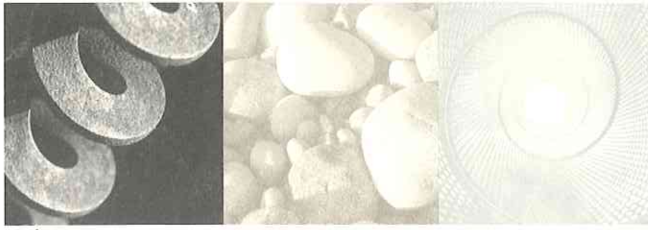

GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological

Phase IV Remedial Design Report
100% Submission
Former King Bear/Summer's Lumber Properties

Bay Shore/Brightwaters Former MGP Site

Operable Unit No. 1
Town of Islip, Bay Shore
Suffolk County, New York
NYSDEC Consent Index No. D1-0001-98-11

Submitted to:
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February 18, 2010
Project # 093180-1-1104

Matthew J. O'Neil, P.E.
GEI Project Manager

Professional Engineer's Certification

The work detailed in this report was originally submitted and performed as an Interim Remedial Measure. At the request of the New York State Department of Environmental Conservation this has been changed to a Remedial Design Report. The engineer of record who designed and oversaw performance of the work is no longer an employee of GEI Consultants, Inc. This has necessitated that the report be reviewed and certified by an engineer other than the previous engineer of record.

I Matthew J. Levinson certify that I am currently a NYS registered professional engineer and that this Remedial Design Report was prepared in substantial accordance with applicable statutes, regulations, and the DER Technical Guidance for Site Investigation and Remediation (DER-10). All activities were performed in general accordance with the DER-approved work plan and any DER-approved modification to the best of my knowledge.

STATE OF NEW YORK
MATTHEW JONAH LEVINSON
086032
LICENSED PROFESSIONAL ENGINEER

6/25/10

Date

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Abbreviations and Acronyms

bgs	Below Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
CAMP	Community Air Monitoring Plan
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	Contaminants of Concern
CRZ	Contamination Reduction Zone
D&B	Dvirka and Bartilucci
DER	Department of Environmental Remediation
DNAPL	Dense Non-Aqueous Phase Liquid
ELUR	Environmental Land Use Restriction
EPA	United States Environmental Protection Agency
EZ	Exclusion Zone
Frac	Fractionation
FSP	Field Sampling Plan
GEI	GEI Consultants, Inc.
HASP	Health and Safety Plan
ID	Inside Diameter
IRM	Interim Remedial Measure
ISCO	In-Situ Chemical Oxidation
LILCO	Long Island Lighting Company
LIRR	Long Island Railroad
LNAPL	Light Non-Aqueous Phase Liquid
MGP	Manufactured Gas Plant
MTBE	methyl-tertiary butyl ether
NAPL	Non-Aqueous Phase Liquid
NTUs	Nephelometric Turbidity Units
NYCRR	New York Codes, Rules, and Regulations
NYS AWQS	New York State Ambient Water Quality Standards
NYSASP	New York State Analytical Service Protocol
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health

Abbreviations and Acronyms (continued)

OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PPE	Personal Protective Equipment
PVC	Polyvinyl Chloride
RAP	Remedial Action Plan
RAOs	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RDR	Remedial Design Report
RDWP	Remedial Design Work Plan
RI	Remedial Investigation
RIR	Remedial Investigation Report
RSCO	Recommended Soil Cleanup Objectives
SARA	Superfund Amendments and Reauthorization Act
SCDEE	Suffolk County Department of Energy and the Environment
SCDHS	Suffolk County Department of Health Services
SCDPW	Suffolk County Department of Public Works
SCGs	Standards, Criteria, and Guidance
SCOs	Soil Cleanup Objective
SVOCs	Semivolatile Organic Compounds
SZ	Support Zone
TAGM	Technical and Administrative Guidance Memorandum
VOCs	Volatile Organic Compounds
MEASUREMENTS	
ft bgs	feet below ground surface
mg/kg	milligrams per kilogram
ug/L	micrograms per liter

1. Introduction

National Grid has prepared this Phase IV Remedial Design Report (RDR) to address comments and concerns conveyed by the New York State Department of Environmental Conservation (NYSDEC) regarding concentrations of Manufactured Gas Plant (MGP)-related contaminants detected in the subsurface on two properties located outside of the subsurface containment barrier wall in Operable Unit No. 1 (OU-1) of the Bay Shore Former MGP Site (Site). An interim remedial measure work plan was submitted to the NYSDEC on February 18, 2010 to address impacts observed at the former King Bear property (60 N. Clinton Avenue) and the former Summer's Lumber property (66 N. Clinton Avenue). In February 2009, NYSDEC approved the reconfiguration of the boundaries of OU-1 to include the portions of the former King Bear and Summer's Lumber properties. These National Grid-owned properties were originally designated as part of OU-2. This change was designed to refine the areas where OU-1 and OU-2 overlapped and designate areas involved with portions of the OU-1 remedy (i.e., barrier wall installation, in-situ chemical oxidation) as part of OU-1 remedial work and not OU-2. Subsequent to mobilization for the IRM work, the NYSDEC requested that since the two properties were now part of OU-1, that the IRM work be integrated into the overall OU-1 remedy as Phase IV.

The remedy to be implemented at OU-1 is detailed in a document entitled "Final Remedial Action Plan, Bay Shore Former Manufactured Gas Plant (MGP) Site – Operable Unit-1, Bay Shore, New York" (Final RAP) prepared by GEI Consultants, Inc. (GEI) and dated August 2004. The Final RAP was approved by the NYSDEC on August 9, 2004. This RDR has been prepared to be consistent with the Order on Consent, Index Number D1-0001-98-11 (the Order) signed by National Grid and NYSDEC. The work performed as part of Phase IV will include elements of Phase II (excavation) and Phase IA (groundwater treatment) of the OU-1 remedy.

This RDR presents the results of investigations performed at the former King Bear property (60 N. Clinton Avenue) and the former Summer's Lumber property (66 N. Clinton Avenue) and a RDR to address the MGP-related impacts identified at the site. The RDR will include the excavation and off-site disposal of shallow suspected MGP-related source material and groundwater treatment using oxygen injection technology. In addition, some monitoring wells for the Phase III In-Situ Chemical Oxidation (ISCO) remedy will be completed during restoration. Although ISCO is a component of Phase III of the OU-1 Final RAP, portions of the installation are being implemented concurrently with the Phase IV work.

This RDR has been prepared to be consistent with the Order on Consent, Index Number D1-0001-98-11 (the Order) signed by National Grid and NYSDEC, the factors set forth in Title 6 of the New York Code of Rules and Regulations Part 375 (6 NYCRR Part 375) for interim remedial measures, and NYSDEC *Draft DER-10* [Department of Environmental Remediation] *Technical Guidance for Site Investigation and Remediation*. The main remedy to be implemented at OU-1 is detailed in a document entitled "Final Remedial Action Plan, Bay Shore Former Manufactured Gas Plant (MGP) Site – Operable Unit-1, Bay Shore, New York" (Final RAP) prepared by GEI Consultants, Inc. (GEI) and dated August 2004. The Final RAP was approved by the NYSDEC on August 9, 2004.

This RDR presents the results of the pre-design activities that were performed in 2009. The pre-remedial design activities were conducted in accordance with the NYSDEC-approved *Pre-Design Soil and Groundwater Investigation Work Plan, Former King Bear (60 N. Clinton Avenue) and Summer's Lumber (66 N. Clinton Avenue) Properties, Bay Shore/Brightwaters Former MGP Site, Site No. 1-52-172*, dated April 20, 2009. This RDR describes the remedial action goals and objectives as well as the techniques used for documentation sampling, material handling, waste characterization, processing, transportation, and disposal of the MGP-related source material. This effort will be performed under the approval and oversight of the NYSDEC and the New York State Department of Health (NYSDOH).

1.1 Remedial Design Report Organization

This RDR has been organized as follows.

- Section 1, the introduction, describes the purpose and objectives of the RDR. It also includes a site description and historical information relative to the site and previous site investigations.
- Section 2 describes the results of the pre-design data collection work and presents the site conceptual model.
- Section 3 presents the RDR goals and objectives.
- Section 4 presents a summary of the RDR scope of work.
- Section 5 presents the vapor/odor management program.
- Section 6 describes the erosion and sediment control plan.
- Section 7 presents the site security plan.
- Section 8 presents the equipment decontamination plan.
- Section 9 includes the waste management practices for the RDR.
- Section 10 provides sample methodology and frequency for documentation sampling.
- Section 11 provides the plan for managing groundwater in the excavation.
- Section 12 outlines the traffic control concerns and measures for the site.
- Section 13 presents the proposed schedule for implementation of the RDR.
- Section 14 discusses the RDR Completion Report to be prepared following completion of the remedial action.

1.2 Site Description and History

The Bay Shore Former MGP Site is located in Bay Shore, Town of Islip, in an area located to the north of the Long Island Rail Road (LIRR) – Montauk Branch; to the east of East Court; to the west of Fifth Avenue; and, to the south of Ackerson Street. The Bay Shore Former MGP Site is currently divided into four operable units as depicted on **Figure 1**. OU-1 is bound to the north by Ackerson Street, to the east by Fifth Avenue, to the south by Union Boulevard and to the west by portions of two vacant properties along North Clinton Avenue.

In addition to the Former MGP Site, OU-1 also includes the adjacent West Parcel located west of North Clinton Avenue, north of the LIRR and east of the National Grid Brightwaters Yard. As stated in the Final RAP, an interim remedial measure (IRM) was conducted at the Bay Shore West Parcel. As such, the RAP did not evaluate or propose any remedial actions for this area of OU-1 of the Bay Shore Former MGP Site.

OU-2 includes the off-site groundwater plume extending south of OU-1. OU-3 includes the Brightwaters Yard and the associated downgradient groundwater plume. OU-4 includes the former cesspool and pond area and the downgradient Watchogue Creek/Crum's Brook. IRMs have been or are being implemented at the OU-1 West Parcel, OU-2, OU-3 and OU-4 to eliminate or mitigate contaminant exposure pathways.

The Bay Shore MGP began operations in the late 1880s. The plant was operated by Mutual Gas and Light Company, the Suffolk Gas and Electric Light Company and later the Long Island Lighting Company (LILCO) in 1918. LILCO operated the plant from 1918 to approximately 1973 when most of the facilities were demolished. In 1998, KeySpan Corporation acquired the former MGP property through a merger of LILCO and the Brooklyn Union Gas Company. In 2007 National Grid acquired the former MGP property through the acquisition of KeySpan Corporation.

A more detailed summary of the operating history of the Bay Shore Former MGP Site is included in the remedial investigation reports that have been prepared for the Site. These reports are entitled "Bay Shore/Brightwaters Former Manufactured Gas Plant Site, Remedial Investigation Report, Bay Shore, New York" dated April 2002 and "Bay Shore/Brightwaters Former Manufactured Gas Plant Site, Final Remedial Investigation Report, Bay Shore, New York" dated January 2003. Both Remedial Investigation Reports (RIRs) were prepared by Dvirka and Bartilucci (D&B).

OU-1 encompasses approximately eight acres and currently includes the following:

- The Bay Shore Former MGP Site, formerly the main operations area of the MGP, currently owned by National Grid.

- An active National Grid natural gas regulator station is located to the northeast of the northern portion of the Site.
- The southern portion of the Site north of the LIRR is currently vacant.
- The off-site area south of the LIRR, north of Union Boulevard, east of North Clinton Avenue and west of Fifth Avenue includes a mixture of commercial and residential uses. The parcel immediately south of LIRR on the east side of North Clinton Avenue, known as OU-1 South, is owned by National Grid and is currently occupied by the groundwater treatment building installed as part of the Phase IA RDR activities. The parcels immediately south of LIRR on the west side of North Clinton Avenue, 60 N. Clinton Avenue and 66 N. Clinton Avenue properties, are owned by National Grid and is the location of the Phase IV remedial activities discussed in this RDR. The remaining off-site adjacent parcels are owned by others.
- A large portion of the Bay Shore West Parcel is currently vacant, with a small area occupied by office trailers to support ongoing field operations.

The overall layout of the OU-1 and the 60 N. Clinton Avenue and 66 N. Clinton Avenue properties is depicted on **Figures 1 and 2, respectively**. Properties surrounding the 60 N. Clinton Avenue and 66 N. Clinton Avenue properties include the following:

- North – LIRR and the Bay Shore West Parcel and the National Grid Brightwaters Yard beyond which is a mixture of private residences and small commercial businesses.
- East – N. Clinton Avenue. East of N. Clinton Avenue is the groundwater treatment building on OU-1 South.
- South - Union Boulevard. The parcels are primarily private residences mixed with commercial businesses along Union Boulevard.
- West –Immediately west is private residences.

In this RDR, the "On-Site Area" refers to the 60 N. Clinton Avenue and 66 N. Clinton Avenue properties.

1.3 Summary of Remedial Action Plan

In compliance with the Order on Consent, National Grid retained GEI to prepare a "Remedial Action Plan" to evaluate on- and off-site potential remedial measures to address the presence of impacts noted during the performance of the remedial investigations. The results of this evaluation were documented in the Final RAP. The results of the Final RAP were utilized by NYSDEC to select the following remedy for OU-1:

- Excavating contaminant source materials in the unsaturated zone to an approximate depth of 8 feet below ground surface (bgs) in the On-Site Area;
- Excavating contaminant source materials in four "hot spot" areas to an average depth of 25 feet bgs based on field conditions;
- Off-site disposal of excavated impacted soil at a permitted facility for thermal desorption;
- Backfill of excavated areas to pre-remedial grades with approved backfill materials;
- Use of an in-situ chemical oxidation to treat/destroy residual source material;
- Construction of a subsurface containment barrier system at the downgradient edge of the Operable Unit to contain dense non-aqueous phase liquid (DNAPL). The containment system will be used to create a treatment zone immediately upgradient of the barrier;
- Recovering non-aqueous phase liquid (NAPL) via extraction wells along the upgradient perimeter of the containment barrier, where practicable;
- Instituting long-term monitoring, operation and maintenance of the containment/treatment system; and,
- Developing institutional and/or engineering controls to manage future subsurface disturbance and resultant potential exposure pathways.

The focus of this RDR is the excavation of contaminant source materials in the unsaturated zone to an approximate depth of 10 feet bgs and a groundwater treatment system to be installed at the downgradient edge of the On-Site Area to extend treatment outside the barrier wall to the west.

1.4 Summary of Remedial Design Work Plans

The NYSDEC-approved February 2005 *Remedial Design Work Plan, Bay Shore Former Manufactured Gas Plant Site, Operable Unit No. 1 (OU-1), Bay Shore Suffolk County, New York*" was prepared by Paulus, Sokolowski & Sartor Engineering, PC. The Remedial Design Work Plan (RDWP) detailed the activities and procedures to be used in developing the construction design for the remedy specified in the Final RAP. As detailed in the RDWP, several tasks were to be performed prior to initiation of the design of the remedy. These pre-remedial design tasks will serve to gather supplementary information in support of the design as well as to demonstrate the selected remedial technologies. The pre-remedial design investigation activities to be conducted, with regard to the design of the subsurface containment barrier system, included a field demonstration of the jet grout panel barrier installation technology; a grout permeability/compatibility study; a geotechnical investigation; and the performance of a subsurface obstruction survey to identify potential subsurface obstructions that could interfere with the installation of the barrier system.

The RDWP detailed the approach for the design of the OU-1 remedy. This approach was selected to promote timely and efficient implementation of the remedy. As stated in the RDWP, the remedial design approach for the project is to be performed in two separate but parallel paths. Two separate RDRs were proposed in the RDWP. The first submission (Phase I RDR) detailed the design and implementation of the downgradient subsurface containment barrier (including passive DNAPL recovery). The second submission (Phase II RDR) detailed the design and implementation of the remainder of the components of the remedy (i.e., excavation of impacted soils, in-situ chemical oxidation, etc.). Subsequent to NYSDEC approval of the RDWP, the in-situ chemical oxidation part of the remedy was segregated into a third RDR submission (Phase III RDR). This was done to accommodate the field pilot study schedule of the in-situ chemical oxidation program. The first submission was further divided into two submittals for the subsurface barrier wall (Phase I RDR) and the groundwater treatment system (Phase IA RDR) as described in the April 12, 2007 comment response letter on the 95% Phase I RDR report and accepted in by NYSDEC on April 17, 2007. Finally, the source area excavation and groundwater treatment planned for the area west of the barrier wall was designated a fourth submission (Phase IV RDR).

