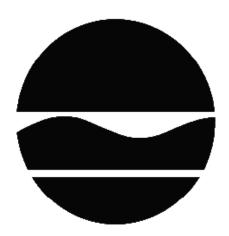
DECISION DOCUMENT

2477 Third Avenue Property Brownfield Cleanup Program Bronx, Bronx County Site No. C203047 August 2011



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

DECLARATION STATEMENT - DECISION DOCUMENT

2477 Third Avenue Property Brownfield Cleanup Program Bronx, Bronx County Site No. C203047 August 2011

Statement of Purpose and Basis

This document presents the remedy for the 2477 Third Avenue Property 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 2477 Third Avenue Property 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:

Storage tank removal and soil excavation, in-situ chemical oxidation of contaminated groundwater, cover system, vapor barrier, institutional controls, and site management.

1) Green remediation principals and techniques will be implemented to the extent feasible in the 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 gas and other emissions;
- increasing energy efficiency and minimizing use of non-renewable energy;
- conserving and efficiently managing resources and materials; and
- reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

2) Storage Tank Removal and Soil Excavation: The existing underground storage tanks (USTs) will be removed in accordance with DER-10. Any source material, defined as soil containing the groundwater contaminants of concern in excess of the Protection of Groundwater values in 6NYCRR Part 375 (Table 375-6.8(b)), will be removed during UST removal and disposed offsite.

An excavation will also be performed in the area of the former gasoline USTs and in the area around MW-105. This excavation will include the "L" shaped area shown on Figure 3 in the southern portion of the site and will continue to, and terminate at, the groundwater table at approximately 9.5 feet below surface. The excavation will confirm that no residual source material exists in these locations and if any source material is discovered, it will be removed and disposed off-site.

3) In-situ Chemical Oxidation: In-situ groundwater treatment will be achieved through injecting a chemical oxidation product in the soil and groundwater in an approximately 3,600-square foot area located in the southern portion of the site where gasoline-related compounds were elevated in the groundwater. The injections will occur prior to site development. Following injection of the chemical oxidation product, groundwater will be monitored via new, post-construction monitoring wells installed in this portion of the site. Additional chemical oxidation injections may take place in the future based upon groundwater monitoring results.

4) Cover System: A site cover will be required to allow for commercial use of the site. The cover will 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 the 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).

5) Vapor Barrier: A vapor barrier will be installed to prevent the migration of vapors into the building from soil and/or groundwater.

6) Institutional Controls: 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 use as defined by Part 375-1.8(g), which allows for industrial use, 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 County DOH;

- prohibits agriculture or vegetable gardens on the controlled property; and
- requires compliance with the Department approved Site Management Plan;

7) Site Management Plan: A Site Management Plan is required, which includes the following: a) an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective: Institutional Controls: The Environmental Easement discussed above. Engineering Controls: The soil cover and a vapor barrier as discussed above.

This plan includes, but may not be limited to:

i) an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;

ii) descriptions of the provisions of the environmental easement including any land use, and/or groundwater and/or surface water use restrictions;

iii) a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion.

iv) provisions for the management and inspection of the identified engineering controls;

v) maintaining site access controls and Department notification; and

vi) 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:

i) monitoring of soil gas and groundwater to assess the performance and effectiveness of the remedy;

ii) a schedule of monitoring and frequency of submittals to the Department;

iii) monitoring for vapor intrusion for any buildings occupied or developed on the site, as may be required pursuant to item 7a.iii above.

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.

August 16, 2011

James L. Chum FOR

Robert Cozzy, Director Remedial Bureau B

Date

DECISION DOCUMENT

2477 Third Avenue Property Bronx, Bronx County Site No. C203047 August 2011

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: SITE DESCRIPTION AND HISTORY

LOCATION: The site is located in an urban industrialized section of the south Bronx at the intersection of 3rd Avenue and the Major Deegan Expressway (I-87) between 135th Street and 136th Street. It is located approximately 1000 feet east of the Harlem River. The property consists of Block 2320, Lot 11 of tax map 20902, and is 0.214 acres in size.

SITE FEATURES: The site contains gasoline pumps and concrete islands from a former gasoline station.

CURRRENT ZONING/USE(S): The site is zoned commercial but is currently vacant.

