DECISION DOCUMENT

Keller Hotel Site
Brownfield Cleanup Program
New York, New York County
Site No. C231092
December 2017

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

DECLARATION STATEMENT - DECISION DOCUMENT

Keller Hotel Site
Brownfield Cleanup Program
New York, New York County
Site No. C231092
December 2017

Statement of Purpose and Basis

This document presents the remedy for the Keller Hotel 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 Keller Hotel 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 existing on-site building on Lot 30 will be demolished and materials which can't be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy. Excavation and off-site disposal of contaminant source areas on Lot 30, including:

- soil with visual waste material or non-aqueous phase liquid;
- soil containing total SVOCs exceeding 500 ppm;
- soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards; and
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

All soils in the upper two feet that exceed the restricted residential SCOs on Lot 30 will be excavated and transported off-site for disposal. Approximately 2,100 cubic yards of contaminated soil will be removed from the site. If found during site excavation, any underground storage tanks (USTs), underground piping or other structures associated with a source of contamination will be removed from the site.

3. **Backfill**

On-site soil on Lot 30 which does not exceed the above excavation criteria may be used above the water table and below the cover system described in remedy element 4 to backfill the excavation to establish the designed grades at the site. If necessary, clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedial element 4.

4. **Cover System**

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet of exposed surface soil will exceed the applicable SCOs. Where a soil cover is to be used, it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

5. **In-Situ Chemical Treatment**

An in-situ treatment program will be implemented to address contaminants of concern in groundwater and soil. A chemical oxidant or reducing agent will be injected into the subsurface to destroy the contaminants in an approximately 900-square-foot area beneath the Barrow Street sidewalk in front of the eastern end of Lot 30 via injection wells screened from 11 to 15 feet deep to breakdown gasoline-related contaminants in groundwater. An in-situ treatment program will also be conducted in an approximately 600-square-foot area beneath the hotel basement on Lot 1 to breakdown naphthalene contamination in groundwater. The method and depth of injection will be determined during the remedial design. In addition to the treatment described above, an oxygen

release compound or similar product will be applied to the open excavation in the eastern part of Lot 30.

6. **Institutional Controls**

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require 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);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOH; and
- require 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 in Paragraph 6, above.
> Engineering Controls: The site cover discussed in Paragraph 4 and the in-situ chemical injections discussed in Paragraph 5, 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;
- a provision for evaluation of the potential for soil vapor intrusion for any existing or future buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs)
- 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 vapor intrusion for any existing or future buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

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.

12/19/17

Date

Gerard Burke, Director
Remedial Bureau B

DECISION DOCUMENT

Keller Hotel Site
New York, New York County
Site No. C231092
December 2017

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:

New York Public Library - Hudson Park Branch
Attn: Miranda Murray
66 Leroy Street
New York, NY 10014
Phone: 212-243-6876

Manhattan Community Board 2
Attn: David Gruber
3 Washington Square Village, #1A
New York, NY 10012
Phone: 212-979-2272

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 144-150 Barrow Street (Block 604, Lots 1 and 30) in the Greenwich Village section of Manhattan, New York County. The area of the site is approximately 0.17 acres.

Site Features:
A vacant one-story, slab-on-grade garage structure, previously used as an auto repair facility, occupies all of Lot 30. The vacant six-story Keller Hotel occupies all of Lot 1 at the corner with the West Side Highway (NYS Route 9A).

Current Zoning and Land Use:
The site is zoned as C1-6A commercial use. The intended use is for commercial and residential use.

Past Use of the Site:
The site was originally part of the Hudson River and was filled in with material of unknown origin in the 1800s to bring the site and surrounding area to development grade. Early use of both lots that make up the site included a coal yard in the late 1800s and early 1900s. Lot 30 was used as an auto repair facility from the 1930s to the late 1990s. The six-story hotel has occupied Lot 1 since 1920.

Site Geology and Hydrogeology:
The site is underlain by historic fill material predominately comprised of coarse to fine sand with varying amounts of silt, gravel, concrete, brick, coal, and shell fragments. The fill layer extends to 12 to 16 feet below sidewalk grade and is underlain by a layer of fine to coarse sand.

The water table ranged from seven to 10 feet below grade, with a calculated flow toward the northeast, in contrast to the presumed westerly flow toward the Hudson River. This unexpected groundwater flow direction is likely attributable to large construction projects in the area, many of which require dewatering.

