FRANCES S. GABRESKI AIRPORT, AIRPORT DEVELOPMENT DISTRICT

SUFFOLK COUNTY, NEW YORK

Site Management Plan

NYSDEC Site Number: V00576

Prepared for:
Suffolk County Department of Health Services

Office of Pollution Control

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SITE MANAGEMENT PLAN

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document is required as an element of the remedial program at the Gabreski Airport (hereinafter referred to as the "Site") under the New York State (NYS) Voluntary Cleanup Program (VCP) administered by New York State Department of Environmental Conservation (NYSDEC). The site is being remediated in accordance with Voluntary Cleanup Agreement (VCA), Site # V00576-1, which was executed on November 26, 2005.

1.1.1 General

Suffolk County entered into a VCA with the NYSDEC to remediate a 58.6 acre property located in Westhampton, New York. This VCA required the Remedial Party, Suffolk County, to investigate and remediate contaminated media at the site. A figure showing the site location and boundaries of the entire 57.943-acre site is provided in Figure 1. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement.

With the completion of the remedial work described in the Remedial Action Work Plan, some contamination will be left in the subsurface at this site, which is hereafter referred to as 'remaining contamination." This remaining contamination will be located in an approximately 0.606 acre area to be known as the Soil Management Area (SMA). This Site Management Plan (SMP) was prepared to manage contamination remaining at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. All

reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by P.W. Grosser Consulting, Inc. (PWGC), on behalf of Suffolk County, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Environmental Easement for the site.

County of Suffolk shall provide, or cause to be provided, to all persons who have or acquire any interest in the Site, a true and complete copy of the SMP that the NYSDEC approves for the Site and all NYSDEC approved amendments to the SMP.

1.1.2 Purpose

The site will contain contamination left after completion of the remedial action. Engineering and Institutional Controls have been incorporated into the site remedy to control exposure to remaining contamination during the use of the site to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC by County of Suffolk as grantor, and recorded with the Suffolk County Clerk, will require compliance with this SMP and all ECs and ICs placed on the site. The ICs place restrictions on site use. This SMP specifies the methods necessary to ensure compliance with all ECs and ICs required by the Environmental Easement for contamination that remains at the site. This SMP has been approved by the NYSDEC, and compliance with this SMP is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the site after completion of the Remedial Action, including: (1) implementation and management of all Engineering and Institutional Controls; (2) media monitoring; and (3) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports.

To address these needs, this SMP includes two plans: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; (2) a Monitoring Plan for implementation of Site Monitoring;

This SMP also includes a description of Periodic Review Reports (section 5.3) for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP may be a violation of the environmental easement, which may be grounds for revocation of the Release and Covenant not to Sue;
- Failure to comply with this SMP may also be a violation of Environmental Conservation Law, 6NYCRR Part 375 and the VCA Site #V00576 for the site, and thereby subject to applicable penalties. A copy of the SMP, with any approved changes, may be obtained from the NYSDEC Remediation Engineer or Site Control Section.

1.1.3 Revisions

Revisions to this SMP will be proposed in writing to the NYSDEC's project manager. In accordance with the Environmental Easement for the site, the NYSDEC will provide a written notice of any approved changes to the SMP to the site owner, and append these notices to the SMP that is retained in its files.

1.2 SITE BACKGROUND

The subject site is located within the Airport Development District (ADD) at the Francis S. Gabreski Airport in Westhampton Beach, New York. The property is owned by Suffolk County and managed by the Department of Economic Development and Workforce Housing.

The ADD portion of the Airport was occupied by housing for base personnel, a theater, church and PX, as wells as buildings for training and support services, including

a photo lab, vehicle repair areas, flight simulator and armament and electronics storage facility. Several storage tanks, used to store fuel-oil, gasoline and diesel, were located at the site. One tank was reportedly used for the temporary storage of jet fuel while aircraft were undergoing repair.

Investigations dating back to 1986 in the vicinity of the southern part of the ADD parcel (between Smith and Avenue B) identified a plume containing a light non-aqueous phase liquid (LNAPL). A groundwater treatment system was in operation at the site from 1986 to 1990. PWGC performed a Supplemental Investigation in 2009 which consisted of the collection and analysis of soil, groundwater and soil-vapor samples to delineate the horizontal and vertical extent of the LNAPL/VOC plume identified during the 2002 Site Investigation. Results from the 2009 investigation horizontally delineated the impacted soils to an approximately 220' x 120' area where soil impacts exceeded the NYSDEC recommended soil cleanup objectives (RSCOs) contained within Technical Administrative Guidance Memorandum TAGM #4046 (Figure 2). Within that area, a smaller 120'x60' area was found to exceed the restrictive residential Soil Cleanup Objectives (SCOs) contained within 6 NYCRR Part 375. Vertically impacted soils exceeding TAGM RSCOs and Part 375 Restricted Residential SCOs were confined to a depth of 30' to 35' below grade. Based upon these results, shallow soil impacts were not encountered at the site.

Based upon the planned use of the property for restricted residential purposes, the approved remedial action consists of the removal of impacted soils which exceeded Part 375 restricted residential SCOs from a depth of 30' to 35' below grade. Upon completion of soil removal and prior to the application of backfill, treatment of groundwater contamination will be conducted by applying an Oxygen Release Compound (ORC).

1.2.1 Site Location and Description

The site is located in Westhampton Beach in the County of Suffolk, New York and is identified as a portion of District 900 Section 312 Block 1 and Lot 1 on the Suffolk County Tax Map. The SMA portion of the site where limited contamination will remain following the remedial action is an approximately 0.606-acre area located north of Cook Street (see Figure 3). The boundaries of the entire site and the SMA are more fully described in Appendix A – Metes and Bounds.

1.2.2 Site History

Historically, the site was a portion of the 11,550 acre Gabreski Airport. This airport was built in 1943. Ownership of the property transferred several times between the US Air Force and Suffolk County between 1943 and 1969. In 1970, the County again regained ownership of the airport and has retained ownership since then.

While operating as an airbase, the subject site area was primarily used by base personnel and included housing / dormitory buildings, as well as recreation areas and base support areas. A portion of the site, located at the northern extent of the SMA was reported as being utilized as a maintenance garage. Underground Storage Tanks (USTs) were associated with the garage building. This included a 5,000 gallon UST which was used to temporarily store jet fuel (JP-4) while maintenance was being performed on the aircraft.

After the Air Force ceased using the site, the SMP area was operated as a Bus Garage (Baumann Bus). The surrounding portions were utilized by various commercial businesses. Baumann Bus moved their operations from the building and then the building remained vacant for several years. Several years ago, the former Baumann Bus building, as well as the surrounding buildings were demolished. All known UST were removed as well.

1.2.3 Geologic Conditions

The geologic setting of Long Island is well documented and consists of crystalline bedrock composed of schist and gneiss overlain by layers of unconsolidated

deposits. Immediately overlying the bedrock is the Raritan Formation, consisting of the Lloyd Sand confined by the Raritan Clay Member. The Lloyd Sand is an aquifer and consists of discontinuous layers of gravel, sand, sandy and silty clay, and solid clay. The Raritan Clay is a solid and silty clay with that is gray, red or white in color with few lenses of sand and gravel and abundant lignite and pyrite.

Above the Raritan Clay lies the Magothy Formation. The Magothy aquifer consists of layers of fine to coarse sand of moderate to high permeability, with inter-bedded lenses of silt and clay of low permeability resulting in areas of preferential horizontal flow. Therefore, this aquifer generally becomes more confined with depth. The Magothy Formation is overlain by the Upper Glacial deposits which contains the Upper Glacial aquifer. The Upper Glacial aquifer is the water-table aquifer at this location and is comprised of medium to coarse sand and gravel with occasional thin lenses of fine sand and brown clay. This aquifer extends from the water table to the top of the Magothy and, therefore, is hydraulically connected to the Magothy aquifer. Groundwater at the site is located at approximately 30’ below grade. A groundwater flow figure is shown in Figure 4.

1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

A Remedial Investigation (RI) was performed to characterize the nature and extent of contamination at the site. The results of the RI are described in detail in the following reports:

Site Investigation Report, O’Brien & Gere, December 2003

Supplemental Investigation Report, PWGC, November 2009

Supplemental Investigation Report Addendum (Part 375 Investigation), PWGC, May 2010

Generally, the RI determined that soil impacts were isolated to an approximately 220’x120’ area at a depth of 30’-35’ below grade in the vicinity of the Former Baumann Bus operations. Groundwater impacts were located in a similar location.

Below is a summary of site conditions when the RI was performed in 2009-2010:

1.3.1 Soil

Results of the soil investigation revealed that site impacts exceeding TAGM RSCOs were related to the approximately 220'x120' area identified on Figure 2. Impacts exceeding Part 375 Restricted Residential SCOs were isolated to a smaller 110'x60 area also shown on Figure 2. Impacted soils were located vertically between 30' and 35' below grade (at the approximate water table interface). Soil results are included on the following table (Table 1) and soil boring locations are shown on Figure 2. As shown in the tables, soil contamination consisted solely of Volatile Organic Compounds (VOCs), consisting mainly of trimethlybenzene and xylene. The sample from VD-1 (32.5-35' below grade) contained the highest total VOC (STARS list) concentration at 516,280 ug/kg. These findings are consistent with the spill originating from a release of JP-4 jet fuel. During the course of the investigation, no signs of soil impact were encountered in the soils shallower than 30' below grade. PWGC collected soil samples from depths less than 30' as part of the Part 375 investigation to assess the shallow soils for reuse. Analytical results of those soils for VOCs, Semi-VOCs (SVOCs), metals, pesticides, and PCBs (Tables 2-5) revealed no concentrations exceeding regulatory guidelines.

1.3.2 Site-Related Groundwater

Groundwater results generally mirrored the soil results with groundwater exceedances being generally located in the shallow groundwater (approximately 30' below grade) in the area roughly defined by the soil TAGM exceedances. Groundwater results are summarized in Table 6. Groundwater impacts consisted of VOCs (no SVOC exceedances were encountered). Xylene was the predominant VOC compound detected. The groundwater sample from HD-9 contained the highest total VOC (STARS list) concentration at 7,615 ug/L.

1.3.3 Site-Related Soil Vapor Intrusion

In order to assess the site for potential soil vapor concerns, five soil gas samples were collected from the SMP area (Figure 5). Analytical results of the soil gas samples are included in Table 7. VOCs were not detected at concentrations exceeding USEPA Target Shallow Soil Gas Concentrations in collected soil-

vapor samples, indicating that subsurface soil/groundwater impact present at the site has not impacted shallow soil-vapor

1.4 SUMMARY OF REMEDIAL ACTIONS

The site was remediated in accordance with the NYSDEC-approved Remedial Design dated June 2010.

The following is a summary of the Remedial Actions performed at the site:

1. Excavation of soil exceeding restricted residential SCOs listed in Table 1. These soils were horizontally defined by the 110'x60' area shown on Figure 2 and vertically defined delineated to a depth of 30' to 35' below grade. During backfilling of the saturated zone (approximately 30'-35' below grade), an Oxygen Releasing Compound (ORC) is to be applied. The purpose of the ORC is enhance natural degradation of the remaining impacts;

2. Given the depth of the remaining impact (30'-35' below grade) the clean soils located from 25'-30' below grade are to act as a natural barrier to prevent human exposure to remaining contaminated soil remaining at the site;

3. Execution and recording of an Environmental Easement to restrict land use on the entire 57.943 acre ADD property and prevent future exposure to any contamination remaining at the site. The easement will include the following restrictions:

    - Restrict site use to restricted residential or less restrictive (e.g. commercial).
    - Restrict use of groundwater.
    - Restrict disturbance of soils below 25' below grade without notification of the NYSDEC within the SMA only.

4. Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring / inspection, and (3) reporting;

Remedial activities were completed at the site in February 2011.

1.4.1 Removal of Contaminated Materials from the Site

Soil removal during the Remedial action consisted of the removal of the impacted soils which exceed the NYSDEC Part 375 Restricted Residential Standard. These soils were identified by the previous investigations to be located within the approximately 110'x60' area identified on Figure 2. Vertically, the soils exceeding Part 375 were located from 30' to 35' below grade.

Since the soils which exceed Part 375 were located below the water table, the excavation method consisted of the following:

- Through a combination of shoring and sloping, clean soils from grade to 28' below grade were removed and stockpiled on site for re-use. The base of the excavation at 28' below grade was the extents of the Part 375 area and was the working base of the excavation.
- Using slide rail shoring, clean soils from 28' to 30' and impacted soils from 30' to 35' were removed from the excavation. Approximately 3,500 tons of soil were disposed of.
- Soils removed from 28' to 35' below grade were placed on drying beds to allow the saturated soils to drain prior to disposal. Water captured by the drying beds was transferred to an onsite storage tank for temporary storage prior to disposal.
- The excavation from 28' to 35' below grade will be backfilled with gravel. ORC will be applied to the saturated zone during backfilling.
- From 28' below grade to ground surface will be backfilled with the previously retained soils. The soils will be properly compacted during backfill placement.
- Grade will be restored with top soil and seeded (weather permitting).

A figure depicting the extents of the excavation (including sloped areas and shoring) is included as Figure 6.

The NYSDEC did not require endpoint samples to be collected following the remedial action as the area was pre-characterized during the investigation phase.

1.4.2 Remaining Contamination

With the completion of the remedial action, remaining contamination is located at a depth of 30’-35’ below grade in an area roughly defined by the extents of the SMA (minus the footprint of the remedial action excavation) as shown in Figure 2.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Since remaining contaminated soil and groundwater exists beneath the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

2.1.2 Purpose

This plan provides:

- A description of all EC/ICs on the site;
- The basic implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the features to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Excavation Work Plan for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC.

2.2 ENGINEERING CONTROLS

2.2.1 Engineering Control Systems

2.2.1.1 Soil Cover

Exposure to remaining contamination in soils in the SMA is prevented by a soil cover system placed over the site. This cover system is comprised of the five feet of clean soils (25'-30' below grade) which lie above the impacted soils which begin at 30' below grade. The Excavation Work Plan that appears in Appendix B outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Since these soils will be located beneath an additional 25' feet of clean cover soil, routine inspections of the protective cover cannot be performed and is unnecessary.

2.2.2 Criteria for Completion of Remediation

2.2.2.1 Monitored Natural Attenuation

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC, until residual groundwater concentrations are found to be consistently below NYSDEC standards or have become asymptotic at an acceptable level over an extended period. Monitoring is to consist of quarterly sampling of three downgradient monitoring wells installed along Cook Street following the Remedial Action. Monitoring will also include monitoring of a fourth well located downgradient of the plume on the Air National Guard (ANG) property. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

2.3 INSTITUTIONAL CONTROLS

A series of Institutional Controls is required by the Remedial Action Work Plan (RAWP) to: (1) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (2) limit the use and development of the site to Restricted Residential or less restrictive uses only. Adherence to these Institutional Controls on the site is required by the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

- The property may only be used for restricted residential or less restrictive uses (e.g. commercial) provided that the long-term Engineering and Institutional Controls included in this SMP are employed.
- The use of the groundwater underlying the property is prohibited.
- Restrict disturbance of soils below 25’ below grade within the SMA without notification of the NYSDEC.
- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor’s successors and assigns;
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP;
- On a yearly basis, the site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitutes a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

Institutional Controls identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

2.3.1 Excavation Work Plan

The site has been remediated for restricted residential or less restrictive use. Any future intrusive work that will penetrate the clean soils located between 25'-30' below grade in the SMA, or encounter or disturb the remaining contamination, including any modifications or repairs to the existing cover system will be performed in compliance with the Excavation Work Plan (EWP) that is attached as Appendix B to this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) prepared for the site. A sample HASP and CAMP, consisting of the HASP and CAMP utilized for the remedial action, is attached as Appendix C to this SMP that is in current compliance with DER-10, and 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided in Section A-1 of the EWP. Any intrusive construction work performed in the SMA which will disturb soils deeper than 25' below grade will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5).

The site owner and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are responsible for; the safe performance of all intrusive work, the structural integrity of excavations, the proper disposal of excavation de-water, control of runoff from open excavations into remaining contamination, and for protecting structures that may be affected by excavations (such as building foundations and bridge footings). The site owner will ensure that its site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of all remedial components installed at the site will be conducted at the frequency specified in the SMP Monitoring Plan schedule. A comprehensive site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If site records are complete and up to date; and
- Changes, or needed changes, to the remedial or monitoring system;

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Reporting section of this plan (Section 5).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the site by a qualified environmental professional as determined by NYSDEC.

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Voluntary Cleanup Agreement (VCA), 6NYCRR Part 375, and/or Environmental Conservation Law.

- 7-day advance notice of any proposed ground-intrusive activities to occur below 25’ within the SMA pursuant to the Excavation Work Plan.
- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the Voluntary Cleanup Agreement (VCA), and all approved work plans and reports, including this SMP
- Within 15 days after the transfer of all or part of the site, the new owner’s name, contact representative, and contact information will be confirmed in writing.

2.5 CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance the Owner or Owner’s representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to SCDHS Division of Environmental Quality (DEQ). These

emergency contact lists must be maintained in an easily accessible location at the site.

Table 8: Emergency Contact Numbers

Medical, Fire, and Police:	911
One Call Center:	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362
SCDHS DEQ	(631) 852-5800

* Note: Contact numbers subject to change and should be updated as necessary

2.5.2 Map and Directions to Nearest Health Facility

Site Location: Gabreski Airport

Nearest Hospital Name: Peconic Bay Medical Center

Hospital Location: 1300 Roanoke Avenue, Riverhead, NY

Hospital Telephone: (631) 548-6000

Directions to the Hospital:

1. Head west on Cooks St toward County Rd 31.

2. Turn right at the 1st cross street onto County Rd 31/Old Riverhead Rd/Riverhead Rd. Continue to follow Old Riverhead Rd/Riverhead Rd 2.5 mi

3. Continue onto Quogue-Riverhead Rd/Riverleigh Ave 1.4 mi

4. Slight left to stay on Quogue-Riverhead Rd/Riverleigh Ave 1.4 mi

5. At the traffic circle, continue straight to stay on Quogue-Riverhead Rd/Riverleigh Ave 0.2 mi

6. Turn right at E Main St 105 ft

7. Take the 1st left onto County Rd 73/Roanoke Ave 1.3 mi

8. At the traffic circle, continue straight to stay on County Rd 73/Roanoke Ave 410 ft

9. Arrive at 1300 Roanoke Avenue, Riverhead, NY 11901

Total Distance: 7.1 Miles

Total Estimated Time: 17 Minutes

MAP INCLUDED AS FIGURE 7

2.5.3 Response Procedures

As appropriate, the fire department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is found at the beginning of this Contingency Plan (Table 8). The list will also be posted prominently at the site in the Airport Administration Building and made readily available to all personnel at all times.

3.0 SITE MONITORING PLAN

3.1 INTRODUCTION

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site, and all affected site media identified below. This Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of groundwater;
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards;
- Assessing achievement of the remedial performance criteria.
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., well logs);
- Analytical sampling program requirements;
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and

- Annual inspection and periodic certification.

Quarterly monitoring of the performance of the remedy and overall reduction in contamination on-site will be conducted for the first two years beginning on a date to be determined by the NYSDEC, followed by semiannual sampling for the following three years. The frequency thereafter will be determined by NYSDEC. Trends in contaminant levels in groundwater in the affected areas, will be evaluated to determine if the remedy continues to be effective in achieving remedial goals. Monitoring programs are summarized in Table 9 and outlined in detail in Sections 3.2 and 3.3 below.

Table 9: Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Well Monitoring	Quarterly (years 1-2) Semiannual (years 3-5)	Groundwater	VOCs and SVOCs
Sitewide Inspection	Quarterly (years 1-2) Semiannual (years 3-5)	N/A	N/A

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH

3.2 MEDIA MONITORING PROGRAM

3.2.1 Groundwater Monitoring

Groundwater monitoring will be performed on a periodic basis to assess the performance of the remedy.

Three monitoring wells will be installed to monitor down-gradient groundwater conditions of the SMA. In addition, an existing downgradient well will be monitored on the ANG property. The network of on-site wells has been designed based on the following criteria:

- The wells will be placed downgradient of the soil excavation area along the southern (downgradient) property line. Well locations are show in Figure 8.
- The wells will be screened at the water table in the upper glacial aquifer.
- Wells are to be constructed of 2" PVC. The wells will be screened from 25' to 40' below grade with 0.020-inch slot screen since the average water table depth for the site is approximately 30' below grade. An appropriate length of riser pipe will be used to bring the well to grade. A sandpack suitable for use with the well slot size will be installed in the annular space between the well and the borehole. A bentonite seal will be installed above the sand, and the remaining annular space will be filled with a bentonite / cement grout. A protective flush mount manhole will be installed above the well at completion.
- The wells will be properly developed prior to sampling.
- Samples from the wells will be analyzed for VOCs by EPA method 8260 for the sub-set of compounds specified in NYSDEC Spills Technology and Remediation Series (STARS) Memorandum #1. The samples will also be analyzed for the natural attenuation parameters specified in the Section 2.3 of the 2004 O'Brien&Gere Remedial Action Work Plan. (Copy in Appendix C) which server as a Groundwater Monitoring Plan for the site.

The wells will be sampled on a quarterly basis for the first two years following the remedial action. The three years following, the wells will be sampled on a semi-annual basis. The sampling frequency may be modified with the approval of NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC.

Deliverables for the groundwater monitoring program are specified below.

3.2.1.1 Sampling Protocol

All monitoring well sampling activities will be recorded in a field book and a groundwater-sampling log presented in Appendix D. Other observations (e.g., well integrity, etc.) will be noted on the well sampling

log. The well sampling log will serve as the inspection form for the groundwater monitoring well network.

Well monitoring will be performed following the procedures specified in the 2004 O'Brien & Gere Remedial Action Work Plan, Appendix D - Groundwater Monitoring Plan. A summary of the procedures is as follows:

- Wells will be gauged to assess water levels;
- Wells will be sampled utilizing low flow sampling technique.
- Collected samples will be transferred to laboratory supplied glassware.

A copy of the relevant portions of the O'Brien & Gere Groundwater Monitoring Plan is attached as Appendix E.

3.2.1.2 Monitoring Well Repairs, Replacement and Decommissioning

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent periodic report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning

Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

3.3 SITE-WIDE INSPECTION

Site-wide inspections will be performed on a regular schedule as indicated on Table 9. Site-wide inspections will also be performed after all severe weather conditions that may affect Engineering Controls or monitoring devices. During these inspections, an inspection form will be completed (Appendix F). The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection;
- Compliance with permits and schedules included in the Operation and Maintenance Plan; and
- Confirm that site records are up to date.

3.4 MONITORING QUALITY ASSURANCE/QUALITY CONTROL

All sampling and analyses will be performed in accordance with the requirements of the Quality Assurance procedures specified in the 2008 SI Workplan (Appendix G). Main Components of the QAPP include:

- QA/QC Objectives for Data Measurement;
- Sampling Program:
    - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.

- Sample holding times will be in accordance with the NYSDEC ASP requirements.
- Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected during the first sampling round following the remedial action and on a yearly basis there after.

Sample Tracking and Custody;

- Calibration Procedures:
  - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
  - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.
- Analytical Procedures;
- Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method.
- Internal QC and Checks;
- QA Performance and System Audits;
- Preventative Maintenance Procedures and Schedules;
- Corrective Action Measures.

3.6 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular monitoring events and inspections will be kept on file on-site. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in the Reporting Plan of this SMP.

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report. A letter report will also be prepared, subsequent to each sampling event. The report will include, at a minimum:

- Date of event;
- Personnel conducting sampling;
- Description of the activities performed;
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether groundwater conditions have changed since the last reporting event.

Data will be reported in hard copy or digital format as determined by NYSDEC. The monitoring program deliverables are summarized in Table 10 below.

Table 10: Reporting Frequency

Task	Reporting Frequency*
Groundwater Monitoring	Summary Letter Following Each Event
Annual Groundwater Summary Report	Annually, due by First week of April following year.
Site Wide Inspection Report	Quarterly / Semi-annually to be submitted with groundwater monitoring summary letter.

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC

4.0 OPERATION AND MAINTENANCE PLAN

4.1 INTRODUCTION

The site remedy does not rely on any mechanical systems, such as sub-slab depressurization systems or air sparge/ soil vapor extraction systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP.

5. INSPECTIONS, REPORTING AND CERTIFICATIONS

5.1 SITE INSPECTIONS

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted when a breakdown of any treatment system component has occurred or whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

A general site-wide inspection form will be completed during the site-wide inspection (see Appendix F). These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format in the Periodic Review Report.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented;
- The site remedy continues to be protective of public health and the environment and is performing as designed in the RAWP and FER.

5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

After the last inspection of the reporting period (as indicated on Table 10), a Professional Engineer licensed to practice in New York State will prepare the following certification:

For each institutional or engineering control identified for the site, I certify that all of the following statements are true:

- The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;
- The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;
- Use of the site is compliant with the environmental easement;
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program; and
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class “A” misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business

address], am certifying as Owner's Designated Site Representative and I have been authorized and designated by all site owners to sign this certification for the site.

- No new information has come to my attention, including groundwater monitoring data from wells located at the site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of off-site contamination are no longer valid; and

Every five years the following certification will be added:

- The assumptions made in the qualitative exposure assessment remain valid.

The signed certification will be included in the Periodic Review Report described below.

5.3 PERIODIC REVIEW REPORT

A Periodic Review Report will be submitted to the Department each year, beginning eighteen months after the Certificate of Completion is issued. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix B (Metes and Bounds). The report will be prepared in accordance with NYSDEC DER-10 and submitted within 45 days of the end of each certification period. Media sampling results will also incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site;
- Results of the required annual site inspections and severe condition inspections, if applicable;
- All applicable inspection forms and other records generated for the site during the reporting period in electronic format;
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will

include a presentation of past data as part of an evaluation of contaminant concentration trends;

- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format;
- A site evaluation, which includes the following:
    - The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;
    - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored;
    - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
    - The overall performance and effectiveness of the remedy.

Revise as appropriate: The Periodic Review Report will be submitted, in hard-copy format, to the NYSDEC Central Office and Regional Office in which the site is located, and in electronic format to NYSDEC Central Office, Regional Office and the NYSDOH Bureau of Environmental Exposure Investigation.

5.4 CORRECTIVE MEASURES PLAN

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

FIGURES



BASEMAP PROVIDED BY:
AES
AMERICAN ENGINEERING SERVICES, P.C.
1600 OLD COUNTRY ROAD - SUITE 202
PLAINVIEW, NEW YORK 11803
DATED: JUNE 1, 2002
REVISED: NOV. 6, 2002

SITE PLAN

SCALE: 1" = 200'

J:\Projects S-Z\SHD\1006 - Baumann Remedial Oversight\cad\Fig 1.dwg (11X17) Oct 18,2010-3:44pm By: guzman

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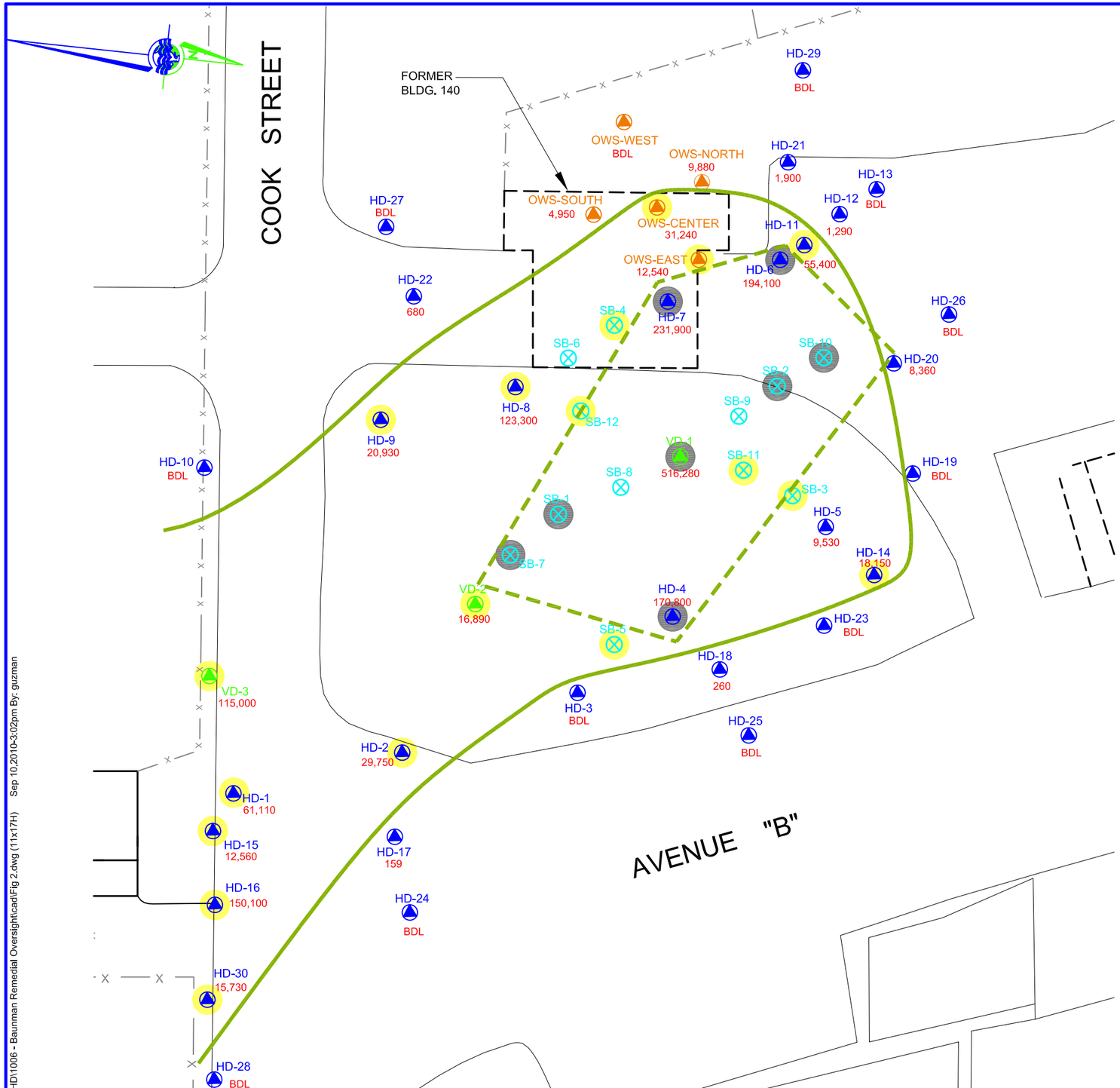
SHEET TITLE

SITE PLAN

REMEDIATION OF FORMER
BAUMAN BUS SITE
GABRESKI AIRPORT
WEST HAMPTON, NY

FIGURE NO
1

SHEET
- OF -



LEGEND

- BORING LOCATION (OIL WATER SEPARATOR)
- BORING LOCATION (VERTICAL DELINEATION)
- BORING LOCATION (HORIZONTAL DELINEATION)
- 8,360 — SOIL TOTAL VOCs (ppb)
- BDL — BELOW LABORATORY DETECTION LIMITS
- BORING WITH VOC CONCENTRATIONS EXCEEDING TAGM RSCO
- BORING WITH VOC CONCENTRATIONS EXCEEDING PART 375 RESTRICTED RESIDENTIAL SCO
- SUPPLEMENTAL PART 375 DELINEATION BORINGS
- APPROXIMATE EXTENT OF SOIL IMPACT WITH COMPOUNDS EXCEEDING RSCO'S (TAGM)
- APPROXIMATE EXTENT OF SOIL IMPACTED WITH COMPOUNDS EXCEEDING RESTRICTED RESIDENTIAL SCO'S (PART 375)

BASE MAP PROVIDED BY:
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EXTENTS OF IMPACT

SCALE: 1" = 30'

0 30 60

SCALE: 1" = 30'

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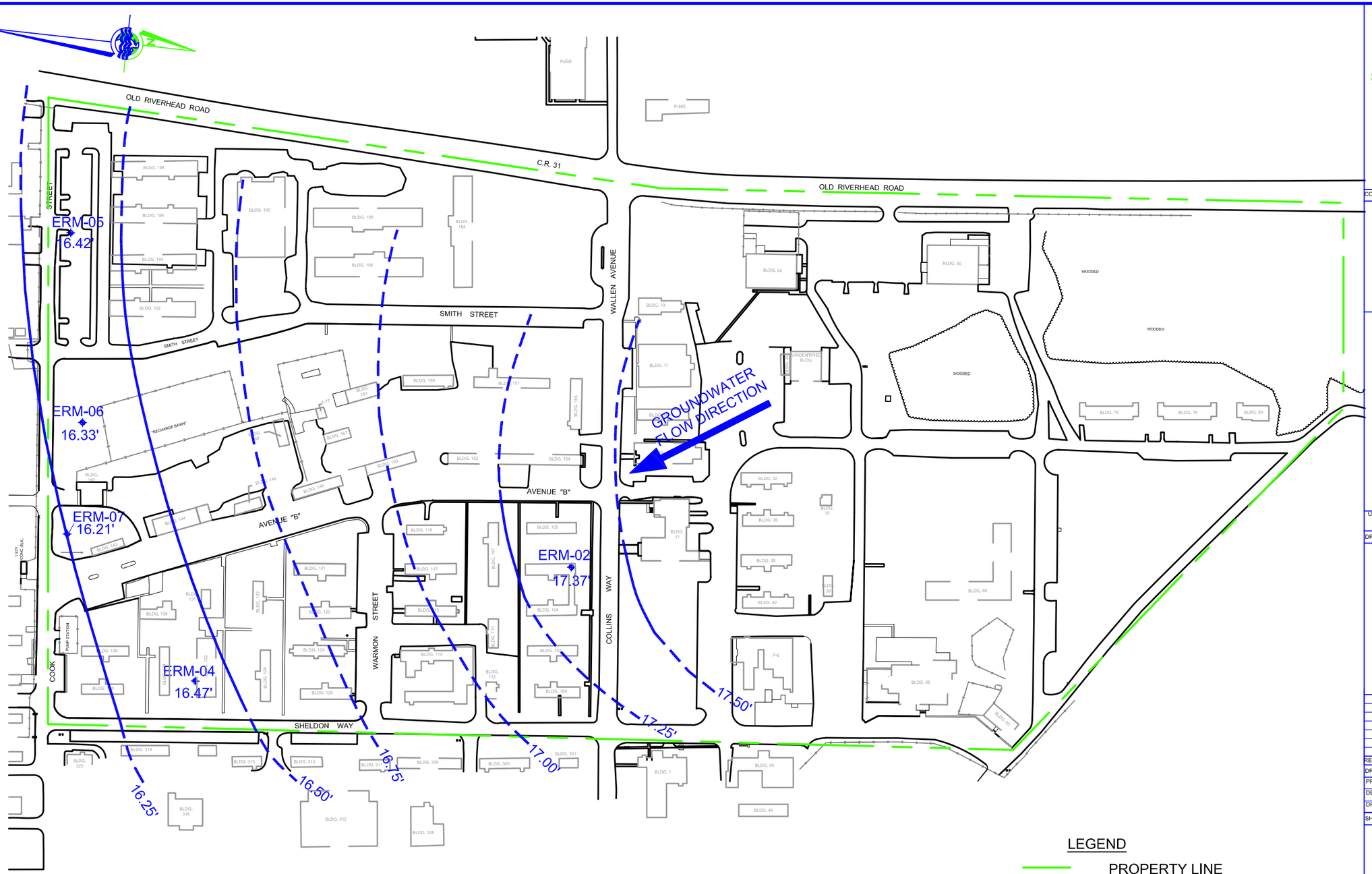
SITE PLAN
EXTENT OF IMPACT

FORMER BAUMAN BUS SITE
GABRESKI AIRPORT
WEST HAMPTON, NY

FIGURE NO 2

SHEET - OF -

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REVISED: NOV. 6, 2002

GROUNDWATER CONTOUR MAP

SCALE: 1" = 200'

LEGEND

- PROPERTY LINE
- FORMER BUILDING
- GROUNDWATER CONTOUR
- INFERRED GROUNDWATER CONTOUR
- 17.50' GROUNDWATER ELEVATION

0 200 400

SCALE: 1" = 200'

