

DECISION DOCUMENT

BH Aircraft Site
Brownfield Cleanup Program
East Farmingdale, Suffolk County
Site No. C152247
August 2019



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

DECLARATION STATEMENT - DECISION DOCUMENT

BH Aircraft Site
Brownfield Cleanup Program
East Farmingdale, Suffolk County
Site No. C152247
August 2019

Statement of Purpose and Basis

This document presents the remedy for the BH Aircraft 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 BH Aircraft 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. Cover system

A cover system currently exists on the entire site which consists of buildings, sidewalks, pavement and soil covered areas. Any site redevelopment will maintain the existing site cover. The site cover may include paved surface parking areas, sidewalks or soil where the upper one foot of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for commercial use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

3. Soil Vapor Extraction

Soil vapor extraction (SVE) will be implemented to remove volatile organic compounds (VOCs) from the subsurface. VOCs will be physically removed from the soil by applying a vacuum to wells that have been installed into the vadose zone (the area below the ground but above the water table). The vacuum draws air through the soil matrix which carries the VOCs from the soil to the SVE well. The air extracted from the SVE wells is then treated as necessary prior to being discharged to the atmosphere.

4. Monitored Natural Attenuation

Groundwater contamination will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination and for MNA indicators which will provide an understanding of the (biological activity) breaking down the contamination. It is anticipated that contamination will decrease by an order of magnitude in a reasonable period of time (5 to 10 years). Reports of the attenuation will be provided annually initially to assess its effectiveness, and active remediation will be proposed if it appears that natural processes alone will not address the contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated that bioremediation injection of an electron donor would be the expected contingency remedial action.

5. 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 commercial and industrial uses 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 County DOH; and
- require compliance with the Department approved Site Management Plan.

6. 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 5 above.

Engineering Controls: The soil cover discussed in Paragraph 2 and the soil vapor extraction system discussed in Paragraph 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 intrusions for any buildings on the Site, including provisions 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 2 above will be placed in any areas where the upper one foot of exposed soils exceeds the applicable 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 buildings 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, inspection, and reporting of mechanical or physical components of the active vapor mitigation system. The plan includes, but is not limited to:
- Procedures for operating and maintaining the system; and
 - Compliance inspection of the system to ensure proper O&M as well as providing the data for any necessary reporting.
 - maintaining site access controls and Department notification; and
 - providing the Department access to the site 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.

August 16, 2019
Date


Eric Obrecht, Director
Remedial Bureau A

DECISION DOCUMENT

BH Aircraft Site
East Farmingdale, Suffolk County
Site No. C152247
August 2019

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:

Farmingdale Public Library
116 Merritts Road
Farmingdale, NY 11735
Phone: 516-249-9090

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 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 BH Aircraft site is located in a commercial/industrial district of Farmingdale, New York, in the Town of Babylon. The site is immediately south of a Long Island Railroad right of way, to the north of Eastern Parkway, and to the west and east are commercial/industrial properties. Land use north of the rail tracks is characterized by residential and commercial retail. South of the Eastern Parkway, the land use is characterized by mixed residential and commercial.

Site Features:

The roughly 3.5-acre site currently includes one building, which is currently occupied. The site is partially paved and partially graveled and contains some vegetation.

Current Zoning and Land Use:

The site is currently zoned in a commercial/industrial district of Farmingdale. The site is currently used as a car dealership.

Past Use of the Site:

The site has been used for industrial purposes since the 1920s when it was used by a rubber manufacturing company; in 1929, a flower pot manufacturer; in 1942, a manufacturer of essential oils and aromatic products; from 1964 to approximately 2000, an aircraft parts manufacturing company, which was at one point called BH Aircraft Co. Inc. Between approximately 2000 and November 2016, the site was occupied by bus companies that used it for maintaining and storing buses. During this time the facility also included a 12,000-gallon diesel underground storage tank and two fuel dispensers. Historical investigations identified several Areas of Concern (AOCs) associated with historical operations. Several of these AOCs were investigated and remediated under other programs overseen by Suffolk County Department of Health Services. During the past operations the site consisted of seven buildings; all but one was demolished in the fall of 2017.

Site Geology and Hydrogeology:

The site is in an area that is characterized by low hills of unconsolidated sands, gravel, and silt. The site's topography is generally flat, with an elevation of approximately 76 feet above mean sea level (msl). Groundwater at the site is in the upper glacial aquifer and the depth to groundwater at the site is approximately 18 feet below grade. Regional groundwater flows in a southerly direction, toward the Massapequa Preserve. A water body identified as a manmade freshwater pond is located within approximately 240 feet hydraulically upgradient.

A site location map is attached as Figure 1, and a site plan map is attached as Figure 2.

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 commercial use (which allows for industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

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

SECTION 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 contamination may be migrating off-site; accordingly, enforcement actions are necessary. The Department will seek to identify any parties (other than the Volunteer) known or suspected to be responsible for contamination at or emanating from the site, referred to as Potentially Responsible Parties (PRPs). The Department will bring an enforcement action against the PRPs. If an enforcement action cannot be brought or does not result in the initiation of a remedial program by any PRPs, the Department will evaluate the off-site contamination for action under the State Superfund. The PRPs are subject to legal actions by the State for recovery of all response costs the State incurs or has incurred.

