DECISION DOCUMENT

295 Locust Avenue
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203053
September 2013

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

DECLARATION STATEMENT - DECISION DOCUMENT

295 Locust Avenue
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203053
September 2013

Statement of Purpose and Basis

This document presents the remedy for the 295 Locust Avenue 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 295 Locust Avenue 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. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. The design will include sampling to better delineate the horizontal and vertical depth of contamination in the northern and eastern portions of the site. 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 gas 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. A site cover currently exists and will be maintained to allow for industrial 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 industrial 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).

3. In-situ chemical oxidation (ISCO) will be implemented to treat contaminants in groundwater. Persulfate or a similiar oxidant will be injected into the subsurface to destroy the contaminants along the northwest and southwest sides of the 295 Locust Avenue building via vertical and angled injection wells. The depth of the injection wells will be determined during the remedial design. The byproducts of the ISCO process are non-toxic.

Prior to the full implementation of this technology, laboratory and on-site pilot scale studies will be conducted to more clearly define design parameters. Between the pilot and the full scale implementations, it is estimated that 25 shallow injection points will be installed. It is estimated that initially the persulfate will be injected over several months.

4. 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 industrial use 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 County DOH; and
• requires compliance with the Department approved Site Management Plan.

5. 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 Bullet 4 above.

Engineering Controls: The existing building cover discussed in Bullet 2; the ISCO groundwater treatment in Bullet 3; and the 295 Locust Avenue building sub-slab depressurization system.

This plan includes, but may not be limited to:

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

• a provision for further investigation to refine the nature and extent of contamination in the following areas where access was previously hindered: under the 295 Locust Avenue Building if and when the building is demolished;
• descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
• provisions 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:

• monitoring of groundwater to assess the performance and effectiveness of the remedy; and
• a schedule of monitoring and frequency of submittals to the Department.
• monitoring for vapor intrusion for any 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:

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

September 4, 2013
Date

George Heitzman, Director
Remedial Bureau C

DECISION DOCUMENT

295 Locust Avenue
Bronx, Bronx County
Site No. C203053
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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:

The New York Public Library, Mott Haven Branch
Attn: Jeanine Thomas-Cross
321 East 140th Street
Bronx, NY 10454
Phone: (718) 665-4878

NYSDEC Region 2 Office
Hunters Point Plaza
47-40 21st Street
Long Island City, NY 11101

Phone: (718) 482-4900

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 Description: The site includes multiple parcels including property located at 275-297 Locust Avenue, 881 East 139th Street, 880-908 East 140th Street, 900-902 East 141st Street and 901-903 East 140th Street, Bronx, New York, Bronx County. The site is 1.83 acres in size.

Site Features: The site is made up of three adjacent lots. Lot 46 comprises an entire block and includes an industrial warehouse. Lots 74 and 86 are two small fenced parking lots situated across E 140th Street from the Lot 46 warehouse.

Current Zoning and Land Use: The site is currently zoned as industrial. The site was used as an automated storage facility until 2008. The site is currently being used as an electric car assembly plant. The surrounding parcels are currently used for industrial purposes. A dry cleaner and a heating fuel distribution center neighbor the site.

Past Use of the Site: Prior uses that may have led to site contamination include a manufactured gas plant, a gas holder, industrial storage, petroleum/diesel stations, and automotive service stations.

The site is a part of the larger East 138th Street site. Consolidated Edison (ConEd) is currently conducting a site characterization on parcels surrounding the 295 Locust site as a part of the Voluntary Cleanup Agreement ConEd has with the Department. A focused remedial investigation was conducted by ConEd on the 295 Locust Avenue site.

Site Geology and Hydrogeology: The site is immediately underlain by a fill layer comprising a mix of sand, silt, gravel, cobbles, and historic fill. Beneath this fill layer is a highly organic layer that most likely represents river or marsh deposits. Regional bedrock is known to consist of shist and/or gneiss.
Groundwater is present beneath the site at approximately three (3) to five (5) feet below ground surface. Groundwater is assumed to flow in a southeasterly direction toward the East River and it appears that groundwater elevation and flow direction may be influenced by tidal conditions. Groundwater flow direction may also be influenced by building construction utilities and subsurface variations in geology.

