

# DECISION DOCUMENT

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Former Arkansas Company, Inc. Site  
Brownfield Cleanup Program  
Brooklyn, Kings County  
Site No. C224172  
October 2014



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

# **DECLARATION STATEMENT - DECISION DOCUMENT**

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Former Arkansas Company, Inc. Site  
Brownfield Cleanup Program  
Brooklyn, Kings County  
Site No. C224172  
October 2014

## **Statement of Purpose and Basis**

This document presents the remedy for the Former Arkansas Company, Inc. 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 Former Arkansas Company, Inc. 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, 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 and disposal of soils across the site to a minimum depth of ten feet below grade. The majority of this work was completed as an Interim Remedial Measure (IRM), described in Section 6.2 of this document. The only remaining area of the site that requires excavation is the

southeastern corner of the parcel. Final excavation depths have been/will be established based upon results of post-excavation confirmatory sampling to achieve the following site-specific excavation goals:

- Unrestricted Use Soil Cleanup Objectives (SCOs) in 6 NYCRR Part 375-6.8(a) for volatile organic compounds (VOCs) (except for acetone, which was established at the Restricted Residential Level), pesticides, and polychlorinated biphenyls (PCBs);
- Protection of groundwater SCOs in 6 NYCRR Part 375-6.8(b) for semi-volatile organic compounds (SVOCs), and;
- Restricted Residential SCOs in 6 NYCRR Part 375-6.8(b) for all metals except arsenic and mercury, which have a site-specific excavation goal of:
  - arsenic: 40 mg/kg (ppm) and;
  - mercury: 5.7 mg/kg (ppm).

Approximately 16,000 cubic yards of soil will need be removed from the site.

3. A site cover will be required to allow for restricted residential 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 two feet of exposed surface soil will exceed the 6 NYCRR Part 375-6.7(d) SCOs for restricted residential use. Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential 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. A vapor barrier will be required beneath the commercial/residential building currently under construction to aid in preventing contaminated soil vapors, if present, from entering the building.

5. 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 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.

6. 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 5 above.
- Engineering Controls: The site cover discussed in Paragraph 3 and the vapor barrier discussed in Paragraph 4 above.

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;
- 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;
- A provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site in the future, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- 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 for vapor intrusion for any new 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 to 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.

Date

10/28/14

  
Robert Cozy, Director  
Remedial Bureau B

# **DECISION DOCUMENT**

Former Arkansas Company, Inc. Site  
Brooklyn, Kings County  
Site No. C224172  
October 2014

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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 - Marcy Branch  
617 Dekalb Avenue  
Brooklyn, NY 11216  
Phone: 718-935-0032

### **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 site is located at 74 Wallabout Street. The site extends from Wallabout Street in Brooklyn, Kings County on the north to Flushing Avenue to the south, and is approximately 0.91 acres in size.

**Site Features:** The site formerly contained an approximately 44,700 square foot 2 to 3 story warehouse, an accessory at-grade parking and loading area at the northwest corner of the lot and a smaller fenced-in parking area at the southwest corner of the lot. The site is currently undergoing redevelopment, and the majority of the site is now covered by a building foundation.

**Current Zoning and Land Use:** The subject site is zoned R7-1 (residential zoning district) with a C1-5 commercial overlay, permitting residential, commercial and community facility uses. The proposed use is for residential and commercial for the majority of the parcel, with a planned school expansion from the adjoining parcel.

**Past Use of the Site:** The site was utilized in the past by a chemical manufacturer, furniture manufacturer, shelving company, paint and varnish manufacturer, lumber company, cable and rope company, packaging company, plastic processing company, and a housewares and household chemicals distributing company.

**Site Geology and Hydrogeology:** Shallow soils, ranging from 0-8 feet below ground surface (bgs) were characterized as mostly non-native, historic fill material consisting of brown silty sands. Deeper soils, ranging from 8-15 feet bgs were characterized as mostly gray, low-plasticity, silty clay. Groundwater occurs at the site at a depth of approximately 10 feet below ground surface. The flow is in a west/northwest 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 restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

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

## **SECTION 5: ENFORCEMENT STATUS**

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

Off-site petroleum-related contamination will be addressed under the DEC Petroleum Spill Response program.