J:\Projects S-Z\SHD\1006 - Bauman Remedial Oversight\cad\Fig 4.dwg (11x17H) Sep 10,2010-3:04pm By: guzman

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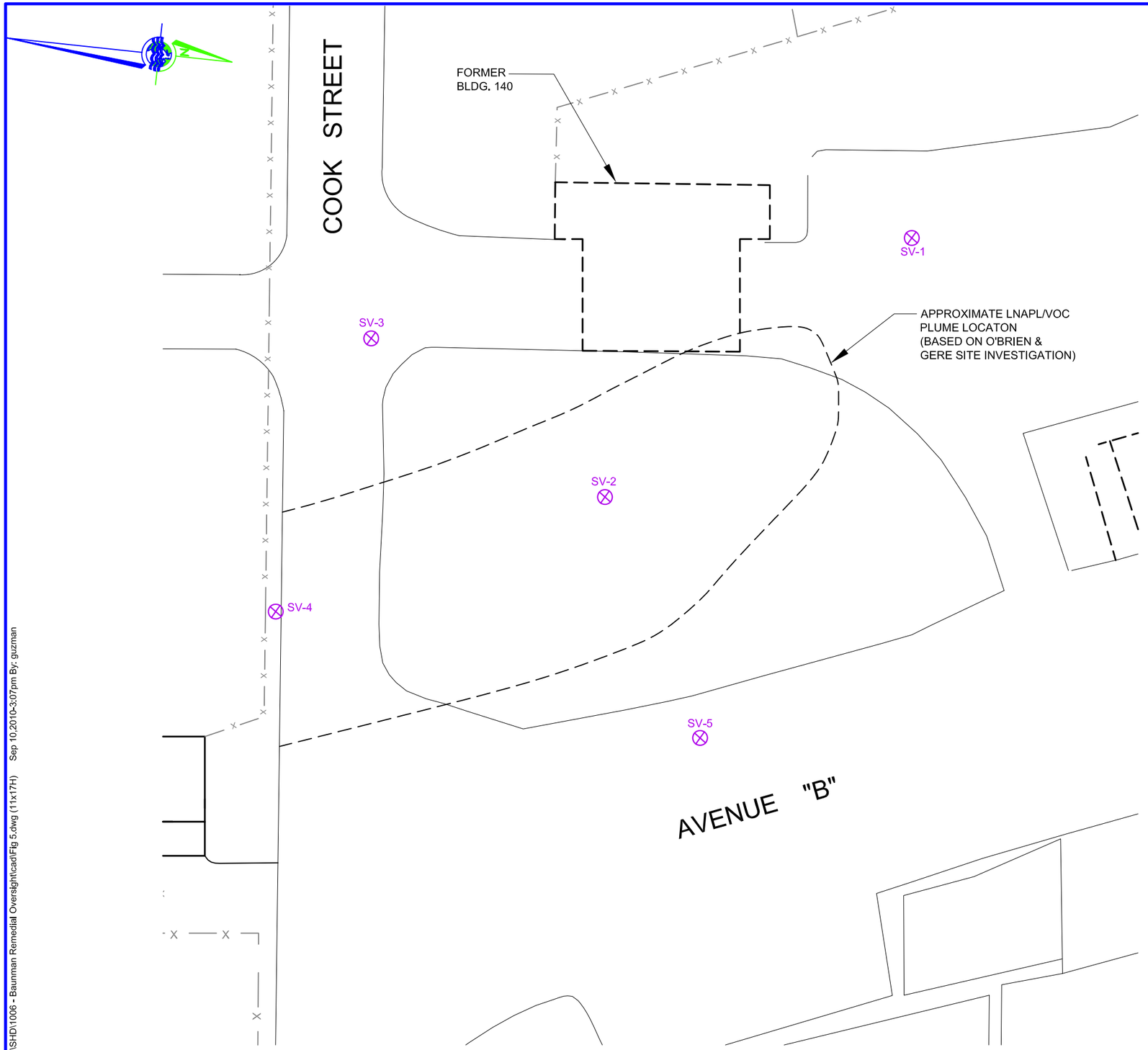
SHEET TITLE

GROUNDWATER CONTOUR MAP

FORMER BAUMAN BUS SITE
GABRESKI AIRPORT
WEST HAMPTON, NY

FIGURE NO 4

SHEET - OF -



LEGEND

⊗ SOIL GAS SAMPLING LOCATIONS

BASE MAP PROVIDED BY:
O'BRIEN & GERE
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SOIL VAPOR SAMPLE LOCATIONS

SCALE: 1" = 30'

0 30 60

SCALE: 1" = 30'

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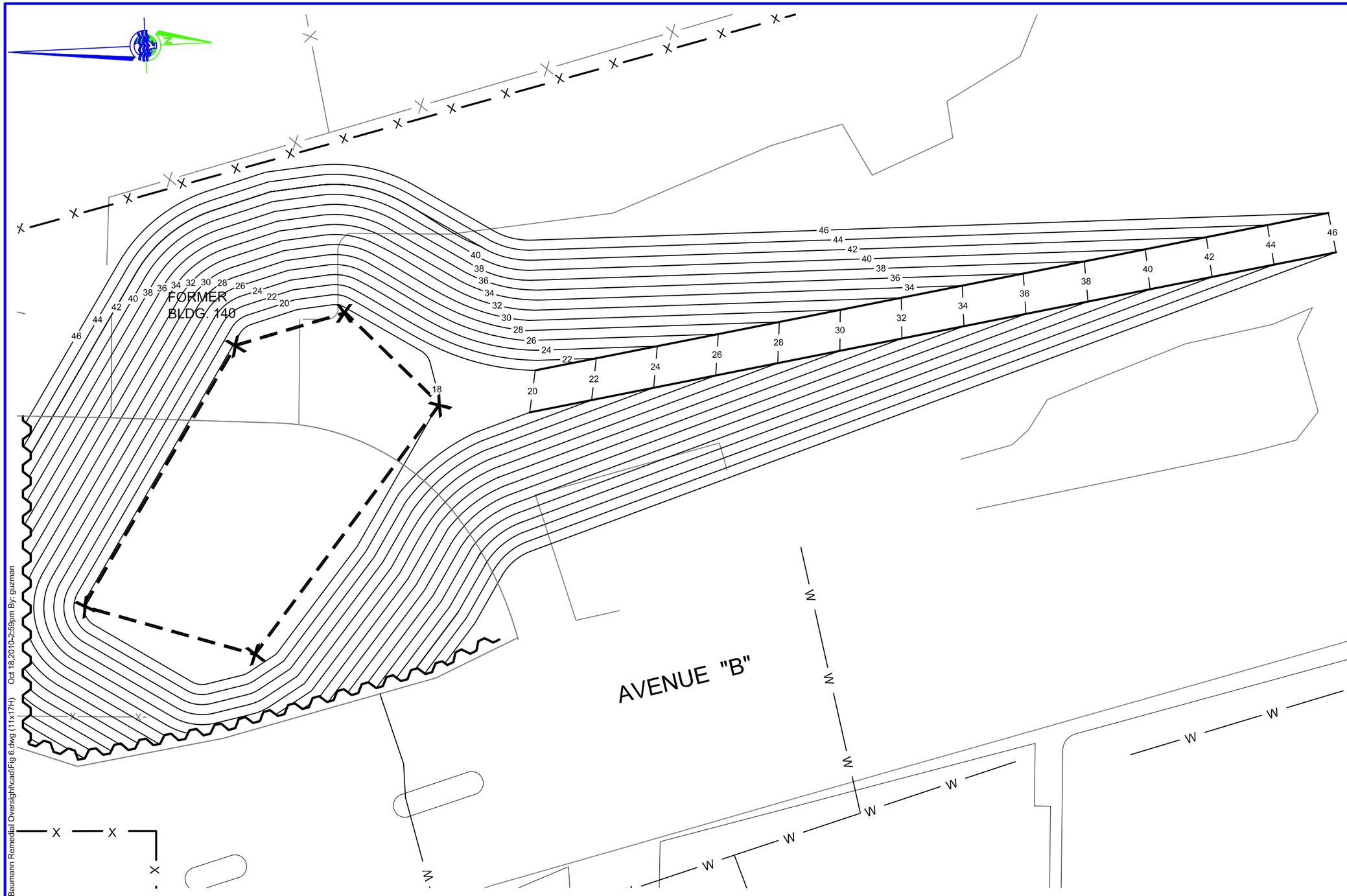
SHEET TITLE

SOIL VAPOR SAMPLE LOACTIONS

FORMER BAUMAN BUS SITE
GABRESKI AIRPORT
WEST HAMPTON, NY

FIGURE NO 5

SHEET - OF -



EXCAVATION EXTENTS

SCALE: 1" = 200'

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SHEET TITLE

EXCAVATION EXTENTS

REMEDIATION OF FORMER
BAUMANN BUS SITE
GABRESKI AIRPORT
WEST HAMPTON, NY

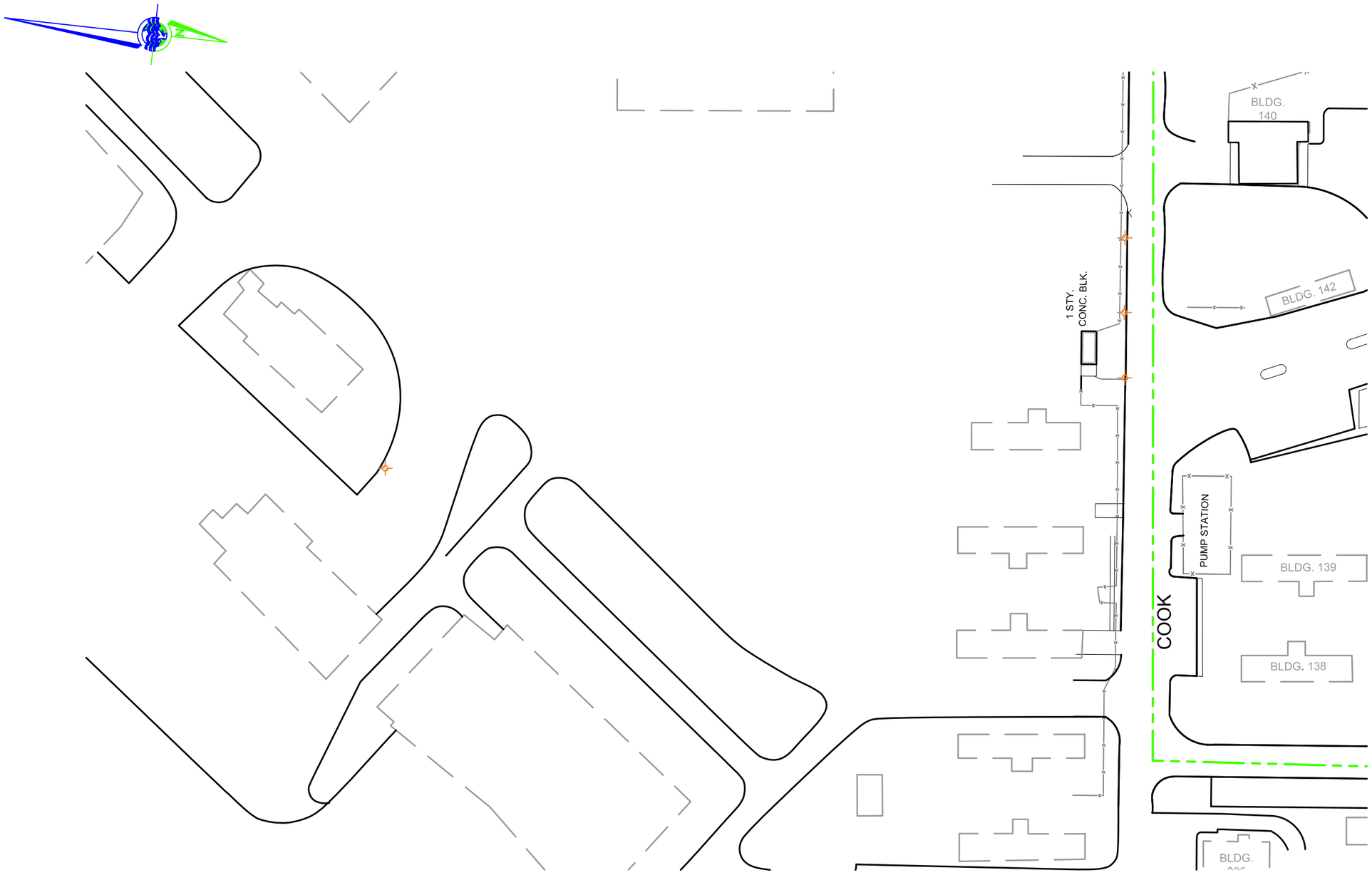
FIGURE NO

6

SHEET

- OF -

J:\Projects S-Z\SHD\1006 - Baumann Remedial Oversight\cad\Fig 6.dwg (11x17H) Oct 18,2010-2:59pm By: guzman



POST REMEDIATION MONITORING WELLS

SCALE: 1" = 80'

LEGEND

PROPERTY LINE

FORMER BUILDING

PROPOSED POST EXCAVATION MONITORING WELL

0 80 160

SCALE: 1" = 80'

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SHEET TITLE

POST REMEDIATION MONITORING WELLS

REMEDIATION OF FORMER BAUMAN BUS SITE
GABRESKI AIRPORT
WEST HAMPTON, NY

FIGURE NO

8

SHEET - OF -

J:\Projects S-Z\SHD\1006 - Baumann Remedial Oversight\cad\Fig 8.dwg (11X17) Oct 18,2010-4:04pm By: guzman

TABLES

Table 1
Soil Sample Analytical Data Summary
Volatile Semi-Volatile Organic Compounds

Client Sample ID:				VD-1		VD-1		VD-1		VD-2		VD-2		VD-2		VD-3		VD-3		VD-3		HD-1		HD-1		HD-2		HD-3		HD-4		HD-5		HD-6		HD-7		HD-8		HD-9		HD-10		HD-11		HD-11		HD-11		HD-12		HD-13		HD-14		HD-15		HD-16		HD-17	
Sample Depth:	Rec. Soil Cleanup Objective [1]	Restricted Residential SCO [2]	Restricted Commercial SCO [2]	(32.5-35)		(37.5-40)		(40-45)		(32.5-35)		(40-42.5)		(42.5-45)		(32.5-35)		(35-37.5)		(47.5-50)		(32.5-35)		(40-45)		(32.5-35)		(32.5-35)		(32.5-35)		(32.5-35)		(30-32.5)		(32.5-35)		(30-32.5)		(30-32.5)		(25-30)		(32.5-35)		(35-40)		(40-42.5)		(30-32.5)		(25-30)		(32.5-35)		(32.5-35)		(32.5-35)		(32.5-35)	
Laboratory ID:				A2925-01		A2925-02		A2925-03		A2925-04		A2925-05		A2972-01		A2972-02		A2972-03		A2972-04		A2972-06		A2972-07		A2990-01		A2990-03		A2990-07		A2990-09		A3034-02		A3034-04		A3034-06		A3034-08		A3034-10		A3109-05		A3109-08		A3109-09		A3107-02		A3107-07		A3107-11		A3107-13		A3690-13		A3690-10	
Sampling Date:				5/28/2009		5/28/2009		5/28/2009		5/28/2009		5/28/2009		5/28/2009		5/29/2009		5/29/2009		5/29/2009		5/29/2009		5/29/2009		6/1/2009		6/1/2009		6/2/2009		6/2/2009		6/2/2009		6/3/2009		6/3/2009		6/4/2009		6/4/2009		6/9/2009		6/9/2009		6/9/2009		6/10/2009		6/10/2009		6/10/2009		6/10/2009		7/23/2009		7/23/2009	
Volatile Organic Compounds:																																																												
1,2,4-Trimethylbenzene	*10,000*	*52,000*	*190,000*	*120,000*	*D*	*0.62*	*UJ*	*300*	*JD*	*5,200*	*JD*	*22*		*0.62*	*UJ*	*48,000*	*D*	*0.62*	*UJ*	*0.62*	*UJ*	*26,000*	*D*	*0.57*	*UJ*	*8,300*		*0.61*	*UJ*	*56,000*	*D*	*1,300*		*59,000*	*D*	*82,000*	*D*	*36,000*	*D*	*5,300*		*0.61*	*UJ*	*18,000*		*13*		*0.62*	*UJ*	*180*	*J*	*0.53*	*UJ*	*510*	*J*	*5,000*	*D*	*47,000*	*D*	*45*	
1,3,5-Trimethylbenzene	*3,300*	*52,000*	*190,000*	*46,000*	*D*	*0.56*	*UJ*	*120*	*JD*	*1,900*	*JD*	*6.8*		*0.56*	*UJ*	*17,000*		*0.56*	*UJ*	*0.56*	*UJ*	*9,800*		*0.51*	*UJ*	*4,000*		*0.55*	*UJ*	*18,000*		*580*	*J*	*21,000*		*32,000*	*D*	*12,000*		*2,000*		*0.55*	*UJ*	*6,600*		*5.4*	*J*	*0.56*	*UJ*	*66*	*UJ*	*0.47*	*UJ*	*180*	*J*	*2,000*	*D*	*19,000*	*D*	*29*	
Benzene	*60 or MDL*	*4,800*	*44,000*	*47*	*U*	*0.48*	*UJ*	*0.49*	*UJ*	*0.48*	*UJ*	*0.48*	*UJ*	*0.48*	*UJ*	*45*	*UJ*	*0.47*	*UJ*	*0.47*	*UJ*	*49*	*UJ*	*0.43*	*UJ*	*46*	*UJ*	*0.46*	*UJ*	*48*	*UJ*	*48*	*UJ*	*46*	*UJ*	*47*	*UJ*	*47*	*UJ*	*51*	*UJ*	*0.46*	*UJ*	*47*	*UJ*	*0.45*	*UJ*	*0.47*	*UJ*	*46*	*UJ*	*0.4*	*UJ*	*48*	*UJ*	*46*	*UJ*	*720*	*U*	*5.8*	*U*	
Ethyl Benzene	*5,500*	*41,000*	*390,000*	*33,000*	*D*	*0.78*	*UJ*	*140*		*550*	*JD*	*1.6*	*J*	*0.78*	*UJ*	*1,900*		*0.77*	*UJ*	*0.77*	*UJ*	*310*	*J*	*0.7*	*UJ*	*76*		*0.76*	*UJ*	*3,850*		*79*	*UJ*	*9,300*		*7,900*		*7,200*		*1,400*		*0.76*	*UJ*	*1,900*		*0.74*	*UJ*	*0.77*	*UJ*	*76*	*UJ*	*0.65*	*UJ*	*79*	*UJ*	*220*	*JD*	*3,900*		*5.8*	*U*	
Cumene (Isopropylbenzene)	*2,300*	*NS*	*NS*	*12,000*		*0.6*	*UJ*	*79*		*480*	*JD*	*1.6*	*J*	*0.6*	*UJ*	*4,100*		*0.59*	*UJ*	*0.59*	*UJ*	*2,500*		*0.55*	*UJ*	*850*		*0.59*	*UJ*	*2,900*		*67*	*UJ*	*6,900*		*7,400*		*3,800*		*590*	*J*	*0.59*	*UJ*	*2,200*		*1.2*	*J*	*0.59*	*UJ*	*65*	*UJ*	*0.51*	*UJ*	*67*	*UJ*	*570*	*JD*	*6,700*		*5.8*	*U*	
m + p Xylene	*1,200* [a]	*100,000* [a]	*500,000* [a]	*160,000*	*D*	*0.9*	*UJ*	*230*	*JD*	*3,500*	*JD*	*18*		*0.9*	*UJ*	*11,000*		*0.89*	*UJ*	*0.89*	*UJ*	*2,500*		*0.82*	*UJ*	*140*	*UJ*	*0.88*	*UJ*	*52,000*	*D*	*140*	*UJ*	*43,000*	*D*	*36,000*		*29,000*		*6,000*		*0.88*	*UJ*	*11,000*		*3*	*J*	*0.89*	*UJ*	*140*	*UJ*	*0.76*	*UJ*	*140*	*UJ*	*1,500*	*D*	*22,000*		*12*	*U*	
ter.ButylMethylEther	*120*	*100,000* [a]	*500,000* [a]	*51*	*UJ*	*1.2*	*UJ*	*1.2*	*UJ*	*1.2*	*UJ*	*1.2*	*UJ*	*1.2*	*UJ*	*50*	*UJ*	*1.2*	*UJ*	*1.2*	*UJ*	*53*	*UJ*	*1.1*	*UJ*	*50*	*UJ*	*1.1*	*UJ*	*51*	*UJ*	*52*	*UJ*	*50*	*UJ*	*51*	*UJ*	*51*	*UJ*	*56*	*UJ*	*1.2*	*UJ*	*51*	*UJ*	*1.1*	*UJ*	*1.2*	*UJ*	*50*	*UJ*	*1*	*UJ*	*52*	*UJ*	*50*	*UJ*	*720*	*U*	*5.8*	*U*	
Naphthalene(v)	*13,000*	*100,000* [a]	*500,000* [a]	*17,000*		*0.56*	*UJ*	*150*		*1,300*	*JD*	*24*		*0.56*	*UJ*	*3,300*		*0.56*	*UJ*	*0.56*	*UJ*	*1,600*		*0.51*	*UJ*	*96*	*UJ*	*0.55*	*UJ*	*4,500*		*100*	*UJ*	*6,100*		*7,100*		*5,200*		*1,100*		*0.55*	*UJ*	*1,900*		*2.2*	*J*	*0.56*	*UJ*	*260*	*J*	*0.47*	*UJ*	*100*	*UJ*	*570*	*JD*	*6,600*		*5.8*	*U*	
n-Butylbenzene	*10,000*	*NS*	*500,000* [a]	*17,000*		*0.57*	*UJ*	*160*		*800*	*D*	*4*	*J*	*0.57*	*UJ*	*6,200*		*0.57*	*UJ*	*0.57*	*UJ*	*4,400*		*0.52*	*UJ*	*4,800*		*0.56*	*UJ*	*6,500*		*3,900*		*9,100*		*12,000*		*3,900*		*66*	*UJ*	*0.56*	*UJ*	*2,400*		*0.55*	*UJ*	*0.57*	*UJ*	*650*	*J*	*0.48*	*UJ*	*11,000*		*59*	*UJ*	*14,000*		*5.8*	*U*	
n-Propylbenzene	*3,700*	*100,000* [a]	*500,000* [a]	*19,000*		*0.45*	*UJ*	*150*		*880*	*D*	*3.2*	*J*	*0.45*	*UJ*	*7,600*		*0.44*	*UJ*	*0.44*	*UJ*	*4,800*		*0.41*	*UJ*	*2,100*		*0.44*	*UJ*	*8,700*		*750*		*11,000*		*13,000*		*5,900*		*860*		*0.44*	*UJ*	*3,500*		*2.1*	*J*	*0.44*	*UJ*	*65*	*UJ*	*0.38*	*UJ*	*760*		*1,000*	*D*	*12,000*		*9.2*		
o Xylene	*1,200* [a]	*100,000* [a]	*500,000* [a]	*50,000*	*D*	*0.85*	*UJ*	*240*		*800*	*D*	*5.1*	*J*	*0.85*	*UJ*	*2,700*		*0.84*	*UJ*	*0.84*	*UJ*	*66*	*UJ*	*0.77*	*UJ*	*62*	*UJ*	*0.83*	*UJ*	*13,000*		*64*	*UJ*	*12,000*		*9,700*		*11,000*		*2,200*		*0.83*	*UJ*	*3,000*		*0.81*	*UJ*	*0.84*	*UJ*	*62*	*UJ*	*0.72*	*UJ*	*64*	*UJ*	*160*	*JD*	*3,300*		*5.8*	*U*	
p-Isopropyltoluene	*10,000*	*NS*	*NS*	*25,000*	*D*	*0.36*	*UJ*	*170*		*1,100*	*D*	*0.37*	*UJ*	*0.36*	*UJ*	*9,900*		*0.36*	*UJ*	*0.36*	*UJ*	*6,800*		*0.33*	*UJ*	*7,200*		*0.35*	*UJ*	*3,700*		*2,000*		*12,000*		*18,000*		*6,700*		*1,100*		*0.35*	*UJ*	*3,500*		*0.35*	*UJ*	*0.36*	*UJ*	*520*	*J*	*0.31*	*UJ*	*3,300*		*1,100*	*D*	*8,100*		*56*		
sec-Butylbenzene	*10,000*	*100,000* [a]	*500,000* [a]	*11,000*		*0.65*	*UJ*	*70*		*380*	*JD*	*0.66*	*UJ*	*0.65*	*UJ*	*3,300*		*0.64*	*UJ*	*0.64*	*UJ*	*2,400*		*0.59*	*UJ*	*2,500*		*0.63*	*UJ*	*1,700*		*1,000*		*4,700*		*6,300*		*2,600*		*400*	*J*	*0.63*	*UJ*	*1,400*		*0.62*	*UJ*	*0.64*	*UJ*	*310*	*J*	*0.55*	*UJ*	*2,400*		*440*	*JD*	*7,500*		*20*		
tert-Butylbenzene	*10,000*	*100,000* [a]	*500,000* [a]	*680*	*J*	*0.74*	*UJ*	*0.76*	*UJ*	*0.75*	*UJ*	*0.75*	*UJ*	*0.74*	*UJ*	*62*	*UJ*	*0.73*	*UJ*	*0.73*	*UJ*	*67*	*UJ*	*0.67*	*UJ*	*63*	*UJ*	*0.72*	*UJ*	*65*	*UJ*	*65*	*UJ*	*63*	*UJ*	*64*	*UJ*	*71*	*UJ*	*0.72*	*UJ*	*65*	*UJ*	*63*	*UJ*	*0.73*	*UJ*	*63*	*UJ*	*0.62*	*UJ*	*65*	*UJ*	*63*	*UJ*	*160*	*JD*	*720*	*U*	*5.8*	*U*	
Toluene	*1,500*	*100,000* [a]	*500,000* [a]	*5,600*		*0.8*	*UJ*	*58*		*0.81*	*UJ*	*0.81*	*UJ*	*0.8*	*UJ*	*53*	*UJ*	*0.79*	*UJ*	*0.79*	*UJ*	*56*	*UJ*	*0.73*	*UJ*	*53*	*UJ*	*0.78*	*UJ*	*55*	*UJ*	*55*	*UJ*	*53*	*UJ*	*54*	*UJ*	*54*	*UJ*	*59*	*UJ*	*0.78*	*UJ*	*54*	*UJ*	*0.76*	*UJ*	*0.79*	*UJ*	*53*	*UJ*	*0.67*	*UJ*	*55*	*UJ*	*53*	*UJ*	*720*	*U*	*5.8*	*U*	
Total VOCs	*NS*	*NS*		*516,280*		*ND*		*1867*		*16,890*		*86.3*		*ND*		*115,000*		*ND*		*ND*		*61,110*		*ND*		*29,750*		*ND*		*170,800*		*9,530*		*194,100*		*231,400*		*123,300*		*20,950*		*ND*		*55,400*		*27*		*ND*		*1,920*		*ND*		*18,150*		*12,560*		*150,100*		*159*	
Semi-Volatile Organic Compounds:																																																												
Acenaphthene	*50,000*	*100,000* [a]	*500,000* [a]	*69*	*UJ*	*12*	*UJ*	*12*	*UJ*	*12*	*UJ*	*12*	*UJ*	*12*	*UJ*	*210*	*J*	*12*	*UJ*	*12*	*UJ*	*47*	*J*	*11*	*UJ*	*11*	*UJ*	*11*	*UJ*	*11*	*UJ*	*57*	*J*	*150*	*J*	*11*	*UJ*	*11*	*UJ*	*12*	*UJ*	*11*	*UJ*	*9.9*	*UJ*	*11*	*UJ*	*11*	*UJ*	*12*	*UJ*	*11*	*UJ*	*9.9*	*UJ*	*110*	*UJ*	*NA*		*NA*	
Anthracene	*50,000*	*100,000* [a]	*500,000* [a]	*140*	*J*	*8.5*	*UJ*	*8.7*	*UJ*	*8.6*	*UJ*	*8.6*	*UJ*	*8.5*	*UJ*	*64*	*J*	*8.4*	*UJ*	*8.4*	*UJ*	*89*	*J*	*7.7*	*UJ*	*7.8*	*UJ*	*8.3*	*UJ*	*8.1*	*UJ*	*43*	*J*	*7.8*	*UJ*	*8*	*UJ*	*8.3*	*UJ*	*7.9*	*UJ*	*8.7*	*UJ*	*8.3*	*UJ*	*8*	*UJ*	*8.1*	*UJ*	*8.4*	*UJ*	*7.8*	*UJ*	*7.1*	*UJ*	*78*	*UJ*	*NA*		*NA*	
Benzo(a)anthracene	*224 or MDL*	*1,000* [f]	*5,600*	*54*	*U*	*20*	*UJ*	*20*	*UJ*	*20*	*UJ*	*20*	*UJ*	*20*	*UJ*	*18*	*UJ*	*20*	*UJ*	*20*	*UJ*	*19*	*UJ*	*18*	*UJ*	*18*	*UJ*	*19*	*UJ*	*19*	*UJ*	*19*	*UJ*	*18*	*UJ*	*19*	*UJ*	*19*	*UJ*	*19*	*UJ*	*20*	*UJ*	*18*	*UJ*	*17*	*UJ*	*19*	*UJ*	*19*	*UJ*	*18*	*UJ*	*17*	*UJ*	*19*	*UJ*	*180*	*UJ*	*NA*		*NA*	
Benzo(a)pyrene	*61 or MDL*	*1,000* [f]	*1,000* [f]	*62*	*UJ*	*9*	*UJ*	*9.2*	*UJ*	*9.1*	*UJ*	*9.1*	*UJ*	*9*	*UJ*	*8.2*	*UJ*	*8.9*	*UJ*	*8.9*	*UJ*	*8.7*	*UJ*	*8.2*	*UJ*	*8.3*	*UJ*	*8.7*	*UJ*	*8.6*	*UJ*	*8.5*	*UJ*	*8.3*	*UJ*	*8.5*	*UJ*	*8.3*	*UJ*	*9.2*	*UJ*	*8.7*	*UJ*	*8.5*	*UJ*	*8.5*	*UJ*	*8.9*	*UJ*	*8.3*	*UJ*	*7.6*	*UJ*	*8.5*	*UJ*	*83*	*UJ*	*NA*		*NA*	
Benzo(b)fluoranthene	*220 or MDL*	*1,000* [f]	*5,600*	*43*	*UJ*	*14*	*UJ*	*14*	*UJ*	*14*	*UJ*	*14*	*UJ*	*14*	*UJ*	*12*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*12*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*14*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*11*	*UJ*	*13*	*UJ*	*120*	*UJ*	*NA*		*NA*	
Benzo(g,h,i)perylene	*50,000*	*100,000* [a]	*500,000* [a]	*64*	*UJ*	*17*	*UJ*	*17*	*UJ*	*17*	*UJ*	*17*	*UJ*	*17*	*UJ*	*15*	*UJ*	*17*	*UJ*	*17*	*UJ*	*16*	*UJ*	*15*	*UJ*	*15*	*UJ*	*16*	*UJ*	*16*	*UJ*	*16*	*UJ*	*15*	*UJ*	*16*	*UJ*	*16*	*UJ*	*17*	*UJ*	*16*	*UJ*	*16*	*UJ*	*16*	*UJ*	*16*	*UJ*	*17*	*UJ*	*15*	*UJ*	*14*	*UJ*	*16*	*UJ*	*150*	*UJ*	*NA*		*NA*	
Benzo(k)fluoranthene	*220 or MDL*	*3,900*	*56,000*	*86*	*UJ*	*20*	*UJ*	*20*	*UJ*	*20*	*UJ*	*20*	*UJ*	*20*	*UJ*	*18*	*UJ*	*19*	*UJ*	*19*	*UJ*	*19*	*UJ*	*18*	*UJ*	*18*	*UJ*	*19*	*UJ*	*19*	*UJ*	*19*	*UJ*	*18*	*UJ*	*19*	*UJ*	*19*	*UJ*	*20*	*UJ*	*19*	*UJ*	*18*	*UJ*	*19*	*UJ*	*19*	*UJ*	*19*	*UJ*	*18*	*UJ*	*16*	*UJ*	*18*	*UJ*	*180*	*UJ*	*NA*		*NA*	
Chrysene	*400*	*3,900*	*56,000*	*70*	*UJ*	*19*	*UJ*	*19*	*UJ*	*18*	*UJ*	*19*	*UJ*	*19*	*UJ*	*17*	*UJ*	*19*	*UJ*	*18*	*UJ*	*18*	*UJ*	*17*	*UJ*	*17*	*UJ*	*18*	*UJ*	*18*	*UJ*	*18*	*UJ*	*17*	*UJ*	*18*	*UJ*	*18*	*UJ*	*18*	*UJ*	*18*	*UJ*	*17*	*UJ*	*17*	*UJ*	*18*	*UJ*	*18*	*UJ*	*17*	*UJ*	*16*	*UJ*	*18*	*UJ*	*170*	*UJ*	*NA*		*NA*	
Dibenzo(a,h)anthracene	*14.3 or MDL*	*330* [c]	*560*	*49*	*UJ*	*12*	*UJ*	*12*	*UJ*	*12*	*UJ*	*12*	*UJ*	*12*	*UJ*	*11*	*UJ*	*12*	*UJ*	*12*	*UJ*	*12*	*UJ*	*11*	*UJ*	*11*	*UJ*	*11*	*UJ*	*11*	*UJ*	*11*	*UJ*	*11*	*UJ*	*11*	*UJ*	*11*	*UJ*	*11*	*UJ*	*12*	*UJ*	*11*	*UJ*	*11*	*UJ*	*11*	*UJ*	*12*	*UJ*	*11*	*UJ*	*10*	*UJ*	*11*	*UJ*	*110*	*UJ*	*NA*		*NA*	
Fluoranthene	*50,000*	*100,000* [a]	*500,000* [a]	*58*	*UJ*	*8.4*	*UJ*	*8.6*	*UJ*	*8.5*	*UJ*	*8.5*	*UJ*	*8.3*	*UJ*	*7.6*	*UJ*	*8.2*	*UJ*	*8.3*	*UJ*	*8.1*	*UJ*	*7.6*	*UJ*	*7.7*	*UJ*	*8.1*	*UJ*	*8*	*UJ*	*95*	*J*	*7.7*	*UJ*	*7.9*	*UJ*	*7.8*	*UJ*	*8.6*	*UJ*	*8.1*	*UJ*	*7.9*	*UJ*	*8*	*UJ*	*8.2*	*UJ*	*7.7*	*UJ*	*7*	*UJ*	*110*	*J*	*77*	*UJ*	*NA*		*NA*	
Fluorene	*50,000*	*100,000* [a]	*500,000* [a]	*940*		*16*	*UJ*	*16*	*UJ*	*16*	*UJ*	*16*	*UJ*	*16*	*UJ*	*460*		*15*	*UJ*	*16*	*UJ*	*98*	*J*	*14*	*UJ*	*250*	*J*	*15*	*UJ*	*15*	*UJ*	*82*	*J*	*280*	*J*	*260*	*J*	*82*	*J*	*16*	*UJ*	*15*	*UJ*	*95*	*J*	*15*	*UJ*	*16*	*UJ*	*44*	*J*	*13*	*UJ*	*15*	*UJ*	*480*	*J*	*NA*		*NA*	
Indeno(1,2,3-cd)pyrene	*3,200*	*500* [f]	*5,600*	*49*	*UJ*	*14*	*UJ*	*14*	*UJ*	*14*	*UJ*	*14*	*UJ*	*14*	*UJ*	*13*	*UJ*	*14*	*UJ*	*14*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*13*	*UJ*	*12*	*UJ*	*13*	*UJ*	*130*	*UJ*	*NA*		*NA*	
Phenanthrene	*50,000*	*100,000* [a]	*500,000* [a]	*1,300*		*14*	*UJ*	*12*	*UJ*	*46*	*J*	*11*	*UJ*	*11*	*UJ*	*500*		*11*	*UJ*	*11*	*UJ*	*110*	*J*	*10*	*UJ*	*210*	*J*	*11*	*UJ*	*11*	*UJ*	*190*	*J*	*330*	*J*	*280*	*J*	*78*	*J*	*12*	*UJ*	*11*	*UJ*	*120*	*J*	*11*	*UJ*	*11*	*UJ*	*86*	*J*	*9.4*	*UJ*	*160*	*J*	*570*	*J*	*NA*		*NA*	
Pyrene	*50,000*	*100,000* [a]	*500,000* [a]	*94*	*J*	*10*	*UJ*	*10*	*UJ*	*10*	*UJ*	*10*	*UJ*	*10*	*UJ*	*9.1*	*UJ*	*9.8*	*UJ*	*9.9*	*UJ*	*9.7*	*UJ*	*9.1*	*UJ*	*9.2*	*UJ*	*9.7*	*UJ*	*9.1*	*UJ*	*63*	*J*	*9.2*	*UJ*	*9.4*	*UJ*	*9.3*	*UJ*	*10*	*UJ*	*9.7*	*UJ*	*9.4*	*UJ*	*9.5*	*UJ*	*9.9*	*UJ*	*9.2*	*UJ*	*8.4*	*UJ*	*93*	*J*	*92*	*UJ*	*NA*		*NA*	