As described in Section 1.1, this work was originally designated as an IRM. The Draft IRM Work Plan was submitted on November 10, 2009. NYSDEC comments from the review of the Draft IRM Work Plan were incorporated into a final IRM Work Plan submitted on February 18, 2010. That work plan has been modified at the direction of the NYSDEC into this Phase IV Remedial Design Report, 100% submission.

1.5 Remedial Action Design Objectives

The objectives of this RDR are:

- To present a summary of the results of the pre-remedial design activities, performed in support of the design of the excavation and groundwater treatment system;
- To incorporate all of the remedial design aspects into a set of plans and technical specifications;
- To describe the methods and procedures that will be used to complete and construct the groundwater treatment systems;
- To identify the project plans (Construction Quality Assurance Project Plan, Health and Safety Plan) that will be used during the construction activities; and,
- To provide a cost estimate and schedule for the implementation of the construction activities associated with the excavation and the groundwater treatment system.

1.6 Project Organizational Structure and Responsibility

National Grid will coordinate with NYSDEC, NYSDOH, Suffolk County Department of Health Services (SCDHS), Suffolk County Department of Energy and the Environment (SCDEE) and other local regulatory agencies to conduct the RDR at the site. Approval of the

IRM Work Plan by NYSDEC was obtained prior to site preparation. It is anticipated that NYSDEC and/or NYSDOH will have representatives at the site periodically during the RDR.

National Grid will have final responsibility and authority for all aspects of the RDR activities at the site. National Grid is responsible for enforcement of the terms and conditions of the Contract Documents and negotiating and approving any change orders for construction activity, if necessary. A National Grid representative will be on-site or accessible via phone during the RDR activities. When the National Grid representative is off-site, the Engineer (GEI) will act as National Grid's representative. National Grid will be responsible for all communication with regulatory agencies, members of the surrounding community and the press.

The Contractor, under contract to National Grid, will be responsible for all on-site construction activities to include, but not limited to, compliance with all applicable Occupational Safety and Health Administration (OSHA) health and safety regulations, construction personnel health and safety, implementation of odor control measures (as necessary), traffic control, site security, excavation, material handling, transport and disposal activities associated with the RDR, and any other specified tasks outlined in this Work Plan or the Contract Documents.

The Engineer (GEI), under contract to National Grid, will serve as the Engineer of Record for the RDR and act as National Grid's representative on site. As such, the Engineer will be responsible for engineering design, oversight of Contractor to ensure compliance with Contract Documents, implementation of the Community Air Monitoring Plan (CAMP), collection of confirmation/documentation samples, maintenance of site sampling logs, meteorological logs, and Contractor invoice and change order review on behalf of National Grid. National Grid may elect to hire a third party construction manager to oversee the work. The Engineer will not direct the Contractor on specific means and methods to perform the work; however, the Engineer will advise the Contractor of non-compliance with the contract documents and identify required corrective action.

Representatives of NYSDEC and the owner will be invited to attend all regular job progress meetings, including pre-construction meetings.

The following are the key personnel or agencies involved with RDR activities at the Site:

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1.7 Summary of Previous Investigations

A series of investigations were conducted at the site between 1998 and 2006. This section provides a summary of these investigations and the findings. A comprehensive summary is presented in the April 2002 RIR, the January 2003 RIR, and the Supplemental Field Program, King Bear Property and Adjacent Areas Report, dated January 2005.

1.7.1 Remedial Investigation

Three soil borings were installed on the two properties during the remedial investigation (RI) in 2002 (BBSB-83, BBSB-84, and BBSB-90). The boring locations are presented in **Figure 2**. The boring logs are included in **Appendix A**. A total of eight samples were collected from the three borings locations and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) and polycyclic aromatic hydrocarbons (PAHs). The results of RI soil analytical samples are presented on **Table 1**.

The RIR was prepared in accordance with the December 2002 *NYSDEC Draft DER-10* guidance document which was developed to interpret the regulations in Title 6 of the New York Code of Rules and Regulations, Part 375. In accordance with guidance in DER-10, the Recommended Soil Cleanup Objectives (RSCO) identified in *NYSDEC Technical and Administrative Guidance Memorandum #4046* (TAGM 4046) were used in evaluating soil chemistry. In December 2006, Title 6 of the New York Codes, Rules and Regulations, Part 375 Environmental Remediation Programs (6 NYCRR Part 375) was revised. This included revised soil cleanup objectives (SCOs). The data provided in Table 1 has been compared to both the Unrestricted Use SCOs listed in Table 375-6.8(a) (Unrestricted Use) and the Restricted Use - Commercial SCOs listed in Table 375-6.8(b) (Commercial Use). All of the samples met the Unrestricted Use SCOs for BTEX. Only one of the eight samples, BBSB-90 (8-10 feet), had concentrations detected above the Unrestricted Use SCOs for several PAHs. The concentrations of benzo[a]pyrene and dibenz[a,h]anthracene detected in this sample were also above the Commercial Use SCOs. Both compounds were detected at low concentrations slightly above the SCOs. Benzo[a]pyrene was detected at 2.7 milligrams per kilogram (mg/kg) (SCO is 1 mg/kg) and dibenz[a,h]anthracene was detected at 0.68 mg/kg (SCO is 0.33 mg/kg).

Three temporary groundwater probes were advanced at the two properties during the RI in February 2002 (BBGP-71, BBGP-87, and BBGP-88). The groundwater probe locations are presented in **Figure 3**. A total of eight groundwater samples were collected from the three temporary groundwater probe locations and analyzed for BTEX and PAHs. The results of RI groundwater analytical samples are presented in **Table 2**. The shallow water table sample at each location exhibited concentrations of ethylbenzene, xylenes, and naphthalene greater than the New York State Ambient Water Quality Standards and Guidance Values for GA groundwater (NYS AWQS). The shallow groundwater at BBGP-87 also contained benzene at a concentration greater than the NYS AWQS. This probe was located along the northern site boundary with the LIRR tracks adjacent to soil boring BBSB-83. As noted above, BTEX was not detected in the soil boring at this location indicating that the groundwater impacts observed in BBGP-87 in 2002 are likely from an upgradient source. The upgradient Bay Shore West parcel was remediated in 2004.

1.7.2 Supplemental Field Program

GEI conducted sampling on the two properties in 2004 as part of the Supplemental Field Program, focusing on the King Bear property and adjacent areas such as the Summer's Lumber property.

Four soil borings were installed on the two properties during the Supplemental Field Program in 2004 (KBSB-01, KBSB-02, KBSB-03, and KBSB-04). The boring locations are presented in **Figure 2**. The boring logs are included in **Appendix A**.

A total of sixteen samples and one duplicate were collected from the four borings locations and analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and total cyanide. The soil analytical sample results from the Supplemental Field Program are presented in **Table 3**. Concentrations of toluene and xylenes were detected above the Unrestricted Use SCOs in one sample, KBSB-01 (9-11 ft). All other VOC detections met the Unrestricted Use SCOs. Concentrations of several PAHs were detected above the Unrestricted Use SCOs in two samples, KBSB-01 (9-11 ft) and KBSB-02 (7-8 ft). The borings were located north and west of the impacts observed during the RI at boring BBSB-90. Concentrations of benzo[a]pyrene were detected above the Commercial Use SCOs at both locations and the concentration of benz[a]anthracene was detected above the Commercial Use SCOs at KBSB-02 (7-8 ft). The concentrations of benzo[a]pyrene were detected at low levels slightly above the 1 mg/kg SCO at 1.2 and 4.7 mg/kg, respectively.

Three temporary groundwater probes were advanced at the two properties during the Supplemental Field Program in June 2004 (KBGP-04, KBGP-05, and KBGP-06). The groundwater probe locations are presented on **Figure 3**. Five groundwater samples were collected at each of the three groundwater probe locations and analyzed for VOCs, SVOCs, and cyanide. The groundwater analytical sample results from the Supplemental Field Program are presented in **Table 4**. The concentration of total xylenes in the shallow water table sample at KBSG-05 (7-11 ft) was detected at concentrations above the NYS AWQS. Concentrations of methyl-tertiary butyl ether (MTBE) exceeded the NYS AWQS at three locations, KBGP-04 (26-30 ft), KBGP-04 (36-40 ft), and KBGP-05 (36-40 ft). Low levels of MTBE were detected in 10 of the 15 samples collected.

1.7.3 Phase 1 Remedial Action Data Collection and Quarterly Monitoring

Following the installation of the subsurface barrier wall in OU-1 South, four monitoring well clusters were installed outside of the wall to monitor groundwater concentrations downgradient of the perforated barrier and along the outside edge of the barrier wall. The OZMW-22 cluster was installed on the former Summer's Lumber property outside of the barrier wall in January 2008. The boring locations are presented in **Figure 2**. The boring logs are included in **Appendix A**. Trace light non-aqueous phase liquids (LNAPL) were observed at the water table depth of approximately 9 feet below grade in the boring for the monitoring well. Four soil samples were collected during the installation of the monitoring well from the most impacted zone of each well screen interval. The analytical results from the soil boring are presented in **Table 5**. All concentrations detected in the samples collected from the intermediate (25-30 feet below ground surface [ft bgs]), intermediate 2 (45-50 ft bgs) and deep (65-70 and 63-68 ft bgs) well screen intervals were below the Unrestricted Use SCOs. The sample collected from the water table in the vicinity of the LNAPL had several detections of VOCs and SVOCs at concentrations above the Unrestricted Use SCOs including ethylbenzene, total xylenes, n-propylbenzene, trimethylbenzene isomers, naphthalene, benz[a]anthracene, benzo[a]pyrene, benzo[b]flouranthene, chrysene, indeno[1,2,3-cd]pyrene. However, only benzo[a]pyrene was detected above the Commercial Use SCOs at 2.5 mg/kg (SCO is 1 mg/kg). The presence of the ethylbenzene, xylenes, n-propylbenzene, and trimethylbenzene isomers is consistent with what would be expected from a gasoline or diesel range LNAPL. As this area is located in the approximate location of the former Light Oil Recovery System, the findings were consistent with former site activities.

The monitoring wells have been sampled quarterly since the first quarter (Q1) of 2008. The historical data for the wells are available in the Q2 2009 Quarterly Operations, Maintenance, and Monitoring Report, dated October 2009. The average concentrations in quarterly samples collected from OZMW-22S over the last 6 quarterly events were 7,992 micrograms per Liter (ug/L) BTEX and 1,928 ug/L PAHs. Similar average concentrations were observed downgradient of the two properties at monitoring well BBMW-23S located on the south side of Union Boulevard. Over the same 6 quarters, the average BTEX and PAH concentrations at BBMW-23S were 15,304 ug/L and 1,920 ug/L, respectively.

Concentrations of total BTEX and total PAHs have remained non-detect or less than 100 ug/L total BTEX or total PAHs at monitoring wells OZMW-22I, OZMW-I2, and OZMW-22D since their installation in Q1 2008. In Q1 2009, total BTEX and total PAHs were detected at OZMW-22I at 95 ug/L and 607 ug/L respectively. Concentrations of total BTEX and total PAHs have dropped dramatically at the BBMW-23I, BBMW-23I2, and BBMW-23D over the last six quarterly events. Concentrations have been below 100 ug/L total BTEX or total PAHs over the last four quarterly monitoring events.

2. Nature and Extent

2.1 Pre-Design Data Collection Scope of Work

Based on the impacts observed in 2008 during the installation of monitoring well cluster OZMW-22 and the downgradient groundwater impacts at monitoring well cluster BBMW-23, the NYSDEC requested that the subsurface impacts observed outside of the containment barrier be further delineated. Between April and June 2009, National Grid conducted a pre-design soil and groundwater investigation at the former King Bear and Summer's Lumber properties to address the NYSDEC's request. The objectives of this pre-design soil and groundwater investigation work plan were to:

- Assess the horizontal and vertical profile of contaminants of concern (COCs) in the shallow subsurface soil on both properties outside of the containment barrier;
- Develop a profile or cross-section of the groundwater plume and evaluate its COC flux as it migrates off of the former King Bear property. This included the installation of two deep groundwater probes and one deep groundwater monitoring well along the southern boundary to monitor the entire groundwater column above the aquitard for remedial design considerations and an evaluation of the potential for other sources contributing to groundwater contamination observed in downgradient monitoring well cluster BBMW-23;
- Evaluate shallow groundwater concentrations of COCs on both properties; and,
- Develop the design criteria for remedial actions, including, but not limited to, excavation/source removal and in-situ treatment (chemical oxidation, oxygen injection, etc.).

The results of this data collection scope of work are presented below.

2.2 Subsurface Soils

Thirty-eight soil borings were installed on the two properties between April and June 2009. The boring locations are presented in **Figure 2**. The boring logs are included in **Appendix B**. A total of 107 soil samples and five duplicate samples were collected from the 38 boring locations and analyzed for VOCs and SVOCs. Twenty-three of the 107 samples were also analyzed for total petroleum hydrocarbons; and ten samples were also analyzed for total metals, total cyanide, polychlorinated biphenyls (PCBs), and pesticides. A summary of the soil analytical samples results is presented in **Table 5**.

Nine samples out of the 107 collected contained concentrations of one or more VOCs or SVOCs which exceeded the Unrestricted Use SCOs. All of these samples were collected from depths between 4 ft and 11 ft bgs. The samples are located in two distinct locations, in the vicinity of the impacts observed at monitoring well cluster OZMW-22 on the Summer's Lumber property and adjacent to and downgradient of the former King Bear building.

2.2.1 Former Summer's Lumber Property Soils

On the former Summer's Lumber property, physical impacts were observed at two borings along the eastern site boundary at KB/SL D-1 and KB/SL F-1 at depths of 8-10 ft bgs and 9-11 ft bgs, respectively. Slight coating of product with petroleum-like odors was observed at boring KB/SL E-1 at a depth of approximately 8.5-9.1 ft bgs and at KB/SL F-1 at 9.1-9.4 ft bgs. Both borings are located adjacent to the outside of the subsurface barrier wall and are located upgradient and downgradient of OZMW-22. The physical impacts observed at these borings are consistent with the impacts observed at approximately 9 ft bgs at monitoring well cluster OZMW-22.

VOCs and/or SVOCs were detected at concentrations above the Unrestricted Use SCOs in five samples collected from the former King Bear property. Compounds with concentrations above the Unrestricted Use SCOs are listed by sample location below.

- KB/SL B-1 (4-6 feet) - trimethylbenzene isomers and chrysene
- KB/SL C-2 (7.5-9.5 feet) - trimethylbenzene isomers
- KB/SL D-1 (8-10 feet) - ethylbenzene, total xylenes, n-propylbenzene, trimethylbenzene isomers, naphthalene, benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, and indeno[1,2,3-cd]pyrene
- KB/SB E-1 (8-10 feet) - benz[a]anthracene, benzo[a]pyrene, and chrysene
- KB/SB F-1 (9-11 feet) - ethylbenzene, total xylenes, n-propylbenzene, trimethylbenzene isomers, and naphthalene.

The same compounds detected above the Unrestricted Use SCOs in sample KB/SL D-1 (8-10 feet), with the exception of benzo[k]fluoranthene, were detected above the Unrestricted Use SCOs at OZMW-22 (8-10 ft). However, the only compound detected above the Commercial Use SCOs was benzo[a]pyrene at KB/SL D-1 (8-10 feet), KB/SL E-1 (8-10 feet), and OZMW-22 (8-10 ft), with concentrations ranging from 1.2 mg/kg to 2.5 mg/kg.

Additional soil samples were collected from below the impacted samples at KB/SL D-1 and KB/SL E-1 at depths of 11-13 ft bgs and 16-18 ft bgs, respectively. Concentrations of VOCs and SVOCs in both of these deeper samples met the Unrestricted Use SCOs indicating that the impacts above the Commercial Use SCOs are limited to the vicinity of the water table depth.

All other samples collected from the Summer's Lumber property during this investigation and previous investigations meet the Unrestricted Use SCOs.

2.2.2 Former King Bear Property Soils

On the former King Bear property, physical impacts were limited to staining and petroleum and naphthalene odors observed at eight borings in the southeast corner of the property. NAPL was not observed in any of the borings advanced on the property.