## **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
- 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:

MERCURY  
ARSENIC  
CHROMIUM  
LEAD  
BENZ(A)ANTHRACENE

BENZO(B)FLUORANTHENE  
Petroleum Products  
BENZENE  
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.

The following IRM is on-going at this site based on conditions observed during the RI.

##### **IRM Soil Excavation**

The majority of the site has already been excavated to a minimum depth of ten feet, and endpoint samples were shown to meet the site-specific excavation goals stated in Section seven, paragraph two, below. Dewatering was required in order for the excavation to attain the necessary depth at certain locations, including the southwestern corner of the site where a significant amount of petroleum product was found. During the dewatering of that area, water and petroleum were run through a multi-stage treatment system and then discharged to the sanitary sewer system under permit with the City of New York. Ultimately, all contaminated soil and on-site petroleum product will be removed and disposed off-site. Following the excavation, clean fill meeting the requirements of 375-6.7(d) for restricted residential use was placed to accommodate development. Prior to pouring the foundation for the development, an engineered vapor barrier, certified as compatible with known site contaminants, was laid down to both act as a deterrent to moisture, as

well as potentially contaminated soil vapors. That barrier extends up the foundation walls several feet above the water table, and will aid in preventing contaminated soil vapors, if present, from entering the building. As of the issuance of this Decision Document, the only remaining area of the site requiring further excavation is in the southeastern corner of the parcel. It is anticipated that this IRM remedial work will be complete by early November, 2014.

### **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 upon investigations conducted to date, the primary contaminants of concern for the site include metals and SVOCs in soil; floating petroleum product on the groundwater; and VOCs in soil vapor.

#### **Pre-IRM Soils:**

Soil was sampled at three depths (i.e., 0-2', 6-8', and approximately 8-12', which is just above the groundwater table). Of the three horizons, the intermediate depth was generally the most contaminated, though not in all instances. Contaminants above Restricted Residential SCOs (Soil Cleanup Objectives) in soil include the metals: arsenic (present in 9 of 35 samples with a maximum concentration of 41 parts per million [ppm]); chromium (present in 3 of 35 samples with a maximum concentration of 2,500 ppm); lead (present in 7 of 35 samples with a maximum concentration of 1,700 ppm); and mercury (present in 22 of 35 samples with a maximum concentration of 130 ppm). SVOC contamination in soil above RRSCOs in 14 of 37 samples and consisted primarily of polyaromatic hydrocarbons (PAHs), with a maximum concentration of all SVOCs in any one sample of 1,924 ppm. The primary PAHs found in soil were benz(a)anthracene and benzo(b)fluoranthene. No VOCs, pesticides or PCBs were found to exceed the RRSCOs, though it should be noted that one sample location contained a maximum of 4.5 ppm of the VOC trichloroethene (TCE). The TCE occurred in the 0-2' and 6-8' sampling zones, but was not found at greater depths. Other than assumed soil contamination co-located with the known off-site floating petroleum product at/off the southwest corner of the site, there is no other known off-site soil contamination related to site activities.

#### **Groundwater:**

Aside from the floating petroleum product discovered in the southwestern portion of the site and just off-site, groundwater appears to be only marginally contaminated. The primary dissolved phase contaminants are likely related to the petroleum product, and consist of SVOCs of a type associated with heavy heating oils (e.g., perhaps a #6 oil). Site-related metals mercury and lead were present in dissolved groundwater on-site at only one groundwater sampling location; however, none of the immediately off-site wells, nor any other on-site sample, contained these contaminants, indicating that these detections are anomalous. Only three petroleum-related VOCs exceeded the State's groundwater standards. There were no chlorinated VOCs in excess of

standards. Off-site petroleum-related contamination will be addressed under the DEC Petroleum Spill Response program.