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, an alternative that restricts 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) 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 Participant. The Applicant has an obligation to address on-site and off-site contamination. Accordingly, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminants of concern identified at this site are:

1,2,4-trimethylbenzene
1,3,5-trimethylbenzene
ethylbenzene
n-propylbenzene
naphthalene
xylene (mixed)
toluene

The contaminants 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

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and pesticides. Based upon investigations conducted to date, the primary contaminants of concern include petroleum related compounds, as specified below.

Soil – Petroleum-related VOCs including total xylenes, ethylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, n-propylbenzene and naphthalene were observed at one location) at 250 parts per million (ppm), 150 ppm, 430 ppm, 77 ppm, 76 ppm and 52 ppm, respectively. All of which are above their respective protection of groundwater soil cleanup objectives (SCOs) of 1.6 ppm, 1 ppm, 3.6 ppm, 8.4 ppm, 3.9 ppm, and 12 ppm. Xylenes, ethylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene were also above their respective restricted residential SCOs of 100 ppm, 41 ppm, 52 ppm, and 52 ppm. No pesticides or PCBs were detected in on-site soil. The data do not indicate any site-related impacts to off-site soil-.

Groundwater - Petroleum-related VOCs and SVOCs are present in groundwater at concentrations in excess of groundwater standards. Maximum on-site concentrations include total xylenes at 720 parts per billion (ppb), ethylbenzene (110 ppb), 1,2,4-trimethylbenzene (240 ppb), 2,4-dimethylphenol (1,490 ppb), 2-methylphenol (781 ppb) and phenol (469 ppb). The respective ground water standard for these chemicals are, 5 ppb, 5ppb, 5 ppb, 50 ppb, 50 ppb and 5 ppb. A monitoring well immediately off site had much higher VOC concentrations including total xylenes (6,900 ppb), ethylbenzene (790 ppb) and 1,2,4-trimethylbenzene (2,800 ppb) that appear to have migrated from the site.

Soil Vapor – Soil vapor samples were analyzed for VOCs. An on-site soil vapor sampling point on Lot 31 had tetrachloroethene at 230 micrograms per cubic meter ($\mu g/m^3$). No petroleum-related compounds were observed in soil vapor. The data do not indicate any off-site impacts in soil vapor related to this site. A sub-slab vapor sample obtained from the basement of Lot 1 showed no detectable VOCs.

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 may contact contaminated soil or groundwater if they dig below the ground surface. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the soil or 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. The potential exists for the inhalation of site contaminants due to soil vapor intrusion in any future on-site redevelopment. Environmental 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

- 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 exposure to contaminants volatilizing from 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 the 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, in-situ treatment and cover system remedy.

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

1. **Remedial Design**

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

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- soil with visual waste material or non-aqueous phase liquid;
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- require 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);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
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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:

> Institutional Controls: The Environmental Easement discussed in Paragraph 6, above.
> Engineering Controls: The site cover discussed in Paragraph 4 and the in-situ chemical injections discussed in Paragraph 5, 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;
- a provision for evaluation of the potential for soil vapor intrusion for any existing or future buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs)
- 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 vapor intrusion for any existing or future buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