VOCs and/or SVOCs were detected at concentrations above the Unrestricted Use SCOs in four samples collected from the former King Bear property. Compounds with concentrations above the Unrestricted Use SCOs are listed by sample location below.

- KB/SL G-1 (8-10 feet) - benz[a]anthracene and chrysene
- KB/SL H-2 (6-8 feet) - indeno[1,2,3-cd]pyrene
- KB/SL SB-01 (8-10 feet) - ethylbenzene, n-propylbenzene, trimethylbenzene isomers, naphthalene, benz[a]anthracene, benzo[a]pyrene, and chrysene
- KB/SL SB-02 (7-9 feet) - total xylenes, 1,2,4-trimethylbenzene, benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, and chrysene

The detections in samples KB/SL SB-01 (8-10 feet) and KB/SL SB-02 (7-9 feet) are consistent with the analytical sample results from samples KBSB-01 (9-11 ft), KBSB-02 (7-8 ft), and BBSB-90 (8-10 ft).

Benzo[a]pyrene was detected above the Commercial Use SCOs at all five sample locations. In addition, benz[a]anthracene was detected above the Commercial Use SCOs at KBSB-02 (7-8 ft) and dibenz[a,h]anthracene was detected above the Commercial Use SCOs at BBSB-90 (8-10 ft). The concentrations for benzo[a]pyrene were detected at low levels ranging from 1.2 mg/kg to 4.7 mg/kg, slightly above the 1 mg/kg Commercial Use SCO. These PAHs, benz[a]anthracene, dibenz[a,h]anthracene, and benzo[a]pyrene do not readily leach to groundwater and are not detected in groundwater samples at or downgradient of these locations.

Additional soil samples were collected from immediately below the impacted samples at BBSB-90 (12-14 ft) and KB/SL SB-01 (14-16 ft) KBSB-01 (9-11 ft). Concentrations of VOCs and SVOCs in these deeper samples met the Unrestricted Use SCOs indicating that the impacts are limited to near the water table.

All other samples collected from the former King Bear property during this investigation and previous investigations meet the Unrestricted Use SCOs.

2.3 Groundwater

Eight temporary groundwater probes and two monitoring well clusters were installed on the two properties between April and June 2009. The groundwater probe locations and monitoring well cluster locations are presented in **Figure 3**. The well logs are included in **Appendix B**. A total of 26 samples and two duplicates were collected from the eight temporary groundwater probes and analyzed for VOCs and SVOCs. Three of the 26 samples were also analyzed for total cyanide. A summary of the groundwater probe analytical samples results is presented in **Table 6**. Eight samples were collected from the two monitoring well clusters and analyzed for VOCs, SVOC, total metals, nitrate/nitrite, sulfate/sulfide, ammonia, total phosphorous, and heterotrophic plate counts. A summary of the monitoring well groundwater analytical sample results are presented in **Table 7**.

Five of the groundwater probes contained concentrations of VOCs and SVOCs above the NYS AWQS. All of the detections above the NYS AWQS are limited to shallow samples at depths of less than 20 feet bgs collected from points in the southeast corner of the former King Bear property or adjacent to the impacts on the eastern boundary of the former Summer's Lumber Property. The PAHs which were detected above the Commercial Use SCOs on the King Bear property are not detected in groundwater samples at or downgradient of the soil sample locations.

One sample from the permanent monitoring well OU2MW-48S contained concentrations of VOCs which exceeded the NYS AWQS for n-propylbenzene and 1,2,4-trimethylbenzene. This well is located on the western site boundary of the former Summer's Lumber property and does not appear to be related to the MGP impacts at the site.

2.4 Conceptual Site Model

Based on the results of all investigations conducted on the two properties, it appears that three separate areas of impacts are present.

- A thin lens of NAPL-coated soil less than 1-foot thick is present at approximately 9 feet bgs adjacent and downgradient to the subsurface barrier wall. These impacts appear to be related to the former light oil recovery system which operated in this portion of the site.
- Analytical soil impacts (primarily benzo[a]pyrene) are present in the southeast corner of the site at and downgradient of the former cesspool on this property. Groundwater impacts observed in this area (primarily BTEX and naphthalene) are likely the results of the upgradient NAPL-coated soils on Summer's Lumber property and potential transport of impacted groundwater from further upgradient, western portion of OU-1 main parcel.

- Groundwater impacts consisting of low levels of n-propylbenzene and 1,2,4-trimethylbenzene are present along the western site boundary of the former Summer's Lumber Property. These impacts do not appear related to the former MGP site. They appear to be gasoline-related and likely the result of historic operations on this portion of the property. Although these impacts are most likely not related to the MGP site, they will be addressed through the proposed RDR.
- Soil impacts above the Commercial Use SCOs were detected in two samples along the eastern side of the King Bear property. The impacted soils are present between 7-10 feet bgs and the area is covered with an asphalt parking lot. The impacts are limited to three PAHs, benz[a]anthracene, dibenz[a,h]anthracene, and benzo[a]pyrene. These PAHS do not readily leach to groundwater and are not detected in groundwater samples at or downgradient of these locations.

Figure 4 identifies these three areas and highlights the proposed RDR activities which will address each area.

3. Remedial Action Goal and Objectives

3.1 Remedial Action Goal

The NYSDEC remedial program identifies the goal for site remediation under 6 NYCRR Sub-Part 375-2.8(a) as:

> "…restore that site to pre-disposal conditions, to the extent feasible. At a minimum, the remedy selected shall eliminate or mitigate all significant threats to the public health and to the environment presented by contaminants disposed at the site through the proper application of scientific and engineering principles and in a manner not inconsistent with the national oil and hazardous substances pollution contingency plan as set forth in section 105 of CERCLA [Comprehensive Environmental Response, Compensation and Liability Act], as amended as by SARA [Superfund Amendments and Reauthorization Act]."

Where restoration to pre-disposal conditions is not feasible, the NYSDEC may approve an alternative criteria based on the site conditions (6 NYCRR Sub-Part 375-2-8(b)(1)). This could include the application of one of the SCOs listed in Table 375-6.8(a) (Unrestricted Use) or Table 375-6.8(b) (Restricted Use). Alternatively, the responsible party may "propose site-specific soil cleanup objectives which are protective of public health and the environment based upon other information."

Based on these criteria, the goals for the RDR of the former Summer's Lumber and King Bear properties is to remove the MGP-related source material via excavation where present and accessible, to the extent practicable, and treat residual impacts through the use of in-situ chemical oxidation and oxygen injection. MGP-related source material is defined as materials containing or saturated with NAPL or product related to the former MGP operations. MGP-impacted materials are defined as materials which do not contain NAPL or product, but exhibit MGP-related sheens, staining, odors, or analytical sampling results which do not meet the Commercial Use SCOs for soils.

3.2 Remedial Action Objectives

Remedial Action Objectives (RAOs) are medium-specific or operable-unit specific objectives for the protection of human health and the environment. RAOs are developed based on contaminant-specific Standards, Criteria and Guidance (SCGs) and the intended land use.

SCGs are defined in the 2002 NYSDEC Draft DER-10. Standards and Criteria are New York State regulations or statutes, which dictate the cleanup standards, standards of control and other substantive environmental protection requirements, criteria, or limitations which are generally applicable, consistently applied, officially promulgated and are directly applicable to a remedial action. Guidance are non-promulgated criteria and are not legal requirements; however, those responsible for investigation and/or remediation of the site should consider guidance that, based on professional judgment, are determined to be applicable to the site.

For this RDR, two SCGs were applied to the site, 6 NYCRR Part 375 for shallow accessible soils and a site-specific soil cleanup objective of removing source material which could contribute to groundwater contamination, where present and accessible. Specifically, the Commercial Use SCOs listed in Table 375-6.8(b) will apply to shallow subsurface soils at the site and under the existing King Bear building and asphalt parking lot. For the purposes of this RDR, shallow subsurface soils are defined as soil above the seasonally high water table. The removal of source material which could contribute to groundwater contamination, where present and accessible, will apply to the impacts observed at the former Summer's Lumber property. Based on these SCGs, the RAOs for the site are:

SOIL

- Prevent, to the extent practicable, ingestion/direct contact with MGP-related soil contamination.

GROUNDWATER

- Remove/treat, to the extent practicable, MGP-related source material which may impact groundwater.
- Prevent, to the extent practicable, contact with, or ingestion of groundwater with MGP-related contaminant levels exceeding class GA standards.

4. Remedial Summary

The remedial action proposed for the former Summer's Lumber and King Bear properties combines several remedial technologies to accomplish the RAOs. Specifically, the remedy will include:

- **Excavation:** MGP-related source materials outside of the barrier wall on the former Summer's Lumber property will be removed where present and accessible, and shipped for off-site disposal.
- **ISCO:** Residual impacts below the water table at the base of the source material removal may be addressed via ISCO.
- **Bioremediation:** Groundwater impacts will be addressed using an oxygen injection technology to create an aerobic environment in groundwater to increase the bioremediation of the groundwater impacts.
- **Institutional Controls:** Impacted material at depths greater than 4 feet bgs which do not meet the Commercial Use SCOs for benzo[a]pyrene, benz[a]anthracene, and dibenz[a,h]anthracene will be left in place below the King Bear building and the adjacent asphalt parking area. An Environmental Land Use Restriction (ELUR) will be developed for this property which will include a deed restriction prohibiting excavations below 4 feet and a Site Management plan to address any future construction at this property. The impacts which will remain at this property do not contribute to groundwater contamination at the site.

More detailed information regarding the implementation of the remedy is provided in the Engineering Drawings in Appendix C.

4.1 Remedy Execution

The proposed remedy includes the excavation, removal, and off-site disposal of MGP-related source materials to a depth approximately 10 feet below the existing grade on the former Summer's Lumber property. Impacted soils will be transported off-site for treatment and disposal at an appropriately permitted facility approved by National Grid. The excavation will be brought to final grade using clean backfill. Asphalt pavements, concrete aprons, sidewalks, driveways, and fencing will be restored to pre-construction conditions or better. The final grade of the site will be restored to match the existing grade.

It is anticipated that excavations below the water table will be conducted in the wet similar to the previous excavations at OU-1. Groundwater from excavated materials will be allowed to gravity drain back into the excavation prior to being loaded out for off-site disposal. If collection of dewatering fluids becomes necessary during excavation to remove free product, then any dewatering liquids will be disposed of off-site along with any decontamination liquids generated as wastewater. Wastewater will be pumped into fractionation (frac) tank(s) and stored at a designated location within the project limits. Solid materials at the bottom of the frac tanks will be combined with the impacted material being excavated and disposed of off-site. The Contractor will be responsible for operation and maintenance of the wastewater/dewatering system and its components. Any wastewater generated will be sampled prior to off-site disposal.

Due to the limited volume of MGP source material (less than 1-foot thick) and anticipated excavation methods, a temporary structure will not be necessary to complete this excavation. A Vapor/Odor Management Plan is included in Section 5.

Site work will commence at 0730 Monday through Friday with no heavy truck traffic until 0800. All work must be completed and the site secured for the evening at 1700 unless otherwise authorized by National Grid.

During working hours, the Contractor will make every effort to minimize potential nuisance community impacts. These include, but are not limited to, noise and traffic concerns associated with the execution of the remedy. Site work will not be conducted on weekends without prior approval and coordination of National Grid.

4.2 Mobilization and Site Access

Prior to mobilization, the Contractor will prepare and submit all required documents identified in the Contract Documents for review and approval by National Grid, the Engineer, and the NYSDEC. The Engineer will review final Contractor submittals to ensure conformance with Contract Documents.

The Contractor will apply for and obtain all necessary Federal, State, and local permits associated with the RDR. These permits may include, but are not limited to, traffic routing, construction, air emissions, noise, etc.

The Contractor will contact New York City-Long Island One Call to request that all utilities on the Site are located and marked. The Contractor will contract a private utility locator service to identify any utilities on private properties. Any underground utility protection and/or relocation will be the responsibility of the Contractor prior to mobilization.

The Engineer will conduct a pre-construction site meeting, after the project is awarded, with the Contractor, National Grid, Suffolk County Department of Public Works (SCDPW), and NYSDEC prior to the commencement of RDR implementation. The meeting will be conducted to review specified construction requirements and schedules, as well as to review the responsibilities of the Contractor, the Engineer, and National Grid with respect to the RDR implementation.

Prior to the start of work, the Contractor will conduct an external pre-construction survey and inspection of adjacent properties to document existing conditions. The survey will be conducted under the oversight of the Engineer and the findings reviewed and approved by the Engineer and National Grid prior to mobilization.

A New York State licensed surveyor will be contracted to establish a temporary baseline grid and benchmarks for the remedial work.

The grid and benchmarks will be established in English Units (feet) in the following datums:

- Horizontal: New York State Plane Coordinate System Long Island 3104;
- Vertical: North American Vertical Datum 1988, NAVD88.

The surveyors will return as needed to establish other reference points, layout work, and survey record information such as the locations of documentation samples and the limits of the excavations. Other site personnel may perform additional intermediate surveys as needed.

The Contractor will mobilize all necessary labor, equipment, supplies and materials to complete the RDR upon approval by National Grid. The appropriate exclusion zone(s) and contaminant reduction zone(s) will be established to conduct the planned activities safely and effectively.

As the excavation will occur at the current entrance of the Summer's Lumber property, access to the site from North Clinton avenue will not be possible. It is anticipated that the Contractor will install a temporary gate on the south side of the Summer's Lumber property and access to the site will be from Union Boulevard.

4.3 Site Preparation

The Contractor will be responsible for preparing the site for the remedy. Site preparation activities necessary to provide support for the work, includes at a minimum the establishment of work zones, support facilities, decontamination facilities, erosion control measures, and installation of temporary security fencing around the work area and roll-off box staging area (for debris).

The Contractor will be responsible for removing/preserving existing trees, fences, and structures/appurtenances, prior to the start of the remedy.

The Contractor will be required to obtain approval from a primary and an alternate, properly licensed National Grid-approved disposal facility for all excavated material, prior to beginning any excavation work.

Soil erosion and sediment control measures will be installed prior to excavation and maintained throughout the project in accordance with the Erosion and Sediment Control Plan in Section 6, and the Contract Documents.

An 8-foot high odor control/privacy fence with two access gates will be erected to enclose and control access to the construction site for the duration of the remedy. The site Security Plan, Section 7, indicates the location and installation of the temporary fence.

Following preparation of the site, a decontamination/anti-traction pad will be constructed. The pads will likely be located towards the southern edge of the Summer's Lumber property prior to exiting onto Union Boulevard through the former King Bear Property. The Decontamination Plan in Section 8 details the placement and operation of the decontamination/anti-traction pad.

4.4 Excavation

4.4.1 Excavation Limits

A thin layer, approximately 0.5 feet thick, of slight coating of product with petroleum-like odors was observed at boring KB/SL E-1, KB/SL F-1, and OZMW-22 at depths of approximately 8.5-9.1 ft bgs, 9.1-9.4 ft bgs, and 9 ft bgs, respectively. These physical impacts are located at or near the water table elevation in the vicinity of the groundwater impacts observed at OZMW-22S, and upgradient of the groundwater impacts observed at BBMW-23S. These impacts appear to be contributing to groundwater contamination outside of the subsurface barrier wall. Therefore, the material will be removed to a minimum depth of 10 feet below grade.

The anticipated extent of the excavation was established based on the existing site data. The field observations and the analytical results from documentation samples will determine whether the known extent of the excavation has been met or needs to be expanded. If a determination is made to expand the extent of the excavation, National Grid will work with NYSDEC to modify the scope of the RDR either prior to or during implementation of the remedy. However, expansion of the excavation may be limited based on the anticipated excavation methods and support system. In the event that expansion is not possible, the remedial goals may need to be modified and additional institutional controls or engineering controls will need to be determined.

Figure 4 depicts the extent of MGP-related source material based on existing data and the anticipated extent of excavation limits based on the SCOs. MGP-related source material will be excavated to the target depths of 10 feet.

If necessary, the Engineer may locally increase the depth of the excavation by up to 2 feet to excavate additional visibly impacted soils if they are encountered during the excavation. However, based on the findings of the previous investigations, impacted material is not anticipated to extend beyond a depth of 12 feet.

4.4.2 Earth Support System

It is anticipated that the excavations will utilize the existing barrier wall for excavation support adjacent to North Clinton Avenue. The Contractor will verify the suitability of the barrier wall for use as an earth support system. Based on the excavation depth and location, it is anticipated that the excavation may be accomplished by open excavation techniques with safe side slopes above the water table depth and temporary localized excavation support (i.e. trench boxes, timber sheeting, slide rail system) to remove impacts at and below the water table within the excavation. It is anticipated that the excavation will be conducted in the wet and construction dewatering will not be required.