Client Sample ID:				HD-22		HD-23		HD-24		HD-25		HD-26		HD-27		HD-28		HD-29		HD-30		OWS-Center		OWS-Center		OWS-WEST		OWS-SOUTH		OWS-EAST		OWS-NORTH		SB-1		SB-1		SB-2		SB-2		SB-3		SB-3		SB-4		SB-4		SB-5		SB-5		SB-7		SB-7		SB-10		SB-10	
Sample Depth:	Rec. Soil Cleanup Objective [1]	Restricted Residential SCO [2]	Restricted Commercial SCO [2]	(32.5-35)		(27.5-30)		(27.5-30)		(27.5-30)		(27.5-30)		(27.5-30)		(27.5-30)		(30-32.5)		(32.5-35)		(7.5-10)		(32.5-35)		(27.5-30)		(32.5-35)		(32.5-35)		(32.5-35)		(30-32.5)		(30-32.5)		(30-32.5)		(30-32.5)		(30-32.5)		(30-32.5)		(30-32.5)		(30-32.5)		(30-32.5)		(30-32.5)		(30-32.5)		(30-32.5)		(30-32.5)		(30-32.5)		(30-32.5)	
Laboratory ID:				A3690-15		A3811-05		A3811-03		A3811-01		A3811-15		A3811-20		A3811-22		A3811-27		A3811-02		A3034-13		A3034-14		A3075-02		A3075-04		A3075-03		A3075-06		L1002325-01		L1002329-01		L1002325-02		L1002329-02		L1002325-03		L1002329-03		L1002325-04		L1002329-04		L1002325-05		L1002329-05		L1002583-01		L1002583-02		L1002583-03		L1002583-04		L1002583-00	
Sampling Date:				7/23/2009		7/22/2009		8/3/2009		8/3/2009		8/4/2009		8/4/2009		8/4/2009		8/4/2009		8/3/2009		6/4/2009		6/4/2009		6/5/2009		6/5/2009		6/5/2009		6/8/2009		2/12/2010		2/13/2010		2/12/2010		2/13/2010		2/12/2010		2/13/2010		2/12/2010		2/13/2010		2/12/2010		2/13/2010		2/19/2010		2/19/2010		2/19/2010		2/19/2010	
Volatile Organic Compounds:																																																												
1,2,4-Trimethylbenzene	*10,000*	*52,000*	*190,000*	*360*	*J*	*5.3*	*U*	*6*	*U*	*6*	*U*	*5.5*	*U*	*5.6*	*U*	*5.4*	*U*	*6.2*	*U*	*6,300*	*D*	*0.53*	*UJ*	*9,100*		*0.52*	*U*	*59*	*U*	*5,400*		*4,500*		*56,000*		*76*		*62,000*		*15*	*U*	*35,000*		*15*	*U*	*20,000*		*23*		*36,000*		*600*		*60,000*		*63*		*130,000*		*350*	
1,3,5-Trimethylbenzene	*3,300*	*52,000*	*190,000*	*160*	*J*	*5.3*	*U*	*6*	*U*	*6*	*U*	*5.5*	*U*	*5.6*	*U*	*5.4*	*U*	*6.2*	*U*	*2,200*	*D*	*0.48*	*UJ*	*3,100*		*0.47*	*U*	*71*	*U*	*2,000*		*1,800*		*21,000*		*28*		*24,000*		*15*	*U*	*14,000*		*15*	*U*	*7,800*		*15*	*U*	*12,000*		*200*		*27,000*		*260*		*49,000*		*140*	
Benzene	*60 or MDL*	*4,800*	*44,000*	*740*	*U*	*5.3*	*U*	*6*	*U*	*6*	*U*	*5.5*	*U*	*5.6*	*U*	*5.4*	*U*	*6.2*	*U*	*770*	*UJ*	*0.4*	*UJ*	*47*	*UJ*	*0.4*	*U*	*49*	*U*	*48*	*U*	*50*	*U*	*1,200*	*U*	*3.1*	*U*	*1,200*	*U*	*3*	*U*	*290*	*U*	*3.1*	*U*	*300*	*U*	*2.9*	*U*	*300*	*U*	*3.1*	*U*		
Ethyl Benzene	*5,500*	*41,000*	*390,000*	*740*	*U*	*5.3*	*U*	*6*	*U*	*6*	*U*	*5.5*	*U*	*5.6*	*U*	*5.4*	*U*	*6.2*	*U*	*240*	*JD*	*0.44*	*UJ*	*940*		*0.43*	*U*	*82*	*U*	*80*	*U*	*83*	*U*	*15,000*		*24*		*17,000*		*3*	*U*	*2,700*		*3*	*U*	*2,600*		*6.2*		*18,000*		*54*		*25,000*		*71*		
Cumene (Isopropylbenzene)	*2,300*	*NS*	*NS*	*740*	*U*	*5.3*	*U*	*6*	*U*	*6*	*U*	*5.5*	*U*	*5.6*	*U*	*5.4*	*U*	*6.2*	*U*	*630*	*JD*	*0.51*	*UJ*	*1,400*		*0.5*	*U*	*620*	*J*	*520*	*J*	*370*	*J*	*4,800*		*5.4*		*6,000*		*3*	*U*	*5,000*		*3.1*	*U*	*2,100*		*3*	*U*	*1,200*		*25*		*6,000*		*46*		*12,000*		*37*		
m + p Xylene	*1,200* [a]	*100,000* [a]	*500,000* [a]	*1,500*	*U*	*11*	*U*	*12*	*U*	*12*	*U*	*11*	*U*	*11*	*U*	*11*	*U*	*12*	*U*	*1,200*	*JD*	*0.77*	*UJ*	*4,800*		*0.75*	*U*	*150*	*U*	*1,300*	*J*	*330*	*J*	*64,000*		*6.2*	*U*	*81,000*		*6*	*U*	*600*		*6.2*	*U*	*13,000*		*6.1*	*U*	*3,200*		*6.2*	*U*	*600*	*U*	*5.8*	*U*	*600*	*U*	*6.2*	*U*		
ter.ButylMethylEther	*120*	*100,000* [a]	*500,000* [a]	*740*	*U*	*5.3*	*U*	*6*	*U*	*6*	*U*	*5.5*	*U*	*5.6*	*U*	*5.4*	*U*	*6.2*	*U*	*770*	*UJ*	*1*	*UJ*	*51*	*UJ*	*1*	*U*	*54*	*U*	*53*	*U*	*55*	*U*	*2,300*	*U*	*14*		*2,400*	*U*	*6.3*		*590*	*U*	*6.8*		*600*	*U*	*6.8*		*1,100*	*U*	*54*		*10,000*		*96*		*18,000*		*55*		
Naphthalene(v)	*13,000*	*100,000* [a]	*500,000* [a]	*160*	*J*	*5.3*	*U*	*6*	*U*	*6*	*U*	*5.5*	*U*	*5.6*	*U*	*5.4*	*U*	*6.2*	*U*	*800*	*D*	*0.48*	*UJ*	*1,600*		*0.47*	*U*	*100*	*U*	*500*	*J*	*680*	*J*	*19,000*		*11*		*19,000*		*3*	*U*	*3,300*		*3.1*	*U*	*4,800*		*3*	*U*	*4,000*		*97*		*13,000*		*100*		*24,000*		*70*		
n-Butylbenzene	*10,000*	*NS*	*500,000* [a]	*740*	*U*	*5.3*	*U*	*6*	*U*	*6*	*U*	*5.5*	*U*	*5.6*	*U*	*5.4*	*U*	*6.2*	*U*	*1,400*	*D*	*0.49*	*UJ*	*2,100*		*0.48*	*U*	*63*	*U*	*62*	*U*	*64*	*U*	*8,700*		*41*		*8,900*		*25*		*8,700*		*15*	*U*	*2,300*		*28*		*3,900*		*41*		*16,000*		*240*		*22,000*		*64*		
n-Propylbenzene	*3,700*	*100,000* [a]	*500,000* [a]	*740*	*U*	*5.3*	*U*	*6*	*U*	*6*	*U*	*5.5*	*U*	*5.6*	*U*	*5.4*	*U*	*6.2*	*U*	*1,100*	*D*	*0.38*	*UJ*	*2,400*		*0.38*	*U*	*940*		*960*		*810*		*9,500*		*48*		*11,000*		*6*	*U*	*12,000*		*6*	*U*	*5,400*		*6.1*	*U*	*5,400*		*6.2*	*U*	*29,000*		*110*		*42,000*		*120*		
o Xylene	*1,200* [a]	*100,000* [a]	*500,000* [a]	*740*	*U*	*5.3*	*U*	*6*	*U*	*6*	*U*	*5.5*	*U*	*5.6*	*U*	*5.4*	*U*	*6.2*	*U*	*220*	*JD*	*0.72*	*UJ*	*1,200*		*0.71*	*U*	*66*	*U*	*65*	*U*	*67*	*U*	*24,000*		*8.8*		*30,000*		*5*		*590*	*U*	*5.2*		*3,000*		*5.7*		*1,100*	*U*	*17*		*5,600*		*53*		*10,000*		*32*		
p-Isopropyltoluene	*10,000*	*NS*	*NS*	*740*	*U*	*5.3*	*U*	*6*	*U*	*6*	*U*	*5.5*	*U*	*5.6*	*U*	*5.4*	*U*	*6.2*	*U*	*830*	*D*	*0.31*	*UJ*	*3,200*		*0.3*	*U*	*1,600*		*1,000*		*1,000*		*5,100*		*110*		*5,500*		*6*	*U*	*3,100*		*6.2*	*U*	*1,900*		*13*		*3,200*		*95*		*76,000*		*290*		*110,000*		*340*		
sec-Butylbenzene	*10,000*	*100,000* [a]	*500,000* [a]	*740*	*U*	*5.3*	*U*	*6*	*U*	*6*	*U*	*5.5*	*U*	*5.6*	*U*	*5.4*	*U*	*6.2*	*U*	*810*	*D*	*0.55*	*UJ*	*1,400*		*0.55*	*U*	*990*		*360*	*J*	*390*	*J*	*3,800*		*4.6*		*4,200*		*3*	*U*	*3,800*		*3.1*	*U*	*1,600*		*3*	*U*	*940*		*14*		*4,900*		*46*		*9,700*		*32*		
tert-Butylbenzene	*10,000*	*100,000* [a]	*500,000* [a]	*740*	*U*	*5.3*	*U*	*6*	*U*	*6*	*U*	*5.5*	*U*	*5.6*	*U*	*5.4*	*U*	*6.2*	*U*	*770*	*UJ*	*0.63*	*UJ*	*64*	*UJ*	*0.62*	*U*	*68*	*U*	*66*	*U*	*69*	*U*	*5,800*	*U*	*15*	*U*	*5,900*	*U*	*15*	*U*	*1,500*	*U*	*15*	*U*	*

TABLE 2
SOIL ANALYTICAL RESULTS FOR
VOLATILE ORGANIC COMPOUNDS
EPA METHOD 8260

Client Sample ID:	Rec. Soil Cleanup Objective[1]	Restricted Residential SCO[2]	COMMERCIAL	INDUSTRIAL	SB-1	SB-1	SB-1	SB-2	SB-2	SB-2
Sample Depth:			SCO (2)	SCO (2)	5'	10-15'	25'	5'	10-15'	25'
Laboratory ID:					L1002327-01	L1002327-02	L1002327-03	L1002327-04	L1002327-05	L1002327-06
Sampling Date:					2/12/2010	2/12/2010	2/12/2010	2/12/2010	2/12/2010	2/12/2010
Volatile Organic Compounds:										
1112Tetrachloroethane	NS	NS	NS	NS	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
111 Trichloroethane	800	100,000[a]	500,000[b]	1,000,000[c]	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
1122Tetrachloroethane	600	NS	NS	NS	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
112 Trichloroethane	NS	NS	NS	NS	3.9 U	3.9 U	3.9 U	4 U	3.9 U	3.9 U
1,1 Dichloroethane	200	26,000	240,000	480,000	3.9 U	3.9 U	3.9 U	4 U	3.9 U	3.9 U
1,1 Dichloroethene	400	100,000[a]	500,000[b]	1,000,000[c]	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
1,1-Dichloropropene	NS	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
123-Trichlorobenzene	NS	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
123-Trichloropropane	400	NS	NS	NS	26 U	26 U	26 U	26 U	26 U	26 U
1245 Tetramethylbenz	NS	NS	NS	NS	10 U	10 U	10 U	11 U	10 U	10 U
124-Trichlorobenzene	3,400	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
124-Trimethylbenzene	10,000	52,000	190,000	380,000	13 U	13 U	13 U	13 U	13 U	13 U
12 Dibromo 3 chloropropane	NS	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
1,2 Dibromoethane	NS	NS	NS	NS	10 U	10 U	10 U	11 U	10 U	10 U
1,2 Dichlorobenzene	7,900	100,000[a]	500,000[b]	1,000,000[c]	13 U	13 U	13 U	13 U	13 U	13 U
1,2 Dichloroethane	100	3,100	30,000	60,000	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
1,2 Dichloropropane	NS	NS	NS	NS	9.1 U	9.1 U	9.1 U	9.3 U	9.1 U	9.1 U
135-Trimethylbenzene	3,300	52,000	190,000	380,000	13 U	13 U	13 U	13 U	13 U	13 U
1,3 Dichlorobenzene	1,600	49,000	280,000	560,000	13 U	13 U	13 U	13 U	13 U	13 U
1,3-Dichloropropane	300	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
1,4 Dichlorobenzene	8,500	13,000	130,000	250,000	13 U	13 U	13 U	13 U	13 U	13 U
1,4 Diethylbenzene	NS	NS	NS	NS	10 U	10 U	10 U	11 U	10 U	10 U
2,2-Dichloropropane	NS	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
2-Butanone	300	100,000[a]	500,000[b]	1,000,000[c]	26 U	26 U	26 U	26 U	26 U	26 U
2-Hexanone	NS	NS	NS	NS	26 U	26 U	26 U	26 U	26 U	26 U
4-Ethyltoluene	NS	NS	NS	NS	10 U	10 U	10 U	11 U	10 U	10 U
4-Methyl-2-pentanone	1,000	NS	NS	NS	26 U	26 U	26 U	26 U	26 U	26 U
Acetone	200	100,000[a]	500,000[b]	1,000,000[c]	26 U	26 U	26 U	26 U	26 U	26 U
Acrylonitrile	NS	NS	NS	NS	26 U	26 U	26 U	26 U	26 U	26 U
Benzene	60 or MDL	4,800	44,000	89,000	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Bromobenzene	NS	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
Bromochloromethane	NS	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
Bromodichloromethane	NS	NS	NS	NS	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Bromoform	NS	NS	NS	NS	10 U	10 U	10 U	11 U	10 U	10 U
Bromomethane	NS	NS	NS	NS	5.2 U	5.2 U	5.2 U	5.3 U	5.2 U	5.2 U
Carbon Disulfide	2,700	NS	NS	NS	26 U	26 U	26 U	26 U	26 U	26 U
Carbon Tetrachloride	600	2,400	22,000	44,000	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Chlorobenzene	1,700	100,000[a]	500,000[b]	1,000,000[c]	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Chloroethane	1900	NS	NS	NS	5.2 U	5.2 U	5.2 U	5.3 U	5.2 U	5.2 U
Chloroform	300	49,000	350,000	700,000	3.9 U	3.9 U	3.9 U	4 U	3.9 U	3.9 U
Chloromethane	NS	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
c-1,2-Dichloroethene	NS	100,000[a]	500,000[b]	1,000,000[c]	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
c-1,3Dichloropropene	NS	NS	NS	NS	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Dibromochloromethane	NS	NS	NS	NS	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Dibromomethane	NS	NS	NS	NS	26 U	26 U	26 U	26 U	26 U	26 U
Dichlordifluoromethane	NS	NS	NS	NS	26 U	26 U	26 U	26 U	26 U	26 U
Ethyl ether	NS	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
Ethyl Benzene	5,500	41,000	390,000	780,000	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Hexachlorobutadiene	NS	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
Isopropylbenzene	2,300	NS	NS	NS	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
ter.ButylMethylEther	120	100,000[a]	500,000[b]	1,000,000[c]	5.2 U	5.2 U	5.2 U	5.3 U	5.2 U	5.2 U
Methylene Chloride	100	100,000[a]	500,000[b]	1,000,000[c]	26 U	26 U	26 U	26 U	26 U	26 U
n-Butylbenzene	10,000	NS	NS	NS	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
n-Propylbenzene	3,700	100,000[a]	500,000[b]	1,000,000[c]	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Naphthalene	13,000	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
o Chlorotoluene	NS	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
o Xylene	1,200	100,000[a]	500,000[b]	1,000,000[c]	5.2 U	5.2 U	5.2 U	5.3 U	5.2 U	5.2 U
p-chlorotoluene	NS	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
p-Isopropyltoluene	NS	NS	NS	NS	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
m + p Xylene	1,200	100,000[a]	500,000[b]	1,000,000[c]	5.2 U	5.2 U	5.2 U	5.3 U	5.2 U	5.2 U
sec-Butylbenzene	10,000	100,000[a]	500,000[b]	1,000,000[c]	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Styrene	NS	NS	NS	NS	5.2 U	5.2 U	5.2 U	5.3 U	5.2 U	5.2 U
tert-Butylbenzene	10,000	100,000[a]	500,000[b]	1,000,000[c]	13 U	13 U	13 U	13 U	13 U	13 U
Tetrachloroethene	1,400	19,000	150,000	300,000	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Toluene	1,500	100,000[a]	500,000[b]	1,000,000[c]	3.9 U	3.9 U	3.9 U	4 U	3.9 U	3.9 U
t-1,2-Dichloroethene	300	100,000[a]	500,000[b]	1,000,000[c]	3.9 U	3.9 U	3.9 U	4 U	3.9 U	3.9 U
t-1,3Dichloropropene	NS	NS	NS	NS	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
t-1,4Dichloro-2-butene	NS	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
Trichloroethylene	700	21,000	200,000	400,000	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Trichlorofluoromethane	NS	NS	NS	NS	13 U	13 U	13 U	13 U	13 U	13 U
Vinyl acetate	NS	NS	NS	NS	26 U	26 U	26 U	26 U	26 U	26 U
Vinyl Chloride	200	900	13,000	27,000	5.2 U	5.2 U	5.2 U	5.3 U	5.2 U	5.2 U

Notes:

All concentrations are ug/kg (ppb)

(1) NYSDEC Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels 4046

(2) NYSDEC 6 NYCRR Environmental Remediation Programs Part Restriced Use of Soil Cleanup Objective Table 375-6.8b 12/06

a - The SCO for residential, restricted residential and ecological resources use were capped at a maximum value of 100,000 ppb.

b - The SCOs for commercial use were capped at a maximum value of 500 ppm.

c - The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm.

f - For constituents where the calculated SCO was lower than the rural soil background concentration, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

U - Indicates that the analyte was not detected above the laboratory MDL

J - Indicates an estimated value

B - Indicates the analyte was detected in the method blank

D - The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.

NS - Not Specified

NA - Not Analyzed

Yellow highlighted values indicate exceedance of RSCO

Orange highlighted values indicate exceedance of Restricted Residential SCO & RSCO

Table 3
Soil Analytical Resuls for Semi-Volatile Organic Compounds

Client Sample ID:	Rec. Soil Cleanup Objective[1]	Restricted Residential SCO[2]	COMMERCIAL SCO (2)	INDUSTRIAL SCO (2)	SB-1	SB-1	SB-1	SB-2	SB-2	SB-2
Sample Depth:					5'	10-15'	25'	5'	10-15'	25'
Laboratory ID:					L1002327-01	L1002327-02	L1002327-03	L1002327-04	L1002327-05	L1002327-06
Sampling Date:					2/12/2010	2/12/2010	2/12/2010	2/12/2010	2/12/2010	2/12/2010
Semi-Volatile Organic Compounds										
1245-Tetrachlorobenzene	NS	NS	NS	NS	1,400 U	1,400 U	1,300 U	1,400 U	1,400 U	1,400 U
124-Trichlorobenzene	NS	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
1,2 Dichlorobenzene	NS	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
1,3 Dichlorobenzene	NS	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
1,4 Dichlorobenzene	NS	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
2,4,5-Trichlorophenol	100	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
2,4,6-Trichlorophenol	NS	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
2,4,Dichlorophenol	400	NS	NS	NS	700 U	730 U	660 U	680 U	700 U	720 U
2,4-Dimethylphenol	NS	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
2,4-Dinitrophenol	200 or MDL	NS	NS	NS	1,400 U	1,400 U	1,300 U	1,400 U	1,400 U	1,400 U
2,4-Dinitrotoluene	NS	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
2,6-Dinitrotoluene	1000	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
2-Chlorophenol	800	NS	NS	NS	420 U	440 U	400 U	410 U	420 U	430 U
2-Methylphenol	100 or MDL	NS	NS	NS	420 U	440 U	400 U	410 U	420 U	430 U
2-Nitroaniline	430 or MDL	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
2-Nitrophenol	330 or MDL	NS	NS	NS	1,400 U	1,400 U	1,300 U	1,400 U	1,400 U	1,400 U
3,3'-Dichlorobenzidine	NS	NS	NS	NS	700 U	730 U	660 U	680 U	700 U	720 U
3+4-Methylphenol	900	NS	NS	NS	420 U	440 U	400 U	410 U	420 U	430 U
3-Nitroaniline	500 or MDL	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
4,6-Dinitro-o-cresol	NS	NS	NS	NS	1,400 U	1,400 U	1,300 U	1,400 U	1,400 U	1,400 U
4-Bromophenyl phenyl ether	NS	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
4-Chloroaniline	220 or MDL	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
4-Chlorophenyl phenyl ether	NS	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
4-Nitroaniline	NS	NS	NS	NS	490 U	510 U	460 U	480 U	490 U	500 U
4-Nitrophenol	100 or MDL	NS	NS	NS	700 U	730 U	660 U	680 U	700 U	720 U
Acetophenone	NS	NS	NS	NS	1,400 U	1,400 U	1,300 U	1,400 U	1,400 U	1,400 U
Benzoic acid	NS	NS	NS	NS	3,500 U	3,600 U	3,300 U	3,400 U	3,500 U	3,600 U
Benzyl alcohol	NS	NS	NS	NS	700 U	730 U	660 U	680 U	700 U	720 U
Biphenyl	NS	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
bis(2-Chloroethoxy)methane	NS	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
bis(2-Chloroethyl)ether	NS	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
bis(2-Chloroisopropyl)ether	NS	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
bis(2-Ethylhexyl)phthalate	50,000	NS	NS	NS	700 U	730 U	660 U	680 U	700 U	720 U
BenzylButylPhthalate	50,000	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
Carbazole	NS	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
Di-n-Butyl Phthalate	8,100	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
Di-n-octyl Phthalate	50,000	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
Dibenzofuran	6,200	59,000	350,000	1,000,000 [c]	350 U	360 U	330 U	340 U	350 U	360 U
Diethyl Phthalate	7,100	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
Dimethyl Phthalate	2,000	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
Hexachlorocyclopentadiene	NS	NS	NS	NS	700 U	730 U	660 U	680 U	700 U	720 U
Isophorone	4,400	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
N-Nitrosodi-n-propylamine	NS	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
Nitrobenzene	200 or MDL	NS	NS	NS	350 U	360 U	330 U	340 U	350 U	360 U
N-Nitrosodimethylamine	NS	NS	NS	NS	1,000 U	1,100 U	990 U	1,000 U	1,000 U	1,100 U
P-Chloro-M-Cresol	NS	100,000 [a]	500,000 [b]	1,000,000 [c]	350 U	360 U	330 U	340 U	350 U	360 U
Phenol	30 or MDL	100,000 [a]	500,000 [b]	1,000,000 [c]	490 U	510 U	460 U	480 U	490 U	500 U
2-Chloronaphthalene	NS	NS	NS	NS	14 U	14 U	13 U	14 U	14 U	14 U
2-Methylnaphthalene	36,400	NS	NS	NS	14 U	20	13 U	14 U	14 U	14 U
Acenaphthene	50,000	100,000 [a]	500,000 [b]	1,000,000 [c]	14 U	14 U	13 U	14 U	14 U	14 U
Acenaphthylene	50,000	100,000 [a]	500,000 [b]	1,000,000 [c]	14 U	14 U	13 U	14 U	14 U	14 U
Anthracene	50,000	100,000 [a]	500,000 [b]	1,000,000 [c]	14 U	14 U	13 U	14 U	14 U	14 U
Benzo(a)anthracene	224 or MDL	1,000 [f]	5,600	11,000	14 U	14 U	13 U	14 U	14 U	14 U
Benzo(a)pyrene	61 or MDL	1,000 [f]	1,000 [f]	1,100	14 U	14 U	13 U	14 U	14 U	14 U
Benzo(b)fluoranthene	1,100	1,000 [f]	5,600	11,000	14 U	14 U	13 U	14 U	14 U	14 U
Benzo(ghi)perylene	50,000	100,000 [a]	500,000 [b]	1,000,000 [c]	14 U	14 U	13 U	14 U	14 U	14 U
Benzo(k)fluoranthene	1,100	3,900	56,000	110,000	14 U	14 U	13 U	14 U	14 U	14 U
Chrysene	400	3,900	56,000	110,000	14 U	14 U	13 U	14 U	14 U	14 U
Dibenzo(a,h)anthracene	14 or MDL	330 [c]	560	1,100	14 U	14 U	13 U	14 U	14 U	14 U
Fluoranthene	50,000	100,000 [a]	500,000 [b]	1,000,000 [c]	14 U	14 U	13 U	14 U	14 U	14 U
Fluorene	50,000	100,000 [a]	500,000 [b]	1,000,000 [c]	14 U	14 U	13 U	14 U	14 U	14 U
Hexachlorobenzene	410	NS	NS	NS	56 U	58 U	53 U	54 U	56 U	58 U
Hexachlorobutadiene	NS	NS	NS	NS	35 U	36 U	33 U	34 U	35 U	36 U
Hexachloroethane	NS	NS	NS	NS	56 U	58 U	53 U	54 U	56 U	58 U
Indeno(1,2,3-cd)pyrene	3,200	500 [f]	5,600	11,000	14 U	14 U	13 U	14 U	14 U	14 U
Naphthalene	13,000	100,000 [a]	500,000 [b]	1,000,000 [c]	14 U	14 U	13 U	14 U	14 U	14 U
Pentachlorophenol	1,000 or MDL	6,700	6,700	55,000	56 U	58 U	53 U	54 U	56 U	58 U
Phenanthrene	50,000	100,000 [a]	500,000 [b]	1,000,000 [c]	14 U	14 U	13 U	14 U	14 U	14 U
Pyrene	50,000	100,000 [a]	500,000 [b]	1,000,000 [c]	14 U	14 U	13 U	14 U	14 U	14 U

Notes:

All concentrations are mg/kg (ppm)

(1) NYSDEC Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels 4046

(2) NYSDEC 6 NYCRR Environmental Remediation Programs Part Restriced Use of Soil Cleanup Objective Table 375-6.8b 12/06

a - The SCO for residential, restricted residential and ecological resources use were capped at a maximum value of 100,000 ppb.

b - The SCOs for commercial use were capped at a maximum value of 500 ppm.

c - The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm.

f - For constituents where the calculated SCO was lower than the rural soil background concentration, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

j - This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts).

U - Indicates that the analyte was not detected above the laboratory MDL

J - Indicates an estimated value

B - Indicates the analyte was detected in the method blank

D - The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.

NS - Not Specified

NA - Not Analyzed

Yellow highlighted values indicate exceedance of RSCO

Orange highlighted values indicate exceedance of Restricted Residential SCO & RSCO

Table 4
Soil Analytical Results for Metals

Client Sample ID: Sample Depth: Laboratory ID: Sampling Date:	Rec. Soil Cleanup Objective[1]	Eastern USA Background	Restricted Residential SCO[2]	COMMERCIAL SCO (2)	INDUSTRIAL SCO (2)	SB-1 5' L1002327-01 2/12/2010	SB-1 10-15' L1002327-02 2/12/2010	SB-1 25' L1002327-03 2/12/2010	SB-2 5' L1002327-04 2/12/2010	SB-2 10-15' L1002327-05 2/12/2010	SB-2 25' L1002327-06 2/12/2010
Primary Pollutant Metals											
Antimony as Sb	*SB*	*NS*	*NS*	*NS*	*NS*	2 U	1.9 U	2 U	2 U	1.8 U	1.8 U
Arsenic as As	*7.5 or SB*	*3-12*	*16 f*	*16 f*	*16 f*	0.54	0.38 U	0.4 U	0.67	0.35 U	0.37 U
Beryllium as Be	*0.16 or SB*	*0-1.75*	*72*	*590*	*2,700*	0.2 U	0.19 U	0.2 U	0.2 U	0.18 U	0.18 U
Cadmium as Cd	*1 or SB*	*0-1.1*	*4.3*	*9.3*	*60*	0.39 U	0.38 U	0.4 U	0.4 U	0.35 U	0.37 U
Chromium as Cr	*10 or SB*	*1.5-40*	*180*	*1,500*	*6,800*	1.5	2.4	3.7	3	1.7	1.2
Copper as Cu	*25 or SB*	*1-50*	*270*	*270*	*10,000 d*	0.71	0.9	1	0.94	0.64	0.84
Lead as Pb	*500*	*200-500*	*NS*	*NS*	*NS*	5.4	1.9 U	2 U	3.6	1.8 U	2.1
Mercury as Hg	*0.1*	*0.001-0.2*	*0.81 j*	*2.8 j*	*5.7 j*	0.08 U	0.07 U	0.08 U	0.08 U	0.07 U	0.07 U
Nickel as Ni	*13 or SB*	*0.5-25*	*310*	*310*	*10,000 d*	0.98 U	0.96 U	1 U	1.5	0.88 U	0.93 U
Selenium as Se	*2 or SB*	*0.1-3.9*	*180*	*1,500*	*6,800*	0.79 U	0.77 U	0.8 U	0.81 U	0.7 U	0.74 U
Silver as Ag	*SB*	*SB*	*180*	*1,500*	*6,800*	0.39 U	0.38 U	0.4 U	0.4 U	0.35 U	0.37 U
Thallium as Tl	*SB*	*SB*	*NS*	*NS*	*NS*	0.79 U	0.77 U	0.8 U	0.81 U	0.7 U	0.74 U
Zinc as Zn	*20 or SB*	*9-50*	*10,000 d*	*10,000 d*	*10,000 d*	24	2.1	2	3.9	1.8 U	2.3

Notes:

All concentrations are mg/kg (ppm)

(1) NYSDEC Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels 4046

(2) NYSDEC 6 NYCRR Environmental Remediation Programs Part Restriced Use of Soil Cleanup Objective Table 375-6.8b 12/06

a - The SCO for residential, restricted residential and ecological resources use were capped at a maximum value of 100,000 ppb.

b - The SCOs for commercial use were capped at a maximum value of 500 ppm.

c - The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm.

d - The SCOs for metals were capped at a maximum value of 10,000 ppm.

f - For constituents where the calculated SCO was lower than the rural soil background concentration, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

j - This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts).

U - Indicates that the analyte was not detected above the laboratory MDL

J - Indicates an estimated value

B - Indicates the analyte was detected in the method blank

D - The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.