#### Soil Vapor:

Seven soil vapor samples, consisting of five sub-slab samples taken beneath the original building and two soil gas samples taken beneath parking areas, were collected at the site. Elevated levels of petroleum constituents were found in almost all soil vapor samples, with perhaps the most significant of these being benzene detected in one sample at 821 micrograms (ug)/cubic meter. Of all seven samples, only one significant detection of a chlorinated VOC occurred, being TCE at 143 ug/cubic meter. Importantly, this detection occurred at a sub-slab sampling location very near the area where the same compound was detected in site soils. These soils were removed under the IRM, and sampling indicates that soil vapor intrusion as a result of this site is not a concern for off-site buildings.

#### Significant Threat:

The site has been determined not to pose a significant threat to human health or 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*.

People are not expected to come into contact with site related contamination unless they dig below the surface. People are not drinking the contaminated groundwater because the area is served by public water supply that is not affected by this contamination. Because the site is vacant and undergoing remedial activities, soil vapor intrusion does not represent a current exposure pathway. Measures are in place to minimize the potential for vapor intrusion in buildings constructed at the site in the future and sampling indicates that soil vapor intrusion is not a concern for off-site buildings.

### **6.5: Summary of the Remediation Objectives**

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

The remedial action objectives for this site are:

#### **Groundwater**

##### **RAOs for Public Health Protection**

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

### **RAOs for Environmental Protection**

- 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 Excavation, Backfilling and Cover System 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, 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 and disposal of soils across the site to a minimum depth of ten feet below grade. The majority of this work was completed as an Interim Remedial Measure (IRM), described in Section 6.2 of this document. The only remaining area of the site that requires excavation is the southeastern corner of the parcel. Final excavation depths have been/will be established based upon results of post-excavation confirmatory sampling to achieve the following site-specific excavation goals:

- Unrestricted Use Soil Cleanup Objectives (SCOs) in 6 NYCRR Part 375-6.8(a) for volatile organic compounds (VOCs) (except for acetone, which was established at the Restricted Residential Level), pesticides, and polychlorinated biphenyls (PCBs);
- Protection of groundwater SCOs in 6 NYCRR Part 375-6.8(b) for semi-volatile organic compounds (SVOCs), and;
- Restricted Residential SCOs in 6 NYCRR Part 375-6.8(b) for all metals except arsenic and mercury, which have a site-specific excavation goal of:
  - arsenic: 40 mg/kg (ppm) and;
  - mercury: 5.7 mg/kg (ppm).

Approximately 16,000 cubic yards of soil will need be removed from the site.

3. A site cover will be required to allow for restricted residential 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 two feet of exposed surface soil will exceed the 6 NYCRR Part 375-6.7(d) SCOs for restricted residential use. Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential 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. A vapor barrier will be required beneath the commercial/residential building currently under construction to aid in preventing contaminated soil vapors, if present, from entering the building.

5. 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 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.

6. 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 5 above.

- Engineering Controls: The site cover discussed in Paragraph 3 and the vapor barrier discussed in Paragraph 4 above.

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;

- 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;

- A provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site in the future, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;

- 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 for vapor intrusion for any new 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;