Upon completion of the excavation, the temporary earth support system will be removed to facilitate backfill operations.

4.4.3 Backfill

The excavation will be backfilled with clean imported materials meeting the Unrestricted Use SCOs. Excavated materials meeting the Unrestricted Use SCOs may be stockpiled on-site and used as backfill in the excavation above the seasonally high water table elevation. ISCO will be applied to the excavation backfill in accordance with subsection 4.6.3.

Materials below the seasonally high water table elevation will be backfilled with high permeability material. Vertical injection wells will be placed in the high permeable material as described in subsection 4.6. This will facilitate the injection of additional oxidant to this zone during the ISCO injection portion of the remedy. A low permeability material, such as AquaBlock, will be placed at the seasonally high water table elevation. This will prevent upwelling of the oxidant during injection into the high permeability zone and help control the oxidant distribution. A minimum of 2 feet of clean imported backfill or reused site soils meeting the Unrestricted Use SCOs will be placed above the high permeability layer. A visual demarcation barrier will then be placed above the 2-foot clean fill layer. The excavation will then be backfilled to grade with clean imported materials.

4.4.4 Monitoring Well Abandonment

Monitoring well cluster OZMW-22 will be abandoned prior to beginning excavations. Monitoring wells will be abandoned per the 2003 NYSDEC *Groundwater Monitoring Well Decommissioning Procedures*.

4.4.5 Material Handling

Due to the constraints of the site size, it is anticipated that the excavation activities will be conducted as a direct load operation. All loading of excavated material will occur within the exclusion zone. Once a truck is filled with excavated material, spray-on odor suppressing materials such as Rusmar Foam or Biosolve® may be used to reduce potential VOC emissions during transit, if necessary. A solid truck tarp will then be employed over the truck bed and secured on all sides. A plastic tarp may be used in the event that solid covers are not available for material removed from above the water table. The truck will then exit the excavation area and proceed immediately to a decontamination pad. Following decontamination, the truck will proceed directly to the designated treatment, storage and disposal facility. All trucks shall have watertight compartments and liners to prevent seepage from wet soil and leaking onto public streets.

Limited stockpiling of materials will be authorized within the excavation area to allow for gravity dewatering. Lined and covered roll-off bins will be staged on site to contain construction debris and bulk waste for waste classification and appropriate disposal.

Based on the investigation data, it is anticipated that excavated material will be transported as non-hazardous material.

If necessary, suspect materials encountered during excavation that may exhibit hazardous characteristics will be segregated, stored on site, sampled, and disposed of appropriately.

4.4.6 Odor and Fugitive Dust Control

The Contractor will provide odor suppressant system consisting of chemical foam (e.g., Rusmar foam, Biosolve®) or other approved method. The Contractor will keep sufficient odor suppressant on site to manage the odors generated from the excavated materials, including, but not limited to open excavations, limited stockpiles, or materials loaded into trucks for transportation and disposal. The odor suppressant system will be stored near the excavation and will be easily mobile in case of need. Further details about the management of the odor suppressant system are presented in Section 5. All open excavations containing

MGP-related source material will be backfilled or covered at the end of each working day to suppress odors.

Conditions within the excavation area will be monitored in accordance with the Contractor Health and Safety Plan (HASP). Conditions on the perimeter will be monitored in accordance with the CAMP.

4.5 Site Restoration

Upon completion of the remedy, the site will be restored to original conditions or better. Restoration actions shall include, but may not be limited to:

- Backfill and compact the excavated areas
- Removal of all erosion control measures after permanent stabilization
- Grading the site to prevent pounding or runoff of stormwater that could adversely affect the site or adjacent properties
- Replacing any removed or damaged structures or appurtenances, if damaged during the remedy
- Restoration of the driveways, curb and sidewalk wherever they were removed or damaged
- Post Restoration survey to document conditions following restoration

4.6 Oxygen Injection System Installation

4.6.1 Site Preparation

Site preparation activities will be conducted as necessary to provide support for the installation of the oxygen injection system as shown in **Figure 4**. This will include the establishment of work zones, support facilities, decontamination facilities, and installation of temporary security fencing around the work area. The work area will change daily and consist of a section of trench that the Contractor can excavate, place continuous oxygen supply lines, and backfill in a single workday. This will reduce the need for erosion control, security, and other overnight safety measures.

GEI will mark out the locations of oxygen system injection wells, the routes of the injection system supply tubing, the routes of the oxygen injection system utilities, and the oxygen injection system location and piping interconnection vault.

All work shall be conducted to minimize impacts to existing utilities. If the planned system configuration conflicts with existing utilities, National Grid will advise the NYSDEC of the proposed changes, and the NYSDEC-approved changes will be documented on the as-built figures provided in the Phase IV Completion Report.

The Contractor will be responsible for removing/replacing any existing plants, fences, and structures/appurtenances, prior to the installation of the system trenching as necessary. The Contractor will be responsible for saw cutting and replacing any concrete or pavement as necessary.

Temporary construction fencing and barriers will be erected to enclose and control access to the work area for the duration of the proposed activities as described in the Site Security Plan, Section 7.

4.6.2 Trenching

The Contractor will excavate the system trenches as indicated in system design document located in **Appendix D**. Trenches will be 2 feet or smaller in width and will be no deeper than approximately 3 feet. The Contractor shall perform all trench excavations to minimize the disturbance to adjacent areas. During the trenching work in paved or concrete areas, the Contractor shall be responsible for carefully marking out the trench, saw cutting and removing the pavement or concrete, and trenching to minimize the impact to adjacent surfaces.

The Contractor shall excavate a small trench to install an electrical line below grade as required by code to provide power to the oxygen injection system. The Contractor shall be responsible for coordinating a power drop from the local utilities to the system. The Contractor shall ensure that all electrical work performed is conducted by a licensed electrician and conducted in accordance with all applicable Federal, State, and local laws and local building codes.

The Contractor will sequence trenching, supply line installation, and backfill activities to minimize or eliminate open excavation areas at the end of each workday. Any excavations remaining open overnight will be secured. Any excavations remaining open overnight within the road right-of-way will be covered by steel plates secured with spikes/pins. Following completion of backfill operations, the trench surface will be restored to pre-existing conditions, as described in the applicable access agreements.

4.6.3 Injection Well Installation

Injection wells will be installed for each individual groundwater treatment system in accordance with the design document in Appendix D. The oxygen injection wells will be installed in the bottom of the trenches at a depth of about 3-feet below grade, using a Geoprobe® or hollow stem auger drill rig. The Contractor shall construct each oxygen injection well to the following specifications and as depicted in the design drawings in Appendix D. In general, the wells will be constructed as follows:

- Injection points will be constructed of Schedule 40 polyvinyl chloride (PVC) risers.
- Injection point screens will be constructed of a 1-foot-long, 1-inch-diameter PVC sump fitted to a 1-inch-diameter, 1-foot-long 0.010 slot PVC screen, fitted to 1-inch-diameter PVC riser.
- The 1-inch PVC riser will be attached to a 1-inch to ¾-inch threaded tee at approximately 2-feet below grade surface.
- The ¾-inch threaded tee will be attached to a ¾-inch threaded barb.
- The 1-inch tee will be fitted with a 1-inch-diameter riser to grade.
- The annular space will be filled with #00 Silica Sand to at least 1 foot above the screen interval, a minimum 3-foot-thick bentonite seal, Portland cement/bentonite grout to 3 feet below grade, and native material to grade.
- The wellheads will be completed with flush mount valve boxes or well housings large enough to allow access for cleaning, adjustment or measurement within their respective road boxes.

The injection well depths were selected to inject oxygen where the highest concentrations of BTEX and PAHs were observed during the Remedial Investigation, Pre-Design Investigations, and the ongoing monitoring program. The approximate injection zone depths are presented in Appendix D.

4.6.4 Monitoring Well Installation

At the request of the NYSDEC, two additional groundwater monitoring well clusters will be installed at locations downgradient of the treatment line along Union Boulevard. The well clusters will include multiple screen depths for monitoring the oxygen injection system performance throughout the vertical extent of the aquifer. The proposed locations are depicted in Appendix D. In addition to the two additional monitoring well clusters, the shallow and intermediate monitoring wells from the OZMW-22 cluster will be re-installed at the completion of the excavation activities to provide an upgradient data point north of the oxygen injection line.

The monitoring wells will be installed with 4.25-inch-diameter hollow-stem augers or 3-inch diameter Geoprobe® based on site constraints and applicable access agreement(s). The monitoring wells will be screened in the intervals presented in Appendix D. The monitoring wells will be constructed of either 1-inch or 2-inch inside diameter (ID), flush-threaded PVC screen and solid casing with a 2-foot sump. The annular space between the well screen and borehole wall will be backfilled with chemically inert sand to promote sufficient groundwater flow to the well and to minimize the passage of any fine-grained formational material into the well. A bentonite clay seal will be placed above the sand pack. The remaining annular space will be filled to grade with cement/bentonite grout. The bentonite seal will prevent the migration of contaminants to the sampling zone (i.e., screened interval) from the surface and overlying material and will prevent cross-contamination between strata. Each monitoring well will be fitted with a flush-mounted curb box secured with cement.

The construction details for all proposed monitoring wells are included in Appendix D. Monitoring wells installed at the water table will have a 10-foot PVC screen interval and monitoring wells installed below the water table will have a 5-foot PVC screen interval.

There is no indication that any LNAPL or DNAPL are present in the proposed system locations. However, if LNAPL is encountered in the borings, the well screen will extend approximately 2 feet above the water table. If DNAPL is encountered, the well screen bottom will be installed on top of any observed confining layer that may be retarding the migration of DNAPL and the sump will be installed into the confining unit with a bentonite clay seal at the elevation of the top of the confining layer.

4.6.5 Well Development

The Contractor will develop each well after completion. Development will be performed by alternately surging and pumping, utilizing a centrifugal or piston pump, peristaltic pump, or an alternative method approved by GEI for a maximum of 1 hour or until the turbidity of the development water is less than 50 nephelometric turbidity units (NTUs). A field turbidity meter will be used to monitor NTU levels.

4.7 Phase III RDR Support

National Grid is developing a Phase III RDR in accordance with the RAP to address residual impacts and deep impacts in OU-1 that will not be removed via direct excavation. In anticipation of the Phase III work and during the construction work for the Phase IV remedy, three injection wells will be installed north of the excavation. The injection wells are identified on **Figure 5**. The proposed construction details are shown in **Figure 6**. Injection wells will be installed via direct push methodologies.

4.8 Construction Oversight

A representative of National Grid, or his or her designee, will be on site during all remedial activities. The Engineer will be responsible for remediation oversight and conformance with the Contract Documents at the site. The specific responsibilities of the Engineer, Contractor, and National Grid are discussed in subsection 1.3.

Representatives of the NYSDEC, NYSDOH, SCDEE, and SCDHS may be present during construction and restoration activities.

5. Vapor/Odor Management

Excavation activities at remediation sites typically generate airborne dust and vapors (VOCs) that have the potential to migrate off-site. In recognition of this potential hazard, the NYSDOH has promulgated a CAMP that establishes action levels of respirable dust and VOCs that are protective of the surrounding community. The requirements of the CAMP are contained in Appendix 1A of the 2002 Draft DER-10 Technical Guidance for the site Investigations and Remediation. The CAMP is intended to supplement, but be discrete from the air-monitoring program implemented by the Contractor for purposes of evaluating site worker health and safety.

5.1 CAMP Summary

A site-specific CAMP has been prepared for the site and is included in Appendix E. The CAMP is designed to provide monitoring procedures, Alert Limits, Action Limits, and contingency measures if Action Limits are approached. An Alert Limit is a contaminant concentration or odor intensity that triggers contingent measures. An Alert Limit does not suggest the existence of a health hazard, but serves instead as a screening tool to trigger contingent measures if necessary, to assist in minimizing off-site transport of contaminants and odors during remedial activities. An Action Limit is a contaminant concentration or odor intensity that triggers work stoppage.

During times of ground intrusive activities, fence line perimeter air monitoring will be conducted using a combination of real-time (continuous and almost instantaneous) air monitoring at fixed locations and walk-around supplemental monitoring using hand-held instruments on an as-needed basis. Contaminants commonly found at former MGP sites will be monitored, including VOCs and dust. The CAMP includes a Contingency Plan that defines Alert Levels, Action Levels, and specific response activities to be implemented during working hours if an exceedance of an Alert Limit or Action Limit for a measured compound occurs. The response actions, potentially including work stoppage, are intended to prevent or significantly reduce the migration of airborne contaminants from the site.

If the real-time perimeter Action Limits are exceeded or significant nuisance odors are noted, National Grid, the Engineer, and the Contractor will consult to determine what type of emission control action is appropriate. Actions that may be taken to reduce emissions include the following:

- Spraying water on exposed soil surfaces and/or roadways to suppress windblown dust.

- Covering working areas of exposed impacted soils, trucks loaded with impacts soils, or stockpiles of impacted soils with tarpaulins with vapor suppressing foam or other vapor control agent.
- Temporarily relocating work to an area with potentially lower emission levels.
- Reduce the production rate or change the sequence of work activities.
- Change the work methods or equipment to alternatives that minimize air emissions.

In practice, these actions will typically be employed proactively to prevent action levels from being reached at the exclusion zone perimeter in the first instance. These above mentioned Alert and Action Level Concentrations are included in the CAMP and will be summarized in the Contract Documents. The anticipated locations of the air monitoring stations are also noted, subject to change according to the Contractor's means and methods.

5.2 Fugitive Dust Control

Construction activities will be performed so as to limit the potential for fugitive dust emissions. Dust control measures will be implemented to minimize the potential for dust generation during soil excavation and handling, and placement of fill. Dust control measures will include water spraying, and/or suppressant foams. The Contractor will provide materials to act as a dust suppressant. This may include tarps and/or water, or chemical foam, (e.g., Rusmar™ foam) or other National Grid-approved method. The selected Contractor will keep sufficient dust suppressant materials on site to suppress fugitive dust from the excavation. The material will be stored near the excavation and will be easily mobile in case of need.

Heavily traveled truck routes within the exclusion and support zones will be wet down to minimize dust emissions. These truck routes will be continuously monitored for excessive dirt or dust. Proper cleaning of trucks exiting the exclusion zone will aid in minimizing/eliminating dusty conditions on site. A decontamination pad large enough to accommodate equipment and truck traffic will be constructed at exit points to clean tires of transport trucks exiting the Site.

Truck routes within the exclusion zone will be inspected continuously during high truck traffic periods for excessive dirt or dust. Proper cleaning of trucks exiting the exclusion zone will eliminate dusty conditions on adjacent roadways. Transport trucks exiting the exclusion zone will pass through an inspection area and/or be inspected to ensure tires and undercarriages are clean and that tarps are secured. Excessive mud and loose dirt observed on the trucks will be manually removed with brooms and brushes as necessary.

6. Erosion and Sediment Control Plan

The erosion and sediment controls are intended to mitigate erosion and sedimentation from the site as indicated in the Contract Documents.

6.1 Description of Construction Activities

This project involves the excavation of approximately 1,600 cubic yards of MGP-related source material. Excavation depths will be approximately 10 feet bgs. Excavation below the water table will be conducted in the wet. Gravity dewatering within the excavation area may occur during this project because the target excavation depths extends into the water table. The average groundwater depth is approximately 7 feet bgs.

All stormwater runoff from the exterior of the excavation area will be collected, routed, and discharged into the local drainage structures prior to contact with any impacted materials. Access areas between the excavation area and the adjacent public streets will contain decontamination stations for all trucks and equipment. The decontamination waters will be collected and stored on site in a frac tank.

6.2 Potential Areas for Erosion and Sedimentation

The site is relatively flat, but slopes slightly towards from North to South across the remediation area. The site is primarily gravel with southern portions of the site covered by asphalt or former concrete foundations. Trucks/equipment exiting the excavation area could track soils onto the traveled areas. Wet excavated soils could seep out of the trucks and onto public roads.

6.3 Implementation of Erosion Control Measures

Sediment fence will be installed around the entire perimeter of the site and all areas to be excavated. Decontamination stations will act as anti-tracking pads, thereby, removing all soil and sediment from all trucks/equipment wheels and bodies that are exiting the site onto public streets. All trucks shall have watertight compartments to prevent seepage from wet soil from leaking onto public streets.