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:

- air
- groundwater
- soil
- soil vapor
- 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:

trichloroethene (TCE)	tetrachloroethene (PCE)
1,1,1-trichloroethane (TCA)	carbon tetrachloride

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(s) has/have been completed at this site based on conditions observed during the RI.

IRM Leaching Pool and Drywell Closure

Leaching pool and drywell closure activities were conducted in November and December 2017 pursuant to an October 2017 IRM Work Plan. The IRM addressed six AOCs including leaching pools and drywells where contamination was previously identified. The area of each leaching pool and drywell was identified and marked, then uncovered and examined. If the leaching pool or drywell was determined to be properly closed (filled with sand), the structure required no further action. If the leaching pool or drywell was opened and had not been closed properly, a sample from the bottom was collected and sent to a certified laboratory for analysis of NYSDEC Part 375 compounds. Laboratory results were compared to NYSDEC Unrestricted Soil Cleanup Objectives (USCOs) to evaluate whether additional remediation was required. If the bottom samples did not exceed USCOs, the system was closed in accordance with the regulatory requirements outlined in the IRM work plan. Once each system was determined contaminated or clean, the removal process began. Any systems that exceeded USCOs were excavated, contaminated soils were removed, and post excavation samples were collected and analyzed.

Any contaminated soils associated with the drywells were staged on poly sheeting for analysis and disposal. Fluids or sludges collected from the drywell were containerized in drums. Wastes were characterized for disposal purposes in accordance with Federal, State, and local regulations. Once post-excavation results exhibited no exceedances of USCOs, the leaching pool/drywell system was filled with imported soil and subsequently closed. Completion of the IRM will be documented in the Final Engineering Report.

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, pesticides, herbicides, and polychlorinated biphenyls (PCBs) during the Remedial Investigation (RI). Soil Vapor was analyzed for VOCs. Based upon the RI, the primary contaminants of concern for the site include tetrachloroethene (PCE), trichloroethene (TCE), 1,1,1 trichloroethane (TCA) and carbon tetrachloride.

Soil- Thirty-four soil samples were collected during the RI. No VOCs were detected above the Commercial Soil Cleanup Objectives (CSCOs). One surface soil location had detections of several VOCs above their respective Protection of Groundwater SCOs. These VOC detections included; methylene chloride (1.5 parts per million (ppm)), 1,2-dichloroethane (0.15 ppm), benzene (0.15 ppm), vinyl chloride (0.3 ppm), trans-1,2-dichloroethene (0.22 ppm), acetone (1.5 ppm), and 2-butanone (1.5 ppm). Two sub-surface locations also had detections of VOCs above the Protection of Groundwater SCOs. These exceedances included toluene (1 ppm), tetrachloroethene (2.4 ppm),

1,1,1-trichloroethane (13 ppm) and trichloroethene (130 ppm). Acetone was also detected slightly above the Protection of Groundwater SCO in four subsurface samples, however it was not detected in groundwater above the groundwater standards and is considered a laboratory contaminant. At the other sub-surface location, methylene chloride (0.54 ppm), 1,2-dichloroethane (0.054 ppm), and vinyl chloride (0.11 ppm) were detected above their respective Protection of Groundwater SCOs.

Herbicides and cyanide were not detected above the laboratory method detection limit (MDL) in any of the soil samples analyzed. Hexavalent chromium, trivalent chromium, pesticides, PCBs, SVOCs, and metals were detected above the MDL, however none of the detections were above NYS Restricted Commercial or Protection of Groundwater SCOs. Data does not indicate any off-site impacts in soil related to this site.

During site development following the IRM, fill (topsoil) was imported to the site for landscaping use along the southern fence line. The landscaped area was covered by one foot of topsoil cover, and is only area not covered by an impervious surface. The imported fill was sampled and meets commercial SCOs in accordance with DER-10.

Groundwater- Eighteen groundwater samples were collected and submitted for laboratory analysis.

TCE exceeded the NYSDEC groundwater standards at a maximum concentration of 11 parts per billion (ppb). 1,1,1-Trichloroethane was detected exceeding its groundwater standard in one sample at a concentration of 9.2 ppb.

SVOCs such as benzo(a)anthracene (maximum concentration of 0.03 ppb), benzo(b)fluoranthene (maximum concentration of 0.03 ppb), benzo(a)pyrene (maximum concentration of 0.08 ppb), and benzo(k)fluoranthene (maximum concentration of 0.2 ppb) were detected at concentrations exceeding their respective groundwater standard of .002 ppb.

Metals - Chromium was detected at one location above the groundwater standard of 5 ppb with a concentration of 95 ppb. Iron (maximum concentration of 21,700 ppb) manganese (maximum concentration of 832 ppb) and sodium (maximum concentration of 55,700 ppb) were detected at concentrations exceeding their respective groundwater standards. Iron, manganese and sodium are known to be naturally occurring background metals. The pesticides endrin (maximum concentration of 0.005 ppb), dieldrin (maximum concentration of 0.118 ppb), and chlordane (maximum concentration of 0.226 ppb) were detected at concentrations exceeding their respective groundwater standards. Groundwater samples did not contain detectable PCBs, chlorinated herbicides, cyanide or hexavalent chromium. Data does not indicate any off-site impacts in groundwater related to this site.