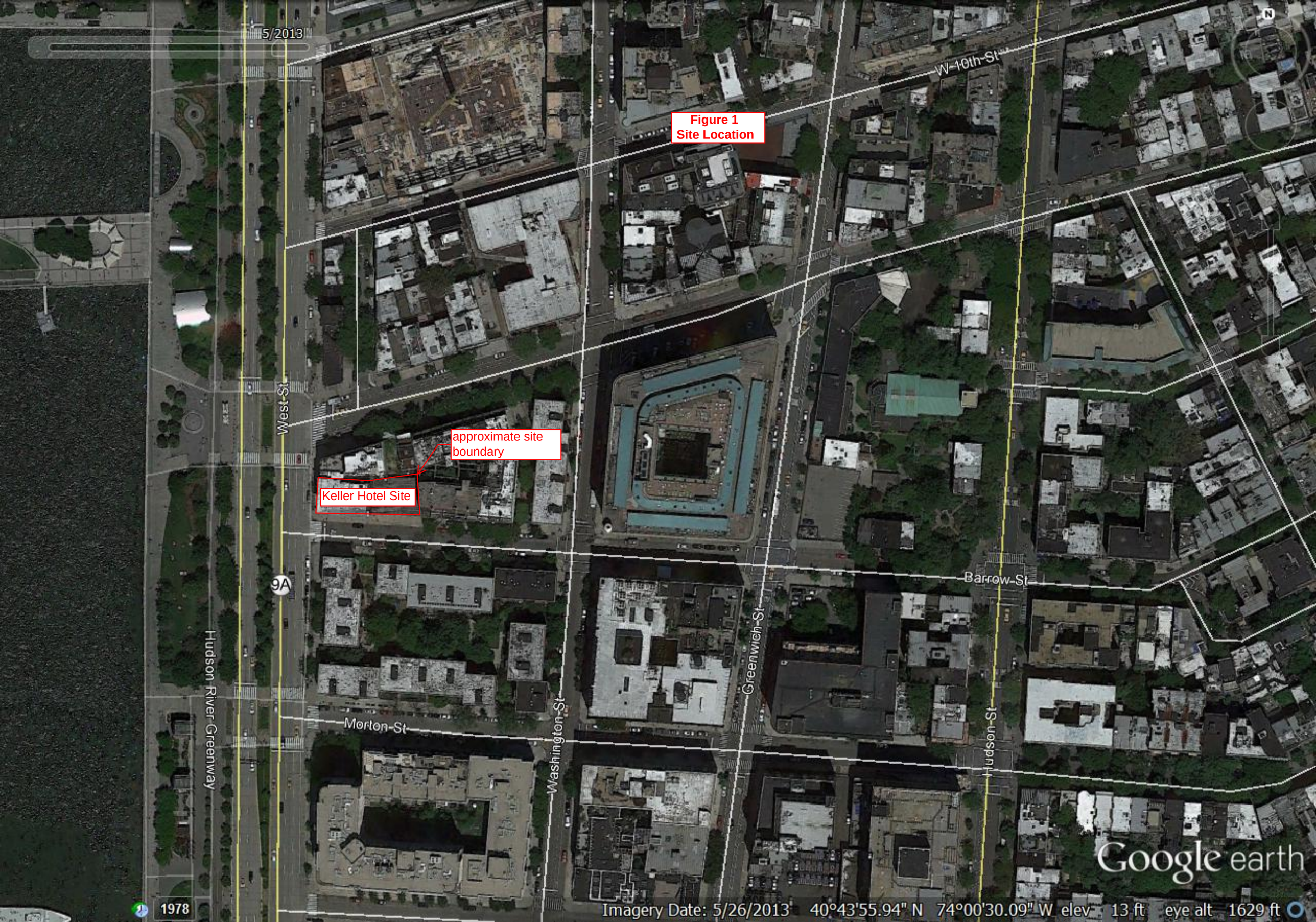
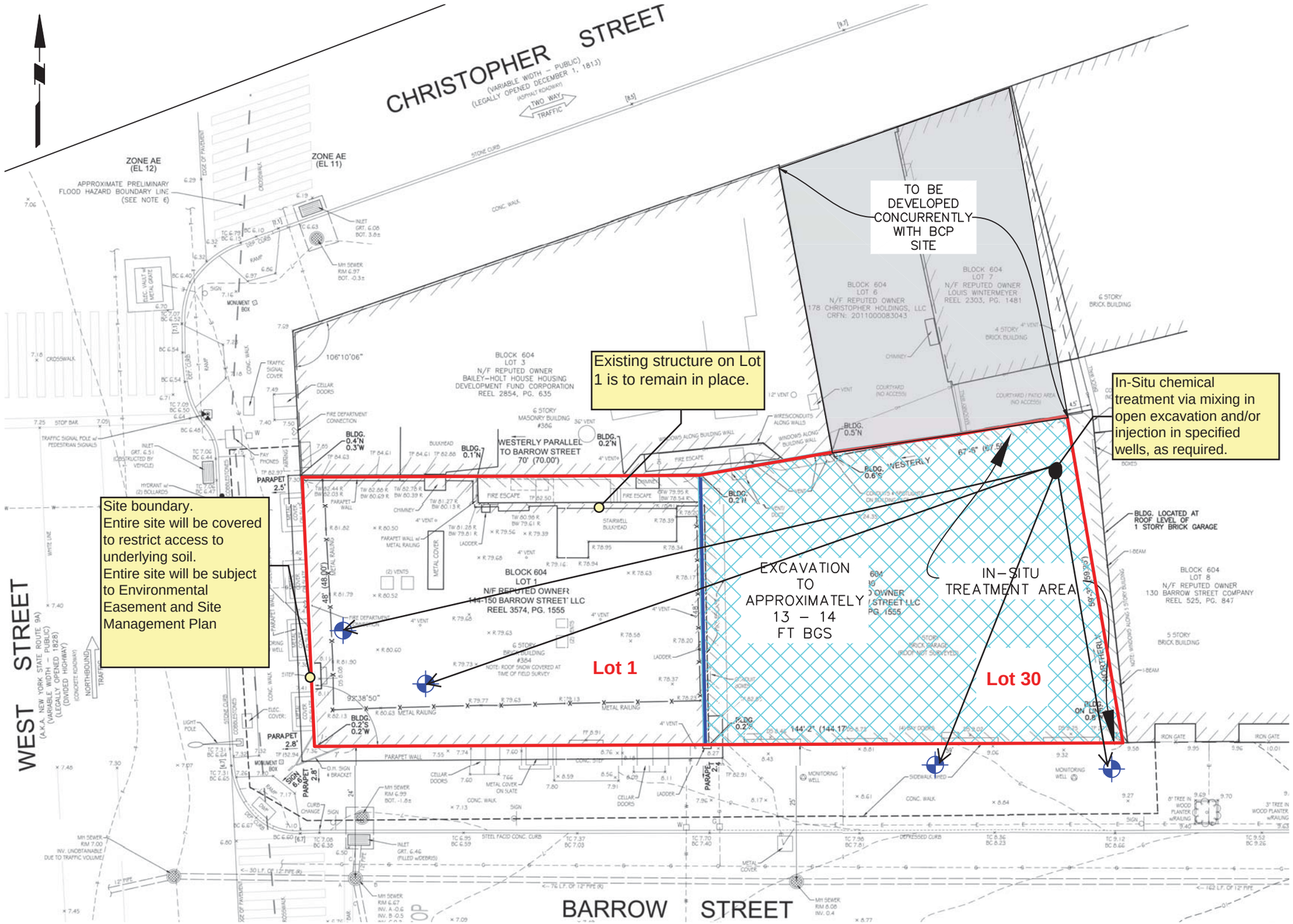