HISTORICAL USE(S): The site was a gasoline filling station from the 1950's until approximately 1989. Releases of petroleum products to the environment resulted in the site contamination.

Previous site investigations were conducted from 2002 to 2008 in response to NYSDEC Spill # 0230034. None of these investigations provided a comprehensive investigation to determine all

the impacts on and off the site; however, information was generated to determine that a significant petroleum contamination problem exists.

SITE GEOLOGY AND HYDROGEOLOGY: The site is approximately 15 feet above mean sea level. The nearest surface water body is the Harlem River, approximately 1000 west of the site. Groundwater was encountered from 7 to 10 feet below ground surface and was found to flow in a south-southwesterly direction towards the Harlem River.

A site location map is attached as Figure 1.

SECTION 3: 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 4: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Volunteer. The Applicant does not have an obligation to address off-site contamination. However, 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 5: SITE CONTAMINATION

5.1: <u>Summary of the Remedial Investigation</u>

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 5.4.

5.1.1: 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: <u>http://www.dec.ny.gov/regulations/61794.html</u>

5.1.2: <u>RI Information</u>

The analytical data collected on this site includes data for:

- groundwater

- soil
- soil vapor

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:

benzene	toluene
ethylbenzene	1,2,4-trimethylbenzene
naphthalene	methyl-tert-butyl ether (mtbe)
xylene (mixed)	ethylbenzene

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

- groundwater
- soil

5.2: 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.

5.3: <u>Summary of Human Exposure Pathways</u>

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

Since this site is covered with concrete and asphalt, people will not come into contact with the contamination unless they dig below the surface. People are not drinking the contaminated groundwater since the area is served by a public water supply that is not contaminated by the site. 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. Because there is no on-site building, inhalation of site contaminants in indoor air due to soil vapor intrusion does not represent a concern for the site in its current condition. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site construction. In addition, the potential exists for off-site migration of site-related contaminants in soil vapor.

5.4: <u>Summary of Environmental Assessment</u>

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

NATURE AND EXTENT OF CONTAMINATION: Based on investigations conducted to date, the primary contaminants of concern in site soils and groundwater are petroleum related compounds.

On-site soil samples exceeded Standards, Criteria, and Guidance (SCG) levels for VOCs at one of 14 samples taken in a 2010 investigation. Soil samples were taken from 2.5 to 149 feet below surface. A sample at MW-105 at 9.5 feet below surface included: 1,2,4-trimethylbenzene (up to 480 mg/kg), 1,3,5-trimethylbenzene (up to 110 mg/kg), ethylbenzene (up to 150 mg/kg), naphthalene (up to 17 mg/kg), n-butylbenzene (up to 37 mg/kg), propylbenzene (up to 81 mg/kg), o-xylene (up to 170 mg/kg), p/m-xylene (up to 700 mg/kg), and toluene (up to 12 mg/kg). All of the contaminants at this sample location exceeded the unrestricted use Soil Cleanup Objectives (SCO) and several exceed the commercial SCO. No free product was found.

Seven SVOCs were detected in soils at levels exceeding the SCO for unrestricted use.

The highest level of soil contamination was found at 9.5 feet below ground surface; however levels met the SCOs near the surface.

On-site groundwater standards were exceeded for gasoline related VOCs including: 1,2,4-trimethylbenzene (up to 3,300 ug/L), 1,3,5-trimethylbenzene (up to 820 ug/L), benzene (up to 72 ug/L), ethylbenzene (up to 920 ug/L), toluene (up to 770 ug/L), o-xylene (up to 620 ug/L), m/p-xylene (up to 2,300 ug/L), and MTBE (46 ug/L). These levels of contamination were found in wells in the southern half of the site and wells in the northern part of the site were found to be non-detectable for any contaminants.

SECTION 6: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and evaluation of the remedial criteria are present 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 elements of the selected remedy, as shown in Figure 2, are as follows:

Storage tank removal and soil excavation, in-situ chemical oxidation of contaminated groundwater, cover system, vapor barrier, institutional controls, and site management.

1) Green remediation principals and techniques will be implemented to the extent feasible in the 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 gas and other emissions;
- increasing energy efficiency and minimizing use of non-renewable energy;
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• reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

2) Storage Tank Removal and Soil Excavation: The existing underground storage tanks (USTs) will be removed in accordance with DER-10. Any source material, defined as soil containing the groundwater contaminants of concern in excess of the Protection of Groundwater values in 6NYCRR Part 375 (Table 375-6.8(b)), will be removed during UST removal and disposed off-site.