Soil Vapor- Nineteen soil vapor samples were collected in the site vicinity during the RI. Maximum VOC concentrations were found in samples in the southwestern corner of the site in the vicinity of the former spray paint shop, which has since been demolished and the area is covered by asphalt. 1,1,1-Trichloroethane (maximum concentration of 25,700 micrograms per cubic meter (ug/m³)), trichloroethene (maximum concentration of 64,000 ug/m³),

tetrachloroethene (maximum concentration of 1,630 ug/m³), and carbon tetrachloride (maximum concentration of 1,840 ug/m³) were the four VOCs detected across the site in the soil vapor. Three indoor air and three sub-slab vapor samples were also collected from the remaining on-site building, Building 2 (see Figure 3). The three indoor air samples were collected at locations co-located with the three sub-slab vapor samples; additionally, an outdoor air sample (AA-01) was collected outside this building to assess ambient concentrations at the site.

SS-02 was the only sub-slab sample to exhibit a detectable concentration of trichloroethene (4.37 ug/m³). Tetrachloroethene was detected in SS-02 and SS-03 at concentrations of 1.64 and 1.83 ug/m³, respectively. 1,1,1-Trichloroethane was observed in all three sub-slab samples, at concentrations ranging from 2.38 to 73.1 ug/m³. Carbon tetrachloride was only detectable in SS-01, at a concentration of 7.61 ug/m³.

The highest indoor air concentrations for TCE and PCE were 0.344 and 0.475 ug/m³ (IA-03), respectively, which are both below the NYS Air Guidance Values of 2 and 30 ug/m³, respectively. Carbon tetrachloride was detected in all three indoor air sample locations with its highest concentration in IA-03 at 0.56 ug/m³, however it was not detected in the sub-slab vapor sample at this location.

Nine VOCs were detected in the ambient air sample (AA-01), which is located on the north side of Building 2. Most notable were PCE at 0.124 ug/m³ and carbon tetrachloride at 0.556 ug/m³.

Based upon the concentrations of the analytes detected ambient air, indoor air and sub-slab soil vapor, no further action will be required at Building 2.

However, based on the results of the soil vapor samples taken on-site, the potential exists for contaminated soil vapor to migrate off-site and affect the indoor air quality of off-site structures.

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 fenced, and the majority of the site is covered with buildings and pavement. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this site. Volatile organic compounds in soil vapor (air spaces within the soil) 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. Environmental sampling indicates that the inhalation of site-related contaminants due to soil vapor intrusion is not a concern at the on-site building. Further evaluation is needed to determine if the potential exists for contaminated soil vapor to migrate and affect the indoor air of 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.
- Prevent the discharge of contaminants to surface water.
- 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.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

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 elements of the selected remedy, as shown in Figure 3-3D, 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. Cover system

A cover system currently exists on the entire site which consists of buildings, sidewalks, pavement and soil covered areas. Any site redevelopment will maintain the existing site cover. The site cover may include paved surface parking areas, sidewalks or soil where the upper one foot of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for commercial use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

3. Soil Vapor Extraction

Soil vapor extraction (SVE) will be implemented to remove volatile organic compounds (VOCs) from the subsurface. VOCs will be physically removed from the soil by applying a vacuum to wells that have been installed into the vadose zone (the area below the ground but above the water table). The vacuum draws air through the soil matrix which carries the VOCs from the soil to the SVE well. The air extracted from the SVE wells is then treated as necessary prior to being discharged to the atmosphere.

4. Monitored Natural Attenuation

Groundwater contamination will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination and for MNA indicators which will provide an understanding of the (biological activity) breaking down the contamination. It is anticipated that contamination will decrease by an order of magnitude in a reasonable period of time (5 to 10 years). Reports of the attenuation will be provided annually initially to assess its effectiveness, and active remediation will be proposed if it appears that natural processes alone will not address the contamination. The contingency remedial action will depend on the

information collected, but it is currently anticipated that bioremediation injection of an electron donor would be the expected contingency remedial action.

5. 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 commercial and industrial uses 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 County DOH; and
- require compliance with the Department approved Site Management Plan.

6. 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 5 above.

Engineering Controls: The soil cover discussed in Paragraph 2 and the soil vapor extraction system discussed in Paragraph 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 intrusions for any buildings on the Site, including provisions 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 2 above will be placed in any areas where the upper one foot of exposed soils exceeds the applicable 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 buildings 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, inspection, and reporting of mechanical or physical components of the active vapor mitigation system. The plan includes, but is not limited to:
- Procedures for operating and maintaining the system; and
 - Compliance inspection of the system to ensure proper O&M as well as providing the data for any necessary reporting.
 - maintaining site access controls and Department notification; and
 - providing the Department access to the site and O&M records.