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 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
- 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 at this site is/are:

BENZENE	TOLUENE
VINYL CHLORIDE	ETHYLBENZENE
TETRACHLOROETHYLENE (PCE)	DICHLOROETHYLENE
XYLENE (MIXED)	COAL TAR
TRICHLOROETHENE (TCE)	

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

- groundwater
- soil
- soil vapor intrusion

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.

Nature and Extent of Contamination: Based on the investigations conducted to date the primary contaminants of concern at the site known at this time include chlorinated solvents, coal tar and BTEX (benzene, toluene, ethylbenzene, xylene) compounds.

Soil - Concentrations of PCE found in on-site soils (5 ppm to 370 ppm) below the water table significantly exceed the soil cleanup objectives for the protection of groundwater (0.47 ppm) and the industrial SCO (300 ppm). The greatest PCE concentration in soil was found on the northwest corner of lot 46.

Groundwater - Concentrations of PCE found in on-site groundwater (5 ppb - 39,000 ppb) exceed the groundwater standard of 5 ppb. PCE breakdown products, including TCE, cis-1,2 DCE, and vinyl chloride were found in exceedance of standards at maximum concentrations of 6,900 ppb, 40,000 ppb, and 16,000 ppb respectively. Detections of benzene, toluene, ethylbenzene, and xylenes also exceeded standards at maximum concentrations of 1,400 ppb, 400 ppb, 2,000 ppb, and 1,600 ppb respectively.

Soil Vapor and Indoor Air - Chlorinated solvents and BTEX compounds were detected beneath the slab of the building in elevated concentrations. The buildings indoor air showed no impacts from the sub slab. The Volunteer installed a sub-slab depressurization system that addresses the entire warehouse prior to entering into the Brownfield Cleanup Agreement to mitigate the sub slab air contamination.

Significant Threat: The site contamination (CVOCs and BTEX) is present in soil, groundwater and soil vapor. The remedial investigation report indicates that site contamination is not migrating off-site. Based on the all the relevant information this site does not pose a significant threat to the environment.

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 buildings 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 that water from a different source not affected by this contamination. Volatile organic compounds 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 or buildings, is referred to as soil vapor intrusion. A sub-slab depressurization

system (systems that ventilate/remove the air beneath the building) was installed in the on-site building to prevent indoor air quality from being affected by the contamination in soil vapor beneath the building. Soil vapor intrusion is not a concern for off-site structures.

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 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.

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 Persulfate In-Situ Chemical Oxidation remedy.

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

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. The design will include sampling to better delineate the horizontal and vertical depth of contamination in the northern and eastern portions of the site. 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:

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Prior to the full implementation of this technology, laboratory and on-site pilot scale studies will be conducted to more clearly define design parameters. Between the pilot and the full scale implementations, it is estimated that 25 shallow injection points will be installed. It is estimated that initially the persulfate will be injected over several months.

4. Imposition of an institutional control in the form of an environmental easement for the controlled property that:

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• maintaining site access controls and Department notification; and
• providing the Department access to the site and O&M records.

QUADRANGLE LOCATION

N

0 2000'

SOURCE:
USGS; 1995, CENTRAL PARK, NY-NJ
7.5 Minute Topographic Quadrangle

Title:

SITE LOCATION MAP

BROWNFIELD CLEANUP APPLICATION
295 LOCUST AVENUE DISTRIBUTION CENTER REESTABLISHMENT

Prepared for:

LOCUST EAST 140TH STREET L.P.

ROUX

ROUX ASSOCIATES, INC.
Environmental Consulting

Compiled by: L.D.	Date: 17AUG10
Prepared by: J.A.D.	Scale: AS SHOWN
Project Mgr.: J.L.	Project No.: 1848.0001Y

N

LEGEND

SITE BOUNDARY

SOURCE:

NEW YORK CITY DEPARTMENT OF FINANCE DIGITAL TAX MAP

150' 0 150'