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4) Cover System: A site cover will be required to allow for commercial use of the site. The cover will 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 the 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).

5) Vapor Barrier: A vapor barrier will be installed to prevent the migration of vapors into the building from soil and/or groundwater.

6) Institutional Controls: 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 use as defined by Part 375-1.8(g), which allows for industrial use, 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 County DOH;

- prohibits agriculture or vegetable gardens on the controlled property; and
- requires compliance with the Department approved Site Management Plan;

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

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

Engineering Controls: The soil cover and a vapor barrier as discussed above.

This plan includes, but may not be limited to: include all that apply and re-number as appropriate i) an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;

ii) descriptions of the provisions of the environmental easement including any land use, and/or groundwater and/or surface water use restrictions;

iii) a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion.

iv) provisions for the management and inspection of the identified engineering controls;

v) maintaining site access controls and Department notification; and

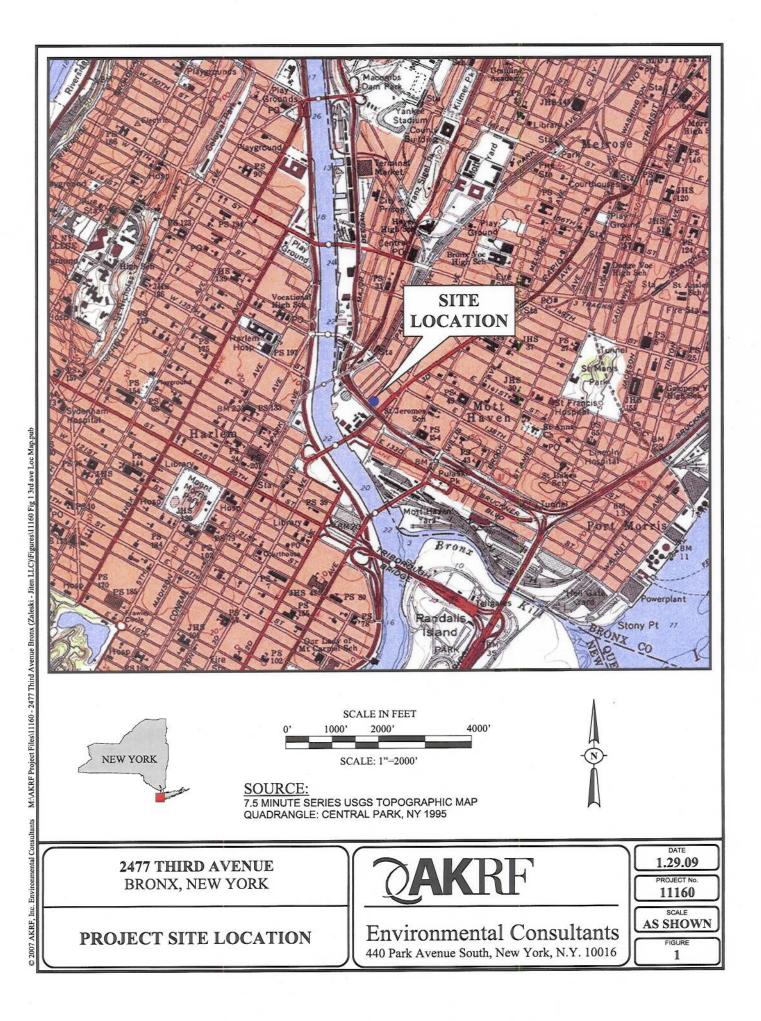
vi) the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls;