NS - Not Specified

NA - Not Analyzed

Yellow highlighted values indicate exceedance of RSCO and Eastern USA Background Levels

Orange highlighted values indicate exceedance of Restricted Residential SCO & RSCO

Table 5
Soil Analytical result for Pesticides / PCBs

Client Sample ID:	Rec. Soil Cleanup Objective[1]	Restricted Residential SCO[2]	COMMERCIAL SCO (2)	INDUSTRIAL SCO (2)	SB-1	SB-1	SB-1	SB-2	SB-2	SB-2
Sample Depth:					5'	10-15'	25'	5'	10-15'	25'
Laboratory ID:					L1002327-01	L1002327-02	L1002327-03	L1002327-04	L1002327-05	L1002327-06
Sampling Date:					2/12/2010	2/12/2010	2/12/2010	2/12/2010	2/12/2010	2/12/2010
Pesticides										
4,4-DDD	3	13	92	180	0.00984 U	0.0101 U	0.0106 U	0.0109 U	0.011 U	0.0103 U
4,4-DDE	2	8.9	62	120	0.0148 U	0.0151 U	0.0158 U	0.0164 U	0.0165 U	0.0155 U
4,4-DDT	2	7.9	47	94	0.0148 U	0.0151 U	0.0158 U	0.0164 U	0.0165 U	0.0155 U
Aldrin	0.041	0.097	0.68	1.4	0.00984 U	0.0101 U	0.0106 U	0.0109 U	0.011 U	0.0103 U
alpha-BHC	0.11	0.48	3.4	6.8	0.00328 U	0.00335 U	0.00352 U	0.00364 U	0.00368 U	0.00344 U
beta-BHC	0.2	0.36	3	14	0.00984 U	0.0101 U	0.0106 U	0.0109 U	0.011 U	0.0103 U
Chlordane	0.54	4.2	24	47	0.064 U	0.0654 U	0.0686 U	0.0711 U	0.0717 U	0.067 U
delta-BHC	0.3	100 (a)	500 (b)	1,000 (c)	0.00984 U	0.0101 U	0.0106 U	0.0109 U	0.011 U	0.0103 U
Dieldrin	0.044	0.2	1.4	2.8	0.00492 U	0.00503 U	0.00528 U	0.00547 U	0.00551 U	0.00516 U
Endosulfan I	0.9	24 (d)	200 (d)	920 (d)	0.00984 U	0.0101 U	0.0106 U	0.0109 U	0.011 U	0.0103 U
Endosulfan II	0.9	24 (d)	200 (d)	920 (d)	0.0148 U	0.0151 U	0.0158 U	0.0164 U	0.0165 U	0.0155 U
Endosulfan Sulfate	1	24 (d)	200 (d)	920 (d)	0.00328 U	0.00335 U	0.00352 U	0.00364 U	0.00368 U	0.00344 U
Endrin	0.1	11	89	410	0.00328 U	0.00335 U	0.00352 U	0.00364 U	0.00368 U	0.00344 U
Endrin ketone	NS	NS	NS	NS	0.00984 U	0.0101 U	0.0106 U	0.0109 U	0.011 U	0.0103 U
Heptachlor	0.1	2.1	15	29	0.00394 U	0.00402 U	0.00422 U	0.00437 U	0.00441 U	0.00412 U
Heptachlor epoxide	0.02	NS	NS	NS	0.0148 U	0.0151 U	0.0158 U	0.0164 U	0.0165 U	0.0155 U
Lindane	0.06	1.3	9.2	23	0.00328 U	0.00335 U	0.00352 U	0.00364 U	0.00368 U	0.00344 U
Methoxychlor	10	NS	NS	NS	0.0148 U	0.0151 U	0.0158 U	0.0164 U	0.0165 U	0.0155 U
trans-Chlordane	0.54	4.2	24	47	0.00984 U	0.0101 U	0.0106 U	0.0109 U	0.011 U	0.0103 U
PCBs										
Aroclor-1016	1*	1	1	25	0.0359 U	0.0369 U	0.0351 U	0.0342 U	0.0347 U	0.0341 U
Aroclor-1221	1*	1	1	25	0.0359 U	0.0369 U	0.0351 U	0.0342 U	0.0347 U	0.0341 U
Aroclor-1232	1*	1	1	25	0.0359 U	0.0369 U	0.0351 U	0.0342 U	0.0347 U	0.0341 U
Aroclor-1242	1*	1	1	25	0.0359 U	0.0369 U	0.0351 U	0.0342 U	0.0347 U	0.0341 U
Aroclor-1248	1*	1	1	25	0.0359 U	0.0369 U	0.0351 U	0.0342 U	0.0347 U	0.0341 U
Aroclor-1254	1*	1	1	25	0.0359 U	0.0369 U	0.0351 U	0.0342 U	0.0347 U	0.0341 U
Aroclor-1260	1*	1	1	25	0.0359 U	0.0369 U	0.0351 U	0.0342 U	0.0347 U	0.0341 U

Notes:
All concentrations are mg/kg (ppm)
(1) NYSDEC Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels 4046
(2) NYSDEC 6 NYCRR Environmental Remediation Programs Part Restriced Use of Soil Cleanup Objective Table 375-6.8b 12/06
a - The SCO for residential, restricted residential and ecological resources use were capped at a maximum value of 100,000 ppb.
b - The SCOs for commercial use were capped at a maximum value of 500 ppm.
c - The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm.
d - SCO is the sum of Endosulfan I, Endosulfan II, and endosulfan sulfate.
f - For constituents where the calculated SCO was lower than the rural soil background concentration, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.
**-NYSDEC recommended soil cleanup objectives for PCBs are 1.0 mg/kg for surface soils and 10 mg/kg for subsurface soils.*
U - Indicates that the analyte was not detected above the laboratory MDL
J - Indicates an estimated value
B - Indicates the analyte was detected in the method blank
D - The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
NS - Not Specified
NA - Not Analyzed
Yellow highlighted values indicate exceedance of RSCO
Orange highlighted values indicate exceedance of Restricted Residential SCO & RSCO

Table 6

Groundwaterl Sample Analytical Data Summary

Volatile Semi-Volatile Organlc Compounds

Client Sample ID:	NYSDEC	VD-1(GW)	VD-1(GW)	VD-2(GW)	VD-2(GW)	VD-3(GW)	VD-3(GW)	HD-1(GW)	HD-2(GW)	HD-3(GW)	HD-4(GW)	HD-5(GW)	HD-6(GW)
Sample Depth:	AWQS [1]	34-38'	42-46'	28-32'	40-44'	29-33'	41-45'	30-34'	30-34'	30-34'	30-34'	30-34'	30-34'
Laboratory ID:		A2925-08	A2925-09	A2925-10	A2925-11	A2972-08	A2972-09	A2972-10	A2992-02	A2992-04	A2992-08	A2992-10	A3034-01
Sampling Date:		5/28/2009	5/28/2009	5/28/2009	5/28/2009	5/29/2009	5/29/2009	5/29/2009	6/1/2009	6/1/2009	6/2/2009	6/2/2009	6/3/2009
Volatile Organic Compounds:													
124-Trimethylbenzene	5	0.38 UJ	53	670 D	8.6	410 D	2.1	770	610 D	530 D	1,200 D	74	920
1,3,5-Trimethylbenzene	5	0.46 UJ	10	140	1.1	120	0.46 UJ	270	190	99	340 D	30	330
Benzene	1	0.32 UJ	0.32 UJ	0.32 UJ	0.32 UJ	0.32 UJ	0.32 UJ	16 UJ	0.32 UJ	0.32 UJ	0.32 UJ	0.32 UJ	3.2 UJ
Ethyl Benzene	5	0.53 UJ	36	670 D	2.5	140	0.53 UJ	39 J	3.8	19	240 D	0.53 UJ	360
Cumene (Isopropylbenzene)	5	0.45 UJ	10	16	1.3	64	0.45 UJ	87	61	32	190	8.6	120
m + p Xylene	5	0.95 UJ	86	2,100 D	8.4	580 D	1.1 J	290	28	110	2,800 D	1.2 J	1,500
ter.ButylMethylEther	10	0.35 UJ	0.35 UJ	0.35 UJ	0.35 UJ	0.35 UJ	0.35 UJ	18 UJ	0.35 UJ	0.35 UJ	0.35 UJ	0.35 UJ	3.5 UJ
Naphthalene(v)	5	0.67 UJ	25	65	7.2	110	0.95 J	110	16	29	270 D	0.67 UJ	180
n-Propylbenzene	5	0.45 UJ	14	5	1.8	18	0.41 UJ	52	100	80	150 D	60	160
n-Butylbenzene	10	0.41 UJ	7	9	1 J	84	0.45 UJ	110	0.41 UJ	0.41 UJ	110	120	4.1 UJ
o Xylene	5	0.43 UJ	46	880 D	4.2	190 D	0.43 UJ	55	1.3	3.6	910 D	0.43 UJ	450
p-Isopropyltoluene	5	0.43 UJ	11	30	1.6	40	0.43 UJ	100	78	13	81	67	82
sec-Butylbenzene	5	0.46 UJ	5	0.46 UJ	0.69 J	14	0.46 UJ	32 J	31	11	0.46 UJ	35	36
tert-Butylbenzene	5	0.44 UJ	0.44 UJ	2	0.44 UJ	1.6	0.44 UJ	22 UJ	0.44 UJ	0.44 UJ	0.44 UJ	0.44 UJ	4.4 UJ
Toluene	5	0.37 UJ	31	460 D	0.78 J	80	0.37 UJ	18 UJ	0.37 UJ	0.37 UJ	0.37 UJ	0.37 UJ	3.7 UJ
Total VOCs	NS	BDL	334	5,047	39	1,852	4	1,915	1,119	927	6,291	396	4,138
Semi-Volatile Organic Compounds:													
Acenaphthene	20	0.21 UJ	0.24 UJ	0.21 UJ	0.21 UJ	0.22 UJ	0.21 UJ	0.21 UJ	0.26 UJ	0.25 UJ	0.26 UJ	1.7 J	0.21 UJ
Anthracene	50	0.16 UJ	0.18 UJ	0.16 UJ	0.16 UJ	0.17 UJ	0.16 UJ	0.16 UJ	0.2 UJ	0.19 UJ	0.2 UJ	0.19 UJ	0.16 UJ
Benzo(a)anthracene	0.002	0.16 UJ	0.18 UJ	0.16 UJ	0.16 UJ	0.17 UJ	0.16 UJ	0.16 UJ	0.2 UJ	0.19 UJ	0.2 UJ	0.19 UJ	0.16 UJ
Benzo(a)pyrene	0.002	0.14 UJ	0.16 UJ	0.14 UJ	0.14 UJ	0.15 UJ	0.14 UJ	0.14 UJ	0.17 UJ	0.17 UJ	0.17 UJ	0.16 UJ	0.14 UJ
Benzo(b)fluoranthene	0.002	0.29 UJ	0.33 UJ	0.29 UJ	0.3 UJ	0.3 UJ	0.29 UJ	0.29 UJ	0.35 UJ	0.35 UJ	0.35 UJ	0.34 UJ	0.3 UJ
Benzo(g,h,i)perylene	5	0.29 UJ	0.33 UJ	0.29 UJ	0.3 UJ	0.3 UJ	0.29 UJ	0.29 UJ	0.35 UJ	0.35 UJ	0.35 UJ	0.34 UJ	0.3 UJ
Benzo(k)fluoranthene	0.002	0.18 UJ	0.21 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.22 UJ	0.22 UJ	0.22 UJ	0.21 UJ	0.18 UJ
Chrysene	0.002	0.18 UJ	0.21 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.22 UJ	0.22 UJ	0.22 UJ	0.21 UJ	0.18 UJ
Dibenzo(a,h)anthracene	50	0.42 UJ	0.48 UJ	0.42 UJ	0.43 UJ	0.44 UJ	0.42 UJ	0.42 UJ	0.51 UJ	0.51 UJ	0.51 UJ	0.49 UJ	0.43 UJ
Fluoranthene	50	0.4 UJ	0.46 UJ	0.4 UJ	0.41 UJ	0.42 UJ	0.4 UJ	0.4 UJ	0.49 UJ	0.48 UJ	0.49 UJ	1.4 J	0.41 UJ
Fluorene	50	0.31 UJ	0.36 UJ	1 J	0.32 UJ	0.32 UJ	0.31 UJ	1.8 J	0.38 UJ	0.37 UJ	0.38 UJ	2 J	2.1 J
Indeno(1,2,3-cd)pyrene	0.002	0.15 UJ	0.17 UJ	0.15 UJ	0.15 UJ	0.16 UJ	0.15 UJ	0.15 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.15 UJ
Phenanthrene	50	0.26 UJ	0.3 UJ	1.1 J	0.27 UJ	0.27 UJ	0.26 UJ	1.4 J	0.32 UJ	0.31 UJ	0.32 UJ	3.9 J	2.3 J
Pyrene	50	0.2 UJ	0.23 UJ	0.2 UJ	0.2 UJ	0.21 UJ	0.2 UJ	0.2 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.24 UJ	0.2 UJ

Table 6

Groundwaterl Sample Analytical Data Summary

Volatile Semi-Volatile Organlc Compounds

Client Sample ID:	NYSDEC	HD-17(GW)	HD-18(GW)	HD-19(GW)	HD-20(GW)	HD-21(GW)	HD-22(GW)	HD-23(GW)	HD-24(GW)	HD-25(GW)	HD-26(GW)	HD-27(GW)	HD-28(GW)
Sample Depth:	AWQS [1]	29-33	29-33	29-33	29-33	29-33	29-33	29-33	29-33	29-33	29-33	29-33	29-33
Laboratory ID:		A3690-11	A3690-08	A3519-02	A3690-02	A3519-04	A3690-16	A3690-05	A3811-06	A3811-10	A3811-18	A3811-21	A3811-26
Sampling Date:		7/23/2009	7/23/2009	7/10/2009	7/22/2009	7/10/2009	7/23/2009	7/22/2009	8/3/2009	8/3/2009	8/4/2009	8/4/2009	8/4/2009
Volatile Organic Compounds:													
124-Trimethylbenzene	5	16	1 U	1 U	2.3	80	180 D	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	5	7.4	1 U	1 U	1 U	37	130	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethyl Benzene	5	1 U	1 U	1 U	1 U	1 U	97	1 U	1 U	1 U	1 U	1 U	1 U
Cumene (Isopropylbenzene)	5	1.4	1 U	1 U	16	6.4	51	1 U	1 U	1 U	1 U	1 U	1 U
m + p Xylene	5	2 U	2 U	2 U	2 U	2 U	120	2 U	2 U	2 U	2 U	2 U	2 U
ter.ButylMethylEther	10	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene(v)	5	1 U	1 U	1 U	1.7	2	110	1 U	1 U	2.3	1 U	1 U	1 U
n-Propylbenzene	5	4.7	1 U	1 U	19	15	66	1 U	1 U	1 U	1 U	1 U	1 U
n-Butylbenzene	10	3.7	16	1 U	11	18	1 U	1 U	1 U	1 U	1 U	1 U	1 U
o Xylene	5	1 U	1 U	1 U	1 U	1 U	1	1 U	1 U	1 U	1 U	1 U	1 U
p-Isopropyltoluene	5	3.4	1 U	1 U	21	23	12	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	5	3.3	4	1 U	19	8.4	13	1 U	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene	5	1 U	1 U	1 U	1.4	1.3	1.3	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	1 U	1 U	1 U	1 U	0.63 J	1 U	1 U	2	1 U	2.4	3.8	6.2
Total VOCs	NS	39.9	20	ND	91.4	191.73	781.3	ND	2	2.3	2.4	3.8	6.2
Semi-Volatile Organic Compounds:													
Acenaphthene	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

All concentrations are ug/L (ppb)

(1) Class GA Ambient Water Quality Standard (AWQS), NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1, Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998

U - Indicates that the analyte was not detected above the laboratory MDL

J - Indicates an estimated value

B - Indicates the analyte was detected in the method blank

D - The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.

NS - Not Specified

NA- Not Analyzed

Highlighted values indicate exceedance of AWQS

Table 6

Groundwaterl Sample Analytical Data Summary

Volatile Semi-Volatile Organlc Compounds

Client Sample ID:	NYSDEC	HD-7(GW)		HD-8(GW)		HD-9(GW)		HD-10(GW)		HD-11(GW)		HD-11(GW)		HD-12(GW)		HD-13(GW)		HD-14(GW)		HD-15(GW)	
Sample Depth:	AWQS [1]	30-34'		30-34'		29-33'		29-33'		29-33'		40-44'		29-33		29-33		29-33		29-33	
Laboratory ID:		A3034-03		A3034-05		A3034-09		A3034-12		A3109-10		A3109-11		A3107-04		A3107-09		A3107-12		A3107-14DL	
Sampling Date:		6/3/2009		6/3/2009		6/4/2009		6/4/2009		6/9/2009		6/9/2009		6/10/2009		6/10/2009		6/10/2009		6/10/2009	
Volatile Organic Compounds:																					
124-Trimethylbenzene	5	1,500		970		1,000		150		65		1.6		0.38	UJ	0.38	UJ	7		360	D
1,3,5-Trimethylbenzene	5	550		330		340		40		11		0.46	UJ	0.46	UJ	0.46	UJ	1.7		140	D
Benzene	1	3.2	UJ	3.2	UJ	3.2	UJ	3.2	UJ	0.32	UJ	0.32	UJ	0.32	UJ	0.32	UJ	0.32	UJ	1.6	UJ
Ethyl Benzene	5	640		900		960		70		29		0.53	UJ	0.53	UJ	0.53	UJ	0.53	UJ	29	D
Cumene (Isopropylbenzene)	5	190		160		140		28		37		0.45	UJ	0.45	UJ	0.45	UJ	1.4		42	D
m + p Xylene	5	2,200		2,400		2,900		250		62		9.1		0.95	UJ	0.95	UJ	0.95	UJ	170	D
ter.ButylMethylEther	10	3.5	UJ	3.5	UJ	3.5	UJ	3.5	UJ	0.35	UJ	0.35	UJ	0.35	UJ	0.35	UJ	0.35	UJ	1.8	UJ
Naphthalene(v)	5	310		270		330		60		32		2.9		0.67	UJ	1.1		0.67	UJ	43	D
n-Propylbenzene	5	270		190		160		37		12		5.2		13		0.41	UJ	59		25	D
n-Butylbenzene	10	110		34		44		9.8	J	44		1		1.3		0.45	UJ	12		64	D
o Xylene	5	420		1,100		1,400		79		21		0.43	UJ	0.43	UJ	0.43	UJ	0.43	UJ	21	D
p-Isopropyltoluene	5	190		77		84		22		15		0.43	UJ	8.8		0.43	UJ	23		42	D
sec-Butylbenzene	5	73		32		37		14		10		0.46	UJ	7.4		0.46	UJ	15		17	D
tert-Butylbenzene	5	4.4	UJ	4.4	UJ	4.4	UJ	4.4	UJ	1		0.44	UJ	0.44	UJ	0.44	UJ	0.44	UJ	2.2	UJ
Toluene	5	7.3	J	130		220		3.7	UJ	0.37	UJ	0.37	UJ	0.37	UJ	0.37	UJ	0.37	UJ	1.8	UJ
Total VOCs	NS	6,453		6,463		7,615		760		339		20		30.5		1.1		119		783	
Semi-Volatile Organic Compounds:																					
Acenaphthene	20	0.23	UJ	0.23	UJ	0.21	UJ	0.21	UJ	0.21	UJ	0.21	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ
Anthracene	50	0.18	UJ	0.17	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.21	UJ	0.2	UJ	0.21	UJ	0.21	UJ
Benzo(a)anthracene	0.002	0.18	UJ	0.17	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ
Benzo(a)pyrene	0.002	0.16	UJ	0.15	UJ	0.14	UJ	0.14	UJ	0.14	UJ	0.14	UJ	0.15	UJ	0.15	UJ	0.15	UJ	0.15	UJ
Benzo(b)fluoranthene	0.002	0.32	UJ	0.31	UJ	0.3	UJ	0.3	UJ	0.3	UJ	0.29	UJ	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ
Benzo(g,h,i)perylene	5	0.32	UJ	0.31	UJ	0.3	UJ	0.3	UJ	0.3	UJ	0.29	UJ	0.41	UJ	0.41	UJ	0.41	UJ	0.41	UJ
Benzo(k)fluoranthene	0.002	0.2	UJ	0.19	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.19	UJ	0.18	UJ	0.19	UJ	0.19	UJ
Chrysene	0.002	0.2	UJ	0.19	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.19	UJ	0.18	UJ	0.19	UJ	0.19	UJ
Dibenzo(a,h)anthracene	50	0.47	UJ	0.45	UJ	0.43	UJ	0.43	UJ	0.43	UJ	0.42	UJ	0.14	UJ	0.14	UJ	0.14	UJ	0.14	UJ
Fluoranthene	50	0.44	UJ	0.43	UJ	0.41	UJ	0.41	UJ	0.41	UJ	0.4	UJ	0.43	UJ	0.43	UJ	0.43	UJ	0.43	UJ
Fluorene	50	0.34	UJ	0.33	UJ	0.32	UJ	0.32	UJ	0.32	UJ	0.31	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ
Indeno(1,2,3-cd)pyrene	0.002	0.17	UJ	0.16	UJ	0.15	UJ	0.15	UJ	0.15	UJ	0.15	UJ	0.22	UJ	0.21	UJ	0.22	UJ	0.22	UJ
Phenanthrene	50	0.29	UJ	0.28	UJ	0.27	UJ	0.27	UJ	0.27	UJ	0.26	UJ	0.27	UJ	0.27	UJ	2.2	J	0.27	UJ
Pyrene	50	0.22	UJ	0.22	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.32	UJ	0.32	UJ	0.32	UJ	0.32	UJ

Table 6

Groundwaterl Sample Analytical Data Summary

Volatile Semi-Volatile Organlc Compounds

Client Sample ID:	NYSDEC	HD-29(GW)		HD-30(GW)		OWS-Center(GW)		PZ-02		PZ-03		PZ-06		PZ-08		PZ-17		PZ-27		PZ-28	
Sample Depth:	AWQS [1]	29-33		29-33		29-33'															
Laboratory ID:		A3811-28		A3811-03		A3034-15		A3108-11		A3108-10		A3108-09		A3108-08		A3108-06		A3108-02		A3108-01	
Sampling Date:		8/4/2009		8/3/2009		6/4/2009		6/10/2009		6/10/2009		6/10/2009		6/10/2009		6/10/2009		6/10/2009		6/10/2009	
Volatile Organic Compounds:																					
124-Trimethylbenzene	5	0.52	J	120		180		0.53	UJ	61	D	510	D	6.1		26	D	800	D	270	D
1,3,5-Trimethylbenzene	5	0.51	J	42		44		0.45	UJ	140	D	82	D	3.8		72	D	110	D	67	D
Benzene	1	1	U	1	U	3.2	UJ	0.41	UJ	20	D	8.2	UJ	0.41	UJ	2	UJ	19	JD	12	D
Ethyl Benzene	5	1	U	8.3		78		0.46	UJ	270	D	150	D	6.5		120	D	250	D	130	D
Cumene (Isopropylbenzene)	5	1	U	15		34		0.37	UJ	3.7	UJ	310	D	6		3.8	JD	730	D	34	D
m + p Xylene	5	1.2	J	40		280		0.46	UJ	10	D	11	JD	0.83	J	15	D	9.2	UJ	4.6	UJ
ter.ButylMethylEther	10	1	U	1	U	3.5	UJ	0.35	UJ	3.5	UJ	7	UJ	0.35	UJ	1.8	UJ	7	UJ	3.5	UJ
Naphthalene(v)	5	1	U	14		62		0.95	UJ	730	D	2,000	D	22		79	D	2,700	D	1,000	D
n-Propylbenzene	5	1	U	23		44		0.32	UJ	3.2	UJ	6.4	UJ	0.32	UJ	1.6	UJ	6.4	UJ	3.2	UJ
n-Butylbenzene	10	1	U	1	U	13		0.67	UJ	78	D	190	D	5.8		13	D	290	D	120	D
o Xylene	5	1	U	7.1		88		0.43	UJ	27	D	810	D	4.7		30	D	790	D	340	D
p-Isopropyltoluene	5	1	U	19		27		0.75	J	890	D	500	D	21		250	D	710	D	430	D
sec-Butylbenzene	5	1	U	1	U	16		0.44	UJ	4.4	UJ	8.8	UJ	0.44	UJ	2.2	UJ	8.8	UJ	4.4	UJ
tert-Butylbenzene	5	1	U	1	U	4.4	UJ	0.45	UJ	74	D	72	D	2.9		35	D	100	D	58	D
Toluene	5	9.1		2		3.7	UJ	0.43	UJ	24	D	29	D	2.1		47	D	49	D	35	D
Total VOCs	NS	11.33		290.4		866		0.75		2,324		4,664		82		691		6,548		2,496	
Semi-Volatile Organic Compounds:																					
Acenaphthene	20	NA		NA		0.22	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ
Anthracene	50	NA		NA		0.16	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ
Benzo(a)anthracene	0.002	NA		NA		0.16	UJ	0.29	UJ	0.3	UJ	0.29	UJ	0.29	UJ	0.29	UJ	0.29	UJ	0.29	UJ
Benzo(a)pyrene	0.002	NA		NA		0.14	UJ	0.15	UJ	0.15	UJ	0.15	UJ	0.15	UJ	0.15	UJ	0.15	UJ	0.15	UJ
Benzo(b)fluoranthene	0.002	NA		NA		0.3	UJ	0.29	UJ	0.3	UJ	0.29	UJ	0.29	UJ	0.29	UJ	0.29	UJ	0.29	UJ
Benzo(g,h,i)perylene	5	NA		NA		0.3	UJ	0.4	UJ	0.41	UJ	0.4	UJ	0.4	UJ	0.4	UJ	0.4	UJ	0.4	UJ
Benzo(k)fluoranthene	0.002	NA		NA		0.19	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ
Chrysene	0.002	NA		NA		0.19	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ
Dibenzo(a,h)anthracene	50	NA		NA		0.43	UJ	0.14	UJ	0.14	UJ	0.14	UJ	0.14	UJ	0.14	UJ	0.14	UJ	0.14	UJ
Fluoranthene	50	NA		NA		0.41	UJ	0.42	UJ	0.43	UJ	0.42	UJ	0.42	UJ	0.42	UJ	0.42	UJ	0.42	UJ
Fluorene	50	NA		NA		0.32	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ
Indeno(1,2,3-cd)pyrene	0.002	NA		NA		0.15	UJ	0.21	UJ	0.21	UJ	0.21	UJ	0.21	UJ	0.21	UJ	0.21	UJ	0.21	UJ
Phenanthrene	50	NA		NA		0.27	UJ	0.26	UJ	0.27	UJ	0.26	UJ	0.26	UJ	0.26	UJ	0.26	UJ	0.26	UJ
Pyrene	50	NA		NA		0.21	UJ	0.31	UJ	0.32	UJ	0.31	UJ	0.31	UJ	0.31	UJ	0.31	UJ	0.31	UJ

Notes:

All concentrations are ug/L (ppb)

(1) Class GA Ambient Water Quality Standard (AWQS), NYSDEC Technical c

U - Indicates that the analyte was not detected above the laboratory MDL

J - Indicates an estimated value

B - Indicates the analyte was detected in the method blank

D - The reported value is from a secondary analysis with a dilution factor. Th

NS - Not Specified

NA- Not Analyzed

Highlighted values indicate exceedance of AWQS

Table 7

Soil-Vapor Sample Analytical Data Summary

Volatile Organic Compounds

Client Sample ID:	Target Soil Gas	AMBIENTAIR		SV-1		SV-2		SV-3		SV-4		SV-5	
Laboratory ID:	Concentration [1]	A3498-01		A3498-02		A3498-03		A3498-04		A3498-05		A3498-06	
Sampling Date:		7/10/2009		7/10/2009		7/10/2009		7/10/2009		7/10/2009		7/10/2009	
Volatile Organic Compounds:													
1,1,1-Trichloroethane	22,000	0.22	UJ	0.22	UJ	0.22	UJ	0.22	UJ	0.22	UJ	0.22	UJ
1,1,2,2-Tetrachloroethane	4.2	0.69	UJ	0.69	UJ	0.69	UJ	0.69	UJ	0.69	UJ	0.69	UJ
1,1,2-Trichloroethane	15	0.44	UJ	0.44	UJ	0.44	UJ	0.44	UJ	0.44	UJ	0.44	UJ
1,1,2-Trichlorotrifluoroethane	30,000	0.31	UJ	0.31	UJ	0.31	UJ	0.31	UJ	0.31	UJ	0.31	UJ
1,1-Dichloroethane	5,000	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ
1,1-Dichloroethene	NS	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ
1,2,4-Trichlorobenzene	2,000	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ
1,2,4-Trimethylbenzene	60	0.49	UJ	4.97		0.49	UJ	2.7		0.49	UJ	0.49	UJ
1,2-Dibromoethane	1.1	0.54	UJ	0.54	UJ	0.54	UJ	0.54	UJ	0.54	UJ	0.54	UJ
1,2-Dichlorobenzene	2,000	0.42	UJ	0.42	UJ	0.42	UJ	0.42	UJ	0.42	UJ	0.42	UJ
1,2-Dichloroethane	9.4	0.28	UJ	0.28	UJ	0.28	UJ	0.28	UJ	0.28	UJ	0.28	UJ
1,2-Dichloropropane	40	0.28	UJ	0.28	UJ	0.28	UJ	0.28	UJ	0.28	UJ	0.28	UJ
1,3,5-Trimethylbenzene	60	0.44	UJ	0.44	UJ	0.44	UJ	0.44	UJ	0.44	UJ	0.44	UJ
1,3-Butadiene	0.87	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ
1,3-Dichlorobenzene	1,100	0.48	UJ	0.48	UJ	0.48	UJ	0.48	UJ	5.65		5.29	
1,4-Dichlorobenzene	8,000	0.36	UJ	0.36	UJ	0.36	UJ	0.36	UJ	0.36	UJ	0.36	UJ
1,4-Dioxane	NS	0.32	UJ	0.32	UJ	0.32	UJ	0.32	UJ	0.32	UJ	0.32	UJ
2,2,4-Trimethylpentane	NS	0.19	UJ	0.19	UJ	0.19	UJ	0.19	UJ	0.19	UJ	0.19	UJ
2-Butanone	NS	0.29	UJ	88.5	JD	10.4		59	JD	404	D	70.8	JD
2-Chlorotoluene	NS	0.52	UJ	0.52	UJ	0.52	UJ	0.52	UJ	0.52	UJ	0.52	UJ
4-Ethyltoluene	NS	0.39	UJ	2.7		0.39	UJ	0.39	UJ	0.39	UJ	0.39	UJ
4-Methyl-2-Pentanone	NS	0.25	UJ	0.25	UJ	0.25	UJ	0.25	UJ	0.25	UJ	0.25	UJ
Acetone	3,500	14.7		1993	DB	1510	DB	2757	DB	2194	DB	2513	DB
Allyl Chloride	NS	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ
Benzene	31	0.13	UJ	0.13	UJ	0.13	UJ	0.13	UJ	2.17		3.87	
Bromodichloromethane	14	0.33	UJ	0.33	UJ	0.33	UJ	0.33	UJ	0.33	UJ	0.33	UJ
Bromoethene	NS	0.13	UJ	0.13	UJ	0.13	UJ	0.13	UJ	0.13	UJ	0.13	UJ
Bromoform	2,200	0.52	UJ	0.52	UJ	0.52	UJ	0.52	UJ	0.52	UJ	0.52	UJ
Bromomethane	NS	0.12	UJ	0.12	UJ	0.12	UJ	0.12	UJ	0.12	UJ	0.12	UJ
Carbon Disulfide	7,000	0.16	UJ	0.16	UJ	0.16	UJ	0.16	UJ	3.21		4.98	
Carbon Tetrachloride	16	0.25	UJ	0.25	UJ	0.25	UJ	0.25	UJ	0.25	UJ	0.25	UJ
Chlorobenzene	600	0.41	UJ	0.41	UJ	0.41	UJ	0.41	UJ	0.41	UJ	0.41	UJ
Chloroethane	100,000	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ
Chloroform	11	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ	3.42		0.1	UJ
Chloromethane	NS	1.69		1.84		3.39		2.13		1.32		2.81	
cis-1,2-Dichloroethene	350	0.24	UJ	0.24	UJ	9.87		0.24	UJ	0.24	UJ	0.24	UJ
cis-1,3-Dichloropropene	NS	0.27	UJ	0.27	UJ	0.27	UJ	0.27	UJ	0.27	UJ	0.27	UJ
Cyclohexane	NS	0.28	UJ	0.28	UJ	0.28	UJ	0.28	UJ	0.28	UJ	0.28	UJ
Dibromochloromethane	NS	0.43	UJ	0.43	UJ	0.43	UJ	0.43	UJ	0.43	UJ	0.43	UJ
Dichlorodifluoromethane	2,000	3.41		2.57		0.2	UJ	3.41		5.39		2.67	
Dichlorotetrafluoroethane	NS	0.28	UJ	0.28	UJ	0.28	UJ	0.28	UJ	0.28	UJ	0.28	UJ
Ethyl Benzene	220	0.35	UJ	3		0.35	UJ	0.35	UJ	2.52		7.73	
Heptane	NS	0.25	UJ	2.87		0.25	UJ	0.25	UJ	2.75		7.25	
Hexachloro-1,3-Butadiene	11	0.85	UJ	0.85	UJ	0.85	UJ	0.85	UJ	0.85	UJ	0.85	UJ
Hexane	2,000	0.14	UJ	2.5		0.14	UJ	0.14	UJ	2.54		2.78	
Isopropyl Alcohol	NS	1.35	UJ	13.7		4.38		10.9		19		25.8	
m/p-Xylene	70,000	0.48	UJ	7.25		0.48	UJ	2.82	J	5.34		9.16	
Methyl Methacrylate	7,000	0.41	UJ	0.41	UJ	0.41	UJ	0.41	UJ	0.41	UJ	0.41	UJ
Methyl tert-Butyl Ether	30,000	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ
Methylene Chloride	520	2.85		6.5		0.17	UJ	0.17	UJ	0.17	UJ	0.17	UJ
o-Xylene	70,000	0.3	UJ	3.39		0.3	UJ	0.3	UJ	2.48		4.65	
Styrene	2,300	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ	0.3	UJ
t-1,3-Dichloropropene	NS	0.32	UJ	0.32	UJ	0.32	UJ	0.32	UJ	0.32	UJ	0.32	UJ
tert-Butyl alcohol	NS	0.3	UJ	10.7		0.3	UJ	11.7		14.7		15.1	
Tetrachloroethene	81	0.2	UJ	58.2		0.2	UJ	0.2	UJ	0.2	UJ	0.2	UJ
Tetrahydrofuran	NS	0.24	UJ	0.24	UJ	0.24	UJ	0.24	UJ	0.24	UJ	0.24	UJ
Toluene	4,000	0.19	UJ	13.4		0.19	UJ	6.1		6.9		22.1	
trans-1,2-Dichloroethene	700	0.24	UJ	0.24	UJ	0.24	UJ	0.24	UJ	0.24	UJ	0.24	UJ
Trichloroethene	2.2	0.21	UJ	0.21	UJ	0.21	UJ	0.21	UJ	0.21	UJ	0.21	UJ
Trichlorofluoromethane	7,000	0.22	UJ	17.7		8.09		4.61		3.65		12.5	
Vinyl Chloride	28	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ	0.18	UJ
Total VOCs	NS	22.65		2232.79		1546.53		2860.37		2679.04		2710.49	
Total TICs	NS	3.5		3.5		3.5		3.5		3.5		3.5	

Notes:

All concentrations are μ g/m ^{3}

(1) Target Shallow Soil Gas Concentrations, USEPA Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soil (Subsurface Vapor Intrusion Guidance) Table 2b Risk = 1 x 10-5

NS - No Standard

U - The compound was not detected at the indicated concentration.

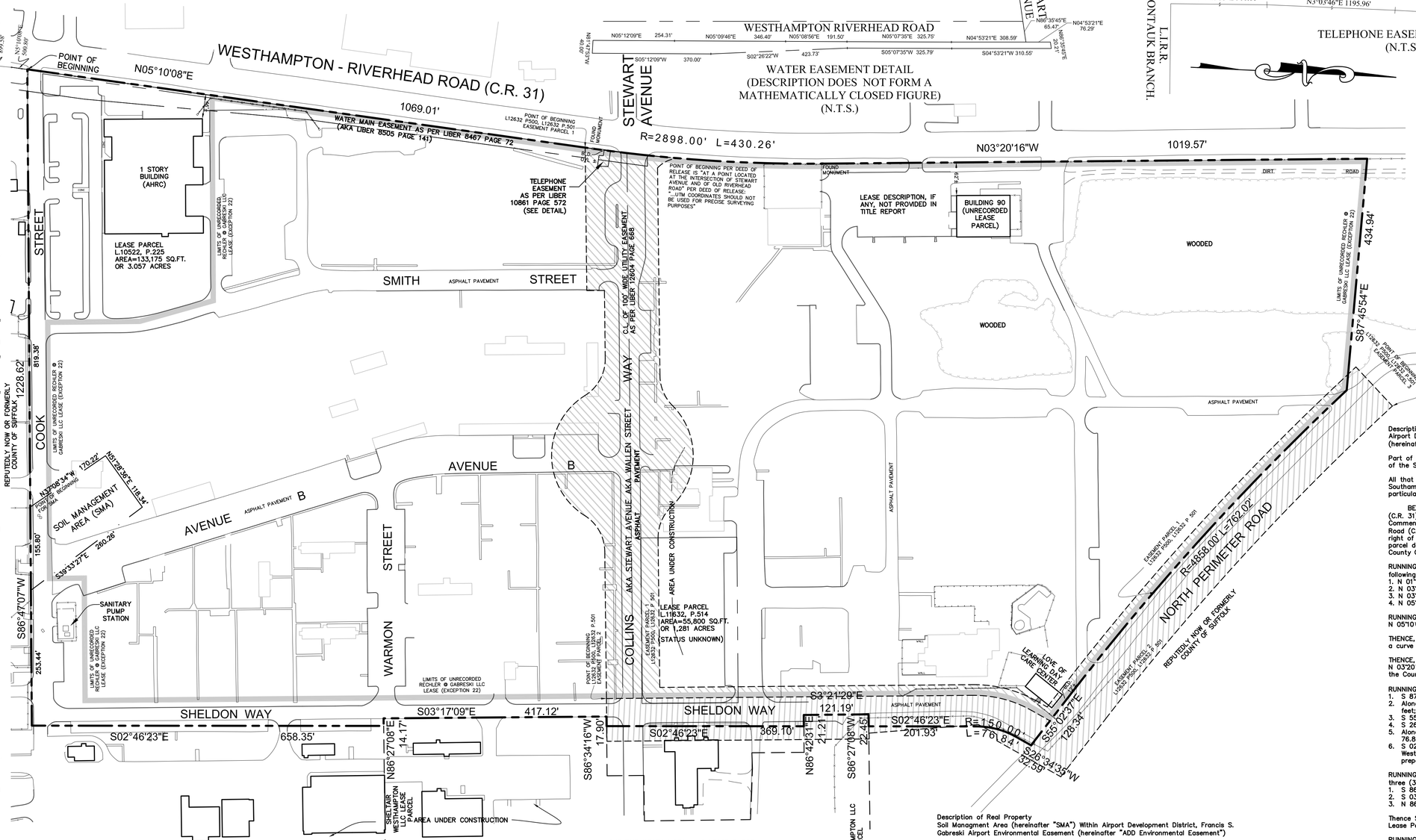
J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than MDL.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

D - The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.

E - Indicates the analyte 's concentration exceeds the calibrated range of the instrument for that specific analysis.

APPENDIX A
Metes & Bounds



EASEMENTS

The following easements listed in Schedule B of Advantage Title Agency, inc Title Report, Title Number 11-CS-A3094(STIC) with an effective date of March 2, 2011 are hereby addressed (numbers correspond to item numbers in said Schedule B):

10. Water Main Easement recorded in Liber 8467 Page 72 affects the subject property and is plotted on the map of survey.

11. Agreement (Water mains) recorded in Liber 8508 Page 141 affects the subject property and is plotted on the map of survey

12. Telephone Easement recorded in Liber 10861 Page 572 affects the subject property and is plotted on the map of survey.