The Contractor shall install and maintain the erosion control measures indicated in the Contract Documents for the duration of the excavation work. Additional erosion control measures may be needed due to unforeseen conditions. The Contractor shall install additional measures as necessary and as directed by National Grid.

6.4 Restoration

Upon completion of the remedy, the contractor will remove all sediment fencing and restore the surface to pre-construction conditions. All sediment accumulated in the sediment fencing materials will be removed and transported to a properly licensed National Grid-approved disposal facility.

7. Site Security Plan

The objectives of the site security plan at the site are to prevent the vandalism/destruction of construction equipment and to prevent access and minimize health and safety concerns for the surrounding residential neighborhood.

7.1 Perimeter Security

A temporary fence will be erected around the perimeter of the work area. At a minimum, the fence will be 8-foot high, equipped with a privacy screen. The fence will extend around all work areas to include the excavation area, waste handling equipment, and storage areas if any. The fence will have two gates that will have the ability to be locked at the end of each working day. If not otherwise lighted (i.e. building floodlights, municipal streetlights, etc.), the Contractor will provide temporary lighting at the gate. Additionally, the former King Bear building is equipped with security cameras that cover the perimeter of the property.

7.2 Equipment Security

All vehicles and/or equipment left in the work area must be secured at the end of each working day. In addition, vehicles and equipment must remain inside the perimeter fence, or at a remote secured area if left on-site overnight or during non-work days. No vehicles or equipment may be left overnight in an unsecured location. It is the responsibility of the Contractor to ensure that all non-essential equipment is de-energized when left on-site and not in use to prevent electrical/fire/explosive hazards. No equipment will run overnight and/or on non-working days.

The selected Contractor will make every effort to minimize the storage of equipment or materials in areas other than OU-3.

7.3 Overnight Security

Overnight security measures will be provided by National Grid.

8. Decontamination Plan

The objectives of the decontamination plan at the site are to provide the procedures and equipment necessary to decontaminate personnel and equipment to prevent cross-contamination from the excavation area to public areas (i.e., highways, roads, support trailer, vehicles, etc.) This plan does not replace the decontamination procedures outlined in the HASP, Appendix F. This plan provides additional guidelines on decontamination locations, necessary equipment, and procedures.

Primarily, the Site will be divided into three primary zones: the exclusion zone (EZ), the contamination reduction zone (CRZ), and the support zone (SZ) during the implementation of remedial activities. These locations are detailed in the Contractor Submittal and will be further defined in the field based on work activities being conducted in an individual area as well as the results of air monitoring activities.

8.1 Decontamination Procedures

The Contractor will establish decontamination areas for the following activities.

- Personnel decontamination
- Equipment decontamination

8.1.1 Personnel Decontamination Station

Personnel field decontamination/cleanup will take place at the exit of the established EZs in CRZs. If possible, these field decontamination facilities will be located upwind of the EZs.

Once removed, disposable personal protective equipment (PPE) will be collected at the field decontamination site in a drum or large plastic bag. The drum or plastic bag will be secured to prevent the accidental spread of contamination. Disposable PPE that has been worn in an EZ will be removed and placed in the disposal container before leaving the CRZ. Additional details for personnel decontamination are presented in the HASP contained in Appendix F.

The designated personnel field decontamination area will be equipped with basins for water and detergent, and trash bags or cans for containing disposable PPE and discarded materials. Once personnel have decontaminated at this station and taken off their PPE, they will proceed to a sink where they will wash themselves as a secondary means of personal hygiene (e.g., hands, face, etc.).

The specific decontamination procedures and requirements for the disposal of decontamination wastewater are outlined in the HASP, Appendix F.

8.1.2 Equipment Decontamination Station

Equipment decontamination will take place on a decontamination pad that will be constructed, at a minimum, as a plastic lined and bermed area, with a wastewater collection sump. Decontamination activities shall include the removal of contaminated soil, debris and other miscellaneous materials from all construction equipment and tools utilized within the EZ using a high-pressure, low volume cleaner. In addition, physical/mechanical agitation (scraping with hand tools) of soil may be utilized during winter months to prevent freezing and icy conditions.

All equipment leaving the site will be decontaminated per these guidelines. In addition, any equipment previously utilized to excavate impacted material will be decontaminated prior to use in backfilling (e.g. excavator bucket).

The decontamination pad will be constructed to adequately facilitate decontamination of the largest mobile construction equipment and to withstand the anticipated traffic loads throughout the duration of the project. The decontamination pad will be located and constructed as detailed in the Contractor Submittal. Provisions will be made to control overspray at the decontamination pad(s).

Drilling equipment, hand tools, and miscellaneous small equipment that come in contact with excavated soils or impacted groundwater will be decontaminated on the decontamination pad in buckets of water and detergent.

Wastewater from equipment decontamination will be collected and pumped into the frac tank(s). Disposal of the wastewater will be handled in accordance with the Waste Management Plan (Section 9).

Soils collected from the decontamination pads will be bulked with the excavated material and sent to the properly licensed National Grid-approved disposal facility as necessary.

8.1.3 Material Transport Vehicle Decontamination

Trucks transporting soil off-site will enter the excavation area as described in the Traffic Control Plan (Section 12). Care will be exercised when loading trucks so as not to spill material on the outside of the trucks. Upon exiting the EZ, the Contractor will stage the trucks on the equipment decontamination/anti-traction pad. Trucks will then be visually inspected (i.e., box sidewalls, box tailgate, and tires, etc.), cleaned with brushes/brooms and will be decontaminated with pressure sprayers, if necessary, prior to being allowed to leave the site.

In addition, trucks will be required to be covered with solid plastic tarp prior to departing the EZ. All collected soil and decontamination fluids will be collected and managed in accordance with the Waste Management Plan (Section 9).

8.2 Decontamination Equipment

The Contractor will be responsible for maintaining a sufficient supply of materials/ equipment required to implement decontamination procedures, including, but not limited to, the following items:

- Plastic trash barrels
- Liners for trash barrels
- Wash basins
- Alconox™ detergent concentrate
- Hand pump sprayers
- Long handled soft bristle brushes
- Large sponges
- Cleaning wipes for respirators
- Bench or stool(s)
- Stepladder(s)
- Steam generator
- Liquid detergent and paper towels
- Plastic trash bags
- Supplies/equipment to construct the decontamination pads
- All necessary hosing, connections, etc., to collect and transport decontamination fluids to the wastewater treatment system

9. Waste Management Plan

The objective of the waste management plan at the site is to provide the Contractor guidelines for managing each waste stream. The Contractor will dispose of all waste materials generated as a result of the remedial activities in accordance with all applicable laws and regulations at a National Grid-approved disposal facility. National Grid will prepare and submit to the treatment/disposal facility a generator profile of soils and wastes generated at the site.

9.1 Disposal Record Keeping

All manifests and/or bills of lading for all shipments will be submitted to the Engineer prior to any vehicle departing the site. The manifest form and/or bills of lading will be signed by an approved agent for National Grid and the truck driver before the material leaves the Site; and by a representative of disposal facility when the load is received. A copy of the signed Manifest will be maintained on file in the selected Contractor administrative trailer by the Engineer (GEI). Upon arrival at the disposal facility, the Manifest will be signed and a copy returned to the Engineer, complete with all applicable signatures as proof of delivery. The returned manifests will be cross checked and matched with the original copy of the manifest already on file.

A log of all shipments and copies of all manifests and/or bills of lading will be maintained by the Engineer on-site for reference in the Contractor's trailer. Upon completion of the remedy, National Grid will receive all logs and manifests and/or bills of lading. The logs, manifests, and bills of lading will be included in the Phase IV Completion Report following completion of the remedy to create a permanent record of disposal.

9.2 Material Shipping Procedures

Waste transporters, properly permitted by the NYSDEC, will be utilized to ship the impacted soils to approved disposal facilities. The selected Contractor will manage all disposal documentation including, but not limited to, all necessary manifests, bill-of-ladings, weight tickets, and certificates of treatment/destruction.

The selected Contractor will coordinate with the transport and disposal facilities to schedule an appropriate amount of transport trucks and to schedule deliveries of materials to the disposal facilities. Coordination with the disposal and transport facilities will be critical to accommodate the sequence of proposed excavation activities. To eliminate the need for staging of trucks on local roadways, trucks will be scheduled in a manner that will minimize the amount of trucks waiting to be loaded.

Trucks that are waiting to be loaded will be directed to the on-site staging area, or the support zone (SZ) as detailed in the Contractor Submittal.

Upon entry to the Site, the trucks will be inspected to ensure the proper placards, decals and permits are displayed. While on–site, transport trucks will remain on designated haul routes. All loaded trucks leaving the EZ will follow the Decontamination Plan. Transport trucks will utilize the most direct hauling route between the Site and the disposal facility.

All material transportation vehicles leaving the site must be watertight and will be decontaminated in accordance with the decontamination plan prior to departing the site. The watertight beds will be lined with plastic truck liners prior to material being placed in the bed. In the event that significant odors are noted, the material in the bed may be covered with Rusmar foam or similar odor suppressant prior to being covered in plastic. Finally, a solid tarp will be affixed to the truck bed to prevent volatilization or fugitive dust emissions during transit to the disposal facility. In the event that a truck arrives at the site without a solid tarp, plastic sheeting will be used to cover the material in the bed.

All material transportation vehicles leaving the Site will be decontaminated in accordance with the Decontamination Plan prior to departing the EZ.

Individual waste streams will be handled as follows.

9.2.1 Non-Impacted Soils for Reuse

It is anticipated that most excavated material from the On-Site Area will not be impacted and may be suitable for reuse as backfill. However, any excavated soils suitable for reuse that are not used to backfill will be transported off site for disposal/landfill at a licensed facility capable of handling such material or at a thermal desorption facility at the discretion of National Grid.

9.2.2 Impacted Soils and Bulky Waste

All excavated MGP-related source material will be placed directly into haul vehicles and transported directly to an appropriately licensed National Grid-approved disposal facility. The Contractor will have a primary and an alternate receiving facility prepared to receive the impacted soils prior to excavation.

Vehicles containing excavated soils will be covered with a solid plastic tarp. If necessary, spray-on odor suppressing materials such as Rusmar Foam or Biosolve® may be used to reduce potential VOC emissions during transit.

Impacted soils that contain too high a water content to be transported safely (e.g. without risk of a liquid spill off-site) must be amended on-site within the excavation area, by the Contractor prior to shipment off-site. All amendments used at the site will meet NYSDEC requirements.

Impacted bulky waste (i.e., concrete, debris, etc.) will be separated from source material upon excavation, and transported for treatment/disposal as regulated waste at an approved facility.

9.2.3 Uncontaminated Bulky Waste

Uncontaminated bulky waste (i.e., asphalt pavement sections, concrete, and debris) will be separated, if possible, from impacted soil upon excavation, immediately placed in a roll-off container or temporarily placed on the site for future loading, and transported for disposal as construction debris at an approved facility/landfill.

9.2.4 Impacted Groundwater and Decontamination Water

Contaminated liquids from decontamination of equipment and personnel will be pumped into the dewatering frac tank(s) and disposed of off-site. The Contractor will retain a licensed liquid waste hauler to remove this liquid from the site and properly dispose of this material in accordance with all applicable regulations. The Contractor will be responsible for obtaining any appropriate Federal, State, and/or local permits that may be required.

It is not anticipated that impacted groundwater will be collected during this remedy. However, in the event that impacted groundwater is collected, it will be containerized for off-site disposal.

Solid material collected in the frac tank(s), as a result of settling with the tank(s), will be bulked with the MGP-related source material and sent to an appropriately licensed National Grid-approved disposal facility as necessary.

9.3 Soil Disposal Characterization Analyses

Samples collected from MGP-impacted materials for disposal will be analyzed in accordance with the receiving facilities' guidelines and all Local, State and Federal laws.

It is not anticipated that any wastes generated as a result of remedial activities will be transported as hazardous. All materials will be transported as non-hazardous material to a thermal desorption facility.

The Engineer will be responsible for collecting and analyzing disposal samples as required for acceptance by the receiving facility. The Contractor will provide the Engineer the selected receiving facilities' guidelines prior to sampling. The Contractor shall utilize these results to select appropriate and acceptable primary and backup appropriately licensed National Grid-approved disposal facilities. If the selected facility or facilities require additional disposal characterization data, it is the responsibility of the Contractor to coordinate with National Grid and obtain the appropriate samples prior to the start of excavation activities. The Contractor shall provide the Engineer the results of all analyses immediately upon receipt.

10. Sample Collection & Analysis Plan

The documentation sample collection and analysis plan for the site has been designed to support the requirements of the remedy. The remedy includes the removal of MGP-related source material. This plan describes the sampling and analysis procedures for collecting representative samples of backfill and waste water for disposal.

Material within the excavation limits will be removed and the excavation will be backfilled with clean fill. Documentation sampling is not anticipated for the material below the bottom of the excavation floor. Previous sampling from the investigations have already identified the magnitude of the remaining impacts, where present.

All analytical testing will be performed by a laboratory that holds a current NYSDOH Environmental Laboratory Approval Program certification. A copy of the documentation sampling data will be maintained at the Engineer's trailer during the remedial activities.

10.1 Representative Sampling of Backfill

The excavation will be backfilled with imported materials. The Contractor will identify the New York State Department of Transportation-approved borrow pit location(s) of imported material prior to the start of excavation activities. The Contractor will provide certificates of clean fill for the imported material identifying said material as native. In addition, the Contractor will provide analytical results from the borrow pit(s), specific to the actual fill being imported to the site, as confirmation that the material is free of contamination. At a minimum, a sample of the backfill will be collected at the beginning, the middle, and the end of backfill operations. Backfill samples will be analyzed for Resource Conservation and Recovery Act (RCRA) 8 Metals, PCBs by United States Environmental Protection Agency (EPA) Method 8082, VOCs by EPA Method 8260 or New York State Analytical Service Protocol (NYSASP) Method 95.1, and SVOCs by EPA Method 8270C or NYSASP Method 95-2.

10.2 Dewatering/Wastewater Sampling

No real-time sampling of wastewater is anticipated due to off-site disposal. However, if the need arises, the discharge and/or influent to the frac tank(s) will be sampled by the Contractor in accordance with the conditions of the receiving facility for off-site disposal and the results provided to National Grid and the Engineer.

11. Groundwater Management Plan

The objectives of the groundwater management plan at the site are to establish requirements for collection of decontamination and dewatering wastewater, off-site disposal, and collection and discharge of stormwater.

11.1 Decontamination and Dewatering Wastewater

Wastewater associated with decontamination activities on the site will be pumped into a covered frac tank(s) located outside of the excavation area. The frac tank(s) must be sufficiently sized to contain the wastewater and provide some measure of primary treatment (settling) with weirs, baffles or other appropriate technology, and flow equalization, if needed. Effluent will then be disposed of off-site as described in subsection 11.2.

Due to the depth to groundwater at the site, it is anticipated that groundwater will be encountered during excavation to meet target depths during the remedial excavation activities. Groundwater measurements from previous investigations indicate that the approximate depth to water in the excavation area is approximately 7 feet bgs. Excavations will be conducted in the wet.

11.2 Off-Site Disposal of Wastewater

The Contractor will arrange for the off-site disposal of all generated wastewater. All generated wastewater requiring off-site disposal will be handled in accordance with the Waste Management Plan (Section 9).

A licensed liquid waste hauler shall remove this liquid from the site and properly dispose of this material in accordance with all applicable regulations and codes. The Contractor will have a primary and an alternate properly permitted, National Grid-approved receiving facility prepared to receive all liquid wastes generated.

In addition, the Contractor will ensure that off-site disposal and/or on-site storage volumes are adequate to avoid construction delays, if necessary.

11.3 Stormwater Runoff Control

The excavation area is under a gravel and paved section of the property and stormwater drainage is handled primarily through surface runoff to local stormwater drainage features and infiltration to the subsurface. In preparation for and throughout the duration of the remedial activities, the control and diversion of stormwater runoff is essential to reduce the potential for impacted material discharges off site.

Stormwater contact with the impacted soils will be limited due to the erosion and sediment control barriers around the area of excavation. Therefore, it is not anticipated that runoff from the exterior will come in contact with the excavation area. The Contractor will be required to utilize appropriate control measures to route the runoff from the collection system to the municipal storm sewer. Stormwater runoff control measures may include the installation of berms, barriers, and a sump for the collection and discharge of the water.

