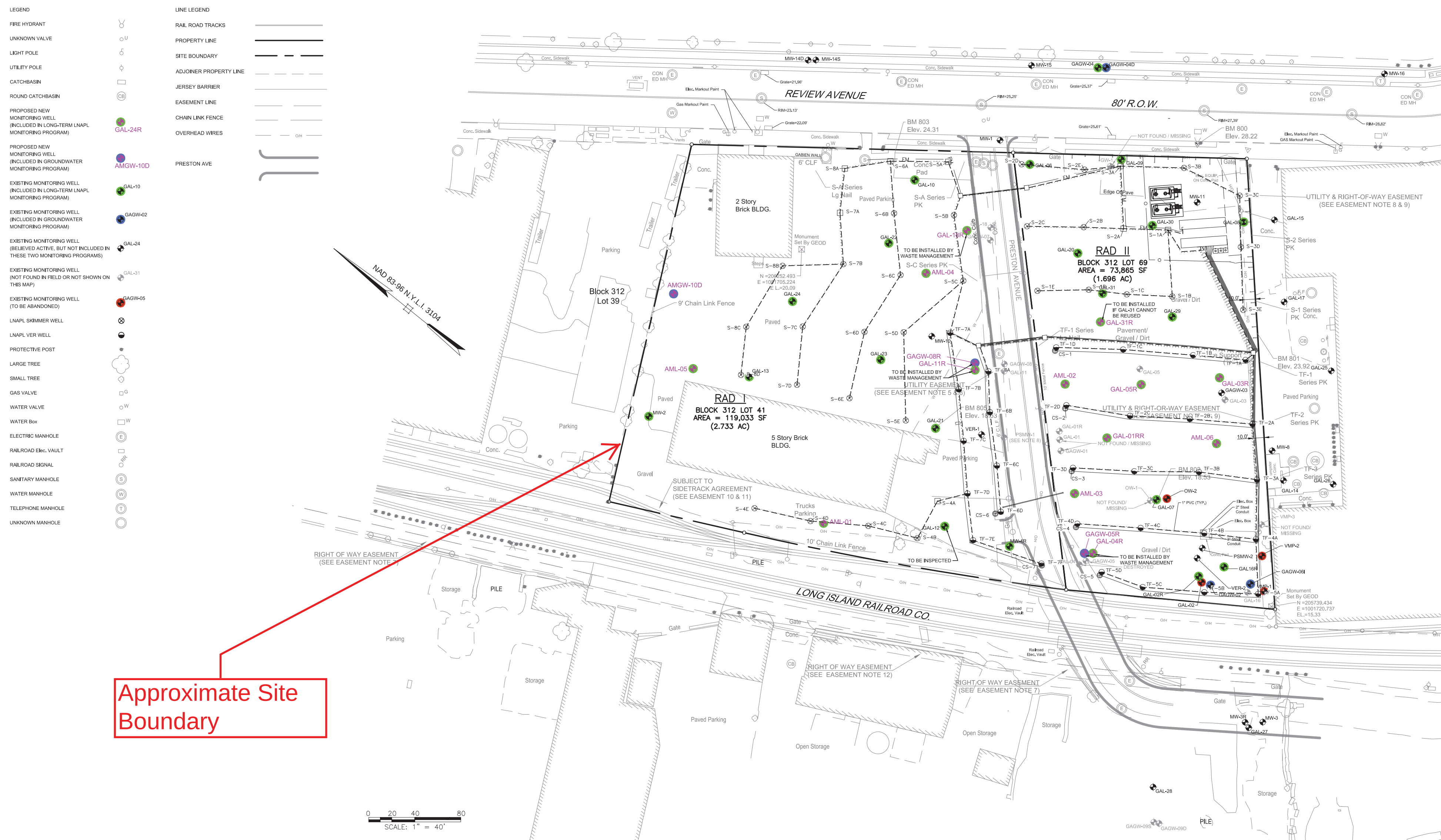
Preston Avenue

0 200 400 800 ft

Figure 1 - Site Location Map

Date: 5/20/2014
Author: Craig Coslett

www.projectportal.net



REV.	DATE	STATUS	PRPD BY	CHKD BY

MACTEC PROJECT No. 3480130369
DRAWING: FIGURE 2 – SITE LAYOUT

PREPARED/DATE: SPM 6/30/2015
CHECKED/DATE: NS 6/30/2015

MACTEC
MACTEC Engineering and Consulting, P.C.
511 Congress Street, Suite 200
Portland, Maine 04112
(207) 775-5401

FIGURE 2
SITE LAYOUT
LONG ISLAND CITY, QUEENS, NY 11101

P:\Quanta Review Ave\Monitoring Plan Figures\Figure 2 – Site Layout.dwg Wed, 01 Jul 2015 – 3:28pm philip.comey Layout: Layout1-D Sheet