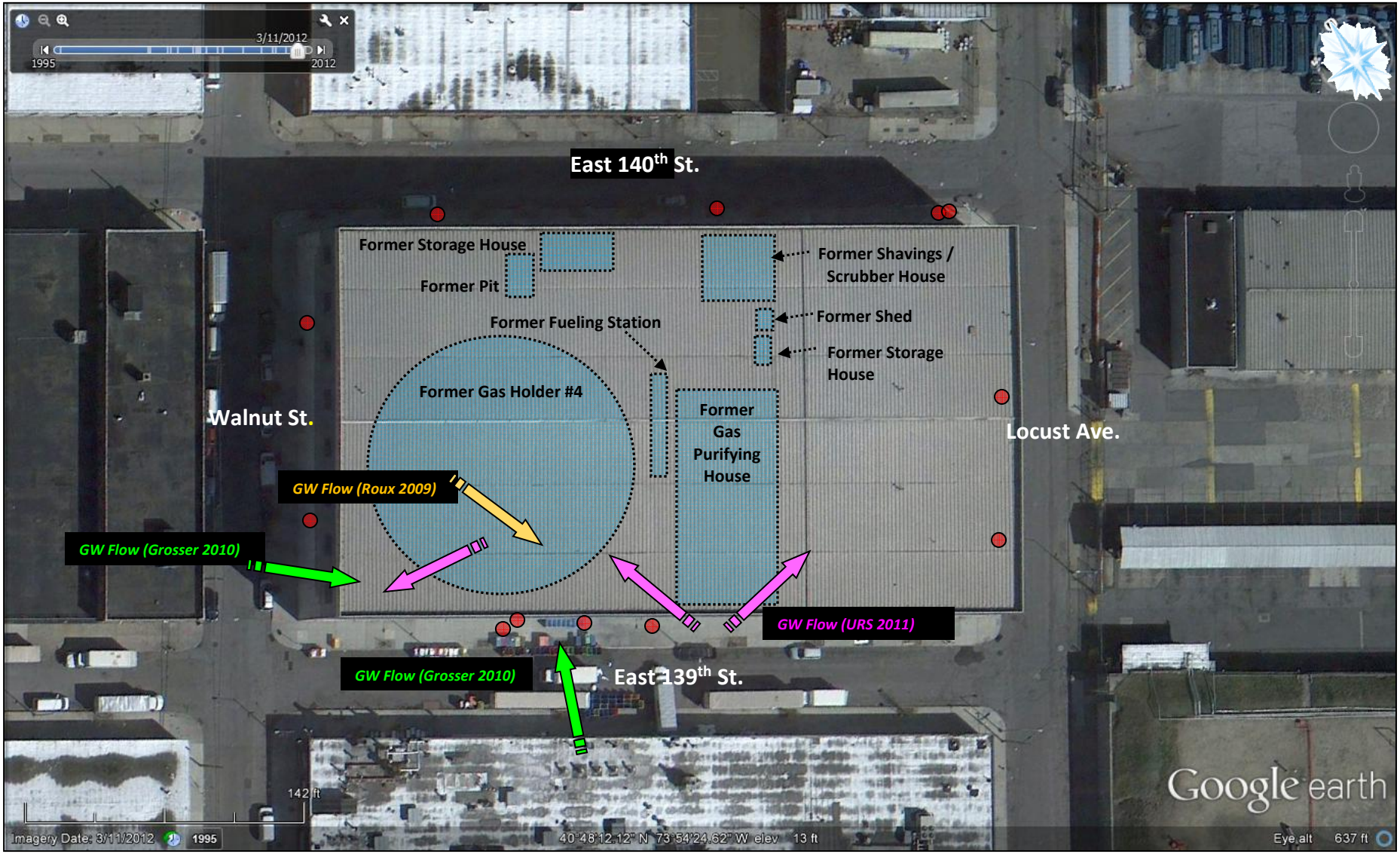
Title:

TAX MAP

BROWNFIELD CLEANUP APPLICATION
295 LOCUST AVENUE DISTRIBUTION CENTER REESTABLISHMENT

Prepared For:

LOCUST EAST 140TH STREET L.P.