12. Traffic Control Plan

The objectives of the traffic plan at the site are to describe the traffic objectives and concerns. The Traffic Control Plan indicates the traffic routes to and from the site for:

- Trucking soil and bulky waste off site.
- Importing clean fill to the site.
- Liquid waste hauler off loading dewatered liquids if necessary.
- Contractor access and parking.
- Equipment access and storage.

Vehicles for hauling of contaminated soil, fill materials, and supplies shall enter Bay Shore from Sunrise Highway (RT 27) at the 5th Avenue (CR13) Exit. The vehicles shall follow 5th Avenue south to where it becomes Clinton Avenue and shall continue south on Clinton Avenue.

The proposed traffic routing pattern to the site is presented below:

- Vehicles transporting impacted materials from the site may first be staged at the National Grid owned property at 1 Orinoco Drive (OU-3) before being loaded.
- Vehicles transporting impacted materials shall make a right hand turn through the primary ingress/egress gates on North Clinton Avenue to access the 1 Orinoco Drive property (OU-3). NO CONSTRUCTION VEHICLES SHOULD ENTER/EXIT THE SITE VIA THE VILLAGE OF BRIGHTWATERS.
- Vehicles transporting impacted materials exiting the 1 Orinoco Drive property (OU-3) will exit via the same gate and make a right turn onto Clinton Avenue.
- Vehicles will cross the LIRR tracks and make a right turn at the entrance for the former the King Bear property (60 N. Clinton Avenue).
- Vehicles will enter the site through a temporary gate installed along the southern site boundary with Union Boulevard.
- Vehicles bringing supplies and/or fill materials, and Contractor personnel shall access the site using the same streets as mentioned above.
- Vehicles leaving the site shall make a left turn onto Union Boulevard followed by a left turn onto 5th Avenue. Vehicles shall then retrace the site entry route to exit Bay Shore.

The Contractor shall provide traffic control personnel when all trucks are exiting the site onto Union Boulevard and North Clinton Avenue. Traffic control personnel shall also direct traffic as needed upon delivery of equipment, trailers, excavation support materials, etc.

To maintain access to the site and to ensure that lines of sight are maintained, the Contractor shall arrange for and coordinate with the appropriate local authorities to ensure that on-street parking nearest to the entrance/exit gate within the lines of sight is limited throughout the duration of the remedial activities.

The Contractor shall provide a detailed traffic route for all vehicles transporting waste materials to the specific disposal facilities.

The Contractor will maintain all signage and traffic controls required for the completion of the project.

13. Completion of Remedial Activities

Upon completion of the remedial activities, the site will be returned to the pre-construction conditions. Excavations will be backfilled to existing grades with imported clean fill. Restoration actions shall include, but may not be limited to:

- Backfill and compaction of the excavated areas.
- Demobilization of the dewatering storage frac tank(s).
- Removal of the temporary earth support structure.
- Demobilization of the CAMP equipment.
- Removal of the decontamination pads.
- Site grading and surface restoration.

14. Phase IV Remedial Action Completion Report

Following completion of the remedial activities, a Phase IV Remedial Action Completion Report will be prepared and stamped by an engineer licensed to practice in the State of New York. The Phase IV Remedial Action Completion Report will include a summary of remedial activities, document any changes to the work proposed in the RDR, document the final disposal of both solid and hazardous waste, and contain a statement that the work was performed in accordance with the RDR, contract drawings, specifications, and any approved changes to those documents. The report will also contain a summation of the contaminant distribution observed beneath the bottom of the excavation and an assessment of the degree to which the remedial activities met the remedial objectives. Specific components of the Phase IV Remedial Design Completion Report will include:

- Record drawings, specifications, addenda, and approved changes.
- The actual volumes of excavated material and treated/discharged wastewater.
- The results of documentation analyses.
- Other plans and figures (if required), photographs, cross sections, data summary tables, and appendices that will provide National Grid with an accurate accounting of the remedial measures implemented at the site.
- Approval and Closure documents from NYSDEC.
- Approved permits.
- Summary of construction work, meetings, and changes in work scope.
- Shipping manifests and bills of lading (contaminated soil, clean fill, and construction dewatering liquids).
- Summary of Air Monitoring Data collected during the remedial activities.
- Certification that material transported off-site was disposed of at a properly licensed National Grid-approved disposal facility or Treatment Storage and/or Disposal Facility.

Tables

Table 1
Remedial Investigation - Subsurface Analytical Soil Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / **Sample Interval (feet):** / **Sample Date:**	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	BBSB-83 (8-10) 2/28/2002	BBSB-83 18-20 2/28/2002	BBSB-84 (8-10) 2/28/2002	BBSB-84 (18-20) 2/28/2002	BBSB-90 (8-10) 4/8/2002	BBSB-90 (12-14) 4/8/2002	BBSB-90 (48-50) 4/8/2002	BBSB-90 (72-74) 4/8/2002
BTEX (mg/kg)										
Benzene	0.06	44	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
Toluene	0.7	500	0.0010 U	**0.002**	0.0010 U	0.0010 U	**0.004**	0.0010 U	0.0010 U	0.0010 U
Ethylbenzene	1	390	0.0010 U	0.0010 U	0.0010 U	0.0010 U	**0.009**	0.0010 U	0.0010 U	0.0010 U
Xylene, Total	0.26	500	0.0010 U	0.0010 U	0.0010 U	**0.005**	**0.076**	0.0010 U	0.0010 U	0.0010 U
Total BTEX	NE	NE	0	**0.002**	0	**0.005**	**0.089**	0	0	0
Non-carcinogenic PAHs (mg/kg)										
Acenaphthene	20	500	0.37 U	0.40 U	0.37 U	0.38 U	**1.9**	0.41 U	0.41 U	0.40 U
Acenaphthylene	100	500	0.37 U	0.40 U	**0.045 J**	0.38 U	**1.7**	0.41 U	0.41 U	0.40 U
Anthracene	100	500	0.37 U	0.40 U	**0.05 J**	0.38 U	**5.9**	0.41 U	0.41 U	0.40 U
Benzo[g,h,i]perylene	100	500	0.37 U	0.40 U	**0.14 J**	0.38 U	**0.9**	0.41 U	0.41 U	0.40 U
Fluoranthene	100	500	0.37 U	0.40 U	**0.5 J**	0.38 U	**8.7 D**	0.17 J	0.41 U	0.40 U
Fluorene	30	500	0.37 U	0.40 U	0.37 U	0.38 U	**5.7**	0.41 U	0.41 U	0.40 U
Methylnaphthalene, 2-	NE	NE	0.37 U	0.40 U	0.37 U	0.38 U	**5**	0.41 U	0.41 U	0.40 U
Naphthalene	12	500	0.37 U	0.40 U	0.37 U	0.38 U	0.39 U	0.41 U	0.41 U	0.40 U
Phenanthrene	100	500	0.37 U	0.40 U	**0.18 J**	0.38 U	**16 D**	0.098 J	0.41 U	0.40 U
Pyrene	100	500	0.37 U	0.40 U	**0.62**	0.38 U	**11 D**	0.18 J	0.41 U	0.40 U
Total Non-carcinogenic PAHs	NE	NE	0	0	**1.535**	0	**57.48**	**0.448**	0	0
Carcinogenic PAHs (mg/kg)										
Benz[a]anthracene	1	5.6	0.37 U	0.40 U	**0.33 J**	0.38 U	**4.8**	0.41 U	0.41 U	0.40 U
Benzo[a]pyrene	1	1	0.37 U	0.40 U	**0.26 J**	0.38 U	**2.7**	0.41 U	0.41 U	0.40 U
Benzo[b]fluoranthene	1	5.6	0.37 U	0.40 U	**0.38 J**	0.38 U	**2.2**	0.41 U	0.41 U	0.40 U
Benzo[k]fluoranthene	0.8	56	0.37 U	0.40 U	**0.14 J**	0.38 U	**1.2**	0.41 U	0.41 U	0.40 U
Chrysene	1	56	0.37 U	0.40 U	**0.33 J**	0.38 U	**3.5**	0.41 U	0.41 U	0.40 U
Dibenz[a,h]anthracene	0.33	0.56	0.37 U	0.40 U	0.37 U	0.38 U	**0.68**	0.41 U	0.41 U	0.40 U
Indeno[1,2,3-cd]pyrene	0.5	5.6	0.37 U	0.40 U	**0.15 J**	0.38 U	**0.78**	0.41 U	0.41 U	0.40 U
Total Carcinogenic PAHs	NE	NE	0	0	**1.59**	0	**15.4**	0	0	0
Total PAHs	NE	NE	0	0	**3.125**	0	**72.88**	**0.448**	0	0
Other SVOCs (mg/kg)										
Dibenzofuran	7	350	0.37 U	0.40 U	0.37 U	0.38 U	**0.22 J**	0.41 U	0.41 U	0.40 U

Table 1
Remedial Investigation - Subsurface Analytical Soil Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Notes:

mg/kg - milligrams/kilogram or parts per million (ppm)
BTEX - benzene, toluene, ethylbenzene, and xylenes
PAHs - polycyclic aromatic hydrocarbons
SVOCs - semivolatile organic compounds

6 NYCRR -New York State Register and Official Compilation of Codes, Rules and Regulations of the State of New York
Cleanup Objectives
Cleanup Objectives

NE - not established

Bolding indicates a detected concentration
Grey Shading and bolding indicates that the detected concentration is above the Unrestricted Use SCOs
Yellow Shading and bolding indicates that the detected concentration is above the Commercial Use SCOs

Validation Qualifiers:

J - estimated value
U - indicates not detected at or above the reporting limit shown.

Table 2
Remedial Investigation - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	NYS AWQS	BBGP-87 8-12 ft 2/28/2002	BBGP-87 20-24 ft 2/28/2002	BBGP-88 8-12 ft 2/28/2002	BBGP-88 20-24 ft 2/28/2002	BBGP-71 6-10 ft 2/11/2002	BBGP-71 20-24 ft 2/11/2002	BBGP-71 38-42 ft 2/11/2002	BBGP-71 56-60 ft 2/8/2002	BBGP-71 70-74 ft 2/8/2002
BTEX (ug/L)										
Benzene	1	**3**	1 U	20 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	5	1 U	1 U	20 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	5	**90**	1 U	**800**	1 U	**66**	1 U	1 U	1 U	2
Total Xylenes	5	**260**	1 U	**3700**	1 U	**160**	1 U	1 U	1	**8**
Total BTEX	NE	**353**	0	**4,500**	0	226	0	0	1	10
Non-carcinogenic PAHs (ug/L)										
Acenaphthene	20*	10 U	10 U	**1 J**	10 U	**15 J**	10 U	10 U	10 U	10 U
Acenaphthylene	NE	**1 J**	10 U	**2 J**	10 U	**18 J**	10 U	10 U	10 U	10 U
Anthracene	50*	10 U	10 U	**1 J**	10 U	150 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	10 U	150 U	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	10 U	150 U	10 U	10 U	10 U	10 U
Fluorene	50*	10 U	10 U	**2 J**	10 U	**26 J**	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	**12**	10 U	**21**	10 U	**210**	10 U	10 U	10 U	10 U
Naphthalene	10*	**220 D**	10 U	**210 D**	10 U	**1800**	10 U	**1 J**	10 U	**1 J**
Phenanthrene	50*	**1 J**	10 U	**5 J**	10 U	**43 J**	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U	**22 J**	10 U	10 U	10 U	10 U
Carcinogenic PAHs (ug/L)										
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	150 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	10 U	150 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	10 U	150 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	10 U	150 U	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U	150 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	10 U	150 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	10 U	150 U	10 U	10 U	10 U	10 U
Total Non-Carcinogenic PAHs	NE	0	0	0	0	0	0	0	0	0
Total PAHs	NE	**234**	0	**242**	0	0	0	0	0	1
Other SVOCs (ug/L)										
Dibenzofuran	NE	10 U	10 U	10 U	10 U	150 U	10 U	10 U	10 U	10 U

Table 2
Remedial Investigation - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Notes:

ug/L - micrograms per liter or parts per billion (ppb)
BTEX - benzene, toluene, ethylbenzene, and xylenes
VOCs - volatile organic compounds
PAHs - polycyclic aromatic hydrocarbons
SVOCs - semivolatile organic compounds
PCBs - polychlorinated biphenyls
Total PCBs is calculated using detects only.

NYS AWQS - New York State Ambient Water Quality Standards and Guidance Values for GA groundwater
* indicates the value is a guidance value and not a standard

NE - not established
NA - not analyzed
ND - not detected; total concentration is listed as ND because no compounds were detected in the group

Bolding indicates a detected concentration
Shading and bolding indicates that the detected concentration is above the NYS AWQS objective it was compared to

Validation Qualifiers:

J - estimated value
U - indicates not detected at or above the reporting limit shown.
UJ - not detected at or above the reporting limit shown and the reporting limit is estimated
R - rejected
D - result is from diluted sample analysis

Table 3
2004 Supplemental Field Program - Subsurface Soil Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KBSB-01 9 - 11 ft 6/21/2004	KBSB-01 20 - 22 ft 6/21/2004	KBSB-01 37 - 39 ft 6/21/2004	KBSB-01 64 - 66 ft 6/21/2004	KBSB-01 76 - 78 ft 6/22/2004	KBSB-02 7 - 8 ft 6/21/2004	KBSB-02 9 - 11 ft 6/21/2004	KBSB-02 38 - 40 ft 6/21/2004	KBSB-02 68 - 70 ft 6/21/2004	KBSB-03 15 - 17 ft 6/22/2004	Duplicate Of KBSB-03 15 - 17 ft 6/22/2004
BTEX (mg/kg)													
Benzene	0.06	44	**0.021 J**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Toluene	0.7	500	**0.12 J**	0.012 U	0.012 U	0.012 U	0.012 U	**0.007 J**	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Ethylbenzene	1	390	**2.3 D**	**0.021**	**0.006 J**	**0.003 J**	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Xylene, Total	0.26	500	**5.2 D**	**0.041**	**0.015**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	**0.007 J**
Total BTEX	NE	NE	**7.641**	**0.062**	**0.021**	**0.003**	ND	**0.007**	ND	ND	ND	ND	**0.007**
Other VOCs (mg/kg)													
Acetone	0.05	500	**0.038 J**	**0.016 J**	0.012 U	0.012 U	0.012 U	**0.029**	**0.036**	0.012 U	0.013 U	0.012 U	0.012 U
Bromodichloromethane	NE	NE	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Bromoform	NE	NE	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Bromomethane	NE	NE	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Butanone, 2-	0.12	500	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Carbon disulfide	NE	NE	**0.002 J**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Carbon tetrachloride	0.76	22	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Chlorobenzene	1.1	500	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Chloroethane	NE	NE	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Chloroform	0.37	350	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Chloromethane	NE	NE	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Dibromochloromethane	NE	NE	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Dichloroethane, 1,1-	0.27	240	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Dichloroethane, 1,2-	0.02	30	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Dichloroethene, 1,1-	0.33	500	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Dichloroethene, 1,2- (total)	NE	NE	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Dichloropropane, 1,2-	NE	NE	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Dichloropropene, cis-1,3	NE	NE	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Dichloropropene, trans-1,3	NE	NE	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Hexanone, 2-	NE	NE	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Methyl tert-butyl ether	0.93	500	0.012 UJ	0.012 U	**0.001 J**	0.012 U	0.012 U	0.012 U	0.012 U	**0.02**	0.013 U	**0.002 J**	0.012 U
Methyl-2-pentanone, 4-	NE	NE	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Methylene chloride	0.05	500	0.012 U	0.049 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Styrene	NE	NE	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Tetrachloroethane,1,1,2,2-	NE	NE	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Tetrachloroethene	1.3	150	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Trichloroethane, 1,1,1-	0.68	500	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Trichloroethane, 1,1,2-	NE	NE	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Trichloroethene	0.47	200	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Vinyl chloride	0.02	13	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
Total Other VOCs	NE	NE	**0.04**	**0.016**	**0.001**	ND	ND	**0.029**	**0.036**	**0.02**	ND	**0.002**	ND
Non-carcinogenic PAHs (mg/kg)													
Acenaphthene	20	500	**5.6**	0.38 U	0.4 U	0.41 U	0.41 U	**0.87**	**0.09 J**	0.41 U	0.42 U	0.4 U	0.41 U
Acenaphthylene	100	500	**2.3**	0.38 U	0.4 U	0.41 U	0.41 U	**1.6**	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Anthracene	100	500	**4.2**	0.38 U	0.4 U	0.41 U	**0.091 J**	**14 D**	**0.23 J**	0.41 U	0.42 U	0.4 U	0.41 U
Benzo[g,h,i]perylene	100	500	**0.91**	0.38 U	0.4 U	0.41 U	0.41 U	**2.1**	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Fluoranthene	100	500	**5.3**	0.38 U	0.4 U	0.41 U	**0.36 J**	**22 D**	**0.23 J**	0.41 U	0.42 U	0.4 U	0.41 U
Fluorene	30	500	**4.2**	0.38 U	0.4 U	0.41 U	0.41 U	**1.4**	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Methylnaphthalene, 2-	NE	NE	**57 D**	**0.43**	**0.4**	0.41 U	0.41 U	**0.64**	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Naphthalene	12	500	**12 D**	0.38 U	0.4 U	0.41 U	0.41 U	**0.19 J**	**0.089 J**	0.41 U	0.42 U	0.4 U	0.41 U
Phenanthrene	100	500	**24 D**	**0.096 J**	0.4 U	0.41 U	**0.42**	**27 D**	**1.2**	0.41 U	0.42 U	0.4 U	0.41 U
Pyrene	100	500	**5.8**	0.38 U	0.4 U	0.41 U	**0.24 J**	**31 D**	**0.25 J**	0.41 U	0.42 U	0.4 U	0.41 U
Total Non-carcinogenic PAHs	NE	NE	**121.31**	**0.526**	**0.4**	ND	**1.111**	**100.8**	**2.089**	ND	ND	ND	ND