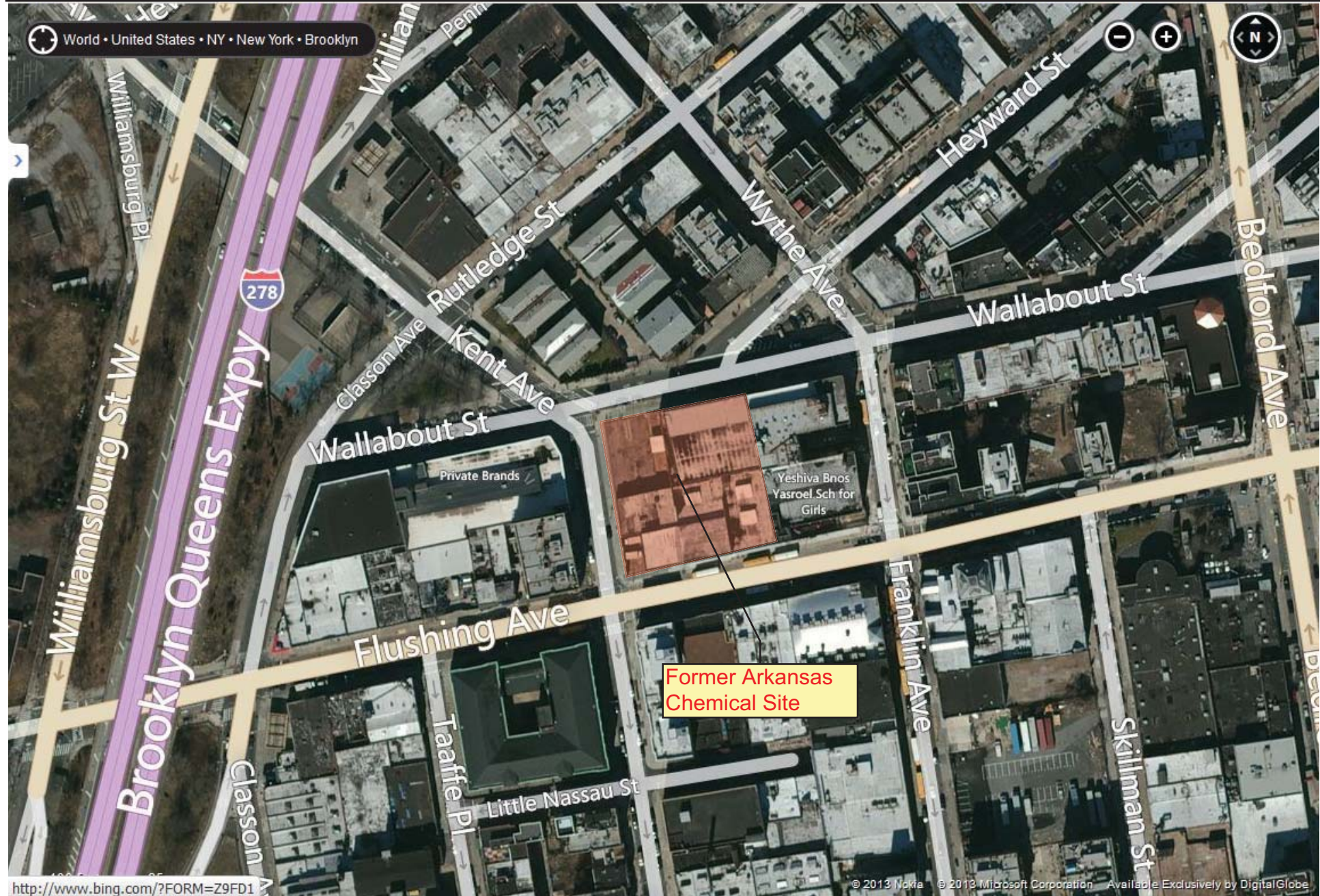
- maintaining site access controls and Department notification; and

- 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.