Figure 1
Site Location
approximate site boundary
Keller Hotel Site
W 10th St
West St
9A
Hudson River Greenway
Barrow St
Morton St
Washington St
Greenwich St
Hudson St
5/2013
1978
Google earth
Imagery Date: 5/26/2013 40°43'55.94" N 74°00'30.09" W elev 13 ft eye alt 1629 ft



LEGEND:

- SITE BOUNDARY
- LOT BOUNDARY
- APPROXIMATE EXCAVATION TO 10-12 FEET BGS
- APPROXIMATE LOCATION OF INJECTION WELL

NOTES:

1. BCP = BROWNFIELD CLEANUP PROGRAM
2. BASE FIGURE REPRODUCED FROM 14 MARCH 2016 SURVEY PREPARED BY GALLAS SURVEYING GROUP
3. ELEVATIONS ARE BASED UPON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)
4. FT BGS = FEET BELOW GRADE SURFACE
5. INJECTION WELL LOCATIONS ARE APPROXIMATE AND WILL BE REFINED IN FORTHCOMING TECHNICAL DESIGN

LANGAN
21 Penn Plaza, 360 West 31st Street, 8th Floor
New York, NY 10001
T: 212.479.5400 F: 212.479.5444 www.langan.com
Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

Project
KELLER HOTEL SITE
144-150 BARROW STREET
BLOCK No. 604, LOT Nos. 1 AND 30
MANHATTAN
NEW YORK NEW YORK

Figure Title
ALTERNATIVE II: TRACK 4 CLEANUP

Project No. 170170901	Figure No. 2
Date 9/21/2017	
Scale 1"=20'	
Drawn By JL	
Submission Date	Sheet 5 of 9

Filename: \\langan.com\data\NY\data9\170170901\Cadd Data - 170170901\BCP RAWP\Figure 5 - Alternative 2 - Track 4 Cleanup - 082516.dwg Date: 9/21/2017 Time: 15:03 User: skabir Style Table: Langan.stb Layout: ANSIB-BL (1)