

DECISION DOCUMENT

87 Kent Avenue
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224188
April 2015



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

DECLARATION STATEMENT - DECISION DOCUMENT

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Site No. C224188
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Statement of Purpose and Basis

This document presents the remedy for the 87 Kent 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 87 Kent 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. Remedial Design

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

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

2. Excavation

The on-site building(s) will be demolished and materials which cannot be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy. The remedy includes excavation and off-site disposal of soil to a minimum depth of 15 feet below grade (ftbg), including contaminant source areas. The excavation will extend approximately five feet below the groundwater table. Due to the grade change across the site, the excavation depths will range from approximately 15 to 21 ftbg. At the shallowest location, along Kent Avenue, the excavation depth will be 15.25 ftbg. Pre-design soil characterization sampling will be completed to confirm the depths of chlorinated volatile organic compound (cVOC) source impacts. Additional hot-spot excavations may be required in the source area in order to meet the groundwater protection soil cleanup objectives (SCOs).

Approximately 10,000 cubic yards of soil/fill will be removed from the site. On-site soil which does not exceed the lower of the SCOs for the use of the site or the protection of groundwater may be used to backfill the excavation to the extent that a sufficient volume of on-site soil is available. Clean fill meeting the requirements of the 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the design grades at the site.

3. Groundwater Treatment

Dewatering at the site will be required to enable the excavation and subgrade work. Contaminated groundwater from dewatering operations will be treated as necessary prior to discharge to the municipal sewer system. A well-point system will lower the groundwater level to approximately two feet below the proposed depth of excavation.

Pre-design groundwater sampling will be completed to assess whether cVOC impacts are present at concentrations requiring remediation or long-term monitoring below the depth of the dewatering. If the pre-design groundwater sampling indicates that cVOCs are expected to remain at depths below the influence of the construction dewatering system, in-situ chemical oxidation (ISCO) will be implemented to treat contaminants in groundwater. The method and depth of injection 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 may be conducted to more clearly define design parameters.

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 residential, restricted residential, commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; 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 Section 4 above.
 - Engineering Controls: The Groundwater Treatment discussed in Section 3 above.

This plan includes, but may not be limited to:

- 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 buildings developed on the site, including a provision for implementing actions recommended to address exposures related to soil vapor intrusion;
 - provisions for the management and inspection of the identified engineering controls;
 - maintaining site access controls and Department notification; 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;
 - a schedule of monitoring and frequency of submittals to the Department;
 - monitoring for soil 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, 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.

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.

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.

April 16, 2015



Date

Robert Cozzy, Director
Remedial Bureau B

DECISION DOCUMENT

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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 repository:

Brooklyn Public Library
Greenpoint Branch
107 Norman Avenue
Brooklyn, NY 11211
Phone:

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

Site Location: The site is located at the corner of Kent Avenue and North 9th Street in the Williamsburg area of Brooklyn, Kings County. To the north of the site is North 9th Street, to the south is North 8th Street, to the west is Kent Avenue, and to the east is Wythe Avenue.

Site Features: The site is approximately 0.382 acres in size with a single story vacant warehouse covering the entire site. The site is surrounded by mixed commercial and residential property uses.

Current Zoning and Land Use: The site has an E-designation as part of the Greenpoint-Williamsburg Rezoning and is included in the M1-2/R6A mixed use district. The property is currently vacant.

Past Use of the Site: From approximately 1980 to until 1998, the site was operated by Barouh Eaton Allen Corp., a manufacturer of typewriter ink and printer products. The building was used from 1998 to 2010 for warehousing and distribution by Lucky Paper Inc. (eastern portion), a distributor of restaurant supplies, and by LJJ, Inc. (western portion), a clothing wholesaler and distributor and from 2010 to 2012 by 200 Supplies Corp., a plumbing supplier.

Site Geology and Hydrogeology:

The surface topography in the surrounding area is generally flat, gradually sloping northwest towards the East River. Based on reports compiled by the United States Geological Survey (Brooklyn, NY Quadrangle), the property lies at an elevation of approximately 20 feet above the National Geodetic Vertical Datum of 1929 (an approximation of mean sea level).

The soil beneath the site is miscellaneous fill at depths of up to eight feet. This is underlain by a fine to medium sand with silt and clay layers of varying thicknesses. United States Geological Survey reports indicate that the depth to bedrock at the site is expected to be approximately 100 feet below ground surface.

Groundwater is approximately 15 feet below ground surface. The East River is the nearest surface water body, approximately 700 feet to the northwest. Groundwater beneath the site flows in north-northeast direction.

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 residential use (which allows for restricted residential, 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 under the Brownfield Cleanup Agreement is a Volunteer. The Volunteer does not have an obligation to address off-site contamination. The Department has determined that this site poses a significant threat to human health and the environment and there are off-site impacts that require remedial activities; accordingly, 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:

TRICHLOROETHENE (TCE)
cis-1,2-Dichloroethene
BENZO(A)PYRENE

LEAD
Chrysene

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.

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:

During the Remedial Investigation, soil and groundwater samples were collected and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, PCBs,

and pesticides. Soil vapor samples were analyzed for VOCs. Based upon the results of the RI, the primary contaminants of concern include the VOCs trichloroethene (TCE) and cis-1,2-DCE. Contamination can likely be attributed to activities associated with the historic use of the site for manufacturing activities.

Soil - During the investigation in January 2014, TCE was detected at concentrations of up to 88 parts per million (ppm), above the restricted-residential SCO of 21 parts per million (ppm). With the exception of 2 samples, TCE was detected in all other samples above the unrestricted use SCO of 0.47 ppm. Low levels of SVOCs, including benzo(a)pyrene at 1.99 ppm and chrysene at 1.82 ppm, were detected at concentrations exceeding the UUSCO. In addition, metals including mercury at 4.24 ppm, copper at 100 ppm and lead at 122 ppm were detected at concentrations exceeding UUSCOs, Site-related soil contamination does not extend off-site based on the available data.

Groundwater - Compounds exceeding the groundwater standards include TCE at a maximum concentration of 520 parts per billion (ppb) and cis-1,2-DCE at 14 ppb. Metals detected in groundwater at concentrations exceeding the standards include mercury at 3.5 ppb, copper at 332 ppb and lead at 1640 ppb. It should be noted that these metals were detected in unfiltered samples. Site-related groundwater contamination does not extend off-site based on the available data.

Soil vapor - TCE was detected at concentrations of up to 1,600,000 ug/m³ and cis-1,2-DCE at concentrations of up to 15,000 ug/m³. Elevated concentrations of contaminants in soil vapor were found at the property boundaries and may extend off-site.

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 this contamination. Direct contact with contaminants in the soil is unlikely because the site is covered by a building and pavement. Volatile organic compounds in groundwater or soil 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. 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 occupancy or development. Additional sampling is needed to evaluate the potential for soil vapor intrusion to impact 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 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 2: Restricted use with generic soil cleanup objectives remedy.

The selected remedy is referred to as the Excavation and Groundwater Treatment 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;

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non-toxic. Prior to the full implementation of this technology, laboratory and on-site pilot scale studies may be conducted to more clearly define design parameters.

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- 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:
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 - Engineering Controls: The Groundwater Treatment discussed in Section 3 above.

This plan includes, but may not be limited to:

- 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 buildings developed on the site, including a provision for implementing actions recommended to address exposures related to soil vapor intrusion;
 - provisions for the management and inspection of the identified engineering controls;
 - maintaining site access controls and Department notification; 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;
 - a schedule of monitoring and frequency of submittals to the Department;
 - monitoring for soil 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, 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.