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Tables 3-4 2004 KB Data
Table 3 2004 Soils

Table 3
2004 Supplemental Field Program - Subsurface Soil Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KBSB-01 9 - 11 ft 6/21/2004	KBSB-01 20 - 22 ft 6/21/2004	KBSB-01 37 - 39 ft 6/21/2004	KBSB-01 64 - 66 ft 6/21/2004	KBSB-01 76 - 78 ft 6/22/2004	KBSB-02 7 - 8 ft 6/21/2004	KBSB-02 9 - 11 ft 6/21/2004	KBSB-02 38 - 40 ft 6/21/2004	KBSB-02 68 - 70 ft 6/21/2004	KBSB-03 15 - 17 ft 6/22/2004	Duplicate Of KBSB-03 15 - 17 ft 6/22/2004
Carcinogenic PAHs (mg/kg)													
Benz[a]anthracene	1	5.6	**3.4**	0.38 U	0.4 U	0.41 U	**0.11 J**	**10 D**	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Benzo[a]pyrene	1	1	**1.2**	0.38 U	0.4 U	0.41 U	0.41 U	**4.7**	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Benzo[b]fluoranthene	1	5.6	**1.1**	0.38 U	0.4 U	0.41 U	0.41 U	**2.6**	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Benzo[k]fluoranthene	0.8	56	**1.1**	0.38 U	0.4 U	0.41 U	0.41 U	**2.5**	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Chrysene	1	56	**3.3**	0.38 U	0.4 U	0.41 U	**0.15 J**	**8.9 D**	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Dibenz[a,h]anthracene	0.33	0.56	**0.27 J**	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Indeno[1,2,3-cd]pyrene	0.5	5.6	**0.79**	0.38 U	0.4 U	0.41 U	0.41 U	**2**	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Total Carcinogenic PAHs	NE	NE	**11.16**	ND	ND	ND	**0.26**	**30.7**	ND	ND	ND	ND	ND
Total PAHs	NE	NE	**132.47**	**0.526**	**0.4**	ND	**1.371**	**131.5**	**2.089**	ND	ND	ND	ND
Other SVOCs (mg/kg)													
Bis(2-chloroethoxy)methane	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Bis(2-chloroethyl)ether	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Bis(2-ethylhexyl)phthalate	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	**0.14 J**	0.58 U
Bis(chloroisopropyl)ether	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Bromophenyl phenyl ether, 4-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Butyl benzyl phthalate	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	**0.12 J**	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Carbazole	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Chloro-3-methylphenol, 4-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Chloroaniline, 4-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Chloronaphthalene, 2-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Chlorophenol, 2-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Chlorophenyl phenyl ether, 4-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Dibenzofuran	7	350	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Dichlorobenzene, 1,2-	1.1	500	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Dichlorobenzene, 1,3-	2.4	280	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Dichlorobenzene, 1,4-	1.8	130	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Dichlorobenzidine, 3,3-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Dichlorophenol, 2,4-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Diethyl phthalate	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	**0.16 J**	0.41 U
Dimethyl phthalate	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Dimethylphenol, 2,4-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Di-n-butyl phthalate	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Dinitro-2-methylphenol, 4,6-	NE	NE	0.97 U	0.97 U	1 U	1 U	1 U	0.96 U	1 U	1 U	1 U	1 U	1 U
Dinitrophenol, 2,4-	NE	NE	0.97 U	0.97 U	1 U	1 U	1 U	0.96 U	1 U	1 U	1 U	1 U	1 U
Dinitrotoluene, 2,4-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Dinitrotoluene, 2,6-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Di-n-octyl phthalate	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Hexachlorobenzene	0.33	6	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Hexachlorobutadiene	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Hexachlorocyclopentadiene	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Hexachloroethane	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Isophorone	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Methylphenol, 2-	0.33	500	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Methylphenol, 4-	0.33	500	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Nitroaniline, 2-	NE	NE	0.97 U	0.97 U	1 U	1 U	1 U	0.96 U	1 U	1 U	1 U	1 U	1 U
Nitroaniline, 3-	NE	NE	0.97 U	0.97 U	1 U	1 U	1 U	0.96 U	1 U	1 U	1 U	1 U	1 U
Nitroaniline, 4-	NE	NE	0.97 U	0.97 U	1 U	1 U	1 U	0.96 U	1 U	1 U	1 U	1 U	1 U
Nitrobenzene	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Nitrophenol, 2-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Nitrophenol, 4-	NE	NE	0.97 U	0.97 U	1 U	1 U	1 U	0.96 U	1 U	1 U	1 U	1 U	1 U
Nitrosodi-n-propylamine, N-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U

Table 3
2004 Supplemental Field Program - Subsurface Soil Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / **Sample Interval (feet):** / **Sample Date:**	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KBSB-01 9 - 11 ft 6/21/2004	KBSB-01 20 - 22 ft 6/21/2004	KBSB-01 37 - 39 ft 6/21/2004	KBSB-01 64 - 66 ft 6/21/2004	KBSB-01 76 - 78 ft 6/22/2004	KBSB-02 7 - 8 ft 6/21/2004	KBSB-02 9 - 11 ft 6/21/2004	KBSB-02 38 - 40 ft 6/21/2004	KBSB-02 68 - 70 ft 6/21/2004	KBSB-03 15 - 17 ft 6/22/2004	Duplicate Of KBSB-03 15 - 17 ft 6/22/2004
Nitrosodiphenylamine, N-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Pentachlorophenol	0.8	6.7	0.97 U	0.97 U	1 U	1 U	1 U	0.96 U	1 U	1 U	1 U	1 U	1 U
Phenol	0.33	500	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Trichlorobenzene, 1,2,4-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Trichlorophenol, 2,4,5-	NE	NE	0.97 U	0.97 U	1 U	1 U	1 U	0.96 U	1 U	1 U	1 U	1 U	1 U
Trichlorophenol, 2,4,6-	NE	NE	0.39 U	0.38 U	0.4 U	0.41 U	0.41 U	0.38 U	0.41 U	0.41 U	0.42 U	0.4 U	0.41 U
Total Other SVOCs	NE	NE	ND	ND	ND	ND	ND	**0.12**	ND	ND	ND	**0.3**	ND
Cyanides (mg/kg)													
Cyanide, Total	27	27	0.58 U	0.58 U	0.61 U	0.62 U	0.62 U	0.58 U	0.62 U	0.62 U	0.63 U	0.6 U	0.62 U

Table 3
2004 Supplemental Field Program - Subsurface Soil Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / **Sample Interval (feet):** / **Sample Date:**	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KBSB-03 38 - 40 ft 6/22/2004	KBSB-03 68 - 70 ft 6/22/2004	KBSB-04 10 - 12 ft 6/23/2004	KBSB-04 18 - 20 ft 6/23/2004	KBSB-04 38 - 40 ft 6/23/2004	KBSB-04 68 - 70 ft 6/24/2004
BTEX (mg/kg)								
Benzene	0.06	44	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Toluene	0.7	500	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Ethylbenzene	1	390	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Xylene, Total	0.26	500	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Total BTEX	NE	NE	ND	ND	ND	ND	ND	ND
Other VOCs (mg/kg)								
Acetone	0.05	500	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Bromodichloromethane	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Bromoform	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Bromomethane	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Butanone, 2-	0.12	500	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Carbon disulfide	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Carbon tetrachloride	0.76	22	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Chlorobenzene	1.1	500	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Chloroethane	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Chloroform	0.37	350	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Chloromethane	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Dibromochloromethane	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Dichloroethane, 1,1-	0.27	240	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Dichloroethane, 1,2-	0.02	30	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Dichloroethene, 1,1-	0.33	500	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Dichloroethene, 1,2- (total)	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Dichloropropane, 1,2-	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Dichloropropene, cis-1,3	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Dichloropropene, trans-1,3	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Hexanone, 2-	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Methyl tert-butyl ether	0.93	500	0.013 U	0.013 U	0.012 UJ	0.012 U	**0.008 J**	0.013 U
Methyl-2-pentanone, 4-	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Methylene chloride	0.05	500	0.013 U	0.013 U	0.012 UJ	0.035 U	0.045 U	0.042 U
Styrene	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Tetrachloroethane,1,1,2,2-	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Tetrachloroethene	1.3	150	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Trichloroethane, 1,1,1-	0.68	500	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Trichloroethane, 1,1,2-	NE	NE	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Trichloroethene	0.47	200	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Vinyl chloride	0.02	13	0.013 U	0.013 U	0.012 UJ	0.012 U	0.012 U	0.013 U
Total Other VOCs	NE	NE	ND	ND	ND	ND	**0.008**	ND
Non-carcinogenic PAHs (mg/kg)								
Acenaphthene	20	500	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Acenaphthylene	100	500	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Anthracene	100	500	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Benzo[g,h,i]perylene	100	500	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Fluoranthene	100	500	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Fluorene	30	500	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Methylnaphthalene, 2-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	**0.16 J**	0.42 U
Naphthalene	12	500	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Phenanthrene	100	500	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Pyrene	100	500	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Total Non-carcinogenic PAHs	NE	NE	ND	ND	ND	ND	**0.16**	ND

Table 3
2004 Supplemental Field Program - Subsurface Soil Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KBSB-03 38 - 40 ft 6/22/2004	KBSB-03 68 - 70 ft 6/22/2004	KBSB-04 10 - 12 ft 6/23/2004	KBSB-04 18 - 20 ft 6/23/2004	KBSB-04 38 - 40 ft 6/23/2004	KBSB-04 68 - 70 ft 6/24/2004
Carcinogenic PAHs (mg/kg)								
Benz[a]anthracene	1	5.6	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Benzo[a]pyrene	1	1	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Benzo[b]fluoranthene	1	5.6	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Benzo[k]fluoranthene	0.8	56	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Chrysene	1	56	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Dibenz[a,h]anthracene	0.33	0.56	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Indeno[1,2,3-cd]pyrene	0.5	5.6	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Total Carcinogenic PAHs	NE	NE	ND	ND	ND	ND	ND	ND
Total PAHs	NE	NE	ND	ND	ND	ND	**0.16**	ND
Other SVOCs (mg/kg)								
Bis(2-chloroethoxy)methane	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Bis(2-chloroethyl)ether	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Bis(2-ethylhexyl)phthalate	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Bis(chloroisopropyl)ether	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Bromophenyl phenyl ether, 4-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Butyl benzyl phthalate	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Carbazole	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Chloro-3-methylphenol, 4-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Chloroaniline, 4-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Chloronaphthalene, 2-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Chlorophenol, 2-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Chlorophenyl phenyl ether, 4-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Dibenzofuran	7	350	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Dichlorobenzene, 1,2-	1.1	500	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Dichlorobenzene, 1,3-	2.4	280	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Dichlorobenzene, 1,4-	1.8	130	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Dichlorobenzidine, 3,3-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Dichlorophenol, 2,4-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Diethyl phthalate	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Dimethyl phthalate	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Dimethylphenol, 2,4-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Di-n-butyl phthalate	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Dinitro-2-methylphenol, 4,6-	NE	NE	1 U	1 U	0.99 U	1 U	1 U	1.1 U
Dinitrophenol, 2,4-	NE	NE	1 U	1 U	0.99 U	1 U	1 U	1.1 U
Dinitrotoluene, 2,4-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Dinitrotoluene, 2,6-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Di-n-octyl phthalate	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Hexachlorobenzene	0.33	6	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Hexachlorobutadiene	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Hexachlorocyclopentadiene	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Hexachloroethane	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Isophorone	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Methylphenol, 2-	0.33	500	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Methylphenol, 4-	0.33	500	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Nitroaniline, 2-	NE	NE	1 U	1 U	0.99 U	1 U	1 U	1.1 U
Nitroaniline, 3-	NE	NE	1 U	1 U	0.99 U	1 U	1 U	1.1 U
Nitroaniline, 4-	NE	NE	1 U	1 U	0.99 U	1 U	1 U	1.1 U
Nitrobenzene	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Nitrophenol, 2-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Nitrophenol, 4-	NE	NE	1 U	1 U	0.99 U	1 U	1 U	1.1 U
Nitrosodi-n-propylamine, N-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U

Table 3
2004 Supplemental Field Program - Subsurface Soil Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KBSB-03 38 - 40 ft 6/22/2004	KBSB-03 68 - 70 ft 6/22/2004	KBSB-04 10 - 12 ft 6/23/2004	KBSB-04 18 - 20 ft 6/23/2004	KBSB-04 38 - 40 ft 6/23/2004	KBSB-04 68 - 70 ft 6/24/2004
Nitrosodiphenylamine, N-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Pentachlorophenol	0.8	6.7	1 U	1 U	0.99 U	1 U	1 U	1.1 U
Phenol	0.33	500	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Trichlorobenzene, 1,2,4-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Trichlorophenol, 2,4,5-	NE	NE	1 U	1 U	0.99 U	1 U	1 U	1.1 U
Trichlorophenol, 2,4,6-	NE	NE	0.41 U	0.41 U	0.39 U	0.41 U	0.41 U	0.42 U
Total Other SVOCs	NE	NE	ND	ND	ND	ND	ND	ND
Cyanides (mg/kg)								
Cyanide, Total	27	27	0.63 U	0.63 U	0.6 U	0.62 U	0.62 U	0.64 U

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Tables 3-4 2004 KB Data
Table 3 2004 Soils

Table 3
2004 Supplemental Field Program - Subsurface Soil Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Notes:

mg/kg - milligrams/kilogram or parts per million (ppm)
BTEX - benzene, toluene, ethylbenzene, and xylenes
VOCs - volatile organic compounds
PAHs - polycyclic aromatic hydrocarbons
SVOCs - semivolatile organic compounds
PCBs - polychlorinated biphenyls
Total PCBs was calculated using detects only

6 NYCRR -New York State Register and Official Compilation of Codes, Rules and Regulations of the State of New York

6 NYCRR 375 SCO UNRESTRICTED USE - regulatory comparison against NYCRR, Chapter IV, Part 375-6 Unrestricted Use Soil Cleanup Objectives

6 NYCRR 375 SCO COMMERCIAL USE - regulatory comparison against NYCRR, Chapter IV, Part 375-6 Commercial Use Soil Cleanup Objectives

NE - not established
NA - not analyzed

Bolding indicates a detected concentration
Grey Shading and bolding indicates that the detected concentration is above the Unrestricted Use SCOs
Yellow Shading and bolding indicates that the detected concentration is above the Commercial Use SCOs

Validation Qualifiers:

J - estimated value
U - indicates not detected at or above the reporting limit shown.
UJ - not detected at or above the reporting limit shown and the reporting limit is estimated
R - rejected
D - result is from diluted sample analysis