13. Covenants and Restrictions as recited in Deed of Release recorded in Liber 12607 Page 534 affect the subject property. Covenants and Restrictions are blanket in nature and cannot be plotted.

14. Utility Infrastructure Easement recorded in Liber 12604 Page 668 (Suffolk County Water Authority) affects the subject property and is plotted on the map of survey.

15. Permanent Utility Easement recorded in Liber 12632 Page 500 (LIPA) affects the subject property. Easement Parcels 1 and 2 are plotted on the map of survey. The instrument does not include a description of Easement Parcel 3 which is not plotted on the map of survey.

16. Permanent Utility Easement recorded in Liber 12632 Page 501 (Keyspan) affects the subject property. Easement Parcels 1 and 2 are plotted on the map of survey. The instrument does not include a description of Easement Parcel 3 which is not plotted on the map of survey.

22. Terms, covenants and conditions of an unrecorded Amended Lease between Rechler @ Gabreski LLC and the County of Suffolk, acting by and through the Department of Economic Development and Workforce Housing, Aviation Division, dated March 31, 2010 affect the subject property. Affected area is plotted on map.

34. Terms, covenants and conditions contained in a certain unrecorded lease agreement entitled "Francis S. Gabreski Lease Agreement," between the County of Suffolk and Rechler@Gabreski LLC, dated November 2011 affect the subject property. Lease parcel is described as "...approximately 3000 square feet of space and parking, located at Building 90, Gabreski Airport, Westhampton Beach, NY 11978,..." Building 90 is indicated on map with the notation, "UNRECORDED LEASE"

DESCRIPTION FOR EASEMENT PARCEL 3 IN DEED LIBER 12632 PAGE 500 AND DEED LIBER 12632 PAGE 501 CONTAINS DESCRIPTION OF POINT OF BEGINNING BUT NO DESCRIPTION OF ACTUAL EASEMENT.

Description of Real Property Known as
Airport Development District, Francis S. Gabreski Airport Environmental Easement (hereinafter "ADD Environmental Easement")

Part of Lot 004.002, Block 01.00, Section 312.00, District 0900 of the Suffolk County Real Property Tax Map

All that certain piece or parcel of land situated at Westhampton, Town of Southampton, County of Suffolk and State of New York, said parcel being more particularly described as follows:

BEGINNING at point on the easterly line of Westhampton – Riverhead Road (C.R. 31), said point being more particularly described thus:
Commencing at the intersection of the easterly line of Westhampton-Riverhead Road (C.R. 31) with the northerly line of Long Island Railroad (Montauk Branch) right of way, said point of commencement being the Point of Beginning of a lease parcel described in deed liber 2854 page 459 filed in the office of the Suffolk County Clerk;

RUNNING THENCE along the easterly line of Westhampton – Riverhead Road the following four (4) courses:
1. N 01°15'33" E a distance of 900.60 feet;
2. N 03°03'46" E a distance of 1195.96 feet;
3. N 03°40'04" E a distance of 899.58 feet;
4. N 05°10'08" E a distance of 500.80 feet to the Point of Beginning;

RUNNING THENCE along said easterly line of Westhampton – Riverhead Road N 05°10'08" E a distance of 1069.01 feet;

THENCE, continuing along the easterly line of Westhampton– Riverhead Road, along a curve to the left having a radius of 2898.00 feet, an arc length of 430.26 feet;

THENCE, continuing along the easterly line of Westhampton– Riverhead Road N 03°20'16" W a distance of 1019.57 feet to the land reputedly now or formerly of the County of Suffolk.

RUNNING THENCE along said land the following six (6) courses:
1. S 87°45'54" E a distance of 434.94 feet;
2. Along a curve to the left having a radius of 4858.00, an arc length of 762.02 feet;
3. S 55°02'37" E a distance of 128.34 feet;
4. S 26°34'35" W a distance of 32.59 feet;
5. Along a curve to the left having a radius of 150.00 feet, an arc length of 76.84 feet;
6. S 02°46'23" E a distance of 201.93 feet to the northerly line of the Sheltair Westhampton, LLC Lease Parcel as shown on a map dated August 18, 2008 prepared by L.K. McLean Associates, P.C.

RUNNING THENCE along said Sheltair Westhampton, LLC Lease Parcel the following three (3) courses:
1. S 86°27'08" W a distance of 22.45 feet;
2. S 03°21'29" E a distance of 121.19 feet;
3. N 86°42'31" E a distance of 21.21 feet;

Thence S 02°46'23" E a distance of 369.10 feet to said Sheltair Westhampton, LLC Lease Parcel;

RUNNING THENCE along said Sheltair Westhampton, LLC Lease Parcel the following three (3) courses:
1. S 86°34'16" W a distance of 17.90 feet;
2. S 03°17'09" E a distance of 417.12 feet to the southerly line of the Sheltair Westhampton, LLC lease parcel;
3. N 86°27'08" E, along said line, a distance of 14.17 feet;

Thence S 02°46'23" E a distance of 658.35 feet;

RUNNING THENCE S 86°47'07" W a distance of 1228.62 feet to the easterly line of Westhampton – Riverhead Road and the Point of Beginning.

Containing within said bounds 57.943 acres more or less.

NOTES:

1. Area of Airport Development District, Francis S. Gabreski Airport Environmental Easement (hereinafter ADD Environmental Easement): 57.943 ACRES
2. Bearing system shown are in the Long Island zone of the New York State Plane Coordinate System. (NAD 1983)
3. Subsurface conditions not investigated.
4. This property may be subject to restrictions, covenants and easements, other than those noted, either written or implied.
5. Utilities not shown.
6. The property is part of the premises described in a certain quitclaim deed from the United States of America, dated July 1, 1972 and recorded on November 25, 2009 in Liber 12607 Page 533 and by Condemnation Order under Index Number 9494–1942, dated July 17, 1942 and Index Number 12521, dated August 2, 1947, Supreme Court, Suffolk County. Said premises are known and designated as District 0900, Section 312.00, Block 01.00, part of Lot 004.002.
7. Soil Management Area (hereinafter "SMA") as depicted on this map is shown as "PROPOSED EXTENT OF SOIL EXCAVATION RESTRICTION AREA" on a map entitled SUPPLEMENTAL BORINGS, FORMER BAUMAN BUS SITE, GABRESKI AIRPORT, WEST HAMPTON, NY", dated February 22, 2010 by P.W. GROSSER CONSULTING. Drawing was provided as an autocad file named "SUPPLEMENTAL BORINGS 9–23–10.DWG"
8. The engineering and institutional controls for this ADD Environmental Easement are set forth in the Site Management Plan (SMP). A copy of the SMP must be obtained by any party with an interest in the property. The SMP can be obtained from NYS Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233.
9. This property is intended to be the same property described in a Deed of Release from The United States of America to the County of Suffolk recorded in Deed Liber 12607 Page 534, with the addition of Sheldon Way and Cook Avenue which are not included in the Deed of Release. Said Deed of Release describes the property using Universal Transverse Mercator (UTM) coordinates and includes the statement: "The above UTM coordinates should not be used for precise surveying purposes." This map is based upon an actual survey. Discrepancies between the Deed of Release description and the survey can be accounted for by the imprecise nature of the UTM coordinate description.
10. UTM coordinates referred to in the Deed of Release are in meters and referenced to the North American Datum of 1927 (NAD27). NAD27 UTM coordinates were transformed to the North American Datum of 1983 (NAD83) New York State Plane Coordinate System (NYSPCS) Long Island Zone in units of U.S. Survey Feet using the U.S. Army Corps of Engineers transformation software CORPSCON.
11. Mailing Address:
    Suffolk County
    Francis S. Gabreski Airport
    Admin Building
    Westhampton Beach, NY 11978

LEGEND

PARCEL BOUNDARY

SOIL MANAGEMENT AREA "SMA"

GRAPHIC SCALE

FEET: 100 0 50 100 200 400

METERS: 50 0 50 150

Survey is certified to:
- The People of the State of New York acting through its Commissioner of the Department of Environmental Conservation
- Stewart Title Insurance Company
- County of Suffolk

Description of Real Property
Soil Managment Area (hereinafter "SMA") Within Airport Development District, Francis S. Gabreski Airport Environmental Easement (hereinafter "ADD Environmental Easement")

Part of Lot 004.002, Block 01.00, Section 312.00, District 0900 of the Suffolk County Real Property Tax Map

All that certain piece or parcel of land situated at Westhampton, Town of Southampton, County of Suffolk and State of New York, said parcel being more particularly described as follows:

BEGINNING at point on the easterly line of Westhampton – Riverhead Road (C.R. 31), said point being more particularly described thus:

Commencing at the intersection of the easterly line of Westhampton – Riverhead Road (C.R. 31) with the northerly line of Long Island Railroad (Montauk Branch) right of way, said point of commencement being the Point of Beginning of a lease parcel described in deed liber 2854 page 459 filed in the office of the Suffolk County Clerk;

RUNNING THENCE along the easterly line of Westhampton – Riverhead Road the following four (4) courses:
1. N 01°15'33" E a distance of 900.60 feet;
2. N 03°03'46" E a distance of 1195.96 feet;
3. N 03°40'04" E a distance of 899.58 feet;
4. N 05°10'08" E a distance of 500.80 feet to the southwest corner of the ADD Environmental Easement;
5. N 86°47'07" E, along the south line of the ADD Environmental Easement, a distance of 819.38 feet to the POINT OF BEGINNING;

RUNNING THENCE N 37°08'34" W a distance of 170.22 feet;

Thence N 51°28'36" E a distance of 118.34 feet;

Thence S 39°33'27" E a distance of 260.26 feet, to the south line of the ADD Environmental Easement;

Thence S 86°47'07" W, along the south line of the ADD Environmental Easement 155.80 feet, to the Point of Beginning.

Containing within said bounds 0.606 acres more or less.

NO.	DATE	DESCRIPTION	BY
8.	12.19.2011	ADD UNRECORDED RECHLER @ GABRESKI LLC LEASE (SCHED B EXCEPTION 22)	pl
7.	12.13.2011	REFERENCE NEW TITLE REPORT AND UNRECORDED LEASE AT BUILDING 90 (SCHED B EXCEPTION No. 34)	pl
6b.	10.06.2011	RENAME ENVIRONMENTAL EASEMENT	pl
5.	05.05.2011	REVISIONS PER MAY 3, 2011 MEETING	pl
4.	03.03.2011	REVISIONS PER ENV. EASEMENT CHECK LIST	pl
3.	02.16.2011	ADD NOTE 9 TO GENERAL NOTES	pl
2.	02.10.2011	REVISIONS PER NYS DEC SURVEY REQUIREMENTS	ed
1.	01.24.2011	ADD REFERENCE TO SHELTAIR WESTHAMPTON LLC LEASE	pl
-	-	SEE REVISION BOX TO LOWER LEFT FOR ADDITIONAL REVISIONS	pl

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MAP OF: Airport Development District, Francis S. Gabreski Airport Environmental Easement (hereinafter "ADD Environmental Easement)
LOCATED AT: WESTHAMPTON, TOWN OF SOUTHAMPTON
COUNTY OF: SUFFOLK, NEW YORK
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CHECKED BY: JE
PROJECT NO.: 10958310.01
SCALE: 1"=100'
DATE: NOVEMBER, 2010

TAX MAP DESIGNATION:
DISTRICT: 0900 SECTION: 312
BLOCK: 1 LOT(S): PART OF LOT 4.002

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APPENDIX B
Excavation Workplan

APPENDIX B – EXCAVATION WORK PLAN

This Excavation Workplan is to be used when soil excavation is to occur in the SMA which will disturb soils deeper than 25' below grade.

A-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the following site contacts are to be notified:

Chief Engineer
Suffolk County Department of Health Services
Division of Environmental Quality
360 Yaphank Avenue - Suite 2C
Yaphank, New York 11980
Phone: (631) 862-5800

and

Airport Manager
Francis S. Gabreski Airport
Administration Building #1
Westhampton Beach, NY 11978
Phone: (631) 852-8095
Fax : (631) 852-8092

In addition, the site owner or their representative will notify the Department. Currently, this notification will be made to:

Heather Bishop
NYSDEC
Division of Environmental Remediation
Remedial Bureau A
625 Broadway, 11th Floor
Albany, NY 12233-7015
Phone: (518) 402-9692
Fax : (518) 402-9022

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for site re-grading, intrusive elements or utilities to be installed

below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control,

- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work,
- A summary of the applicable components of this EWP,
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120,
- A copy of the contractor's health and safety plan, in electronic format, if it differs from the HASP provided in Appendix C of this document,
- Identification of disposal facilities for potential waste streams,
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

A-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

A-3 STOCKPILE METHODS

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC.

A-4 MATERIALS EXCAVATION AND LOAD OUT

A qualified environmental professional or person under his/her supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and its contractors are responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-site. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

A-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks will be washed prior to leaving the site. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

A-6 MATERIALS DISPOSAL OFF-SITE

All soil/fill/solid waste excavated from the SMA from below 25’ below grade and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6 NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic

Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6 NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6 NYCRR Part 360-16 Registration Facility).

A-7 MATERIALS REUSE ON-SITE

Reuse of soils on the site will be limited to clean soils located outside the SMA area, or soils located less than 25 feet below grade from within the SMA area. Contaminated soils will be disposed of offsite as described in section A-6.

A-8 FLUIDS MANAGEMENT

Due to groundwater being located at approximately 30 feet below grade, groundwater is not anticipated to be encountered during any site development activities or during subsequent use of the site.

All liquids to be removed from the site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, but will be managed off-site.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

A-9 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site for use within the SMA will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill and cover soil quality standards established in 6 NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed in Table 1. Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

A-10 STORMWATER POLLUTION PREVENTION

For construction projects exceeding 1 acre, a Stormwater Pollution Prevention Plan that conforms to the requirements of NYSDEC Division of Water guidelines and NYS regulations will need to be prepared. This plan should cover the following topics:

Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

A-11 CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until the issues is properly addressed.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to the SCDHS and airport manager (as identified in section A-1 of this appendix), who will make the proper notifications to the NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline with a concurrent notification of the SCHDS. These findings will be also included in the periodic reports prepared pursuant to Section 5 of the SMP.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

A-12 COMMUNITY AIR MONITORING PLAN

Excavation work performed within the SMA below 25' which will disturb soils located below 25' below grade will require air monitoring for VOCs and dust. This monitoring will follow the procedures specified in the Community Air Monitoring Plan (CAMP) utilized during the Remedial Action. A copy of the Camp is included as Appendix C to the SMP.

A-13 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site. Specific odor control methods to be used on a routine basis will include covering of stockpiles with sheet plastic. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the property owner, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

A-14 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved though the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.

- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

APPENDIX C
HASP /CAMP

FORMER BAUMANN BUS SITE
GABRESKI AIRPORT
WESTHAMPTON, NEW YORK

PWGC Project No. SHD1004

HEALTH AND SAFETY PLAN



MARCH 2010

Submitted to:

New York State Department of Environmental Conservation

Prepared for:
Suffolk County Department of Health Services
Office of Pollution Control
15 Horseblock Place
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HEALTH AND SAFETY PLAN
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STATEMENT OF COMMITMENT

This Health and Safety Plan (HASP) has been prepared to ensure that workers are not exposed to chemical, biological, and physical hazards during the planned Remedial Action (RA) activities to be performed at the Former Baumann Bus Site, Westhampton, New York. P.W. Grosser Consulting Inc.'s (PWGC's) policy is to minimize the possibility of work-related exposure through awareness and qualified supervision, health and safety training, medical monitoring, use of appropriate personal protective equipment, and the following activity specific safety protocols contained in this HASP. PWGC has established a guidance program to implement this policy in a manner that protects personnel to the maximum reasonable extent.

This HASP, which applies to persons present at the site who are actually or potentially exposed to safety or health hazards, describes emergency response procedures for actual and potential physical, biological and chemical hazards. This HASP is also intended to inform and guide personnel entering the work area or exclusion zone. Persons are to acknowledge that they understand the potential hazards and the contents of this Health and Safety policy.

This HASP will also serve as a guide to summarize the HASP requirements of the chosen remedial contractor, who will need to generate their own plan.

1.0 INTRODUCTION

1.1 Purpose

This Health and Safety Plan (HASP) addresses the minimum health and safety practices that will be employed by site workers participating in remedial action (RA) activities at the project site located at the Former Baumann Bus Site, Westhampton, New York.

The HASP takes into account the specific hazards inherent to the site and presents the minimum requirements which are to be met by P.W. Grosser Consulting, Inc. (PWGC), its subcontractors, and other on-site personnel in order to avoid and, if necessary, protect against health and/or safety hazards. PWGC sub-contractors will have the option of adopting this HASP or developing their own site-specific document. If a subcontractor chooses to prepare their own HASP, it must meet the minimum requirements as detailed in this HASP and must be made available to PWGC. As per the approved O'Brien & Gere Engineers, Inc. workplan, the remedial contractor will have their own HASP requirements which they will have to meet.

Activities performed under this HASP will comply with applicable parts of Occupational Safety and Health Administration (OSHA) Regulations, primarily 29 CFR Parts 1910 and 1926 and all other applicable federal, state, and local regulations. Modifications to the HASP may be made with the approval of the PWGC Health and Safety Manager (HSM) and/or Project Manager (PM). A copy of this HASP will be maintained on-site during all work activities.

Refusal to comply with the HASP or violation of any safety procedures by field personnel may result in their immediate removal from the site following consultation with the HSM and the Field Team Leader (FTL)/Site Health and Safety Officer (SHSO).

1.2 Scope

This HASP addresses the potential hazards related to the RA activities. The primary RA activities include the following:

- Soil Excavation Oversight
- Application of Oxygen Releasing Compound Oversight
- Soil Sampling
- Post Remedial Well Sampling

The potential hazards associated with this scope are listed below and are discussed in more detail in this HASP after the project organization and responsibilities section.

- Chemical Hazards
- Biological Hazards
- Physical Hazards

1.3 Application

The HASP applies to all personnel involved in the above tasks who wish to gain access to active work areas, including but not limited to:

- PWGC employees and subcontractors;
- Client representatives; and
- Federal, state or local representatives.

2.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

This section specifies the project organization and responsibilities.

2.1 Project Manager

- Participates in major incident investigations;
- Ensures that the HASP has all of the required approvals before site work is conducted; and
- Has the overall project responsibility for project health and safety.

2.2 Field Team Leader (FTL)/ Site Health and Safety Officer (SHSO)

- Ensures that the HASP is implemented in conjunction with the Health and Safety Manager (HSM);
- Ensures that field work is scheduled with adequate equipment to complete the job safely;
- Enforces site health and safety rules;
- Ensures that proper personal protective equipment is utilized;
- Ensures that the HSM is informed of project changes that require modifications to the HASP;
- Ensures that the procedure modifications are implemented;
- Investigates incidents;
- Conducts the site safety briefing;
- Reports to HSM to provide summaries of field operations and progress; and
- Acts as Emergency Coordinator.

2.3 Health and Safety Manager

- Provides for the development of the HASP;
- Serves as the primary contact to review health and safety matters that may arise;
- Approves individuals who are assigned SHSO responsibilities;
- Coordinates revisions of this HASP with field personnel; and
- Assists in the investigation of major accidents.

2.4 Site Personnel

- Report any unsafe or potentially hazardous conditions to the FTL/SHSO;
- Maintain knowledge of the information, instructions and emergency response actions contained in this HASP; and
- Comply with rules, regulations and procedures as set forth in this HASP and any revisions.

3.0 SITE HISTORY AND PROJECT DESCRIPTION

3.1 Project Background

This Health and Safety Plan (HASP) has been prepared by PWGC, on behalf of Suffolk County.

Volatile Organic Compound (VOC) contamination is the primary contaminant of the site, originating from historic releases of jet fuel. The project will include remedial activities to excavate and remove impacted soils which exceed New York State Department of Environmental Conservation (NYSDEC) restricted residential soil cleanup objectives (SCOs) as specified in 6NYCRR Part 375.

3.2 Site Location and Description

The Francis S. Gabreski Airport is located on County Road 31 in the Town of Southampton, New York and is owned by Suffolk County. The airport is located within the Long Island Pine Barrens which are characterized by open, sunlit woodlands dominated by pitch pine interspersed with white and scarlet oak. The nearby Quogue Wildlife Refuge is characterized by dwarf pitch pines ranging from 3 to 6 ft tall. The airport itself is characterized by surrounding wooded areas consisting of 25 ft pitch pines and scattered scrub oak. The Airport has no commercially scheduled service, but does support private planes and presently is the home of the 106th Rescue Wing of the New York Air National Guard (NYANG).

The Airport Development District (ADD) encompasses 58.6 acres of the Airport. The ADD is bounded to the north by the Airport service road, to the south by Cook Street, to the east by Sheldon Avenue and to the west by County Road 31. The area of concern within the ADD is the former Baumann Bus site, located at the former location of Building 140 at the northwest corner of Avenue B and Cook Street. The former Baumann Bus site is a small 1-2 acre area centrally located near the south border of the ADD at the northwest corner of Cook Street and Avenue B. The site is currently vacant.

4.0 POTENTIAL HAZARDS OF THE SITE

This section presents an assessment of the chemical, biological, and physical hazards that may be encountered during the tasks specified under Section 1.0. Additional information can be found in **Appendix A** - Material Safety Data Sheets or in **Appendix B** - Activity Hazard Analyses.

4.1 Chemical Hazards

Review of historical information from the site indicates that the soil at the site is contaminated with petroleum related compounds (of JP-4 origin) which are present at levels in soil above NYSDEC) recommended soil cleanup objectives (RSCOs) These compounds may present an occupational exposure hazard during site operations.

In addition to the chemical hazards present at the site, remedial activities will include the application of oxygen releasing compound (ORC). This material will require proper handling as part of the application process.

Specific information on the chemicals identified at the Site can be found in Table 4-1 as well as on the Material Safety Data Sheets found in Appendix A.

Table 4-1

COMPOUND	CAS#	OSHA PEL	ROUTES OF EXPOSURE	SYMPTOMS OF EXPOSURE	TARGET ORGANS	PHYSICAL DATA
JP-4	50815-00-4	500ppm	Inhalation Ingestion Eye	Skin / eye Irritation Headache, Nausea and dizzyness	Lungs, Liver Kidney	Flashpoint 0° F LEL 0.9% Ignition Temp. $10-465°F
ORC	14452-57-4 1309-48-4 1309-42-8 7758-11-4 7778-77-0	N/A	Inhalation Eye	Eye irritation Coughing / difficulty breathing	Eyes lungs	White powder No odor

Abbreviations

C = Ceiling limit, not to be exceeded
CNS = Central Nervous System
OSHA = Occupational Safety and Health Administration
ppm = parts per million
PEL=Permissible Exposure Limit
BP = Boiling Point
TWA = Time-weighted average (8 hours)

4.2 Biological Hazards

The site is currently overgrown with small shrubs and grasses/weeds. During the course of the project, there is potential for workers to come into contact with biological hazards such as animals, insects and plants. The Activity Hazard Analyses found in **Appendix B** includes specific hazards and control measures for each task, if applicable.

4.2.1 Animals

The immediate vicinity of the site is well developed, however approximately ¼ mile north of he site the area is undeveloped forest. Therefore, it is possible that white tailed deer, raccoon, foxes, possum, dogs, cats, rats and mice may be present. Workers shall use discretion and avoid all contact with animals.

4.2.2 Insects

Insects, such as mosquitoes, ticks, bees and wasps may be present during certain times of the year. Workers will be encouraged to wear repellents and PPE, if deemed necessary, when working in areas where insects are expected to be present.

During the months of April through October, particular caution must be exercised to minimize exposure to deer ticks and the potential for contracting Lyme disease. Specific precautionary work practices that are recommended include the following:

- Cover your body as much as possible. Wear long pants and long sleeved shirts. Light color clothing makes spotting of ticks easier.

- Try to eliminate possible paths by which the Deer Tick may reach unprotected skin. For example, tuck bottoms of pants into socks or boots and sleeves into gloves. (Duct tape may be utilized to help seal cuffs and ankles). If heavy concentrations of ticks or insects are anticipated or encountered, Tyvek coveralls may be utilized for added protection when the potential for heat stress is not a concern.

- Conduct periodic and frequent, (e.g., hourly), surveys of your clothing for the presence of ticks. Remove any tick, save it and report to the clinic with the tick.

- Use insect /tick repellents that contain the chemical DEET (n,n-Diethyltoluamide). Apply repellents in accordance with manufacturers' recommendations. These repellents are readily available and include such brands as Deep Woods OFF and Maximum Strength OFF.

4.2.3 Plants

Poison ivy has been identified at the site; poison sumac and oak may also be present. The FTL/SHSO should identify the susceptible individuals. Worker shall avoid all contact with these plants.

4.3 Physical Hazards

Most safety hazards are discussed in the Activity Hazard Analyses (AHA) in **Appendix B** for the different phases of the project. In addition to the AHAs, general work rules and other safety procedures are described in Section 10 of this HASP.

4.3.1 Temperature Extremes

Heat Stress
Heat stress is a significant potential hazard, which is greatly exacerbated with the use of PPE in hot environments. The potential hazards of working in hot environments include dehydration, cramps, heat rash, heat exhaustion, and heat stroke.

Cold Stress
At certain times of the year, workers may be exposed to the hazards of working in cold environments. Potential hazards in cold environments include frostbite, trench foot or immersion foot, hypothermia as well as slippery surfaces, brittle equipment, and poor judgment.

PWGC's Heat/Cold Stress Protocols are specified in **Appendix C**.

4.3.2 Steam, Heat and Splashing

Exposure to steam/heat/splashing hazards can occur during steam cleaning activities. Splashing can also occur during well development and sampling activities. Exposure to steam/heat/splashing can result in scalding/burns, eye injury, and puncture wounds.

4.3.3 Noise

Noise is a potential hazard associated with the operation of heavy equipment, drill rigs, pumps and engines. Workers will wear hearing protection while in the work zone when these types of machinery are operating.

4.3.4 Fire and Explosion

When conducting excavation activities, the opportunity of encountering fire and explosion hazards may exist from encountering underground utilities, from the use of diesel engine equipment, and other potential ignition sources. During dry periods there is an increased chance of forest and brush

fires starting at the job site. If these conditions occur no smoking will be permitted at the site and all operations involving potential ignition sources will be monitored continuously (fire watch).

4.3.5 Manual Lifting/Material Handling

Manual lifting of heavy objects may be required. Failure to follow proper lifting technique can result in back injuries and strains. Back injuries are a serious concern as they are the most common work place injury, often resulting in lost or restricted work time, and long treatment and recovery periods.

4.3.6 Slips, Trips and Falls

Working in and around the site will pose slip, trip and fall hazards due to slippery surfaces that may be oil covered, or from rough terrain, surfaces that are steep inclines, surfaced debris, or surfaces which are wet from rain or ice. Falls may result in twisted ankles, broken bones, head trauma or back injuries.

4.3.7 Heavy Equipment Operation

Heavy equipment including backhoes, excavators, and dump trucks will be utilized during the soil excavation and soil handling phases. Working with or near heavy equipment poses many potential hazards, including electrocution, fire/explosion, being struck by or against, or pinched/caught/crushed by, and can result in serious physical harm.

4.3.8 Electrocution

Encountering underground utilities may pose electrical hazards to workers. Additionally, overhead electrical lines can be a concern during drilling operations. Potential adverse effects of electrical hazards include burns and electrocution, which could result in death.

5.0 ACTIVITY HAZARD ANALYSES

The Activity Hazard Analysis (AHA) is a systematic way of identifying the potential health and safety hazards associated with major phases of work on the project and the methods to avoid, control and mitigate those hazards. The AHAs will be used to train work crews in proper safety procedures during phase preparatory meetings.

AHAs have been developed by PWGC for the following phases of work:

1. Site Mobilization/Demobilization;
2. Soil Excavation Oversight
3. ORC application;
4. Soil and Groundwater sampling; and
5. Decontamination

Copies of these AHAs are included in **Appendix B** of this HASP.

6.0 PERSONAL PROTECTIVE EQUIPMENT

The personal protective equipment (PPE) specified in **Table 6-1** represents the hazard analysis and PPE selection required by 29 CFR 1910.132. Specific information on known potential hazards can be found under Section 4.0 and **Appendix B** - Activity Hazard Analyses. For the purposes of PPE selection, the HSM and FTL/SHSO are considered competent persons. The signatures on the approval page of the HASP constitute certification of the hazard assessment. For activities not covered by **Table 6-1**, the FTL/SHSO will conduct the hazard assessment, select the PPE, and document changes in the appropriate field logs. PPE selection will be made in consultation with the HSM.

Modifications for initial PPE selection may also be made by the FTL/SHSO in consultation with the HSM and changes documented accordingly. If major modifications occur, the HSM will notify the PM.

PPE Abbreviations

HEAD PROTECTION
HH = Hard Hat

HEARING PROTECTION
EP = ear plugs
EM = ear muffs

EYE/FACE PROTECTION
APR = Full Face Air Purifying Respirator
MFS = Mesh Face shield
PFS =Plastic Face shield
SG = ANSI approved safety glasses with side shields

FOOT PROTECTION
Neo = Neoprene
OB = Overboot
Poly = polyethylene coated boot
Rub = rubber slush boots
STB = Leather work boots with steel toe

HAND PROTECTION
Cot = cotton
But = Butyl
LWG = Leather Work Gloves
Neo = Neoprene
Nit = Nitrile
Sur = Surgical

BODY PROTECTION
WC = work clothes
Cot Cov = Cotton Coveralls
Poly = Polyethylene coated Tyvek® coveralls
Saran = Saranex coated coveralls
Tyvek® = Uncoated Tyvek® coveralls

RESPIRATORY PROTECTION
APR = Full-face air purifying respirator with organic vapor cartridges
ASR = Full face air supplied respirator with escape bottle
SCBA = Self-contained breathing apparatus

6.1 Hazard Assessment for Selection of Personal Protective Equipment

The initial selection of personal protective equipment for each task was done by performing a hazard assessment taking into consideration the following:

- Potential chemical and physical hazards present;
- Work operations to be performed;
- Potential routes of exposure;

- Concentrations of contaminants present; and
- Characteristics, capabilities and limitations of PPE and any hazard that the PPE presents or magnifies.

A review of the analytical data from previous sampling events indicates that petroleum contamination related to JP-4 as identified in **Table 4-1** are the primary contaminants of concern. Dust generated during ORC application will also be a concern.

The exposure routes for these chemicals are inhalation, skin absorption, skin/eye contact and ingestion. Chemical protective gloves will be required for all activities that involve sample handling and the likelihood for skin contact. The proper use of PPE and strict adherence to decontamination and personal hygiene procedures will effectively minimize skin contact and ingestion as potential routes of exposure.

Table 6-1
Personal Protective Equipment Selection

TASK	HEAD	EYE/FACE	FEET	HANDS	BODY	HEARING	RESPIRATOR
Mobilization/ Demobilization	HH	SG	STB	WG	WC	None	None
Soil Excavation Oversight	HH	SG	STB	WG	WC, Tyvek® as needed	EM or EP	None initially APR if action levels exceeded
ORC Application	HH	SG	STB	WG, Nit & Sur as needed	WC, Tyvek® as needed	EM or EP	HEPA filter APR for personnel in vicinity of application area
Soil/GW sampling	HH	SG	STB	WG, Nit & Sur as needed	WC, Tyvek® as needed	None	None initially APR if action levels exceeded
Decontamination	HH	SG	STB	Nit + Sur	WC, Tyvek® as needed	None	None initially APR if action levels exceeded

6.2 Respirator Cartridge Change-Out Schedule

A respirator cartridge change-out schedule has been developed in order to comply with 29 CFR 1910.134. If the use of respirators is necessary, the respirator cartridge change-out schedule for this project will be as follows:

1. Cartridges shall be removed and disposed of at the end of each shift, when cartridges become wet or wearer experiences breakthrough, whichever occurs first; and
2. If the humidity exceeds 85%, then cartridges shall be removed and disposed of after 4 hours of use.

Respirators shall not be stored at the end of the shift with contaminated cartridges left on. Cartridges shall not be worn on the second day, no matter how short of time period they were used the day before.

7.0 AIR MONITORING

Air monitoring will be performed for protection for on-site workers and the downwind community (i.e., off-site receptors including residences, businesses, and on-site workers not directly involved in the remedial work) from potential airborne contaminant releases resulting from remedial activities at the site. Air monitoring will be used to help to confirm that the remedial work will not spread contamination off-site through the air. The primary concerns for this site are VOCs and dust particulates.

Real-time monitoring for dust and VOCs will be conducted both within the work area, and along the site perimeter, during excavation, soil handling, and ORC application activities.

Level D level of protection will be utilized unless dust monitoring exceeds concentrations greater than 150 µg/m3 over daily background or PID readings in excess of 25.0 ppmv in the breathing zone are detected.

Detailed information on the types, frequency and location of real-time monitoring and community air monitoring requirements are provided in the Community Air Monitoring Plan prepared for this project.

8.0 ZONES, PROTECTION AND COMMUNICATION

8.1 Site Control

Site zones are intended to control the potential spread of contamination throughout the site and to assure that only authorized individuals are permitted into potentially hazardous areas. A three-zone approach will be utilized, as appropriate. It shall include an Exclusion Zone (EZ), Contamination Reduction Zone (CRZ) and a Support Zone (SZ). Specific zones shall be established on the work site when operations begin.

The zones are based upon current knowledge of proposed site activities. It is possible that the zone configurations may be altered or reduced due to work plan revisions. Should this occur, the work zones will be adjusted accordingly, and documented in the field logbook.

The following shall be used for guidance in revising these preliminary zone designations, if necessary.

Support Zone **-** The SZ is an uncontaminated area that will be the field support area for most operations. The SZ provides for field team communications and staging for emergency response. Appropriate safety equipment will be located in this zone. Potentially contaminated personnel/materials are not allowed in this zone. The only exception will be appropriately packaged/decontaminated and labeled samples.

Contamination Reduction Zone **-** The CRZ is established between the EZ and the SZ. The CRZ contains the contamination reduction corridor and provides for an area for decontamination of personnel and portable hand-held equipment, tools and heavy equipment. A personnel decontamination area will be prepared at each exclusion zone. The CRZ will be used for EZ entry and egress in addition to access for heavy equipment and emergency support services.

Exclusion Zone **-** All activities, which may involve exposure to site contaminants, hazardous materials and/or conditions, should be considered an EZ. The FTL/SHSO may establish more than one EZ where different levels of protection may be employed or different hazards exist. The size of the EZ shall be determined by the site FTL/SHSO allowing adequate space for the activity to be completed, field members and emergency equipment.

8.2 Contamination Control

Decontamination areas will be established for the following activities.

- Soil Excavation
- ORC Application

8.2.1 Personnel Decontamination Station

All personnel and portable equipment used in the EZ shall be subject to a thorough decontamination process, as deemed necessary by the FTL/SHSO. Sampling equipment shall be decontaminated. As necessary, all boots and gloves will be decontaminated using soap and water solution and scrub brushes or by simple removal and disposal. All used respiratory protective equipment will be decontaminated daily and sanitized with appropriate sanitizer solution.

All drums generated as a result of sampling and decontamination activities will be marked and stored at a designated area at the site until the materials can be property disposed of off-site. All non-expendable sampling equipment will be decontaminated. This usually entails the use of Alconox, solvent and distilled/deionized water rinses to eliminate contaminants.

8.3 Communication

- Each PWGC team member will have a cell phone/radio for communication with the PM, FTL/SHSO and other team members during field activities.
- Hand Signals - Hand signals shall be used by field teams, along with the buddy system. The entire field team shall know them before operations commence and their use covered during site-specific training. Typical hand signals are the following:

SIGNAL	**MEANING**
Hand gripping throat	Out of air, can't breathe
Grip on a partner's wrist or placement of both hands around a partner's waist.	Leave the area immediately, no debate.
Hands on top of head	Need assistance
Thumbs up	Okay, I'm all right, I understand.
Thumbs down	No, negative.