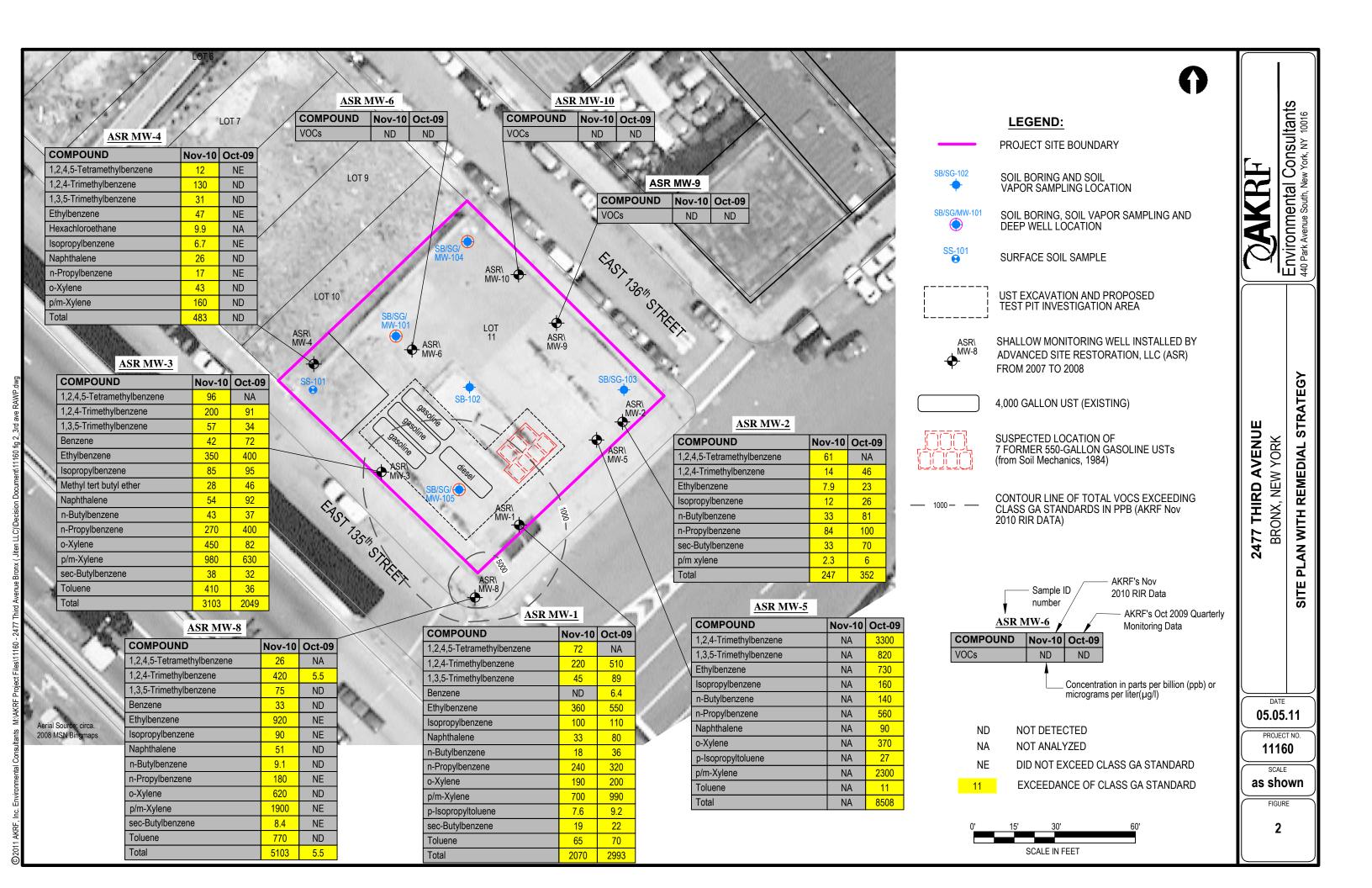
b) a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to: include all that apply and re-number as appropriate