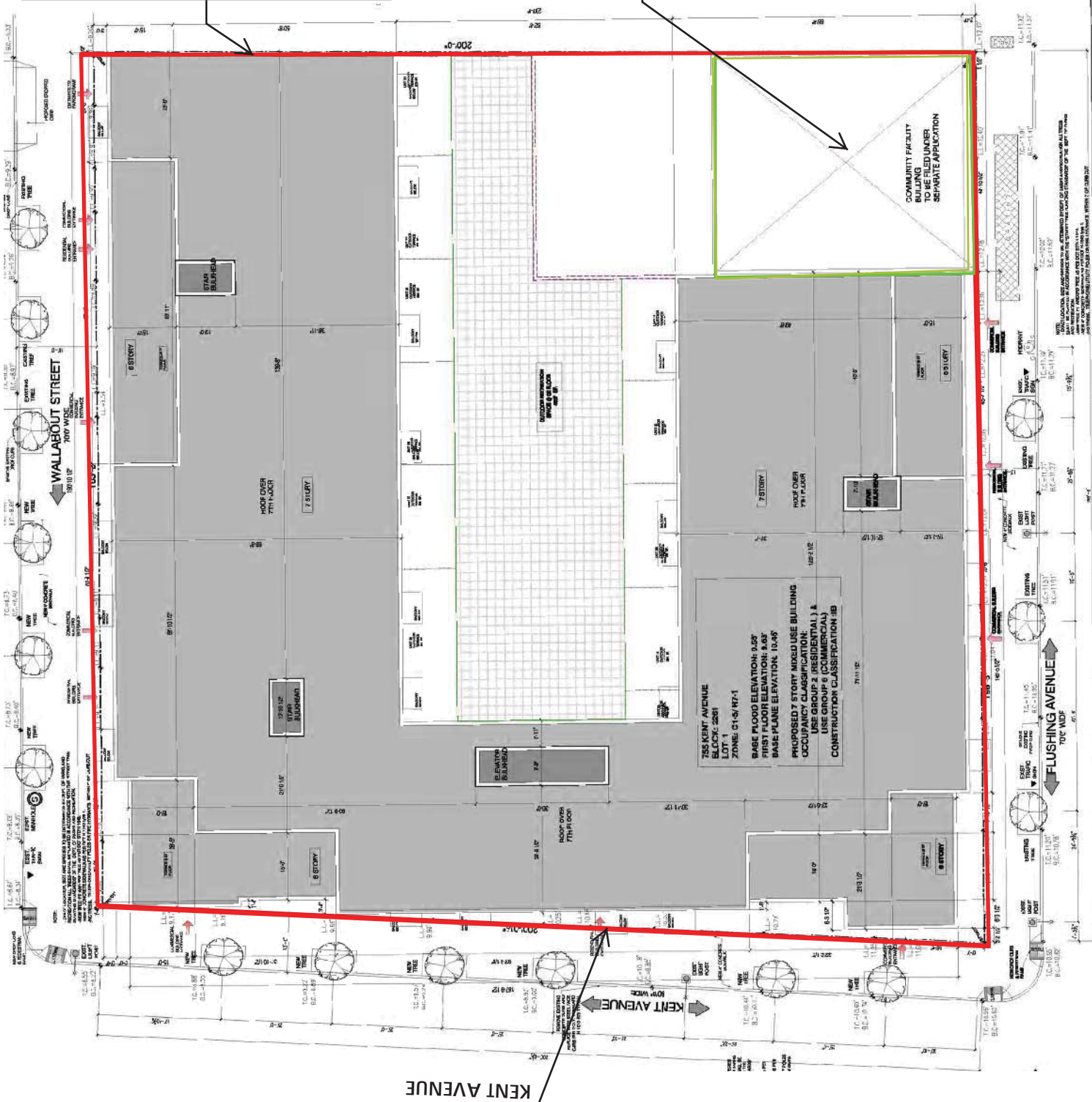
Figure 1:                      Former Arkansas Chemical Site Location Map  
74 Wallabout St., Brooklyn, NY







WALLABOUT STREET



FLUSHING AVENUE

## SITE PLAN WITH PROPOSED DEVELOPMENT

74 WALLABOUT STREET  
BROOKLYN, NEW YORK



Figure 2

Former  
Arkansas Company  
Site

New York State  
Brownfield Cleanup  
Program

Site ID No. C224172

Site Location:  
74 Wallabout Street  
Brooklyn, NY



**Red Line** denotes Brownfield Cleanup Program site boundary, as well as the property parcel boundary.  
**Note 1:** Entire area within boundary is to be excavated to a minimum of ten feet (final depth dependent upon obtaining site cleanup goals). Where there is no development, site will be subject to cover requirements, as presented in Decision Document.  
**Note 2:** Building slab and foundation walls to have certified vapor barrier installed.

Area within **green line** is planned to be transferred in future for school expansion from adjoining parcel. This area is to be excavated a minimum of ten feet (final depth dependent upon attaining site cleanup objectives), and then backfilled to grade and covered as presented in the Decision Document.

Entire Property to be institutionally controlled via Environmental Easement, which will:

1. Restrict Property use to Restricted Residential, Commercial, or Industrial uses.
2. Restrict use of groundwater without prior approval by NYS Departments of Environmental Conservation and Health.
3. Require future buildings be assessed for the potential presence of contaminated soil vapors, and if present, mitigative measures will be taken.
4. Require the preparation of a Site Management Plan to address remaining contamination at the site.
5. Require the owner to submit periodic certifications to the NYSDEC with respect to the Institutional Controls placed upon the site.