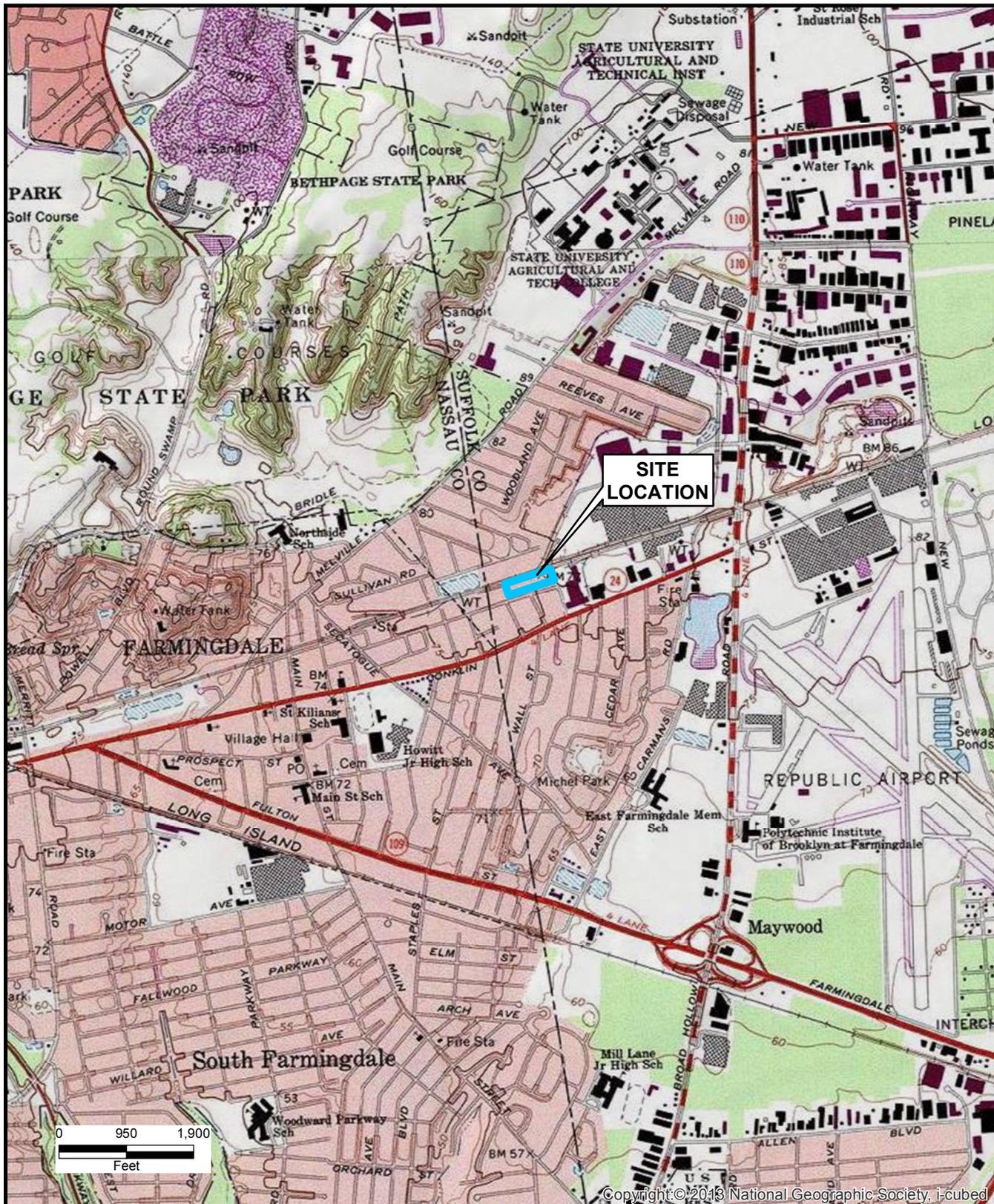


Figure 1
 Site Location Map
 BH Aircraft Site
 Town of Babylon, Suffolk County
 Site No. C152247