9.0 MEDICAL SURVEILLANCE PROCEDURES

All contractor and subcontractor personnel performing field work where potential exposure to contaminants exists at the site are required to have passed a complete medical surveillance examination in accordance with 29 CFR 1910.120(f).

10.0 SAFETY CONSIDERATIONS

10.1 General Health and Safety Work Practices

A list of general health and safety work practices is included as an included in **Appendix D**. The work rules will be posted in a conspicuous location at the site.

10.2 The Buddy System

At a minimum, employees shall work in groups of two in such a manner that they can observe each other and maintain line-of-sight for each employee within the work group. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency.

10.3 Sample Handling

Personnel responsible for the handling of samples should wear the prescribed level of protection. Samples should be identified as to their hazard and packaged as to prevent spillage or breakage. Sample containers shall be decontaminated in the CRZ or EZ before entering a clean Support Zone area. Any unusual sample conditions, odors, or real-time readings should be noted. Laboratory personnel should be advised of sample hazard level and the potential contaminants present. This can be accomplished by a phone call to the lab coordinator and/or including a written statement with the samples reviewing lab safety procedures in handling, in order to assure that the practices are appropriate for the suspected contaminants in the sample.

10.4 Excavation

The remedial action will largely consist of the excavation impacted soils, as well as the removal of approximately 30 feet clean overburden. This work should comply with 29 CFR 1926, Subpart P-Excavations. It provides for the designation of a "Competent Person" and general requirements for safe excavating practices. The program also incorporates company standards for the monitoring of potentially hazardous atmospheres; protection from water hazards; analyzing and maintaining the stability of adjacent structures; daily competent person inspections; soil classification; sloping and benching; protective systems; and training.

The Competent Person will be the FTL or other designee with appropriate training and experience. The Competent Person will be assisted in his/her duties by other technical personnel such as the HSM, geologists, structural engineers and soils engineers.

11.0 DISPOSAL PROCEDURES

All discarded materials, waste materials or other objects shall be handled in such a way as to preclude the potential for spreading contamination, creating a sanitary hazard or causing litter to be left on site.

All potentially contaminated materials, e.g., clothing, gloves, etc., will be bagged or drummed as necessary, labeled and segregated for disposal. All non-contaminated materials will be collected and bagged for appropriate disposal as non-hazardous solid waste. Additional waste disposal procedures may be developed as applicable.

12.0 EMERGENCY RESPONSE PLAN

This section establishes procedures and provides information for use during a project emergency. Emergencies happen unexpectedly and quickly, and require an immediate response; therefore, contingency planning and advanced training of staff is essential. Specific elements of emergency support procedures which are addressed in the following subsections include communications, local emergency support units, and preparation for medical emergencies, first aid for injuries incurred on site, record keeping, and emergency site evacuation procedures.

12.1 Responsibilities

12.1.1 Health and Safety Manager (HSM)

The HSM oversees and approves the Emergency Response/Contingency Plan and performs audits to determine that the plan is in effect and that all pre-emergency requirements are met. The HSM acts as a liaison to applicable regulatory agencies and notifies OSHA of reportable accidents.

12.1.2 Field Team Leader/Site Health and Safety Officer (FTL/SHSO)

The FTL/SHSO is responsible for ensuring that all personnel are evacuated safely and that machinery and processes are shut down or stabilized in the event of a stop work order or evacuation. The FTL/SHSO is required to immediately notify the HSM of any fatalities or catastrophes (three or more workers injured and hospitalized) so that the HSM can ensure that OSHA is notified within the required time frame. The HSM will be notified of all OSHA recordable injuries, fires, spills, releases or equipment damage in excess of $500 within 24 hours.

12.1.3 Emergency Coordinator

The Emergency Coordinator for the project is the FTL/SHSO.

The emergency coordinator will locate emergency phone numbers and identify hospital routes prior to beginning work on site. The emergency coordinator shall make necessary arrangements to be prepared for any emergencies that could occur.

The Emergency Coordinator will implement the Emergency Response/Contingency Plan whenever conditions at the site warrant such action.

12.1.4 Site Personnel

Site personnel are responsible for knowing the Emergency Response/Contingency Plan and the procedures contained herein. Personnel are expected to notify the Emergency Coordinator of situations that could constitute a site emergency.

12.2 Communication

A variety of communication systems may be utilized during emergency situations. These are discussed in the following sections.

12.2.1 Hand Signals

Downrange field teams will employ hand signals where necessary for communication during emergency situations. Hand signals are found in Section 8.3.

12.2.2 Field Radios and Cell Phones

PWGC field personnel are provided cellular phones with telephone capabilities for site communication and emergency use.

12.3 Local Emergency Support Units

A route map from the site to the nearest hospital can be found in **Appendix E**. This map will be placed with the above emergency telephone numbers in all on-site vehicles.

12.4 Emergency Medical Treatment

The procedures and rules in this HASP are designed to prevent employee injury. However, should an injury occur, no matter how slight, it will be reported to the FTL/SHSO immediately. First aid equipment will be available on site at the following locations:

First Aid Kit: Support Zone (or designated by FTL/SHSO upon arrival)

During site-specific training, project personnel will be informed of the location of the first aid station(s) that has been set up. Unless they are in immediate danger, severely injured persons will not be moved until paramedics can attend to them. Some injuries, such as severe cuts and lacerations or burns, may require immediate treatment. Any first aid instructions that can be obtained from doctors or paramedics, before an emergency-response squad arrives at the site or before the injured person can be transported to the hospital, will be followed closely.

Only in non-emergency situations will an injured person be transported to the hospital by means other than an ambulance. **A map and directions to the hospital can be found in Appendix E.**

Table 12-1
Emergency Telephone Numbers

Contact	Firm or Agency	Telephone Number
Police	SCPD	911
Fire	Westhampton Beach Vol. Fire Department	911
Hospital	Peconic Bay Medical Center	631-548-6200
Ambulance	Westhampton Beach Vol. Fire Department	911
Project Manager/Health and Safety Manager	Bryan A Devaux PWGC	(516) 523-4327
Health & Safety Officer	Thomas Melia PWGC	(631) 589-6353
NYSDEC Site Contact	Heather Bishop	(518) 402-9692
SCDHS Site Contact	Jim Meyers	(631) 852-5800
Airport Contact	Anthony Ceglio	(631) 852-8096
Poison Control Center		(800) 962-1253
Chemtrec(for spills)		(800) 424-9300

12.5 Emergency Site Evacuation Routes and Procedures

In order to mobilize the manpower resources and equipment necessary to cope with a fire or other emergency, a clear chain of authority will be established. The EC will take charge of all emergency response activities and dictate the procedures that will be followed for the duration of the emergency. The EC will report immediately to the scene of the emergency, assess the seriousness of the situation, and direct whatever efforts are necessary until the emergency response units arrive. At his/her discretion, the EC also may order the closure of the site for an indefinite period.

All project personnel will be instructed on proper emergency response procedures and locations of emergency telephone numbers during the initial site safety meeting. If an emergency occurs, including but not limited to fire, explosion or significant release of toxic gas into the atmosphere, the EC will notify site personnel. All heavy equipment will be shut down and all personnel will evacuate the work areas and assemble at the evacuation meeting point, which will be determined upon arrival at the site by the FTL/SHSO, prior to work beginning. This will then be conveyed to all crew members during the site-specific briefing.

The EC will give directions for implementing whatever actions are necessary. Any project team member may be assigned to be in charge of emergency communications during an emergency. He/she will attend the site telephone specified by the EC from the time the alarm sounds until the emergency has ended.

The EC will remain at the site to provide any assistance requested by emergency-response squads as they arrive to deal with the situation.

12.6 Fire Prevention and Protection

In the event of a fire or explosion, procedures will include immediately evacuating the site (air horn will sound for a single continuous blast), and notification of local fire and police departments. No personnel will fight a fire beyond the stage where it can be put out with a portable extinguisher (incipient stage).

12.6.1 Fire Prevention

Adhering to the following precautions will prevent fires:

- Good housekeeping and storage of materials;
- Storage of flammable liquids and gases away from oxidizers;
- No smoking in the exclusion zone or any work area;
- No hot work without a properly executed hot work permit;
- Shutting off engines to refuel;
- Grounding and bonding metal containers during transfer of flammable liquids;

- Use of UL approved flammable storage cans;
- Fire extinguishers rated at least 10 pounds ABC located on all heavy equipment, in all trailers and near all hot work activities; and
- Monthly inspections of all fire extinguishers.

12.7 Overt Chemical Exposure

The following are standard procedures to treat chemical exposures. Other, specific procedures detailed on the Material Safety Data Sheet or recommended by the Corporate Medical Consultant will be followed, when necessary.

SKIN AND EYE CONTACT: Use copious amounts of soap and water. Wash/rinse affected areas thoroughly, and then provide appropriate medical attention. Eyes should be rinsed for 15 minutes upon chemical contamination. Skin should also be rinsed for 15 minutes if contact with caustics, acids or hydrogen peroxide occurs.

INHALATION: Move to fresh air. Decontaminate and transport to hospital or local medical provider.

INGESTION: Decontaminate and transport to emergency medical facility.
PUNCTURE WOUND OR LACERATION: Decontaminate and transport to emergency medical facility.

12.8 Decontamination during Medical Emergencies

If emergency life-saving first aid and/or medical treatment is required, normal decontamination procedures may need to be abbreviated or postponed. The FTL/SHSO or designee will accompany contaminated victims to the medical facility to advise on matters involving decontamination, when necessary. The outer garments can be removed if they do not cause delays, interfere with treatment or aggravate the problem. Respiratory equipment must always be removed. Protective clothing can be cut away. If the outer contaminated garments cannot be safely removed on-site, a plastic barrier placed between the injured individual and clean surfaces should be used to help prevent contamination of the inside of ambulances and/or medical personnel. Outer garments may then be removed at the medical facility. No attempt will be made to wash or rinse the victim if his/her injuries are life threatening, unless it is known that the individual has been contaminated with an extremely toxic or corrosive material which could also cause severe injury or loss of life to emergency response personnel. For minor medical problems or injuries, the normal decontamination procedures will be followed.

12.9 Accident/Incident Reporting

As soon as first aid and/or emergency response needs have been met, the following parties are to be contacted by telephone:

- Health and Safety Manager;
- Project Manager; and
- The employer of any injured worker who is not a PWGC employee.

Written confirmation of verbal reports are to be completed by the FTL/SHSO using the Incident Report Form and submitted within 24 hours. The incident report and investigation form is found in **Appendix F**. If the employee involved is not a PWGC employee, his employer will receive a copy of the report.

12.10 Adverse Weather Conditions

In the event of adverse weather conditions, the FTL/SHSO will determine if work can continue without potentially risking the safety of all field workers. Some of the items to be considered prior to determining if work should continue are:

- Potential for heat stress and heat-related injuries;
- Potential for cold stress and cold-related injuries;
- Treacherous weather-related working conditions (hail, rain, snow, ice, high winds);
- Limited visibility (fog);
- Potential for electrical storms;
- Earthquakes; and
- Other major incidents.

Site activities will be limited to daylight hours, or when suitable artificial light is provided, and acceptable weather conditions prevail. The FTL/SHSO will determine the need to cease field operations or observe daily weather reports and evacuate, if necessary, in case of severe inclement weather conditions.

12.11 Spill Control and Response

All small hazardous spills/environmental releases shall be contained as close to the source as possible. Whenever possible, the MSDS will be consulted to assist in determining the best means of containment and cleanup. For small spills, sorbent materials such as sand, sawdust or commercial sorbents should be placed directly on the substance to contain the spill and aid recovery. Any acid spills should be diluted or neutralized carefully prior to attempting recovery. Berms of earthen or sorbent materials can be used to contain the leading edge of the spills. Drains or drainage areas should be blocked. All spill containment materials will be properly disposed. An exclusion zone of 50 to 100 feet around the spill area should be established depending on the size of the spill. The following seven steps should be taken by the Emergency Coordinator:

- Determine the nature, identity and amounts of major spill components;
- Make sure all unnecessary persons are removed from the spill area;
- Notify appropriate response teams and authorities;
- Use proper PPE in consultation with the FTL/SHSO;
- If a flammable liquid, gas or vapor is involved, remove all ignition sources and use non-sparking and/or explosive proof equipment to contain or clean up the spill (diesel only vehicles, air operated pumps, etc.);
- If possible, try to stop the leak with appropriate material; and,
- Remove all surrounding materials that can react or compound with the spill.

12.12 Emergency Equipment

The following minimum emergency equipment shall be kept and maintained on-site:

- Industrial first aid kit;
- Fire extinguishers (one per work area); and
- Spill response kit.

13.0 TRAINING

13.1 General Health and Safety Training

In accordance with PWGC corporate policy, and pursuant to 29 CFR 1910.120, hazardous waste site workers shall, at the time of job assignment, have received a minimum of 40 hours of initial health and safety training for hazardous waste site operations unless otherwise noted in the above reference. At a minimum, the training shall have consisted of instruction in the topics outlined in the standard. Personnel who have not met the requirements for initial training shall not be allowed to work in any site activities in which they may be exposed to hazards (chemical or physical).

13.1.1 Three Day Supervised On the Job Training

In addition to the required initial hazardous waste operations training, each employee shall have received three days of directly supervised on-the-job training. This training will address the duties the employees are expected to perform.

13.2 Annual Eight-Hour Refresher Training

Annual eight-hour refresher training will be required of all hazardous waste site field personnel in order to maintain their qualifications for fieldwork. The training will cover a review of 1910.120 requirements and related company programs and procedures.

13.3 Site-Specific Training

Prior to commencement of field activities, all field personnel (PWGC, remedial contractors, and sub-contractors) assigned to the project will have completed training that will specifically address the activities, procedures, monitoring, and equipment used in the site operations. It will include site and facility layout, hazards and emergency services at the site, and will highlight all provisions contained within this HASP. This training will also allow field workers to clarify anything they do not understand and to reinforce their responsibilities regarding safety and operations for their particular activity.

13.4 On-Site Safety Briefings

Project personnel and visitors will be given on-site health and safety briefings daily by the FTL/SHSO to assist site personnel in safely conducting their work activities. A copy of the Daily Briefing Sign-In Sheet is contained in **Appendix G**. The briefings will include information on new operations to be conducted, changes in work practices or changes in the site's environmental conditions, as well as periodic reinforcement of previously discussed topics. The briefings will also provide a forum to facilitate conformance with safety requirements and to identify performance deficiencies related to safety during daily activities or as a result of safety inspections. The meetings will also be an opportunity to periodically update the crews on monitoring results. Prior to starting

any new activity, a training session using the Activity Hazard Analysis will be held for crew members involved in the activity.

13.5 First Aid and CPR

The HSM will identify those individuals requiring first aid and CPR training to ensure that emergency medical treatment is available during field activities. It is anticipated that a minimum of one field person on-site at any one time will have first aid and CPR training. The training will be consistent with the requirements of the American Red Cross Association or American Heart Association. If none are available on-site, then the HSM shall be notified.

13.6 Supervisory Training

Supervisors and health and safety personnel shall have completed an additional eight hours of specialized training in accordance with 29 CFR 1910.120.

14.0 LOGS, REPORTS AND RECORDKEEPING

Changes to the HASP will be documented in the Health and Safety log book and as appropriate, the HSM and/or PM will be notified. Daily tailgate meetings will be documented in the H&S log book as well as personnel on-site.

14.1 Medical and Training Records

Copies or verification of training (40-hour, 8-hour, supervisor, site-specific training and documentation of three day OJT) and medical clearance for hazardous waste site work and respirator use will be maintained on-site. Records for all subcontractor employees will also be kept on-site.

14.2 Incident Report and Investigation Form

The incident report and investigation form is to be completed for all accidents and incidents, including near misses. The form can be found in **Appendix F**.

14.3 Health and Safety Logbooks

The FTL/SHSO will maintain a logbook during site work. The daily site conditions, personnel, monitoring results and significant events will be recorded. The original logbooks will become part of the exposure records file.

15.0 FIELD PERSONNEL REVIEW

This form serves as documentation that field personnel have read, or have been informed of, and understand the provisions of the HASP. It is maintained on site by the FTL/SHSO as a project record. Each field team member shall sign this section after site-specific training is completed and before being permitted to work on site.

I have read, or have been informed of, the Health and Safety Plan and understand the information presented. I will comply with the provisions contained therein.

Name (Print and Sign)	***Date***

16.0 Remedial Contractor Requirements

As per the Approved O'Brien & Gere Engineers, Inc. workplan, the Remedial Contractor will require their own HASP and will have their own HASP requirements. A summary of the specific requirements will follow. Where possible PWGC will coordinate with the chosen contractor in order to avoid duplication of services.

16.1 Construction Personnel Protection

Contractors engaged in subsurface construction or maintenance activities will be required to implement appropriate health and safety procedures. These procedures will involve, at a minimum, donning adequate personnel protective equipment, performing appropriate air monitoring, and implementing other engineering controls as necessary to mitigate potential ingestion, inhalation, and contact with residual constituents in the soils. Recommended health and safety procedures include, but not be limited to, the following:

- While conducting invasive work at the Site, the Contractor shall provide safe and healthful working conditions. The Contractor shall comply with all New York State Department of Labor regulations and published recommendations and regulations promulgated under the Federal Occupational Safety and Health Act of 1970 and the Construction Safety Act of 1969, as amended, and with laws, rules, and regulations of other authorities having jurisdiction. Compliance with governmental requirements is mandated by law and considered only a minimum level of safety performance. The Contractor shall insure that all work is performed in accordance with recognized safe work practices.
- The Contractor shall be responsible for the safety of the Contractor's employees and the public. The Contractor shall be solely responsible for the adequacy and safety of all construction methods, materials, equipment and the safe prosecution of the work.
- The Contractor is responsible to ensure that all project personnel have been trained in accordance with 29 CFR 1910.120.
- The Contractor shall have a written HASP prepared, signed and sealed by a safety professional; a safety professional and/or a trained safety representative(s) active on the job whenever the work is in progress; an effective and documented safety training program; and a safety work method check list system.
- The Contractor shall stop work whenever a work procedure or a condition at a work site is deemed unsafe by the safety professional or his trained safety representative(s).
- The Contractor shall employ a properly qualified safety professional whose duties shall be to initiate, review and implement measures for the protection of health and prevention of accidents. The Contractor shall also employ safety representative(s) whose duties, working under the direct supervision of the safety professional, shall include the implementation the safety program for the work at the Site.
- Recognition as a safety professional shall be based on a minimum of certification by the Board of Certified Safety Professionals as a Certified Safety Professional and 5 years of professional safety management experience in the types of construction and conditions expected to be encountered on the Site.
- Safety representative(s) who work under the direction of the safety professional will have appropriate qualifications. The required qualifications shall include a minimum of: 5 years of

relevant construction experience, two years of which were exclusively in construction safety management; successful completion of a 30-hour OSHA Construction Safety and Health training course; 40-hour training as per 29 CFR 1926.65, Hazardous Waste Operations and Emergency Response; and, if confined space entry is required, training as per 29 CFR 1910.146, Permit-Required Confined Spaces.

- The safety professional shall visit and audit all work areas as often as necessary but at least once each week and shall. be available for consultation whenever necessary.
- The safety representative(s) must be at the job site full time whenever work is in progress. When multiple shift work is in progress more than one safety representative may be required.
- The safety professional and his safety representative(s) shall be responsible for ensuring Contractor compliance with governing laws, rules and regulations as well as of good safety practice.
- The safety staff shall maintain and keep available safety records, up¬to-date copies of all pertinent safety rules and regulations, Material Safety Data Sheets, and the Contractors' site-specific HASPs and the Site emergency response plan with emergency and telephone contacts for supportive actions.
- The responsible safety professional shall sign and seal the Contractor's written site-specific HASP and the HASP shall be available to workers on site. The Contractor shall provide copies of the HASP to the Contractors' insurer, if required.
- The HASP shall be written in accordance with 29 CFR 1926.65 and it will identify and define the following: the hazards anticipated for each major invasive task; the engineering, administrative and/or personal protective equipment control measures that will be implemented; the surveillance methods, and schedules of both walk through surveys and in-depth safety audits to be performed on site; medical monitoring and screening methods; the Contractors' prestart-up and continuous safety- training program; emergency response equipment, notification, training and procedures; and include copies of safety inspection check-off sheets, specific to the work methods and crews performing work at the various job locations, to be used on a regular basis in evaluating the Site and work methods.
- The safety professional and/or his trained safety representative(s) shall as a minimum:
- Schedule and conduct safety meetings and safety training programs as required by law, the health and safety plan, and good safety practice. A specific schedule of dates of these meetings and an outline of materials to be covered shall be provided with the health and safety plan. All employees shall be instructed on the recognition of hazards, observance of precautions, of the contents of the health and safety plan and the use of protective and emergency equipment.
- Determine that operators of specific equipment are qualified by training and/or experience before they are allowed to operate such equipment.
- Develop and implement emergency response procedures. Post the name, address and hours of the nearest medical doctor, name and address of nearby clinics and hospitals, and the telephone numbers of the appropriate ambulance service, fire, and the police department.
- Post all appropriate notices regarding safety and health regulations at locations that afford maximum exposure to all personnel at the job site.
- Post appropriate instructions and warning signs in regard to all hazardous areas or conditions that cannot be eliminated. Identification of these areas shall be based on experience, on site surveillance, and severity of hazard. Such signs shall not be used in place of appropriate workplace controls.

- Ascertain by personal inspection that all safety rules and regulations are enforced. Make inspections at least once a shift to ensure that all machines, tools and equipment are in a safe operating condition; and that all work areas are free of hazards. Take necessary and timely corrective actions to eliminate all unsafe acts and/or conditions, and submit to the Engineer each day a copy of his findings on the inspection check list report forms established in the health and safety plan.
- Provide safety training and orientation to authorized visitors to ensure their safety while occupying the job site.
- Perform all related tasks necessary to achieve the highest degree of safety that the nature of the work permits.
- The Contractor shall have proper safety and rescue equipment, adequately maintained and readily available, for foreseeable contingencies. This equipment may include such applicable items as: proper fire extinguishers, first aid supplies, safety ropes and harnesses, stretchers, water safety devices, oxygen breathing apparatus, resuscitators, gas detectors, oxygen deficiency indicators, combustible gas detectors, etc. This equipment should be kept in protected areas and checked at scheduled intervals. A log shall be maintained indicating who checked the equipment, when it was checked, and that it was acceptable. This equipment log shall be updated monthly and be submitted with the monthly report. Equipment that requires calibration shall have copies of dated calibration certificates on site. Substitute safety and rescue equipment must be provided while primary equipment is being serviced or calibrated.
- All personnel employed by the Contractor or his subcontractors or any visitors whenever entering the job site, shall be required to wear appropriate personal protection equipment required f'or that area. The Contractor may remove from the Site any person who fails to comply with this or any other safety requirement.

APPENDIX A

MATERIAL SAFETY DATA SHEETS

MATERIAL SAFETY DATA SHEET

SECTION 1 ◆ PRODUCT AND COMPANY IDENTIFICATION

Explorer Pipeline Company 6846 South Canton P.O. Box 2650 Tulsa, Oklahoma 74101	**FOR EMERGENCY SOURCE INFORMATION CONTACT:** ➢ (918) 493 - 5100 ➢ CHEMTREC: (800) 424-9300 (24 hour contact) ➢ CANUTEC: (613) 996-6666 ➢ SETIQ: 91-800-00214

TRADE NAMES/SYNONYMS: Jet Fuel Grade JP4 Military Jet	**CHEMICAL FAMILY:** Naphtha Based Petroleum, Kerosene	**EPL Code:** 58

This material safety data sheet represents the composite characteristics and properties of fungible petroleum hydrocarbons and other related substances transported by explorer pipeline company. The information presented was compiled from one or more product shipper sources and is intended to provide health and safety guidance for these fungible products. Individual shipper and manufacturer MSDSs are available at Explorer Pipeline Company's, Tulsa, Oklahoma, offices.

SECTION 2 ✷ HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Danger Extremely Flammable!!

- Clear, colorless liquid with faint hydrocarbon odor;
- Harmful or fatal if swallowed, inhaled or absorbed through skin.
- May cause CNS depression.
- Can produce skin irritation upon prolonged or repeated contact.
- Keep away from heat, sparks and open flame;
- Wash thoroughly after handling;
- Contains petroleum distillates! If swallowed, do not induce vomiting since aspiration into the lungs will cause chemical pneumonia;
- Avoid breathing vapors or mist;
- Use only with adequate ventilation; and
- Obtain prompt medical attention. Keep Out of Reach of Children!

SECTION 3 ▼ COMPOSITION/INFORMATION OF INGREDIENTS

INGREDIENT	CAS NUMBER	PERCENTAGE (%)
Hydrotreated light naphtha, petroleum and Hydrotreated heavy naphtha, petroleum	64742-49-0 64742-47-8	100%
Antioxidant, anti-static, metal deactivator, and corrosion inhibitor additives	As approved	Added at low ppm levels to meet specifications
Ethylene glycol monomethyl ether	109-86-4	0.10 to 0.15. % by volume normally added as an anti-icing agent as required by military specifications.
May contain benzene	71-43-2	<2.5%

ACUTE

SUMMARY OF ACUTE HAZARDS: If this material is vomited and breathed into the lungs, chemical pneumonia can result. Repeated and prolonged overexposure to vapors can cause CNS depression, coma, and respiratory arrest.

GETTING IT IN YOUR EYE...

- May cause moderate irritation, including burning sensation, redness or swelling of eyelids.

GETTING IT ON YOUR SKIN...

- No significant signs or symptoms indicative of any health hazard are expected to occur as a result of skin absorption exposure.
- Some irritation may occur.
- Headaches and nausea are also possible.
- Prolonged or repeated contact may cause skin to become dry or cracked leading to dermatitis.

SWALLOWING IT...

- May be harmful or fatal if swallowed.
- Ingestion may result in vomiting.
- Aspiration of vomitus may lead to pneumonitis

BREATHING IT...

- Irritation to the nose, throat, and respiratory tract may cause CNS depression followed by dizziness and headache. May cause liver and kidney damage.

CHRONIC

- Early to moderate CNS (Central Nervous System) depression may be evidenced by giddiness. Headache, dizziness and nausea in extreme cases. Unconsciousness and death may occur.
- Aspiration pneumonitis may be evidenced by coughing, labored breathing and cyanosis (bluish skin color): In severe cases death may occur. Kidney damage may be evidenced by changes in urine output. Urine appearance or edema (swelling from fluid retention). Liver damage may be evidenced by loss of appetite. Jaundice (yellowish skin color) and sometimes pain in the upper abdomen on the right side.
- Preexisting eye, skin, and respiratory disorders may be aggravated by exposure to this product. Impaired liver and kidney function(s) from preexisting disorders may be aggravated by exposure to this product.

CANCER, REPRODUCTIVE AND GENETIC EFFECTS

- A chronic inhalation study supported by the United States Air Force found that fully vaporized JP-4 produced lung tumors in mice at the highest concentrations tested.
- Repeated high level benzene exposure may produce injury of the blood-forming tissues causing blood abnormalities and possibly leukemia; however, exposures to such high levels are not likely to be encountered in JP-4 vapor due to the low benzene content.

See Toxicological Information (Section 11) For More Information

SECTION 4 ✣ FIRST AID MEASURES

EMERGENCY MEDICAL TREATMENT PROCEDURES: If more than 2.0 ml per KG has been ingested and vomiting has not occurred, emesis should be induced with medical supervision. Keep victim's head below hips to prevent aspiration. If symptoms such as loss of gag reflex, convulsions or unconsciousness occur before emesis, gastric lavage using a cuffed endotracheal tube should be considered.

EYES: If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

SKIN: In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water.

INGESTION: If ingested, DO NOT induce vomiting; call a physician immediately

INHALATION: If overcome by vapor, remove from exposure and call a physician immediately. If breathing is irregular or has stopped, start resuscitation, administer oxygen, if available.

NOTE TO PHYSICIAN: TREAT SYMPTOMATICALLY AND SUPPORTIVELY

SECTION 5 ⌘ FIRE FIGHTING MEASURES

- Extremely flammable vapors may be generated by material, when mixed with air and exposed to ignition source; vapors can burn in open or explode if confined.
- Vapors may be heavier than air, and may travel long distances along ground before igniting/flashing back to vapor source.
- Clothing, rags or similar organic material contaminated with this product and stored in a closed space may undergo spontaneous combustion; transfer to and from commonly grounded containers.

FLASH POINT:(Method Used) <10 °F	FLAMMABLE LIMITS:	LEL: 0.9% UEL: 8.0%

AUTOIGNITION TEMPERATURE: 410-465 °F

EXTINGUISHING MEDIA: Dry Chemical, Foam, CO_2, and Water Fog

HAZARDOUS REACTIONS/DECOMPOSITION: Incomplete combustion generates highly poisonous carbon monoxide and perhaps other toxic gases.

SPECIAL INSTRUCTIONS: Do not enter fire area without proper protection. Decomposition products possible. Fight fire from safe distance/protected location. Heat may build pressure/rupture closed containers, spreading fire, increasing risk of burns/injuries. Do not use solid water stream -- may spread fire. Apply water spray/fog for cooling. Notify authorities if liquid enters sewer/public waters. Unignited vapors are extremely hazardous to health.

SECTION 6 ❖ ACCIDENTAL RELEASE MEASURES

- Shut off and eliminate all ignition sources.
- Keep people away.
- Recover free product.
- Add sand, earth or other suitable absorbent to spill area.
- Minimize breathing vapors.
- Minimize skin contact.
- Ventilate confined spaces.
- Open all windows and doors.
- Keep product out of sewers and watercourses by diking or impounding.
- Advise authorities if product has entered or may enter sewers, watercourses, or extensive land areas.
- Assure conformity with applicable governmental regulations.
- Continue to observe precautions for volatile, flammable vapors from absorbed material.

SECTION 7 ⌘ HANDLING AND STORAGE

Storage: Protect against physical damage. Separate from oxidizing materials. Store in cool, well ventilated area of non-combustible construction away from possible sources of ignition.

SECTION 8 ⌖ EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Both local exhaust and general room ventilation are usually required to meet recommended exposure standard(s).

OTHER HYGIENIC AND WORK PRACTICES: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential direct exposure. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse. Shower after work using plenty of soap and water.

EXPOSURE LIMITS			
OSHA PEL		ACGIH TLV (2005)	
BENZENE			
TWA	STEL	TWA	STEL
1 ppm	5 ppm	0.5 ppm	2.5 ppm

PERSONAL PROTECTIVE EQUIPMENT

- **EYES:** Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor. Contact lenses should not be worn.
- **SKIN:** When skin contact is possible, protective clothing including gloves, apron, sleeves, boots, head and face protection should be worn. This equipment must be cleaned thoroughly and/or discarded after use.
- **RESPIRATORY PROTECTION:** If exposure may or does exceed occupational exposure limits use a NIOSH-approved respirator to prevent overexposure. In accord with 1910.134 use either a full-face, atmosphere-supplying respirator or air-purifying respirator for organic vapors.

SECTION 9 ⚡ PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT (760 MM HG): 130-518 °F	**PERCENT VOLATILE BY VOLUME:** 100%
SPECIFIC GRAVITY (H_2O = 1 AT 39.2 °F): 0.75-0.80	**VISCOSITY UNITS, TEMP:** 1 cSt @ 20°C
FREEZING POINT: -72°F	**VAPOR DENSITY (AIR =1):** 7.5
STABILITY: Stable	**HAZARDOUS POLYMERIZATION:** Not Expected to Occur
VAPOR PRESSURE AT 100°F: <80 mm Hg 2-3 psi	**SOLUBILITY IN WATER:** Negligible
APPEARANCE AND ODOR: Clear, colorless liquid with faint hydrocarbon odor.	

SECTION 10 ⌑ STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal temperatures and pressures

CONDITIONS TO AVOID: Heat, sparks, open flame, strong oxidizing conditions.

OTHER PHYSICAL AND CHEMICAL PROPERTIES: No data available

MATERIALS TO AVOID: Strong oxidizing agents, such as oxygen, chlorine, and hypochlorites.

HAZARDOUS POLYMERIZATION: Has not been reported

SECTION 11 ☣ TOXICOLOGICAL INFORMATION

The variable composition makes it impossible to set a specific exposure limit for all compositions of this material. Specific exposure limits for potential components such as benzene should be applied based on air monitoring to assure employees are not exposed to excessive vapor levels of components individually or collectively.

BENZENE

Benzene is known to be a human carcinogen based on sufficient evidence in humans. Case reports and case series have reported leukemia (mostly acute myelogenous leukemia) in individuals exposed to benzene. The strongest epidemiological evidence that benzene causes cancer is from several cohort studies in various industries and geographical locations, which found that occupational exposure to benzene increased the risk of mortality from leukemia.

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
$LD_{50(oral)}$	Mouse	4700 mg/kg	$LC_{50(inh)}$	Mouse	9980 ppm	$TD_{LO(oral)}$	Human	50 mg/kg

CARCINOGENICITY

IARC	Sufficient evidence in animals	Sufficient evidence in humans	Group 1: classifiable as a human carcinogen
NTP	Carcinogen		
California (Prop 65): Listed as carcinogen	**NIOSH:** Potential Occupational Carcinogen	**ACGIH:** A1 - Confirmed human carcinogen	**OSHA:** Select Carcinogen

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Repeated or prolonged breathing of benzene vapor has been associated with the development of chromosomal damage in experimental animals and various blood diseases in humans ranging from aplastic anemia to leukemia (a form of cancer). All of these diseases can be fatal. In some individuals, benzene exposure can sensitize cardiac tissue to epinephrine which may precipitate fatal ventricular fibrillation.
No birth defects have been shown to occur in pregnant laboratory animals exposed to doses not toxic to the mother.

SECTION 12 ❋ ECOLOGICAL INFORMATION

ACUTE EFFECTS: No data available on product, however Benzene is considered moderately toxicity to aquatic life. Insufficient data are available to evaluate or predict the short-term effects to birds or land animals.
CHRONIC EFFECTS: No data available on product, however Benzene is considered moderately toxicity to aquatic life. Insufficient data are available to evaluate or predict the long-term effects to birds or land animals.
DISTRIBUTION AND PERSISTENCE IN THE ENVIRONMENT: No Data available.

SECTION 13 ✣ DISPOSAL CONSIDERATIONS

Avoid waste contact/breathing harmful vapors. Contaminated product/soil/water may be RCRA/OSHA hazardous waste due to potential for fire/hazard.

SECTION 14 ★ TRANSPORTATION INFORMATION

Not Meant To Be All Inclusive - Check Local, State, And Federal Laws And Regulations

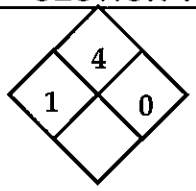
Agency	Shipping Name	Packing Group	Hazard Class	UN/NA #
U.S. DOT	Fuel, Aviation, Turbine Engine	I, II or III	Flammable Liquid	UN 1863

SECTION 15 ☽ REGULATORY INFORMATION

CERCLA RQ's (40 CFR Part 302)	Benzene – 10 pounds
RCRA	Benzene - U019
SARA (40 CFR Part 355) TPQ's	None of the ingredients are listed
SARA Title III Section 313	Benzene listed
California's Prop 65	Benzene listed
OSHA	Benzene is listed as hazardous under 29 CFR 1910.1200

SECTION 16 ❁ OTHER INFORMATION

NFPA 704 LABEL:



HMIS LABEL

1-4-0

MSDS REVISIONS: Change in Format and update of Information

MSDS CREATION DATE: July 1997 | **REVISION #1:** 01/03/06

DISCLAIMER

The information in this MSDS was obtained from sources which we believe are reliable. **HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS ACCURACY.** Some conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. **FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.** All product measurements such as flash point, *etc.* are considered approximate values. All data provided by Explorer Pipeline Company. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, such as refined petroleum hydrocarbon mixtures, this MSDS information may not be applicable.