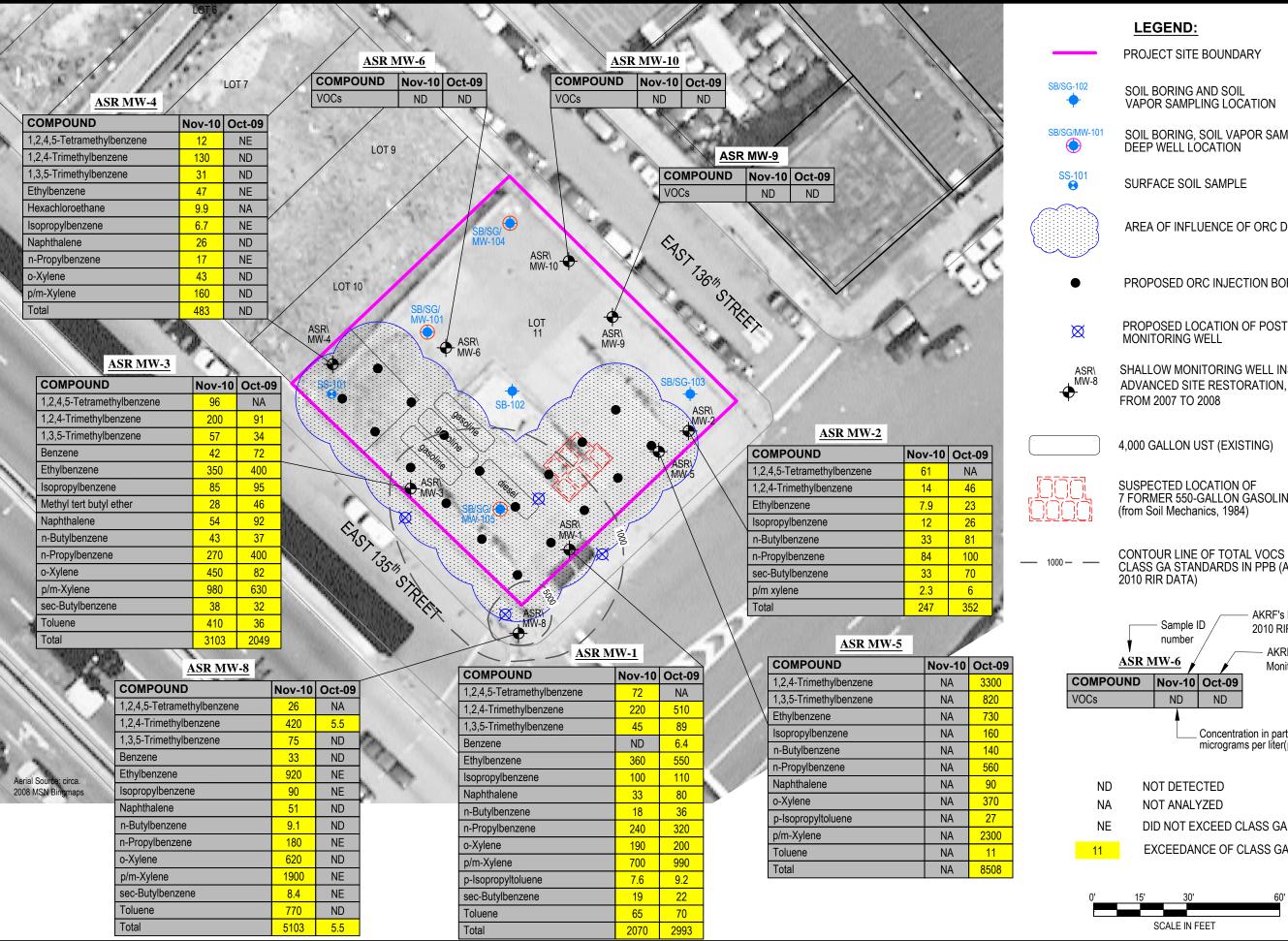
i) monitoring of soil gas and groundwater to assess the performance and effectiveness of the remedy;

ii) a schedule of monitoring and frequency of submittals to the Department;

iii) monitoring for vapor intrusion for any buildings occupied or developed on the site, as may be required pursuant to item 7.a.iii above.









SOIL BORING, SOIL VAPOR SAMPLING AND

AREA OF INFLUENCE OF ORC DISPERSION

PROPOSED ORC INJECTION BORING LOCATION

PROPOSED LOCATION OF POST REMEDIATION

SHALLOW MONITORING WELL INSTALLED BY ADVANCED SITE RESTORATION, LLC (ASR)

7 FORMER 550-GALLON GASOLINE USTs

CONTOUR LINE OF TOTAL VOCS EXCEEDING CLASS GA STANDARDS IN PPB (AKRF Nov

AKRF's Nov 2010 RIR Data AKRF's Oct 2009 Quarterly Monitoring Data Concentration in parts per billion (ppb) or

micrograms per liter(µg/l)

DID NOT EXCEED CLASS GA STANDARD

EXCEEDANCE OF CLASS GA STANDARD