**Department of
 Environmental
 Conservation**



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

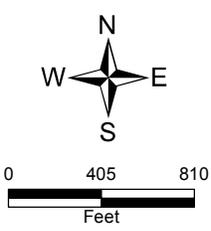


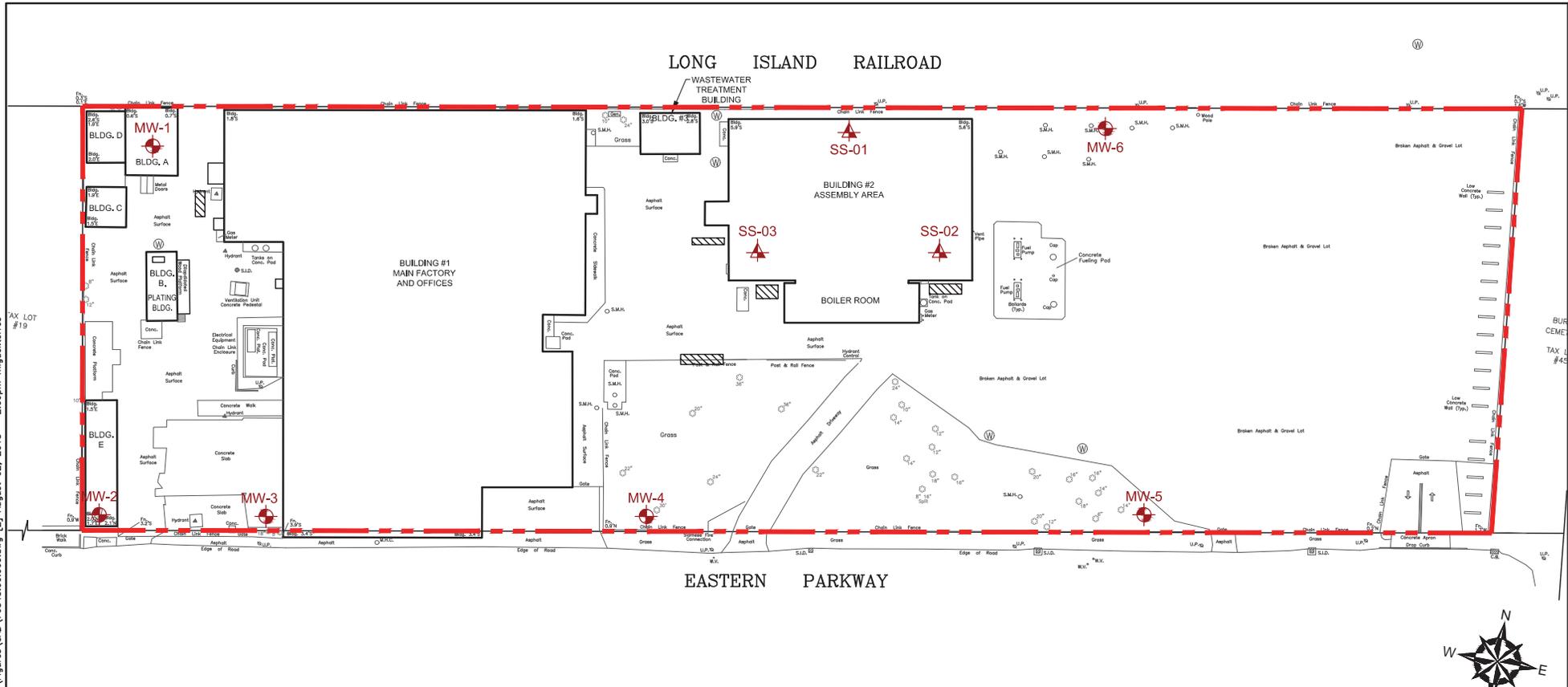
Figure 2
Site Map
 BH Aircraft Site
 441 Eastern Parkway
 Town of Babylon, Suffolk
 Site No. C152247



©2017 - GZA GeoEnvironmental, Inc. GZA--L\76500\12.0076545.00\Figures\CAD\76545.00.009.dwg [2] August 02, 2018 - 2:09pm miguel.torres

LONG ISLAND RAILROAD

EASTERN PARKWAY

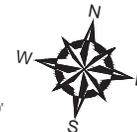


LEGEND:

- BROWNFIELD SITE BOUNDARY
- APPROXIMATE LOCATION OF FORMER DRY WELL
- FORMER UST
- EXISTING SEWER MANHOLE
- PROPOSED GROUNDWATER MONITORING LOCATION
- PROPOSED SUB-SLAB/INDOOR AIR MONITORING LOCATION

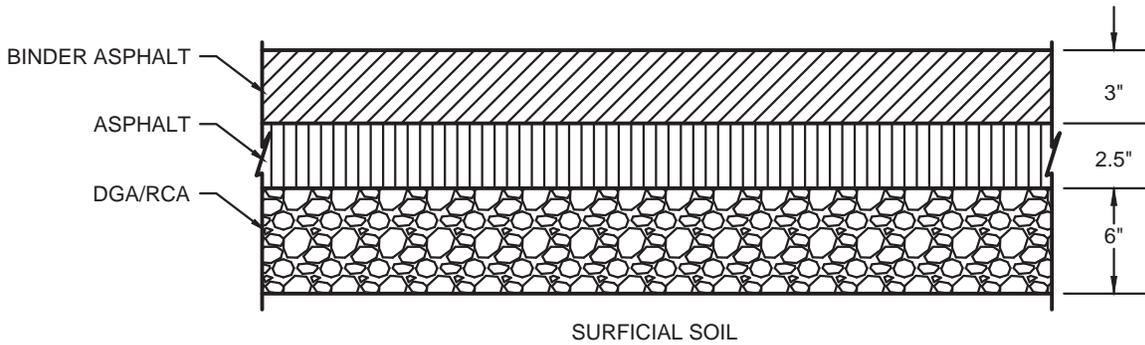
NOTES:

1. THE BASE MAP WAS DEVELOPED FROM A PLAN PROVIDED BY: 441 EASTERN PARKWAY, LLC ENTITLED: "TOPOGRAPHIC MAP," DATED: 11/4/2016, ORIGINAL SCALE: 1" = 20'.