MSDS DEVELOPER: Cass Willard
Cass Willard, CIH

DATE: 01/03/06

Oxygen Release Compound (ORC®)
MATERIAL SAFETY DATA SHEET (MSDS)

Last Revised: **October 18, 2005**

Section 1 - Material Identification

Supplier:

REGENESIS
1011 Calle Sombra
San Clemente, CA 92673
Phone: **949.366.8000**
Fax: **949.366.8090**
E-mail: **info@regenesis.com**

Chemical Description:	**A mixture of Magnesium Peroxide (MgO_2), Magnesium Oxide (MgO), and Magnesium Hydroxide [$Mg(OH)_2$]**
Chemical Family:	**Inorganic Chemical**
Trade Name:	**Oxygen Release Compound (ORC®)**
Product Use:	**Used to remediate contaminated soil and groundwater (environmental applications)**

Section 2 – Chemical Identification

CAS#	Chemical
14452-57-4	**Magnesium Peroxide (MgO_2)**
1309-48-4	**Magnesium Oxide (MgO)**
1309-42-8	**Magnesium Hydroxide [$Mg(OH)_2$]**
7758-11-4	**Dipotassium Phosphate (HK_2O_4P)**
7778-77-0	**Monopotassium Phosphate (H_2KO_4P)**
Assay:	**25-35% Magnesium Peroxide (MgO_2)**

Section 3 - Physical Data	
Melting Point:	**Not Determined (ND)**
Boiling Point:	**ND**
Flash Point:	**Not Applicable (NA)**
Self-Ignition Temperature:	**NA**
Thermal Decomposition:	**Spontaneous Combustion possible at ≈ 150°C**
Density:	**0.6 – 0.8 g/cc**
Solubility:	**Reacts with Water**
pH:	**Approximately 10 in saturated solution**
Appearance:	**White Powder**
Odor:	**None**
Vapor Pressure:	**None**
Hazardous Decomposition Products:	**Not Known**
Hazardous Reactions:	**Hazardous Polymerization will not occur**
Further Information:	**Non-combustible, but will support combustion**

Section 4 – Reactivity Data	
Stability:	**Product is stable unless heated above 150 °C. Magnesium Peroxide reacts with water to slowly release oxygen. Reaction by product is Magnesium Hydroxide**
Conditions to Avoid:	**Heat above 150 °C. Open Flames.**
Incompatibility:	**Strong Acids. Strong Chemical Agents.**
Hazardous Polymerization:	**None known.**

Section 5 - Regulations	
Permissible Exposure Limits in Air	**Not Established. Should be treated as a nuisance dust.**

Section 6 – Protective Measures, Storage and Handling	
Technical Protective Measures	
Storage:	**Keep in tightly closed container. Keep away from combustible material.**
Handling:	**Use only in well ventilated areas.**
Personal Protective Equipment (PPE)	
Respiratory Protection:	**Recommended (HEPA Filters)**
Hand Protection:	**Wear suitable gloves.**
Eye Protection:	**Use chemical safety goggles.**
Other:	**NA**
Industrial Hygiene:	**Avoid contact with skin and eyes**
Protection Against Fire & Explosion:	**NA**
Disposal:	**Dispose via sanitary landfill per state/local authority**
Further Information:	**Not flammable, but may intensify a fire**
After Spillage/Leakage/Gas Leakage:	**Collect in suitable containers. Wash remainder with copious quantities of water.**
Extinguishing Media:	**NA**
Suitable:	**Carbon Dioxide, dry chemicals, foam**
Further Information:	**Self contained breathing apparatus or approved gas mask should be worn due to small particle size. Use extinguishing media appropriate for surrounding fire.**
First Aid:	**After contact with skin, wash immediately with plenty of water and soap. In case of contact with eyes, rinse immediately with plenty of water and seek medical attention.**

Section 7 – Information on Toxicology

Toxicity Data:	**Not Available**

Section 8 – Information on Ecology

Water Pollution Hazard Raging (WGK):	**0**

Section 9 – Further Information

After the reaction of magnesium peroxide with water to form oxygen, the resulting material, magnesium hydroxide, is mildly basic. The amounts of magnesium oxide (magnesia) and magnesium hydroxide in the initial product have an effect similar to lime, but with lower alkalinity.

The information contained in this document is the best available to the supplier at the time of writing, but is provided without warranty of any kind. Some possible hazards have been determined by analogy to similar classes of material. The items in this document are subject to change and clarification as more information become available.

APPENDIX B

ACTIVITY HAZARD ANALYSES

Project Identification Baumann Bus	**Location** Westhampton, NY	**Estimated Dates** TBD
Phase of Work Mobilization/ Demobilization	**Page 1 of 1**	**Analysis Approved by** Bryan Devaux, PM
TASKS	**HAZARDS**	**CONTROL MEASURES**
1. Mobilization and demobilization of equipment site tools, personnel	Slips/trips/falls	• Maintain alertness to slip/trip/fall hazards; • Maintain good housekeeping; • Walk, do not run; • Wear footwear with soles that grip; • Unloading areas should be on even terrain; and • Mark and repair if possible tripping hazards.
	Manual lifting and material handling	• Instruct personnel on proper lifting techniques; • Use proper lifting techniques; and • Team lifting will be used for heavy loads or use mechanical lifting devices.
	Temperature extremes	• Drink plenty of fluids: • Train personnel of signs/symptoms of heat/cold stress; • Monitor air temperatures when extreme weather conditions are present; and • Stay in visual and verbal contact with your buddy.
	Vehicular traffic	• Spotters will be used when backing up trucks and heavy equipment and when moving equipment.
	Overhead hazards	• Personnel will be required to wear hard hats that meet ANSI Standard Z89.1; • All ground personnel will stay clear of suspended loads; • All equipment will be provided with guards, canopies or grills to protect the operator from falling or flying objects; and • All overhead hazards will be identified prior to commencing work operations.
	Noise	• Ear plugs or ear muffs shall be worn for operations that exceed 85 decibels.
	Electrocution	• Equipment will be equipped with GFCI; • A licensed electrician will conduct all electrical work; • All equipment will stay a minimum of 15 feet from overhead-energized electrical lines (50 kV). This distance will increase .4 inches for each 1 kV above 50 kV.
	Biological hazards	• Be alert to the presence of biological hazards; • Wear insect repellent; • Follow procedures in Section 4.2.2 for tick bites; • FTL/SHSO should be aware of on-site personnel with allergic reactions in insect bites and stings.

Project Identification Baumann Bus	**Location** Westhampton, NY	**Estimated Dates** TBD
Phase of Work Excavation Oversight	**Page 1 of 2**	**Analysis Approved by** Bryan Devaux, PM
TASKS	**HAZARDS**	**CONTROL MEASURES**
1. Excavate soils. 2. Backfill excavations.	Chemical hazards	• Wear appropriate PPE per Table 6-1; • Perform air monitoring per Community Air Monitoring Plan; • Practice contamination avoidance; • Follow proper decontamination procedures; and • Wash hands/face before eating, drinking or smoking.
	Hand and power tool usage	• Equip all electrical equipment with GFCI's; • Inspect all electrical equipment and tools prior to use; • Daily inspections will be performed; • Remove broken or damaged tools from service; • Use the tool for its intended purpose; • Use in accordance with manufacturer instructions; and Tag and remove defective equipment.
	Temperature extremes	• Drink plenty of fluids: • Train personnel of signs/symptoms of heat/cold stress; • Monitor air temperatures when extreme weather conditions are present; and, • Stay in visual and verbal contact with your buddy.
	Manual lifting and material handling	• Instruct personnel on proper lifting techniques; • Use proper lifting techniques; and • Team lifting will be used for heavy loads or use mechanical lifting devices.
	Fire/Explosion	• ABC type fire extinguishers shall be readily available; • No smoking in work area.
	Biological hazards	• Be alert to the presence of biological hazards; • Wear insect repellent; • Follow procedures in Section 4.2.2 for tick bites; • FTL/SHSO should be aware of on-site personnel with allergic reactions in insect bites and stings.
	Heavy equipment	• Ground personnel will stay clear of all suspended loads; • Ground personnel will stay out of the swing radius; • Eye contact with operators will be made before approaching equipment; • Equipment will not be approached on blind sides; • All equipment will be equipped with backup alarms or spotters shall be used.
	Slips/Trips/Falls	• Maintain alertness to slip/trip/fall hazards; • Maintain good housekeeping; • Walk, do not run; • Wear footwear with soles that grip; • Unloading areas should be on even terrain; and mark and repair if possible tripping hazards are present.

Project Identification Baumann Bus	**Location** Westhampton, NY	**Estimated Dates** TBD
Phase of Work Excavation Oversight	**Page 2 of 2**	**Analysis Approved by** Bryan Devaux, PM
TASKS	**HAZARDS**	**CONTROL MEASURES**
	Noise	• Hearing protection mandatory at or above 85 dBA. • Instruct personnel how to properly wear heating protective devices. •Disposable ear plugs or other hearing protection required when working near noisy equipment..
	Steam/Heat/Splashing	• Use face shield and safety glasses or goggles; • Stay out of the splash/steam radius; • Do not direct steam at anyone; • Do not hold objects with your foot and steam area near it; • Ensure that the direction of spray minimizes spread of constituents of concern; and • Use shielding as necessary.
	Excavation hazards	• Follow 29 CFR 1926 Subpart P.
	Overhead hazards	• Personnel will be required to wear hard hats that meet ANSI Standard Z89.1; • All ground personnel will stay clear of suspended loads; • All equipment will be provided with guards, canopies or grills to protect the operator from falling or flying objects; and • All overhead hazards will be identified prior to commencing work operations.

Project Identification Baumann Bus	**Location** Westhampton, NY	**Estimated Dates** TBD
Phase of Work Soil/Groundwater Sampling	**Page 1 of 1**	**Analysis Approved by** Bryan Devaux PM

TASKS	**HAZARDS**	**CONTROL MEASURES**
1.Collect soil/groundwater samples.	Chemical hazards	• Wear appropriate PPE per Table 6-1; • Practice contamination avoidance; • Follow proper decontamination procedures; and • Wash hands/face before eating, drinking or smoking.
	Temperature extremes	• Drink plenty of fluids: • Train personnel of signs/symptoms of heat/cold stress; • Monitor air temperatures when extreme weather conditions are present; and • Stay in visual and verbal contact with your buddy.
	Manual lifting and material handling	• Site personnel will be instructed on proper lifting techniques; mechanical devices should be used to reduce manual handling of materials; team lifting should be utilized if mechanical devices are not available.
	Slips/Trips/Falls	• Maintain alertness to slip/trip/fall hazards; • Maintain good housekeeping; • Walk, do not run; • Wear footwear with soles that grip; • Unloading areas should be on even terrain; and • Mark and repair if possible tripping hazards.

Project Identification Baumann Bus	**Location** Westhampton, NY	**Estimated Dates** TBD
Phase of Work Decontamination	**Page 1 of 1**	**Analysis Approved by** Bryan Devaux PM
TASKS	**HAZARDS**	**CONTROL MEASURES**
1.Decontaminate equipment	Chemical hazards	• Wear appropriate PPE per Table 6-1; • Practice contamination avoidance; • Follow proper decontamination procedures; and • Wash hands/face before eating, drinking or smoking.
	Temperature extremes	• Drink plenty of fluids: • Train personnel of signs/symptoms of heat/cold stress; • Monitor air temperatures when extreme weather conditions are present; and • Stay in visual and verbal contact with your buddy.
	Manual lifting and material handling	• Site personnel will be instructed on proper lifting techniques; mechanical devices should be used to reduce manual handling of materials; team lifting should be utilized if mechanical devices are not available.
	Slips/Trips/Falls	• Maintain alertness to slip/trip/fall hazards; • Maintain good housekeeping; • Walk, do not run; • Wear footwear with soles that grip; • Unloading areas should be on even terrain; and • Mark and repair if possible tripping hazards.

Project Identification Baumann Bus	**Location** Westhampton, NY	**Estimated Dates** TBD
Phase of Work ORC Application Oversight	**Page 1 of 2**	**Analysis Approved by** Bryan Devaux, PM
TASKS	**HAZARDS**	**CONTROL MEASURES**
1. Application of ORC material to open excavation..	Chemical hazards	• Wear appropriate PPE per Table 6-1; • Perform air monitoring per Community Air Monitoring Plan; • Practice contamination avoidance; • Follow proper decontamination procedures; and • Wash hands/face before eating, drinking or smoking.
	Hand and power tool usage	• Equip all electrical equipment with GFCI's; • Inspect all electrical equipment and tools prior to use; • Daily inspections will be performed; • Remove broken or damaged tools from service; • Use the tool for its intended purpose; • Use in accordance with manufacturer instructions; and Tag and remove defective equipment.
	Temperature extremes	• Drink plenty of fluids: • Train personnel of signs/symptoms of heat/cold stress; • Monitor air temperatures when extreme weather conditions are present; and, • Stay in visual and verbal contact with your buddy.
	Manual lifting and material handling	• Instruct personnel on proper lifting techniques; • Use proper lifting techniques; and • Team lifting will be used for heavy loads or use mechanical lifting devices.
	Fire/Explosion	• ABC type fire extinguishers shall be readily available; • No smoking in work area.
	Biological hazards	• Be alert to the presence of biological hazards; • Wear insect repellent; • Follow procedures in Section 4.2.2 for tick bites; • FTL/SHSO should be aware of on-site personnel with allergic reactions in insect bites and stings.
	Heavy equipment	• Ground personnel will stay clear of all suspended loads; • Ground personnel will stay out of the swing radius; • Eye contact with operators will be made before approaching equipment; • Equipment will not be approached on blind sides; • All equipment will be equipped with backup alarms or spotters shall be used.
	Slips/Trips/Falls	• Maintain alertness to slip/trip/fall hazards; • Maintain good housekeeping; • Walk, do not run; • Wear footwear with soles that grip; • Unloading areas should be on even terrain; and mark and repair if possible tripping hazards are present.

Project Identification Baumann Bus	**Location** Westhampton, NY	**Estimated Dates** TBD
Phase of Work ORC Application Oversight	**Page 21 of 2**	**Analysis Approved by** Bryan Devaux, PM
TASKS	**HAZARDS**	**CONTROL MEASURES**
	Noise	• Hearing protection mandatory at or above 85 dBA. • Instruct personnel how to properly wear heating protective devices. •Disposable ear plugs or other hearing protection required when working near noisy equipment..
	Steam/Heat/Splashing	• Use face shield and safety glasses or goggles; • Stay out of the splash/steam radius; • Do not direct steam at anyone; • Do not hold objects with your foot and steam area near it; • Ensure that the direction of spray minimizes spread of constituents of concern; and • Use shielding as necessary.
	Excavation hazards	• Follow 29 CFR 1926 Subpart P.
	Overhead hazards	• Personnel will be required to wear hard hats that meet ANSI Standard Z89.1; • All ground personnel will stay clear of suspended loads; • All equipment will be provided with guards, canopies or grills to protect the operator from falling or flying objects; and • All overhead hazards will be identified prior to commencing work operations.

APPENDIX C

HEAT/COLD STRESS PROTOCOLS

HEAT STRESS

Heat Stress (Hyperthermia)

Heat stress is the body's inability to regulate the core temperature. A worker's susceptibility to heat stress can vary according to his/her physical fitness, degree of acclimation to heat, humidity, age and diet.

1. Prior to site activity, the field team leader may make arrangements for heat stress monitoring (i.e., monitoring heart rate, body temperature, and body water loss) during actual site work if conditions warrant. In addition, the FTL is to ensure that each team member has been acclimatized to the prevailing environmental conditions, that personnel are aware of the signs and symptoms of heat sickness, that they have been adequately trained in first aid procedures, and that there are enough personnel on-site to rotate work assignments and schedule work during hours of reduced temperatures. Personnel should not consume alcoholic or caffeinated beverages but rather drink moderate levels of an electrolyte solution and eat well prior to commencing site work.

2. Although there is no specific test given during a baseline physical that would identify a person's intolerance to heat, some indicators are tobacco or medication use, dietary habits, body weight, and chronic conditions such as high blood pressure or diabetes.

3. *Heat cramps*, caused by profuse perspiration with inadequate fluid intake and salt replacement, most often afflict people in good physical condition who work in high temperature and humidity. Heat cramps usually come on suddenly during vigorous activity. Untreated, heat cramps may progress rapidly to heat exhaustion or heat stroke. First aid treatment: remove victim to a cool place and replace lost fluids with water.

4. Thirst is not an adequate indicator of heat exposure. Drinking fluid by itself does not indicate sufficient water replacement during heat exposure. A general rule, the amount of water administered should replace the amount of water lost, and it should be administered at regular intervals throughout the day. For every half pound of water lost, 8 ounces of water should be ingested. Water should be replaced by drinking 2 – 4 ounce servings during every rest period. A recommended alternative to water is an electrolyte drink split 50/50 with water.

5. *Heat exhaustion* results from salt and water loss along with peripheral pooling of blood. Like heat cramps, heat exhaustion tends to occur in persons in good physical health who are working in high temperatures and humidity. Heat exhaustion may come on suddenly as dizziness and collapse. Untreated, heat exhaustion may progress to heat stroke.

6. *Treatment for heat exhaustion*: Move the victim to a cool environment (e.g. air-conditioned room/car), lay victim down and fan him/her. If the air-conditioning is not available, remove the victim to a shaded area, remove shirt, and fan. If symptoms do not subside within an hour, notify 911 to transport to hospital.

7. *Heat stroke* results from the body's inability to dissipate excess heat. A true medical emergency that requires immediate care, it usually occurs when one ignores the signs of heat exhaustion and continues strenuous activities. Working when the relative humidity exceeds 60% is a particular problem. Workers in the early phase of heat stress may not be coherent of they will be confused, delirious or comatose. Changes in behavior, irritability and combativeness are useful early signs of heat stroke.

8. *Treatment of heat stroke*: Move the victim to a cool, air-conditioned environment. Place victim in a semi-reclined position with head elevated and strip to underclothing. Cool victim as rapidly as possible, applying ice packs to the arms and legs and massaging the neck and torso. Spray victim with tepid water and constantly fan to promote evaporation. Notify 911 to transport to hospital as soon as possible.

TABLE 1

SYMPTOMS OF HEAT STRESS

Heat cramps are caused by heavy sweating with inadequate fluid intake. Symptoms include;

- Muscle cramps
- Cramps in the hands, legs, feet and abdomen

Heat exhaustion occurs when body organs attempt to keep the body cool. Symptoms include;

- Pale, cool moist skin
- Core temperature elevated 1-2°
- Thirst
- Anxiety
- Rapid heart rate
- Heavy sweating
- Dizziness
- Nausea

Heat stroke is the most serious form of heat stress. Immediate action must be taken to cool the body before serious injury and death occur. Symptoms are;

- Red, hot, dry skin
- Lack of perspiration
- Seizures
- Dizziness and confusion
- Strong, rapid pulse
- Core temperature of 104° or above
- Coma

TABLE 2

HEAT STRESS INDICATORS

Heat stress indicator	When to measure	If Exceeds...	Action
Heart rate (pulse)	Beginning of rest period	110 beats per minute	Shorten next work period by 33%
Oral temperature	Beginning of rest period	99°F (after thermometer is under tongue for 3 minutes) 100.6°F	Shorten next work period by 33% Prohibit work in impermeable clothing
Body weight	1. Before workday begins (a.m.) 2. After workday ends (p.m.)		Increase fluid intake

COLD STRESS

Cold stress (Hypothermia)

In hypothermia the core body temperature drops below 95°F. Hypothermia can be attributed to a decrease in heat production, increased heat loss or both.

Prevention

Institute the following steps to prevent overexposure of workers to cold:

1. Maintain body core temperature at 98.6°F or above by encouraging workers to drink warm liquids during breaks (preferably not coffee) and wear several layers of clothing that can keep the body warm even when the clothing is wet.
2. Avoid frostbite by adequately covering hands, feet and other extremities. Clothing such as insulated gloves or mittens, earmuffs and hat liners should be worn. To prevent contact frostbite (from touching metal and cold surfaces below 20°F), workers should wear gloves. Tool handles should be covered with insulating material.
3. Adjust work schedules to provide adequate rest periods. When feasible, rotate personnel and perform work during the warmer hours of the day.
4. Provide heated shelter. Workers should remove their outer layer(s) of clothing while in the shelter to allow sweat to evaporate.
5. In the event that wind barriers are constructed around an intrusive operation (such as drilling), the enclosure must be properly vented to prevent the buildup of toxic or explosive gases or vapors. Care must be taken to keep a heat source away from flammable substances.
6. Using a wind chill chart such as the one in Table 3, obtain the equivalent chill temperature (ECT) based on actual wind speed and temperature. Refer to the ECT when setting up work warm-up schedules, planning appropriate clothing, etc. Workers should use warming shelters at regular intervals at or below an ECT of 20°F. For exposed skin, continuous exposure should not be permitted at or below an ECT of -25°F.

Frostbite

Personnel should be aware of symptoms of frostbite/hypothermia. If the following symptoms are noticed in any worker, he/she should immediately go to a warm shelter.

Condition	Skin Surface	Tissue Under Skin	Skin Color
Frostnip	Soft	Soft	Initially red, then white
Frostbite	Hard	Soft	White and waxy
Freezing	Hard	Hard	Blotchy, white to yellow-gray to gray

1. *Frostnip* is the incipient stage of frostbite, brought about by direct contact with a cold object or exposure of a body part to cool/cold air. Wind chill or cold water also can be major factors. This condition is not serious. Tissue damage is minor and the response to care is good. The tip of the nose, tips of ears, upper cheeks and fingers (all areas generally exposed) are most susceptible to frostnip.

2. *Treatment of frostnip*: Care for frostnip by warming affected areas. Usually the worker can apply warmth from his/her bare hands, blow warm air on the site, or, if the fingers are involved, hold them in the armpits. During recovery, the worker may complain of tingling or burning sensation, which is normal. If the condition does not respond to this simple care, begin treatment for frostbite.

3. *Frostbite*: The skin and subcutaneous layers become involved. If frostnip goes untreated, it becomes superficial frostbite. This condition is serious. Tissue damage may be serious. The worker must be transported to a medical facility for evaluation. The tip of the nose, tips of ears, upper cheeks and fingers (all areas generally exposed) are most susceptible to frostbite. The affected area will feel frozen, but only on the surface. The tissue below the surface must still be soft and have normal response to touch. *DO NOT* squeeze or poke the tissue. The condition of the deeper tissues can be determined by gently palpating the affected area. The skin will turn mottled or blotchy. It may also be white and then turn grayish-yellow.

4. *Treatment of frostbite*: When practical, transport victim as soon as possible. Get the worker inside and keep him/her warm. Do not allow any smoking or alcohol consumption. Thaw frozen parts by immersion, re-warming in a 100°F to 106°F water bath. Water temperature will drop rapidly, requiring additional warm water throughout the process. Cover the thawed part with a dry sterile dressing. Do not puncture or drain any blisters.

   NOTE: Never listen to myths and folk tales about the care of frostbite. *Never* rub a frostbitten or frozen area. *Never* rub snow on a frostbitten or frozen area. Rubbing the area may cause

serious damage to already injured tissues. Do not attempt to thaw a frozen area if there is any chance it will be re-frozen.

5. *General cooling/Hypothermia*: General cooling of the body is known as systemic hypothermia. This condition is not a common problem unless workers are exposed to cold for prolonged periods of time without any shelter.

Body Temperature	°C	Symptoms
99-96	37-35.5	Intense, uncontrollable shivering
95-91	35.5-32.7	Violent shivering persists. If victim is conscious, he has difficulty speaking.
90-86	32-30	Shivering decreases and is replaced by strong muscular rigidity. Muscle coordination is affected. Erratic or jerkey movements are produced. Thinking is less clear. General comprehension is dulled. There may be total amnesia. The worker is generally still able to maintain the appearance of psychological contact with his surroundings.
85-81	29.4-27.2	Victim becomes irrational, loses contact with his environment, and drifts into a stuporous state. Muscular rigidity continues. Pulse and respirations are slow and the worker may develop cardiac arrhythmias.
80-78	26.6-18.5	Victim becomes unconscious. He does not respond to the spoken word. Most reflexes cease to function. Heartbeat becomes erratic
Below 78	25.5	Cardiac and respiratory centers of the brain fail. Ventricular fibrillation occurs; probably edema and hemorrhage in the lungs; death.

6. *Treatment of hypothermia*: Keep worker dry. Remove any wet clothing and replace with dry clothes, or wrap person in dry blankets. Keep person at rest. Do not allow him/her to move around. Transport the victim to a medical facility as soon as possible.

TABLE 3[1]
COOLING POWER OF WIND ON EXPOSED FLESH EXPRESSED AS AN EQUIVALENT TEMPERATURE (UNDER CALM CONDITIONS)

Estimated wind Speed (in mph)	Actual Temperature Reading (°F)P											
	50	40	30	20	10	0	10	20	30	40	50	60
	Equivalent Chill Temperature (°F)											
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	15	4	-9	-24	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-121
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-146
(Wind speeds greater than 40 mph have little additional effect.)	LITTLE DANGER in < hr with dry skin. Maximum danger of false sense of security.				INCREASING DANGER Danger from freezing of exposed flesh within one minute			GREAT DANGER may freeze within 30 seconds.				Flesh
	Trench foot and imersion foot may occur at any point on this chart											

Developed by U.S. Army Research Institute of Environmental Medicine, Natick, MA.

(1) Reproduced from American Conference of Governmental Industrial Hygienists, Threshold Limit Values and Biological Exposure Indices for 1985-1986, p.01.

APPENDIX D

GENERAL HEALTH AND SAFETY WORK PRACTICES

GENERAL HEALTH AND SAFETY WORK PRACTICES

1. All site personnel must attend each day's Daily Briefing and sign the attendance sheet.

2. Any individual taking prescribed drugs shall inform the FTL/SHSO of the type of medication. The FTL/SHSO will review the matter with the HSM and the Corporate Medical Consultant (CMC), who will decide if the employee can safely work on-site while taking the medication.

3. The personal protective equipment specified by the FTL/SHSO and/or associated procedures shall be worn by all site personnel. This includes hard hats and safety glasses which must be worn at all times in active work areas.

4. Facial hair (beards, long sideburns or mustaches) which may interfere with a satisfactory fit of a respirator mask is not allowed on any person who may be required to wear a respirator.

5. Personnel must follow proper decontamination procedures and shower as soon as possible upon completion of work shift.

6. Eating, drinking, chewing tobacco or gum, smoking and any other practice that may increase the possibility of hand-to-mouth contact is prohibited in the exclusion zone or the contamination reduction zone. (Exceptions may be permitted by the HSM to allow fluid intake during heat stress conditions).

7. All lighters, matches, cigarettes and other forms of tobacco are prohibited in the Exclusion Zone.

8. All signs and demarcations shall be followed. Such signs and demarcation shall not be removed, except as authorized by the FTL/SHSO.

9. No one shall enter a permit-required confined space without a permit and appropriate training. Confined space entry permits shall be implemented as issued.

10. All personnel must follow Hot Work Permits as issued.

11. All personnel must use the Buddy System in the Exclusion Zone.

12. All personnel must follow the work-rest regimens and other practices required by the heat stress program.

13. All personnel must follow lockout/tagout procedures when working on equipment involving moving parts or hazardous energy sources.

14. No person shall operate equipment unless trained and authorized.

15. No one may enter an excavation greater than four feet deep unless authorized by the Competent Person. Excavations must be sloped or shored properly. Safe means of access and egress from excavations must be maintained.

16. Ladders and scaffolds shall be solidly constructed, in good working condition, and inspected prior to use. No one may use defective ladders or scaffolds.

17. Fall protection or fall arrest systems must be in place when working at elevations greater than six feet for temporary working surfaces and four feet for fixed platforms.

18. Safety belts, harnesses and lanyards must be selected by the Supervisor. The user must inspect the equipment prior to use. No defective personal fall protection equipment shall be used. Personal fall protection that has been shock loaded must be discarded.

19. Hand and portable power tools must be inspected prior to use. Defective tools and equipment shall not be used.

20. Ground fault interrupters shall be used for cord and plug equipment used outdoors or in damp locations. Electrical cords shall be kept out walkways and puddles unless protected and rated for the service.

21. Improper use, mishandling, or tampering with health and safety equipment and samples is prohibited.

22. Horseplay of any kind is prohibited.

23. Possession or use of alcoholic beverages, controlled substances, or firearms on any site is forbidden.

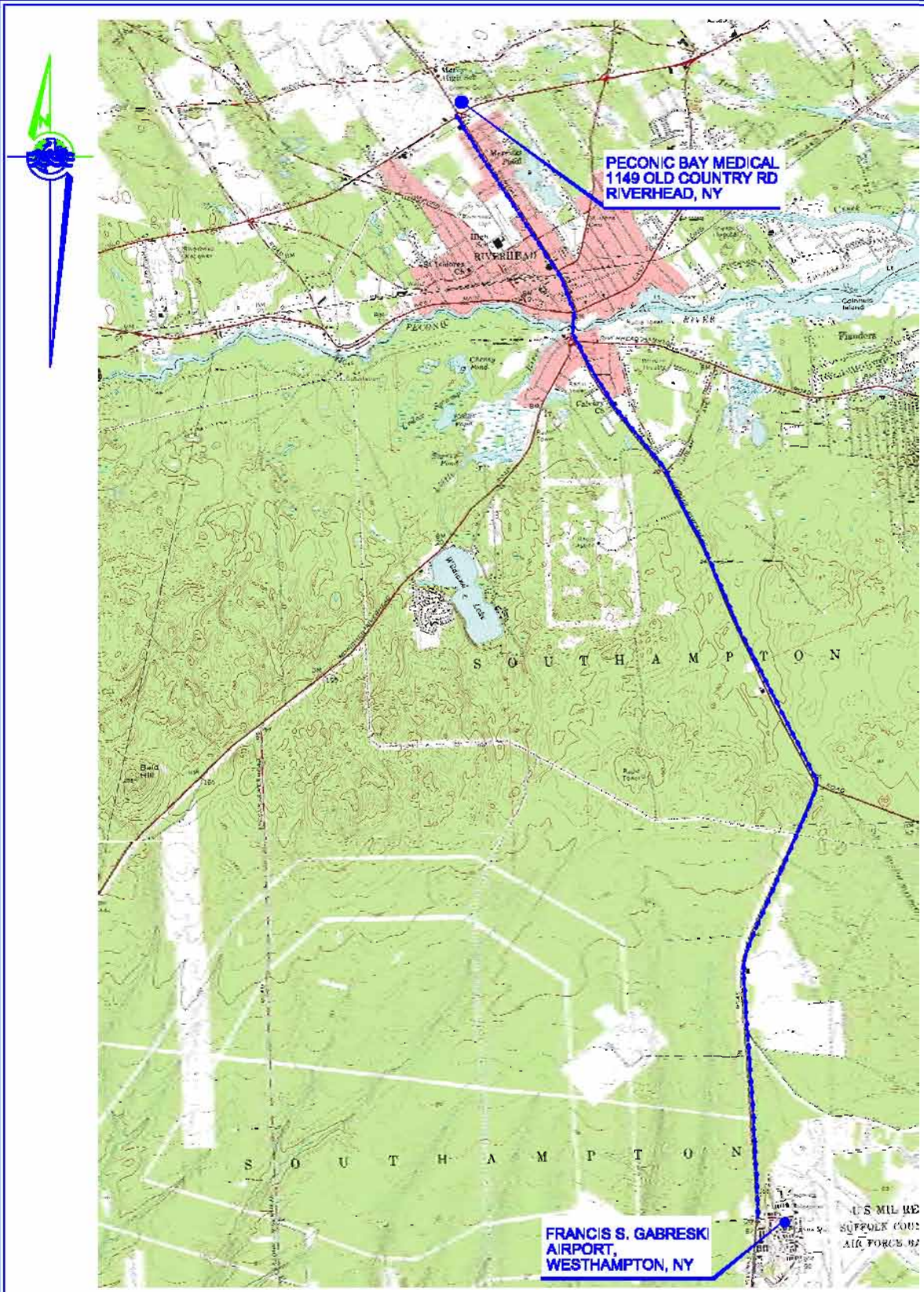
24. All incidents, no matter how minor, must be reported immediately to the Supervisor.

25. All personnel shall be familiar with the Site Emergency Response Plan, which is contained in Section 12 of the HASP.

The above Health and Safety Rules are not all inclusive and it is your responsibility to comply with all regulations set forth by OSHA, the client, PWGC Supervisors, and the FTL/SHSO.

APPENDIX E

HOSPITAL ROUTE MAP



Mapped, edited, and published by the Geological Survey
Revised in cooperation with New York
Department of Transportation
Control by USGS, USC&GS, and New Jersey Geodetic Survey

HOSPITAL ROUTE MAP

NOT TO SCALE

J:\Projects S-Z\SHD\1004 - Baumann RD\HASP\cad\Hospital Route Map.dwg (8x11V) Mar 23,2010-2:39pm By: guzman

PWGC
Strategic Environmental & Engineering Solutions
Schenectady, N.Y. 12308-2915
E-mail: info@pwgcnewyork.com

FORMER BAUMANN BUS SITE, GABRESKI AIRPORT
PECONIC BAY MEDICAL
1149 OLD COUNTRY RD., RIVERHEAD, NY

Project: SPR1009	Figure No: 1
Designed by: ZY	
Approved By: PWG	
Drawn By: LLG	Date: 2/23/10

APPENDIX F

INCIDENT REPORT FORM / INVESTIGATION FORM

INCIDENT / NEAR MISS REPORT AND INVESTIGATION - PAGE 1 OF 2		
TYPE OF INCIDENT - CHECK ALL THAT APPLY		
9 INJURY/ILLNESS 9 VEHICLE DAMAGE 9 PROPERTY DAMAGE 9 FIRE 9 SPILL/RELEASE 9 PERMIT EXCEEDENCE 9 NEAR MISS 9 OTHER		
GENERAL INFORMATION		
PROJECT NAME:	DATE OF REPORT:	REPORT NO.:
DATE OF INCIDENT:	TIME:	DAY OF WEEK:
LOCATION OF INCIDENT:		
WEATHER CONDITIONS:	ADEQUATE LIGHTING AT SCENE? 9 YES 9 NO 9 N/A	
DESCRIBE WHAT HAPPENED (STEP BY STEP - USE ADDITIONAL PAGES IF NECESSARY)		
AFFECTED EMPLOYEE INFORMATION		
NAME:	EMPLOYEE: 9 YES 9 NO	
HOME ADDRESS:		
SOCIAL SECURITY NO.:	HOME PHONE NO.:	
JOB CLASSIFICATION:	YEARS IN JOB CLASSIFICATION:	
HOURS WORKED ON SHIFT PRIOR TO INCIDENT:	AGE:	
DID INCIDENT RELATE TO ROUTINE TASK FOR JOB CLASSIFICATION? 9 YES 9 NO		
INJURY/ILLNESS INFORMATION		
NATURE OF INJURY OR ILLNESS:		
OBJECT/EQUIPMENT/SUBSTANCE CAUSING HARM:		
FIRST AID PROVIDED? 9 YES 9 NO		
IF YES, WHERE WAS IT GIVEN: 9 ON-SITE 9 OFF-SITE		
IF YES, WHO PROVIDED FIRST AID:		
WILL THE INJURY/ILLNESS RESULT IN: 9 RESTRICTED DUTY 9 LOST TIME 9 UNKNOWN		

INCIDENT / NEAR MISS REPORT AND INVESTIGATION - PAGE 2 OF 2 REPORT NO.
MEDICAL TREATMENT INFORMATION
WAS MEDICAL TREATMENT PROVIDED? 9 YES 9 NO
IF YES, WAS MEDICAL TREATMENT PROVIDED: 9 ON-SITE 9 DR.'S OFFICE 9 HOSPITAL
NAME OF PERSON(S) PROVIDING TREATMENT:
ADDRESS WHERE TREATMENT WAS PROVIDED:
TYPE OF TREATMENT:
VEHICLE AND PROPERTY DAMAGE INFORMATION
VEHICLE/PROPERTY DAMAGED:
DESCRIPTION OF DAMAGE:
SPILL AND AIR EMISSIONS INFORMATION:
SUBSTANCE SPILLED OR RELEASED: FROM WHERE: TO WHERE:
ESTIMATED QUANTITY/DURATION:
CERCLA HAZARDOUS SUBSTANCE? 9 YES 9 NO
REPORTABLE TO AGENCY? 9 YES 9 NO SPECIFY:
WRITTEN REPORT: 9 YES 9 NO TIME FRAME:
RESPONSE ACTION TAKEN:
PERMIT EXCEEDENCE
TYPE OF PERMIT: PERMIT #:
DATE OF EXCEEDENCE: DATE FIRST KNOWLEDGE OF EXCEEDENCE:
PERMITTED LEVEL OR CRITERIA:
EXCEEDENCE LEVEL OR CRITERIA:
REPORTABLE TO AGENCY? 9 YES 9 NO SPECIFY:
WRITTEN REPORT: 9 YES 9 NO TIME FRAME:
RESPONSE ACTION TAKEN:
NOTIFICATIONS
NAMES OF PERSONNEL NOTIFIED: DATE/TIME:
CLIENT NOTIFIED: DATE/TIME:
AGENCY NOTIFIED: DATE/TIME:
CONTACT NAME:
PERSONS PREPARING REPORT
EMPLOYEE'S NAME:(PRINT) SIGN:
SUPERVISOR'S NAME:(PRINT) SIGN:

INVESTIGATIVE REPORT

DATE OF INCIDENT: DATE OF REPORT: REPORT NUMBER:

INCIDENT COST: ESTIMATED: $_____ ACTUAL: $_____

OSHA RECORDABLE(S): 9 YES 9 NO # RESTRICTED DAYS ____ # DAYS AWAY FROM WORK ____

CAUSE ANALYSIS

IMMEDIATE CAUSES - WHAT ACTIONS AND CONDITIONS CONTRIBUTED TO THIS EVENT?