Existing GW Monitoring Well

Former MGP Infrastructure (some may remain below grade)

GW Flow (Grosser 2010)

GW Flow (URS 2011)

GW Flow (Roux 2009)

Figure 1
Site Plan for 295 Locust Avenue, Bronx, NY

(Basemap: Google Earth 2012 Image

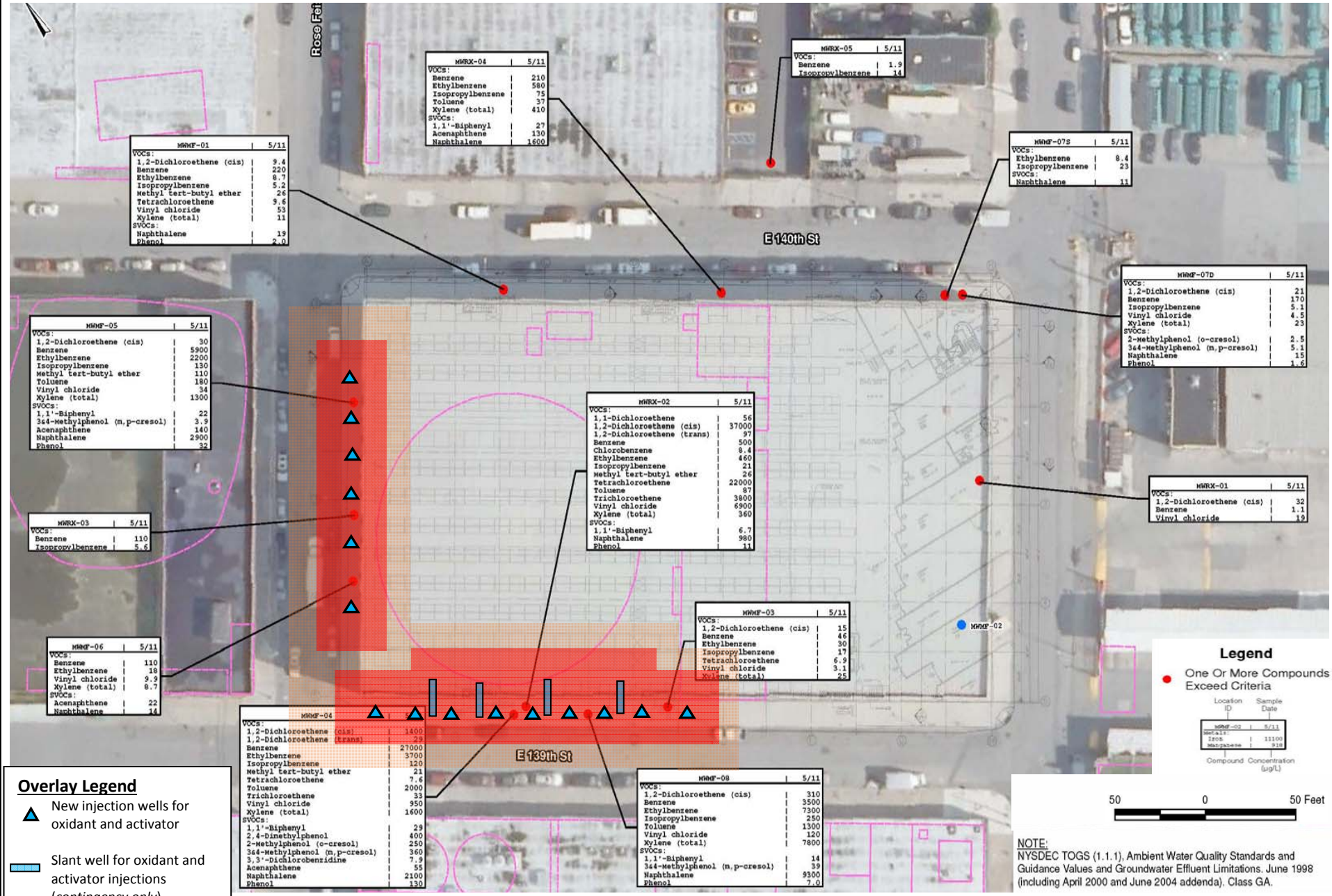


Figure 2

Conceptual Approach for *In-Situ* Chemical Oxidation (ISCO) Remedy

(Basemap: URS RI Report Groundwater Concentration Summary for VOCs)