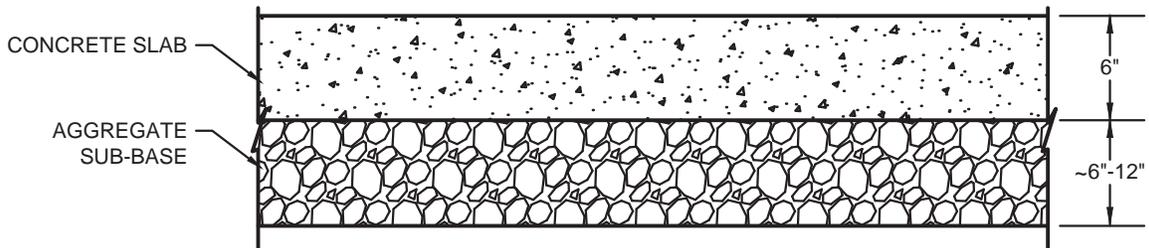


NO.	ISSUE/DESCRIPTION	BY	DATE
UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE, WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.			
441 EASTERN PARKWAY FARMINGDALE, NEW YORK			
PROPOSED MONITORING LOCATIONS			
PREPARED BY: GZA GeoEnvironmental of New York Engineers and Scientists (60 WEST 20TH STREET), 20TH FLOOR NEW YORK, NEW YORK 10001		PREPARED FOR: 441 EASTERN PARKWAY, LLC	
PROJ MGR: DW	DESIGNED BY: MW	REVIEWED BY: MW	CHECKED BY: DW
DATE: AUGUST 2018	PROJECT NO. 12.0076545.00	SCALE: 1" = 50'	REVISION NO.
FIGURE 3			SHEET NO.

© 2016 - GZA GeoEnvironmental, Inc. GZA-P:\CAMEOPC\GZA OUTSIDE JOBS\12.0076545.00\12007654500-F14.DWG 8.5X11-PORT JUNE 18, 2018 VINCENT DEMARINSE



TYPICAL ASPHALT CAP

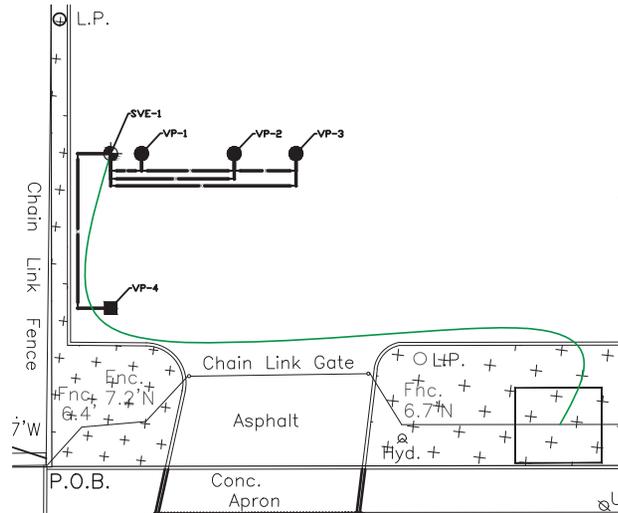


TYPICAL BUILDING CAP

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

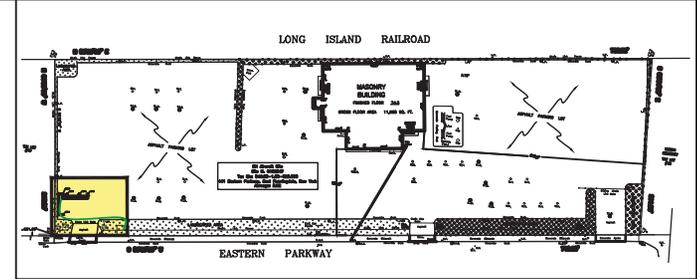
441 EASTERN PARKWAY FARMINGDALE, NEW YORK	PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: 441 EASTERN PARKWAY, LLC
	PROJ MGR: DW DESIGNED BY: BR DATE: JUNE, 2018	REVIEWED BY: MW DRAWN BY: VJD PROJECT NO. 12.0076545.00	CHECKED BY: DW SCALE: N.T.S. REVISION NO. -

TYPICAL SITE CAP CROSS-SECTIONS



- LEGEND:**
- PROPOSED 1" VAPOR MONITORING POINT
 - PROPOSED 2" VAPOR MONITORING POINT
 - ⊕ PROPOSED 2" VAPOR EXTRACTION WELL
 - BLOWER AND COMPRESSOR LOCATION
 - FLEXIBLE HOSE LAYOUT

NOTES:
 ALL ELECTRICAL CONNECTIONS WILL BE MADE USING A LICENSED ELECTRICIAN. THE SVE WELL WILL BE CONNECTED TO THE SYSTEM TRAILER USING FLEXIBLE HOSE.