BASIC CAUSES - WHAT SPECIFIC PERSONAL OR JOB FACTORS CONTRIBUTED TO THIS EVENT?

ACTION PLAN

REMEDIAL ACTIONS - WHAT HAS AND OR SHOULD BE DONE TO CONTROL EACH OF THE CAUSES LISTED?

ACTION	PERSON RESPONSIBLE	TARGET DATE	COMPLETION DATE

PERSONS PERFORMING INVESTIGATION

INVESTIGATOR'S NAME: (PRINT) SIGN: DATE:

INVESTIGATOR'S NAME: (PRINT) SIGN: DATE:

INVESTIGATOR'S NAME: (PRINT) SIGN: DATE:

MANAGEMENT REVIEW

PROJECT MANAGER: (PRINT) SIGN: DATE:

COMMENTS:

H&S MANAGER: (PRINT) SIGN: DATE:

COMMENTS:

Examples of Immediate Causes

Substandard Actions

1. Operating equipment without authority
2. Failure to warn
3. Failure to secure
4. Operating at improper speed
5. Making safety devices inoperable
6. Removing safety devices
7. Using defective equipment
8. Failure to use PPE properly
9. Improper loading
10. Improper placement
11. Improper lifting
12. Improper position for task
13. Servicing equipment in operation
14. Under influence of alcohol/drugs
15. Horseplay

Substandard Conditions

1. Guards or barriers
2. Protective equipment
3. Tools, equipment, or materials
4. Congestion
5. Warning system
6. Fire and explosion hazards
7. Poor housekeeping
8. Noise exposure
9. Exposure to hazardous materials
10. Extreme temperature exposure
11. Illumination
12. Ventilation
13. Visibility

Examples of Basic Causes

Personal Factors

1. Capability
2. Knowledge
3. Skill
4. Stress
5. Motivation

Job Factors

1. Supervision
2. Engineering
3. Purchasing
4. Maintenance
5. Tools/equipment
6. Work Standards
7. Wear and tear
8. Abuse or misuse

Management Programs for Control of Incidents

1. Leadership and administration
2. Management training
3. Planned inspections
4. Task analysis and procedures
5. Task observation
6. Emergency preparedness
7. Organizational rules
8. Accident/incident analysis
9. Personal protective equipment
10. Health control
11. Program audits
12. Engineering controls
13. Personal communications
14. Group meetings
15. General promotion
16. Hiring and placement
17. Purchasing controls

APPENDIX G

DAILY BRIEFING SIGN-IN SHEET

DAILY BRIEFING SIGN-IN SHEET

Date: _____ Project Name/Location: _____

Person Conducting Briefing:_____

1. AWARENESS (topics discussed, special safety concerns, recent incidents, etc.)

_____
_____
_____

2. OTHER ISSUES (HASP changes, attendee comments, etc.)

_____
_____
_____

3. ATTENDEES (Print Name):

1.	21.
2.	22.
3.	23.
4.	24.
5.	25.
6.	26.
7.	27.
8.	28.
9.	29.
10.	30.
11.	31.
12.	32.
13.	33.
14.	34.
15.	35.
16.	36.
17.	37.
18.	38.
19.	39.
20.	40.

APPENDIX D
Groundwater Sampling Log

Monitoring Well Sampling Log

SITE INFORMATION

SITE ID/PROJECT NUMBER: _____

SAMPLING POINT _____ *SAMPLED BY* _____

DATE SAMPLED _____ *TIME SAMPLED* _____

STATIC WATER ELEVATION (feet) _____ *TOTAL WELL DEPTH (feet)* _____

WELL DIAMETER (inches) _____

SAMPLING INFORMATION

PURGE METHOD _____ *SAMPLE METHOD* _____

PURGE RATE (GPM) _____ *PURGE TIME (Min)* _____

SAMPLE APPEARANCE _____ *ODORS OBSERVED* _____

ANALYSIS _____ *LABORATORY* _____

DATE SHIPPED _____ *SHIPPING METHOD* _____

SAMPLING PARAMETERS

Time	*Flow Rate (mL/min)*	*pH*	*Cond. (mS/cm)*	*Turbidity (NTU)*	*ORP (mV)*	*Temp. (°C)*

Notes:

Flow Rate - between 200 - 500 mL/min

pH - ±0.1

Conductivity - ±3%

ORP - ±10 mV

DO - ±10%

Turbidity - ±10%

APPENDIX E
Groundwater Sampling Plan

Ground Water Monitoring Plan
Airport Development District
Francis S. Gabreski Airport
Westhampton, New York

Rebuild Now - NY
Empire State Development

May 2004

O'BRIEN & GERE
ENGINEERS, INC.

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2-1 Natural Attenuation Parameters

1. Introduction

1.1. General

This Ground Water Monitoring Plan (GWMP) presents the scope of work and the analytical requirements for the Natural Attenuation Ground Water Monitoring Program at the Airport Development District (ADD) Property located at the Francis S. Gabreski Airport in Westhampton, New York. This GWMP is a component of the Remedial Action Work Plan (RAWP) for the site.

This GWMP defines in detail the procedures for implementing the Natural Attenuation Ground Water Monitoring Program. Specific procedures that are defined include the methodologies for the collection of ground water samples, field documentation requirements, equipment and personnel requirements, sampling equipment decontamination requirements, and handling requirements for investigation-derived-wastes (IDW).

1.2. Objectives

The objectives of the Ground Water Monitoring Program are to provide the following:

- Monitor the concentration of petroleum-related compounds in ground water.
- Collect information to evaluate whether natural attenuation processes occur subsequent to removal of source material.

To accomplish the objectives, ground water samples monitoring wells will be sampled for volatile organic compounds (VOCs) and natural attenuation parameters on a quarterly basis for a period of two years.

1.3. Plan organization

Section 2 of this GWMP identifies the wells to be sampled, the field sampling procedures, and the analytical requirements. Information pertaining to sampling frequency and well installation procedures are provided in the RAWP.

2. Field sampling plan

This section identifies the selected ground water monitoring wells, irrigation wells, and residential drinking water wells to be sampled. This section also describes the field sampling procedures to be followed and the analytical requirements to be utilized.

2.1. Sample locations

The ground water monitoring wells to be sampled during the Natural Attenuation Ground Water Sampling Program will be installed following the completion of the source removal program. Five wells will be installed to provide monitoring locations as follows:

- 1 well upgradient of the plume area
- 1 well within the area in which the source was located
- 2 wells at the leading edge of the VOC plume
- 1 well downgradient of the VOC plume

It is expected that the latter two locations will be on the Air National Guard property that bounds the ADD to the south. Well installation procedures are defined in the RAWP.

2.2. Ground water monitoring well purging and sampling procedures

2.2.1. Pre-sampling

Prior to sampling, a complete round of ground water elevations will be recorded at each of the monitoring wells. An electronic water level probe will be used to measure the depth to water in each well. The depth to water will be measured to the nearest 0.01 foot from the surveyed points on the well casings. The depth-to-water measurements will be recorded in the field log book. In addition to the depth-to-water measurements, the condition of the well pads, the protective casings and locks, and the well heads will also be recorded in the field log book.

Prior to commencing sampling activities, the ground water quality monitoring probes/meters including pH, conductivity, ORP, dissolved oxygen will be calibrated daily in accordance with the manufacturers' instructions. At a minimum, two-point calibrations will be conducted for pH and conductivity. The dissolved oxygen probe will be checked against a zero-dissolved oxygen solution. In addition, the dissolved

oxygen calibration will be corrected for local barometric pressure and elevation. Calibration results will be recorded in the field log notebook.

2.2.2. Low-flow purging and sampling procedures

The well depths and well screen intervals will be acquired from site-specific drilling logs and monitoring well specifications. The following describes the low-flow purging and sampling procedures:

1. Don a new pair of gloves, and lay out plastic sheeting on the ground in the vicinity of the well head.

2. Prepare the pumping system for operation. Connect the tubing to the in-line, water quality parameter meter.

3. Commence well purging by low-flow pumping from the well. The flow rate shall not exceed 0.5 liters/min. Initially, a flow rate between 200 ml/min and 500 ml/min will be used. Efforts should be made to minimize the generation of air bubbles in the sample tubing by either increasing the flow rate as appropriate, or restricting the flow by clamping the tubing. Record purge rate on the Low-Flow Ground Water Sampling Log. An example of the Low-Flow Ground Water Sampling Log to be utilized during this project is provided in Exhibit A.

4. During purging, monitor and record pH, specific conductivity, temperature, oxidation-reduction potential (redox), dissolved oxygen, and turbidity at time intervals sufficient to evacuate the volume of the flow-through cell. This time interval can be calculated by dividing the volume of the flow through the cell by the pumping rate.

5. Well sampling can commence after equilibration of water quality parameters. Equilibrated trends are generally obvious and usually follow either an exponential decay or asymptotic trend during purging. Equilibration will be defined as three consecutive water quality parameter readings that meet the following equilibration guidelines:

Temperature	± 3%
pH	± 0.1 pH units
Specific conductance	± 3%
Redox	±10 mV
DO	±10%
Turbidity	± 10%

6. If the indicator field parameters have not equilibrated within the above specified limits after 4 hours of purging, then one of the following options may be taken: 1) continue purging until stabilization is achieved; or 2) discontinue purging and collect samples (document attempts to achieve stabilization). Record total volume of water purged and purging time on the Low-Flow Ground Water Sampling Log for future reference.

7. Ideally, drawdown in the well should not exceed 0.3 ft. Pumping rates should, if needed, be reduced to the minimum capabilities of the pump to avoid pumping the well dry and/or allow stabilization of indicator parameters. If the recharge rate of the well is very low and it appears that the well will be purged dry, the pump should be shut down prior to pumping the water level below the top of the well screen and/or purging the well dry. Sampling should commence as soon as the well has recharged to a sufficient level to collect the appropriate volume of samples. Sample collection using bailing techniques may be used in this situation. However, turbidity levels shall be maintained as low as possible by minimizing agitation of the water column within the well.

8. Remove the sampling bottles from their transport containers, and prepare the bottles for receiving samples. Inspect all labels for proper sample identification. Sample bottles should be kept cool with their caps on until they are ready to receive samples. Arrange the sampling containers to allow for convenient filling.

9. Sample bottles for VOC analyses, containing hydrochloric acid for preservation, will be filled completely so that there is no headspace or bubbles. The VOC sample vials will be examined for proper filling by inverting the vials immediately after filling. Occasionally, the HCl will react with the water sample creating effervescence. If this situation is observed, discard the contents of the sample vial, rinse the inside with fresh ground water, and refill sample vial. This sample will not be preserved and must be noted as such on the Chain of Custody

   After filling the sample containers, conduct field tests for ferrous iron and total iron as follows:

   Field test – Ferrous iron
   A Hach7 ferrous iron field test kit (Model IR-18C) will be used to measure dissolved ferrous iron in the field. Prior to arriving in the field, the reagent lot of the Hach7 ferrous iron test kit will be verified using ferrous iron standards at two different concentrations. The collection and measurement procedures of the Hach7 ferrous iron test kit will be as follows:

   a. Fill a viewing tube to the first (5-mL) line with sample water. This is the blank.

   b. Place this tube in the top left opening of the color comparator.

   c. Fill the measuring vial to the 25-mL mark with sample water.

   d. Add contents of one Ferrous Iron Reagent Powder Pillow to the measuring vial.

   e. Swirl to mix, and allow three minutes for full color development.

f. Fill another viewing tube to the first (5-mL) mark with the prepared sample.

g. Place the second tube in the top right opening of the color comparator.

h. Hold the comparator up to a light source (such as the sky, a window, or a light), look through the opening in the front of the comparator, and rotate the color disk until the color matches in the two openings.

i. Read the mg/L ferrous iron in the scale window, and record in the field logbook.

Field test – Total iron
A Hach® field test kit (Model IR-18B) for total iron will be used to measure total dissolved iron in the field. The collection and measurement procedures of the Hach7 total iron test kit will be as follows:

a. Fill a viewing tube to the first (5-ml) line with sample water. This is the blank.

b. Place this tube in the top left opening of the color comparator.

c. Fill another viewing tube to the first (5-ml) line with sample water.

d. Add the contents of one FerroVer® Iron Reagent Powder Pillow to the second tube.

e. Swirl to mix. An orange color will develop if iron is present.

f. Place the second tube in the top right opening of the color comparator.

g. Hold the comparator up to a light source such as the sky, a window, or lamp. Look through the openings in front.

h. Rotate the color disc until the color matches in the two openings.

i. Read the mg/L iron in the scale window.

9. After the last sample has been collected, record the date and time.

10. Begin preparing the Chain of Custody documentation.

Quality control samples, consisting of equipment blanks, field duplicates, and MS/MSDs, will be obtained in the same type sample containers and handled in the same manner as the field samples for contaminant

determination. Field duplicate samples will not be distinguishable from the field samples.

Triplicate volumes of sample will be collected for samples designated for MS/MSD analyses. Laboratory quality control samples will be collected at a frequency of one per matrix type and/or sample batch and every 20 samples of similar matrix.

Equipment blanks of the non-dedicated sampling equipment (*i.e.* sampling pump) will be required. Equipment blank samples will be collected at a frequency of five percent for each analysis.

Field duplicate samples will be two samples collected at the same time from the same source, but submitted as separate samples, for the purpose of assessing the consistency of the overall sampling and analytical system. Field duplicate samples will be collected at a frequency of five percent for each analysis.

Trip blanks will be submitted to the laboratory. One trip blank will be required per cooler.

A temperature control blank will be included in each cooler shipment to the laboratory.

2.2.3. Procedure after taking sample

After taking a ground water sample, the following practices will be performed to complete the documentation and leave the well intact and secure:

1. Pack the ground water sample. The type of analysis for which a ground water sample is collected determines the type of container, preservative, holding time, and filtering requirement. This information is presented on Table 4 of the QAPP. Ground water samples are transferred directly from the sampler to the container. The container should hold any necessary preservative and should be correctly labeled before the sample is transferred to it.

   Next, log the ground water sample. Put the ground water samples in a cooler containing ice. Ship the ground water samples within twenty-four hours via overnight delivery. Include adequate packing and ice with the ground water samples so that the samples arrive unimpaired.

2. Complete the chain of custody.

3. Replace the well cap and lock the well protection assembly before leaving the well location.

4. Put the gloves and plastic sheet in a plastic bag for disposal.

2.2.4. Field documentation

Field documentation is an essential part of the sampling program. The field crew will have an assigned team leader who is responsible for written documentation. Field logbooks will serve as permanent documentation for the monitoring work. In addition, the field investigator will summarize the events and conditions of the work in a logbook.

Field Logbook. A bound field logbook will be maintained for documentation purposes by the sampling team leader, or a designee. The log book will contain information such as names of the sampling team and other people on-site, weather conditions, samples collected, measurements, and significant events, observations, or other pertinent data - notably, unusual occurrences during field investigations. Pages will be numbered, signed, and dated. Field logbooks will be kept neat and organized. Original data recorded in field logbooks will be written in ink. Entries will be legible, factual, detailed, and objective.

If an error is made on an entry, corrections will be made by crossing a single line through the error and entering the correct information above. Erroneous information will not be erased, obliterated, or torn out. Errors in the field logbook will be corrected by the person who made the entry. Corrections will be initialed and dated.

The following items will be included in the field logbook:

- Name, address and phone number of the sampling team leader
- Owner and client information
- Names and affiliations of the personnel on site
- General description of the day's field activities
- Documentation of weather conditions during sampling
- Location of sampling (station number as description)
- Name and address of field contact (in cover of log book)
- Description of accidents involving personnel on site
- Records of field equipment malfunction and repair
- Records of site visitations
- Records of field and lab equipment calibrations
- Matrix type and sample description
- Date and time of sample collection

- Collector's sample identification number
- Sample distribution (e.g., laboratory, hauler, etc.)
- Observations of sample collection environment, if required
- Field measurements made
- Sampler's name
- Sample type (composite, split, etc.)
- Sources and types of preservatives used.

At the end of the sampling day, the sampling team leader or a designee will collect and store the logbooks in a safe location.

Chain of custody. The collection and handling of samples will be documented to demonstrate that a sample was collected following the appropriate sampling protocols. A standard chain of custody form (as shown in the QAPP) is developed when the sample is collected. As possession of the sample is relinquished by one party and transferred to another, the chain of custody document will be so revised.

2.2.5. Decontamination

This section provides procedures for decontamination. Non-dedicated sampling equipment that has the potential to contact the environmental medium to be sampled will be decontaminated to avoid cross contamination between samples and to prevent contaminated equipment from leaving the Site.

Field equipment decontamination. Whenever possible, field sampling will be initiated at the well the lowest constituent levels and proceed to the area of highest suspected constituent levels.

Non-dedicated sampling equipment will be decontaminated prior to use and following sampling of each well. Pumps will not be removed between purging and sampling operations. If a submersible pump used for the purging and sampling, the pump, support cable, and electrical wires that are in contact with the water column will be decontaminated by the procedures listed below.

- The decontamination solutions can either be pumped from buckets through the pump or the pump can be disassembled and flushed with the decontaminating solutions. It is recommended that detergent is used sparingly in the decontamination process and water-flushing steps are extended so that sediment trapped in the pump is flushed out. The outside of the pump and the

electrical wires must be rinsed with the decontaminating solutions, as well. The procedure is as follows:

- Flush the equipment/pump with potable water
- Flush with non-phosphate detergent solution (five gallons)
- Flush with potable water to remove all of the detergent solution
- Flush with distilled water

The decontamination process will be documented. Each step, materials used, and the disposition of waste will be recorded in a field notebook. Miscellaneous items such as weather conditions, nearby activities, and other issues that could affect results will be recorded.

2.2.6. Handling of investigation-derived waste (IDW)

Purge water and decontamination fluids generated during the Natural Attenuation Ground Water Sampling Program will temporarily be containerized and secured in 55-gallon drums for periodic disposal off-site.

2.3. Laboratory analyses

The ground water samples collected from the monitoring wells will be analyzed by by a New York State ELAP-approved laboratory for volatile organic compounds (VOCs) using USEPA Method 8260, and the following natural attenuation parameters:

Table 2-1. Natural Attenuation Parameters.

Natural attenuation parameter	*Analysis method*
Sulfide	376.1
Methane	3810
TOC	415.1
Alkalinity	310.1
Sulfate	375.4
Nitrate/Nitrite	353.2
Ferrous Iron	Field Test
Total Iron	Field Test

Source: O'Brien & Gere Engineers, Inc.

Samples collected from the residential drinking water well will be analyzed for VOCs using USEPA Method 524.2. Samples collected from the irrigation wells will be analyzed for VOCs using USEPA Method 601.

APPENDIX F
Sitewide Inspection Form

Former Bauman Bus Site – Sitewide Inspection Form

Date:_____ Time:_____
Weather:_____

Reason for Inspection:[]Routine []other_____

Inspection Observations
Current site use:_____
_____

Is there evidence of any of the following site activities / conditions at the site:

- [] Groundwater use
- [] Unrestricted (single family) residential housing
- [] Soil Disturbance within the SMA (figure attached) at a depth >25'
- [] Environmental issue which has potential to impact human health.

General Observations / Comments:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Performed by:_____
Printed Name

_____
Signature

_____
Title

_____
Company

APPENDIX G
QAPP

5.0 Quality Assurance Project Plan

This quality assurance project plan (QAPP) presents the objectives, functional activities, methods, and quality assurance / quality control (QA/QC) requirements associated with sample collection and laboratory analysis for characterization activities. The QAPP follows requirements detailed in DER-10, Section 2.

5.1 Project Organization

The investigative efforts defined in this RI work plan will be coordinated by PWGC on behalf of the SCDHS. The following text identifies the responsibilities of various organizations supporting the supplemental investigation:

- The NYSDEC Project Manager (Heather Bishop) will be responsible for reviewing and approving this work plan, coordinating approval of requested modifications, and providing guidance on regulatory requirements.
- The SCDHS Project Manager (James Meyers) will be responsible for reviewing and approving this work plan, providing technical support and acting as a liaison to SCDHS personnel working on the RI and the NYSDEC Project Manager.
- The PWGC Program Manager (James Rhodes) will provide technical expertise for review of the project plans, reports and ongoing field activities. The program manager will be responsible for the coordination of the overall Voluntary Cleanup Program with the SCDHS. The Program manager will act as the projects Quality Assurance Manager.
- PWGC Project Manager (Andrew Lockwood) will be responsible for the day to day project management, task leadership, and project engineering support and for the planning and implementation of investigative activities. The Project Manager is responsible for ensuring that the requirements of this work plan are implemented. The project manager will also act as the site Health and Safety Manager (HSM).
- PWGC Field Team Leader (Thomas Melia) will be responsible for sample collection, oversight of subcontractor personnel, and coordination of daily field activities. Mr. Melia will act as the Site Health and Safety Officer ensuring implementation of the Site Health and Safety Plan.
- Chemtech Environmental Laboratory, a NYSDOH Environmental Laboratory Accreditation Program (ELAP) certified laboratory, will be the analytical laboratory performing required analyses and reporting.
- Subcontractors will perform surveying, drilling, and/or sampling at the direction of the Field Team Leader in accordance with this work plan.

An organizational flow chart showing the lines of responsibility for the project activities is included as Figure 8.

5.2 Laboratory Analysis

Requirements for sample analysis are described below.

5.2.1 Soil Samples

Soil samples will be collected as described in Sections 4.1 and 4.2. Proposed soil boring locations are illustrated in Figure 6. Soil samples will be submitted to Chemtech Environmental Laboratory, Mountainside, New Jersey a NYSDOH ELAP certified laboratory (or approved equivalent laboratory). Soil samples will be analyzed for VOCs by

USEPA Method 8260 (STARS) and SVOCs by USEPA Method 8270 (STARS). Analysis will conform to NYSDEC Analytical Services Protocol (ASP). Category B data deliverables will be submitted for all samples analyzed. Analytical methods, preservation, container requirements, and holding times are summarized in Table 9, below.

TABLE 9
ANALYTICAL METHODS (SOIL)

Sample Matrix	Sample Designations	Sample Type	Parameters	EPA Method	Sample Preservation	Holding Time	Sample Container	Laboratory
Soil	SB	Grab	VOCs	8260 (STARS)	Cool to 4°C	14 days	2-oz. wide mouth glass	Chemtech Environmental Laboratory
Soil	SB	Grab	SVOCs	8270 (STARS)	Cool to 4°C	14 days	8-oz. wide mouth glass	Chemtech Environmental Laboratory

5.2.2 Groundwater Samples

Groundwater samples will be collected as described in Section 4.1 and 4.3. Groundwater samples will be submitted to Chemtech Environmental Laboratory, Mountainside, New Jersey a NYSDOH ELAP certified laboratory (or approved equivalent laboratory). Groundwater samples will be analyzed for VOCs by USEPA Method 8260 (STARS) and SVOCs by USEPA Method 8270 (STARS). Analysis will conform to NYSDEC ASP. Category B data deliverables will be submitted for all samples analyzed. Analytical methods, preservation, container requirements, and holding times are summarized in Table 10, below.

TABLE 10
ANALYTICAL METHODS (GROUNDWATER)

Sample Matrix	Sample Designations	Sample Type	Parameters	EPA Method	Sample Preservation	Holding Time	Sample Container	Laboratory
Ground-water	GW or PZ	Grab	VOCs	8260 (STARS)	Cool to 4°C HCL to pH<2	14 days	40-mL vials	Chemtech Environmental Laboratory
Ground-water	GW or PZ	Grab	SVOCs	8270 (STARS)	Cool to 4°C	7 days	1-L amber glass	Chemtech Environmental Laboratory

5.2.3 UIC Samples

UIC sediment/sludge samples will be collected as described in Section 4.3. Sediment/sludge samples will be submitted to Chemtech Environmental Laboratory, Mountainside, New Jersey a NYSDOH ELAP certified laboratory (or approved equivalent laboratory). Samples will be analyzed for VOCs by USEPA Method 8260 (SCDHS List) and SVOCs by USEPA Method 8270 (SCDHS List), and Metals (SCDHS List). Analysis will conform to NYSDEC ASP protocols. Category B data deliverables will be submitted for all samples analyzed. Analytical methods, preservation, container requirements, and holding times are summarized in Table 11, below.

TABLE 11
ANALYTICAL METHODS (Sediment/Sludge)

Sample Matrix	Sample Designations	Sample Type	Parameters	EPA Method	Sample Preservation	Holding Time	Sample Container	Laboratory
Sediment /Sludge	UIC	Grab	VOCs	8260 (SCDHS List)	Cool to 4°C HCL to pH<2	14 days	3-40-mL vials	Chemtech Environmental Laboratory
Sediment /Sludge	UIC	Grab	SVOCs	8270 (SCDHS List)	Cool to 4°C	7 days	1-L amber glass	Chemtech Environmental Laboratory
Sediment /Sludge	UIC	Grab	Metals	6010 (SCDHS List)	HNO3 to pH<2	6-months	300 ml-poly	Chemtech Environmental Laboratory

5.2.4 Soil Gas Samples

Soil gas samples will be collected as described in Section 4.4. Samples will be submitted to Chemtech Environmental Laboratory, Mountainside, New Jersey a NYSDOH ELAP certified laboratory (or approved equivalent laboratory). Samples will be analyzed for VOCs by TO-17. Analysis will conform to NYSDEC ASP protocols. Category B data deliverables will be submitted for all samples analyzed. Analytical methods, preservation, container requirements, and holding times are summarized in Table 12, below.

TABLE 12
ANALYTICAL METHODS (Soil Gas)

Sample Matrix	Sample Designations	Sample Type	Parameters	EPA Method	Sample Preservation	Holding Time	Sample Container	Laboratory
Soil Gas	SG	Grab	VOCs	TO-15	N/A	14 days	Summa	Chemtech Environmental Laboratory

5.3 Field/Laboratory Data Control Requirements

Quality Control (QC) procedures must be followed in the field and at the laboratory to ensure that reliable data are obtained. When performing this field sampling effort, care shall be taken to prevent the cross-contamination of sampling equipment, sample bottles, and other equipment that could compromise sample integrity.
QC samples to be collected in the field are provided in Table 13.

TABLE 13
FIELD/LABORATORY QC REQUIREMENTS

Sample Type	Frequency	Purpose
Field Duplicate	One duplicate sample, or One per 20 samples of the same matrix.	To evaluate the precision of the field sampling and laboratory analyses.
Equipment Blank	One per type of sampling method used for each batch of sampling equipment. Equipment blanks are collected in the field using analyte-free water supplied by the laboratory.	To assess the cleanliness of the sampling equipment and the effectiveness of the decontamination process.

Trip Blank	One VOA (volatile organic analysis) trip blank per sample cooler that contains site samples to be analyzed for VOAs.	To detect VOC cross-contamination during sample shipping and handling. No trip blanks are anticipated because VOCs are not part of the proposed analytical analysis.
Method Blank	One per 20 samples of same matrix	To document contamination resulting from the analytical process.
Matrix Spike	One per 20 samples of same matrix	It is used to measure the efficiency of all steps of the sampling and analytical methods in recovering the target analytes from the sample. It is a sample spiked with known quantities of analytes and subjected to the entire analytical procedure.
Matrix Spike Duplicate	One per 20 samples of same matrix.	To reinforce the matrix spike information. It is a second aliquot of the same sample as the matrix spike.
Ambient Air	One sample per event	Determine background concentrations of VOCs.

5.4 Sample Identification

Soil sampling rational is provided in Section 4.0. Each soil sample will be identified with a set of information relating individual sample characteristics. Required information may consist of Sample Designation, Depth, Date, Time, and Matrix. Examples of sample IDs are shown below.

- SB-01 @ 14-16' (subsurface soil sample, soil boring #1 from 14 to 16 feet bgs)
- GW-01 @ 32-36' (groundwater sample, sampling point #1, screen depth 32 to 36 feet bgs)
- SG-01 @5' (soil gas sample from location #1 from 5 feet bgs)
- UIC-01 (sludge/sediment sample from UIC structure #1)

Sample frequency, locations, depths, and nomenclature may change subject to field decisions and professional judgment. Estimated sample numbers are provided on Table 14, below.

TABLE 14
ESTIMATED NUMBER OF SOIL AND GROUNDWATER SAMPLES

Sample Type	Estimated # of samples to be collected
Subsurface soil samples collected from the former oil-water separator location	10
Groundwater samples collected from the former oil-water separator location	3
LNAPL/VOC Plume delineation soil samples	13
LNAPL/VOC Plume delineation groundwater samples	7
UIC-Storm drain and sanitary cesspool Characterization	15
Soil Gas Samples	5

Note: does not include QA/QC samples

Actual number of samples may vary depending on field conditions and field observations.

5.5 Chain-of-Custody, Sample Packaging and Shipment

Each day that samples are collected, a chain-of-custody/request for analysis form will be completed and submitted to the laboratory with samples to be analyzed. A copy of the chain-of-custody will be retained by the Project Manager. The chain-of-custody will include the project name, sampler's signature, sample IDs, date and time of sample collection, and analysis requested.

Samples will be packaged and shipped in a manner that maintains sample preservation requirements during transport (i.e., ice to keep samples cool until receipt at the laboratory), ensures that sample holding times can be achieved by the laboratory, and prevents samples from being tampered with.

If a commercial carrier ships samples, a bill of lading (waybill) will be used as documentation of sample custody. Receipts for bills of lading and other documentation of shipment shall be maintained as part of the permanent custody documentation. Commercial carriers are not required to sign the chain-of-custody as long as it is enclosed in the shipping container and evidence tape (custody seal) remains in place on the shipping container.

5.6 Data Validation

The main purpose of the data is for use in defining the extent of contamination at the site and to support remedial action decisions. Based upon this data use validation will be performed as described below. Complete data packages will be archived in the project files, and if deemed necessary additional validation can be performed using procedures in the following sections.

5.6.1 Data Validation Requirements

Data validation is performed on analytical data sets, primarily to confirm that sampling and chain-of-custody documentation are complete, sample IDs can be tied to specific sampling locations, samples were analyzed within the required holding times, and analyses met data quality requirements specified in the sampling plan.

5.6.2 Data Validation Methods

Independent third party data validation will be performed on 5% of the sample data, or on one sample from each sample delivery group (SDG) whichever is greater. Data validation will be performed by a qualified subcontractor independent of the project.

5.7 Field Equipment Calibration

Equipment will be inspected and approved by the Field Team Leader before being used. Equipment will be calibrated to factory specifications, if required. Monitoring equipment will be calibrated following manufacturers recommended schedules. Daily field response checks and calibrations will be performed as necessary (i.e. PID calibrations) following manufacturers standard operating procedures. Equipment calibrations will be documented in a designated field logbook.

5.8 Equipment Decontamination

In order to minimize the potential for cross-contamination, non-dedicated drilling and sampling equipment, and heavy equipment shall be properly decontaminated prior to and between sampling/drilling locations.

5.8.1 General Procedures

Heavy equipment will be decontaminated in a designated area. Sampling equipment and probes will be decontaminated in an area covered with plastic sheeting near the sampling location. Waste material generated during decontamination activities will be containerized, stored and disposed of in accordance with the section 5.9

Decontamination of sampling equipment shall be kept to a minimum, and wherever possible, dedicated sampling equipment shall be used. Personnel directly involved in equipment decontamination shall wear appropriate protective equipment.

5.8.2 Heavy Equipment

Drilling equipment shall be decontaminated by steam cleaning prior to performance of the first boring/excavation and between all subsequent borings/excavations. This shall include hand tools, casing, augers, drill rods, excavator bucket and other related tools and equipment. Water used during drilling and/or steam cleaning operations shall be from a potable source.

5.8.3 Sampling Equipment

All sampling equipment (i.e., trowels, knives, split-spoons, bowls, hand augers, etc.)will be decontaminated prior to each use as follows:

- Laboratory-grade glassware detergent and tap water scrub to remove visual contamination
- Generous tap water rinse
- Distilled water rinse

5.8.4 Meters and Probes

All meters and probes that are used in the field (other than those used solely for air monitoring purposes, e.g., PID meters) will be decontaminated between use as follows:

- Laboratory-grade detergent and tap water solution wash
- Tap water rinse
- Distilled water rinse (triple rinse)

5.9 Waste Management

Project waste management activities are described below.

5.9.1 Management of Investigation Derived Waste

Waste materials generated from the field operations may consist of soil cuttings, purge water, and miscellaneous solid materials such as personal protective equipment (PPE) and supplies. Use of direct push drilling technology

will minimize the volumes of investigation-derived waste (IDW) generated. PWGC will arrange for the disposition of all IDW generated during the field operations.

Soil cuttings generated from soil boring installation activities will be stored in 55-gallon drums. Drums will be labeled to indicate the source of the soil and will be stored in a designated area on site. Soil cores and soil cuttings will be field screened using a PID, while performing drilling operations. Drummed soils will be sampled to determine if spreading on-site is appropriate or off-site disposal is required. Following receipt of the analytical results, recommendations for disposition of the drummed soil will be provided to SCDHS and documented in the SI Report.

Development and purge water generated during the field activities will be stored in 55-gallon drums. Drums will be labeled to indicate the source of the fluid and will be stored in a designated area on site. Drummed groundwater will be sampled to determine if discharge to the surface of the site is appropriate or off-site disposal is required. Following receipt of the groundwater sampling results, recommendations for disposition of the water will be provided to SCDHS and documented in the SI Report.

5.9.2 Management of UIC Waste

Sludge and sediment removed from UIC structures will be disposed of at an approved facility permitted to accept the material. Waste characterization samples will be collected and analyzed in accordance with the facilities waste acceptance criteria (WAC). Analytical results and waste manifests will be reported in the supplemental investigation report.

5.9.3 Management of Petroleum Contaminated Soil

If excavation of an identified petroleum contaminated soil source area is performed the excavated soil will be disposed of at an approved facility permitted to accept the material. Waste characterization samples will be collected and analyzed in accordance with the facilities waste acceptance criteria (WAC). Analytical results and waste manifests will be reported in the supplemental investigation report.

Excavated soil will either be placed directly in a conveyance (truck, roll-off, etc.) or temporarily stockpiled on-site. If stockpiled on-site, the stockpiles will be constructed to prevent spread of the material. Typical stockpile construction detail is provided on Figure 9.

Analytical results and waste manifests will be reported in the supplemental investigation report.

5.10 Field Documentation

Documentation will take place on either appropriate forms or in a dedicated site logbook. Permanent black or blue ink will be used to record information in the logbook. Errors in field documentation will be lined through, initialed, dated, and corrected. Forms will be kept by the PWGC Field Team Leader during the field activities.

Field activities will be documented in the field logbook. The logbook will contain waterproof pages that are consecutively numbered, and be permanently bound with a hard cover. Upon completion of daily activities, unused portions of pages will be lined-through and initialed.

The primary purpose of the field logbook is to document the daily field activities and to provide descriptions of each activity. All entries in the field logbook will be recorded and dated by person making the entry.