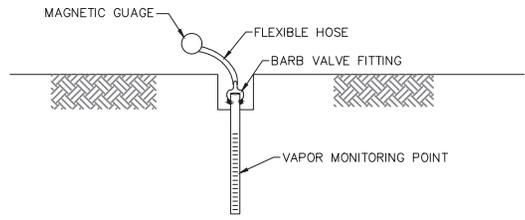


KEY MAP:
 1" = 150'

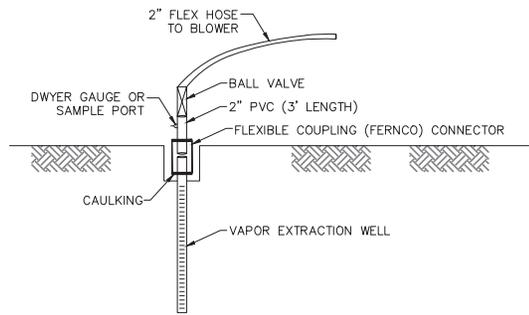


NO.	ISSUE/DESCRIPTION	BY	DATE
UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEODENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.			
441 EASTERN PARKWAY FARMINGDALE, NEW YORK			
SOIL VAPOR EXTRACTION PILOT TEST SITE PLAN			
PREPARED BY:  GZA GeoEnvironmental of New York Engineers and Scientists 104 WEST 20TH STREET, 10TH FLOOR NEW YORK, NEW YORK 10011	PREPARED FOR: 441 EASTERN PARKWAY, LLC		
PROJ MGR: DW DESIGNED BY: BR DATE: DECEMBER 2018	REVIEWED BY: BR DRAWN BY: MT PROJECT NO. 12.0076545.00	CHECKED BY: DW SCALE: 1" = 20' REVISION NO.	FIGURE 3B SHEET NO.

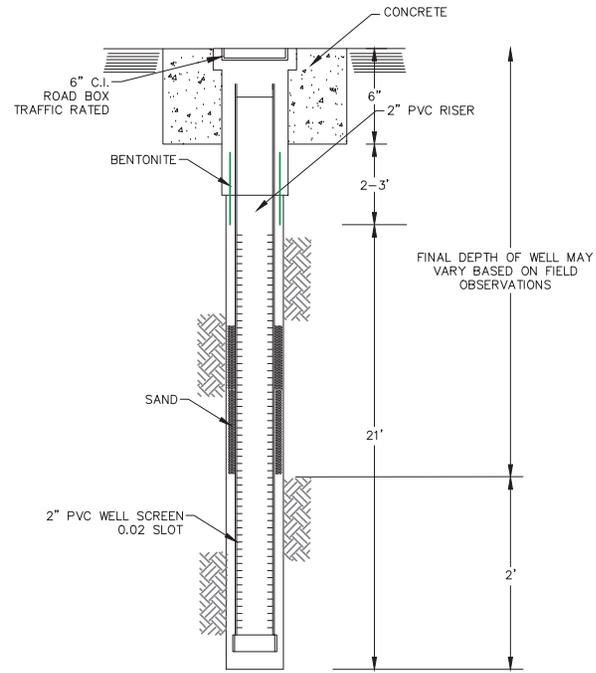
©2017 - GZA GeoEnvironmental, Inc. GZA-\\GZAHAM1\JOBS\76500\S\12.0076545\00\FIGURES\CAD\76545\00.012.DWG FIG-16 DECEMBER 7, 2018 PHILIP BOSCO



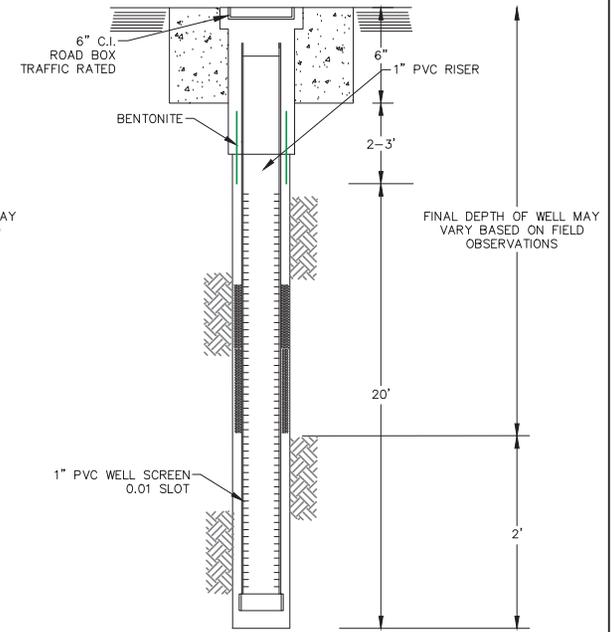
DETAIL - MONITORING POINT CONNECTIONS
NOT TO SCALE



DETAIL - EXTRACTION WELL PIPE CONNECTIONS
NOT TO SCALE

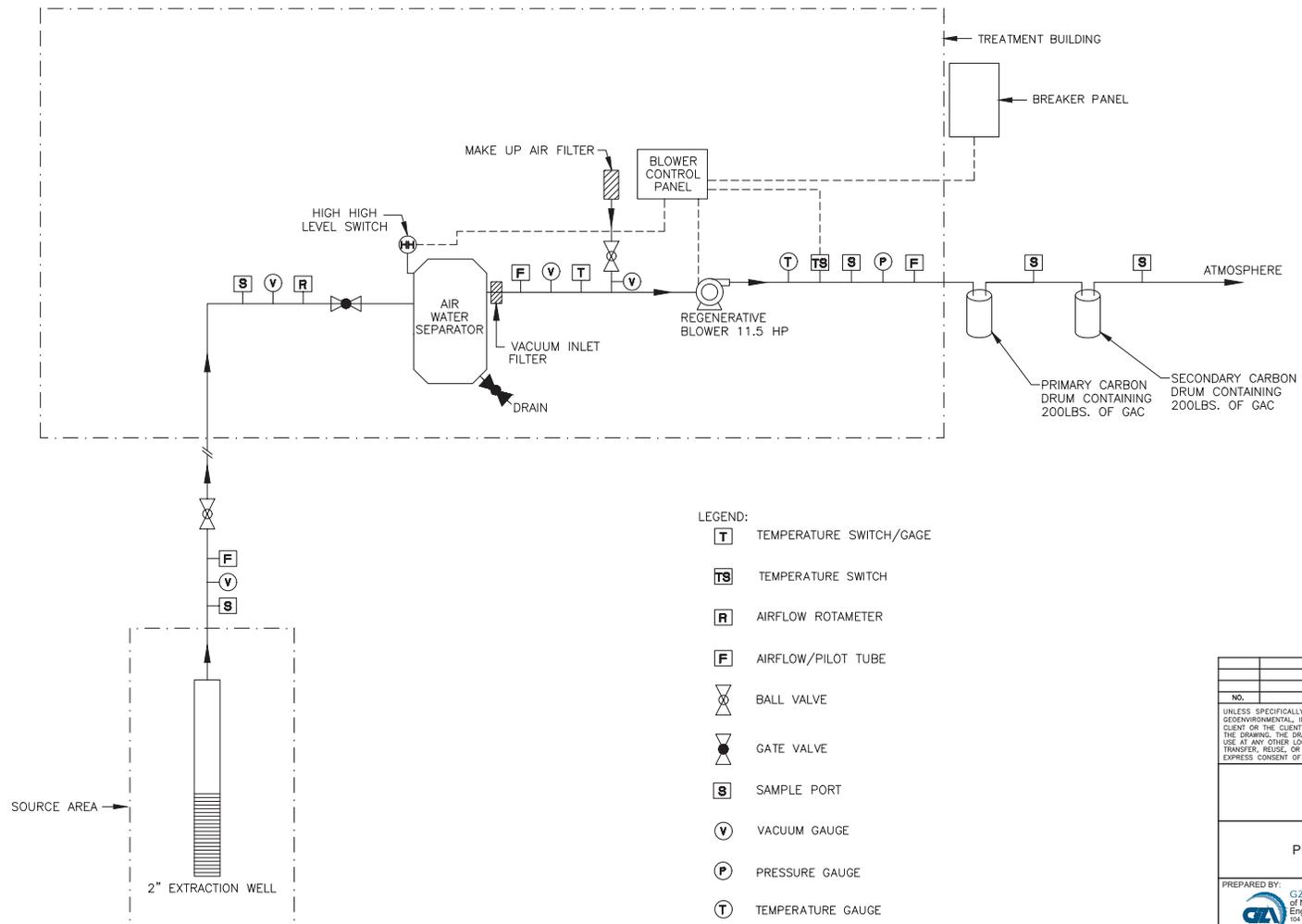


DETAIL - SOIL VAPOR EXTRACTION POINT
NOT TO SCALE



DETAIL - SOIL VAPOR EXTRACTION POINT
NOT TO SCALE

NO.	ISSUE/DESCRIPTION	BY	DATE
UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.			
441 EASTERN PARKWAY FARMINGDALE, NEW YORK			
SOIL VAPOR EXTRACTION PIPING DETAILS			
PREPARED BY:  GZA GeoEnvironmental of New York Engineers and Scientists 164 WEST 97TH STREET, 10TH FLOOR NEW YORK, NEW YORK 10001		PREPARED FOR: 441 EASTERN PARKWAY, LLC	
PROJ MGR: DW	REVIEWED BY: BP	CHECKED BY: IRS	FIGURE 3C SHEET NO.
DESIGNED BY: BR	DRAWN BY: MT	SCALE: NOT TO SCALE	
DATE: DECEMBER 2018	PROJECT NO: 12.0076545.00	REVISION NO.	



- LEGEND:
- T** TEMPERATURE SWITCH/GAGE
 - TS** TEMPERATURE SWITCH
 - R** AIRFLOW ROTAMETER
 - F** AIRFLOW/PILOT TUBE
 - BALL VALVE
 - GATE VALVE
 - S** SAMPLE PORT
 - V** VACUUM GAUGE
 - P** PRESSURE GAUGE
 - T** TEMPERATURE GAUGE

NO.	ISSUE/DESCRIPTION	BY	DATE
UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.			
441 EASTERN PARKWAY FARMINGDALE, NEW YORK			
PIPING AND INSTRUMENTATION DESIGN			
PREPARED BY: GZA GeoEnvironmental of New York Engineers and Scientists 64 WEST 90TH STREET, 10TH FLOOR NEW YORK, NEW YORK 10001		PREPARED FOR: 441 EASTERN PARKWAY, LLC	
PROJ MGR: DW	DESIGNED BY: BR	REVIEWED BY: BP	CHECKED BY: DW
DATE: DECEMBER 2018	PROJECT NO. 12.0076545.00	DRAWN BY: MT	SCALE: NOT TO SCALE
			REVISION NO.
			FIGURE 3D
			SHEET NO.