Table 4
2004 Supplemental Field Program - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name:		KBGP-04	KBGP-04	KBGP-04	KBGP-04	KBGP-04	KBGP-05	Duplicate Of KBGP-05	KBGP-05	KBGP-05	KBGP-05	KBGP-05	KBGP-06	KBGP-06	KBGP-06	KBGP-06	KBGP-06
Sample Interval (feet):		8-12 ft	16-20 ft	26-30 ft	36-40 ft	68-72 ft	7-11 ft	7-11 ft	16-20 ft	26-30 ft	36-40 ft	66-70 ft	8-12 ft	16-20 ft	26-30 ft	36-40 ft	68-72 ft
Sample Date:	NYS AWQS	6/25/2004	6/25/2004	6/25/2004	6/25/2004	6/25/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/28/2004	6/29/2004	6/29/2004	6/29/2004	6/29/2004	6/28/2004
BTEX (ug/L)																	
Benzene	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	5	**1 J**	10 U	10 U	10 U	**2 J**	**3 J**	**2 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total Xylenes	5	**2 J**	10 U	10 U	10 U	**3 J**	**9 J**	**7 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total BTEX	NE	**3**	ND	ND	ND	**5**	**12**	**9**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Other VOCs (ug/L)																	
Acetone	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	60*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**5 J**
Dichloroethane, 1,2-	0.6	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, 1,1-	0.07	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**2 J**
Dichloroethene, 1,2- (total)	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropane, 1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, cis-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, trans-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl tert-butyl ether	10*	**1 J**	**9 J**	**27**	**160**	10 U	10 U	10 U	**3 J**	**4 J**	**11**	10 U	**3**	10 U	**2 J**	**2 J**	10 U
Methyl-2-pentanone, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane,1,1,2,2-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**3 J**
Trichloroethane, 1,1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**1 J**
Vinyl chloride	2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Non-carcinogenic PAHs (ug/L)																	
Acenaphthene	20*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	50*	10 U	10 U	10 U	10 U	10 U	**1 J**	**1 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	10 U	10 U	10 U	**3 J**	**4 J**	10 U	10 U	10 U	10 U	**10**	10 U	10 U	10 U	10 U
Phenanthrene	50*	10 U	10 U	10 U	10 U	10 U	**3 J**	**3 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carcinogenic PAHs (ug/L)																	
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total Non-Carcinogenic PAHs	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PAHs	NE	ND	ND	ND	ND	ND	**7**	**8**	ND	ND	ND	ND	**10**	ND	ND	ND	ND

Table 4
2004 Supplemental Field Program - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	NYS AWQS	KBGP-04 8-12 ft 6/25/2004	KBGP-04 16-20 ft 6/25/2004	KBGP-04 26-30 ft 6/25/2004	KBGP-04 36-40 ft 6/25/2004	KBGP-04 68-72 ft 6/25/2004	KBGP-05 7-11 ft 6/28/2004	Duplicate Of KBGP-05 7-11 ft 6/28/2004	KBGP-05 16-20 ft 6/28/2004	KBGP-05 26-30 ft 6/28/2004	KBGP-05 36-40 ft 6/28/2004	KBGP-05 66-70 ft 6/28/2004	KBGP-06 8-12 ft 6/29/2004	KBGP-06 16-20 ft 6/29/2004	KBGP-06 26-30 ft 6/29/2004	KBGP-06 36-40 ft 6/29/2004	KBGP-06 68-72 ft 6/28/2004
Other SVOCs (ug/L)																	
Bis(2-chloroethoxy)methane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(chloroisopropyl)ether	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloro-3-methylphenol, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroaniline, 4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloronaphthalene, 2-	10*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzidine, 3,3-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorophenol, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphenol, 2,4-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dinitro-2-methylphenol, 4,6-	NE	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrophenol, 2,4-	10*	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrotoluene, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dinitrotoluene, 2,6-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Hexachloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 2-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 4-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitroaniline, 2-	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 3-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitroaniline, 4-	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitrobenzene	0.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 4-	NE	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitrosodi-n-propylamine, N-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrosodiphenylamine, N-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Phenol	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorophenol, 2,4,5-	NE	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Trichlorophenol, 2,4,6-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyanides (ug/L)																	
Cyanide, Total	200	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 UJ	10 U	10 U	10 UJ

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Tables 3-4 2004 KB Data

Table 4
2004 Supplemental Field Program - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Notes:
ug/L - micrograms per liter or parts per billion (ppb)
BTEX - benzene, toluene, ethylbenzene, and xylenes
VOCs - volatile organic compounds
PAHs - polycyclic aromatic hydrocarbons
SVOCs - semivolatile organic compounds
PCBs - Polychlorinated Biphenyls
Total PCBs is calculated using detects only.

NYS AWQS - New York State Ambient Water Quality Standards and Guidance Values for GA groundwater
* indicates the value is a guidance value and not a standard

NE - not established
NA - not analyzed
ND - not detected; total concentration is listed as ND because no compounds were detected in the group

Bolding indicates a detected concentration
Shading and bolding indicates that the detected concentration is above the NYS AWQS objective it was compared to

Validation Qualifiers:
J - estimated value
U - indicates not detected at or above the reporting limit shown.
UJ - not detected at or above the reporting limit shown and the reporting limit is estimated
R - rejected
D - result is from diluted sample analysis

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KB/SL B-1 (4-6) 5/11/2009	KB/SL C-2 (7.5-9.5) 5/5/2009	KB/SL D-1 (8-10) 5/12/2009	KB/SL E-1 (8-10) 4/28/2009	KB/SL F-1 (9-11) 5/13/2009	KB/SL G-1 (8-10) 5/15/2009	KB/SL H-2 (6-8) 5/15/2009	KB/SL SB-01 (8-10) 6/1/2009	KB/SL SB-02 (7-9) 6/1/2009	Duplicate of: KB/SL C-6 (12-14) 5/12/2009	Duplicate of: KB/SL D-2 (23-25) 5/28/2009	Duplicate of: KB/SL D-5 (15-17) 4/30/2009	Duplicate of: KB/SL F-1 (36-38) 5/14/2009	Duplicate of: KB/SL H-4 (19-21) 5/18/2009	KB/SL A-5 (4-6) 5/11/2009	KB/SL A-6 (15-17) 5/11/2009	KB/SL A-6 (4-6) 5/11/2009	KB/SL A-6 (12-14) 5/11/2009	KB/SL B-1 (10-12) 5/11/2009	KB/SL B-1 (21-23) 5/11/2009	KB/SL B-3 (14-16) 5/11/2009	KB/SL B-3 (4-6) 5/11/2009	KB/SL B-3 (9-11) 5/11/2009	KB/SL B-5 (4-6) 5/11/2009	KB/SL B-6 (10-12) 5/4/2009
BTEX (mg/kg)																											
Benzene	0.06	44	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 UJ	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Toluene	0.7	500	0.012 U	**0.007 J**	0.057 UJ	**0.014 J**	**0.072**	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	**0.027**
Ethylbenzene	1	390	**0.003 J**	0.011 U	**5.8 J**	**0.027 J**	**200**	**0.022 J**	0.011 U	**3.6 J**	**0.42 J**	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.012**	**0.03**	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Xylene, m,p-	NE	NE	**0.041 J**	0.011 U	**11**	**0.064**	**260**	**0.036 J**	0.011 U	14 U	**0.58 J**	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	**0.071**	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Xylene, o-	NE	NE	**0.035 J**	0.011 U	**6.3 J**	**0.056 J**	**90**	0.12 U	0.011 U	14 UJ	**0.86 J**	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.007**	**0.026**	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Xylene, Total	0.26	500	**0.076**	ND	**17.3**	**0.120**	**350**	**0.036**	ND	ND	**1.44**	ND	ND	ND	ND	ND	ND	ND	ND	**0.007**	**0.097**	ND	ND	ND	ND	ND	ND
Total BTEX	NE	NE	**0.155**	**0.007**	**40.4**	**0.281**	**900.072**	**0.094**	0	**3.6**	**3.3**	0	0	0	0	0	0	0	0	**0.026**	**0.224**	0	0	0	0	0	**0.027**
Other VOCs (mg/kg)																											
Acetaldehyde	NE	NE	0.012 U	**0.005 J**	R	0.06 UJ	R	R	R	14 U	R	0.012 U	R	0.012 UJ	R	R	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	**0.01 J**
Acetone	0.05	500	0.012 UJ	**0.011 J**	0.057 UJ	**0.032 J**	0.12 UJ	0.12 U	0.011 U	14 UJ	0.057 UJ	0.012 UJ	0.012 UJ	**0.005 J**	**0.007 J**	0.012 U	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	**0.011 J**
Allyl chloride	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 UJ	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Bromodichloromethane	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Bromoform	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 UJ	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Bromomethane	NE	NE	0.012 UJ	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 UJ	0.057 U	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 UJ	0.012 U	0.011 U	0.012 U	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.012 UJ	0.011 U
Butadiene, 1,3-	NE	NE	0.012 U	R	0.057 UJ	R	0.12 UJ	0.12 UJ	0.011 UJ	14 UJ	R	0.012 U	R	R	0.011 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	R
Butanone, 2-	0.12	500	0.012 U	**0.001 J**	0.057 UJ	**0.006 J**	0.12 U	0.12 U	0.011 U	14 U	**0.016 J**	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	**0.003 J**	0.011 U	0.012 U	0.012 U	**0.003 J**	0.012 U	0.011 U
Carbon disulfide	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 UJ	0.12 UJ	0.011 UJ	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Carbon tetrachloride	0.76	22	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 UJ	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Chlorobenzene	1.1	500	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Chloroethane	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 UJ	0.057 U	0.012 U	0.012 UJ	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Chloroform	0.37	350	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Chloromethane	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 UJ	0.12 UJ	0.011 UJ	14 U	0.057 UJ	0.012 U	0.012 UJ	0.012 U	0.011 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Chlorotoluene	NE	NE	0.012 UJ	0.011 UJ	0.057 UJ	0.06 UJ	0.12 UJ	0.12 UJ	0.011 UJ	14 UJ	0.057 U	0.012 UJ	0.012 U	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ
Cryofluorane	NE	NE	0.012 U	0.011 UJ	0.057 UJ	0.06 UJ	0.12 UJ	0.12 UJ	0.011 UJ	14 UJ	R	0.012 U	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 UJ
Cyclohexane	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 UJ	0.12 UJ	0.011 UJ	14 UJ	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dibromochloromethane	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dibromoethane, 1,2-	NE	NE	**0.002 J**	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichlorobenzene, 1,2-	1.1	500	7.4 U	0.011 U	R	0.06 U	0.12 UJ	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichlorobenzene, 1,3-	2.4	280	7.4 U	0.011 U	R	0.06 U	0.12 UJ	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichlorobenzene, 1,4-	1.8	130	7.4 U	0.011 U	R	0.06 U	0.12 UJ	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichlorodifluoromethane	NE	NE	0.012 U	0.011 UJ	0.057 UJ	0.06 UJ	0.12 UJ	0.12 UJ	0.011 UJ	14 UJ	0.057 UJ	0.012 U	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 UJ
Dichloroethane, 1,1-	0.27	240	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 UJ	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichloroethane, 1,2-	0.02	30	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 UJ	0.12 UJ	0.011 UJ	14 UJ	0.057 U	0.012 U	0.012 U	0.012 U	0.011 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichloroethene, 1,1-	0.33	500	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 UJ	0.057 UJ	0.012 U	0.012 UJ	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.011 U
Dichloroethene, cis-1,2-	0.25	500	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichloropropane, 1,2-	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichloropropene, cis-1,3	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichloropropene, trans-1,3	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dioxane, 1,4-	0.1	130	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Ethanol	NE	NE	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Heptane, n-	NE	NE	0.012 U	0.011 U	**0.35 J**	0.06 U	**0.42 J**	0.12 UJ	0.011 UJ	14 UJ	0.057 U	0.012 U	0.012 U	0.012 U	0.011 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Hexachlorobutadiene	NE	NE	7.4 U	0.011 U	R	0.06 U	0.12 UJ	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Hexane, n-	NE	NE	0.012 U	0.011 U	**0.015 J**	0.06 U	**0.051 J**	0.12 UJ	0.011 UJ	14 UJ	0.057 U	0.012 U	0.012 U	0.012 U	0.011 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Hexanone, 2-	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Isopropyl benzene	NE	NE	**1.3 J**	**1.2 J**	**17 J**	**0.25**	**24**	0.12 U	0.011 U	**15 J**	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	**0.003 J**	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Methyl tert-butyl ether	0.93	500	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 UJ	0.12 UJ	0.011 UJ	14 UJ	0.057 U	0.012 U	0.012 U	0.012 U	0.011 UJ	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Methyl-2-pentanone, 4-	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Methylene chloride	0.05	500	0.012 U	0.011 UJ	0.057 UJ	0.06 UJ	0.12 U	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 UJ	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 UJ
Naphthalene	12	500	**1.7 J**	0.011 U	**26**	**2.6**	**170**	**0.8 J**	**0.004 J**	**72**	**4.7**	0.012 UJ	**0.005**	0.012 U	**0.002 J**	0.012 U	**0.007 J**	**0.006**	**0.011**	**0.035**	**0.16 J**	**0.006 J**	**0.002 J**	**0.003 J**	**0.004 J**	0.012 UJ	0.011 U
Propanol, 2-	NE	NE	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Propylbenzene, n-	3.9	500	**0.52 J**	**2.1**	**16 J**	**0.19**	**10 J**	0.12 U	0.011 U	**9 J**	**0.53 J**	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Styrene	NE	NE	0.012 U	0.011 U	0.057 UJ	**0.021 J**	0.12 U	0.12 U	0.011 U	14 UJ	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Tetrachloroethane, 1,1,1,2-	NE	NE		0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 UJ	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Tetrachloroethane,1,1,2,2-	NE	NE	0.012 U	0.011 U	R	0.06 U	0.12 UJ	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Tetrachloroethene	1.3	150	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	**0.038**	14 UJ	0.057 UJ	0.012 U	0.012 UJ	0.012 U	0.011 U	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Tetrahydrofuran	NE	NE	0.012 UJ	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 UJ	0.057 U	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 UJ	0.012 U	0.011 U	0.012 U	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.012 UJ	0.011 U
Trans-1,2-dichloroethene	0.19	500	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 UJ	0.012 U	0.012 UJ	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trichlorobenzene, 1,2,4-	NE	NE	7.4 U	0.011 U	R	0.06 U	0.12 UJ	0.12 U	0.011 U	14 U	0.057 UJ	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trichloroethane, 1,1,1-	0.68	500	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 UJ	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trichloroethane, 1,1,2-	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trichloroethene	0.47	200	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 UJ	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trichlorofluoromethane	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 UJ	0.12 UJ	0.011 UJ	14 UJ	0.057 U	0.012 U	0.012 UJ	0.012 U	0.011 U	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	8.4	190	**15**	**23**	**56**	**3.1**	**97 J**	**0.096 J**	0.011 U	**110 J**	**4.8 J**	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	**0.002 J**	**0.003 J**	**0.053**	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trimethylbenzene, 1,2,4-	3.6	190	**9.9**	**15**	**53**	**2.6**	**98**	**0.034 J**	0.011 U	**110**	**5.4**	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	**0.002 J**	**0.003 J**	**0.026**	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trimethylpentane, 2,2,4-	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 UJ	0.12 UJ	0.011 UJ	14 UJ	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KB/SL B-1 (4-6) 5/11/2009	KB/SL C-2 (7.5-9.5) 5/5/2009	KB/SL D-1 (8-10) 5/12/2009	KB/SL E-1 (8-10) 4/28/2009	KB/SL F-1 (9-11) 5/13/2009	KB/SL G-1 (8-10) 5/15/2009	KB/SL H-2 (6-8) 5/15/2009	KB/SL SB-01 (8-10) 6/1/2009	KB/SL SB-02 (7-9) 6/1/2009	Duplicate of: KB/SL C-6 (12-14) 5/12/2009	Duplicate of: KB/SL D-2 (23-25) 5/28/2009	Duplicate of: KB/SL D-5 (15-17) 4/30/2009	Duplicate of: KB/SL F-1 (36-38) 5/14/2009	Duplicate of: KB/SL H-4 (19-21) 5/18/2009	KB/SL A-5 (4-6) 5/11/2009	KB/SL A-6 (15-17) 5/11/2009	KB/SL A-6 (4-6) 5/11/2009	KB/SL A-6 (12-14) 5/11/2009	KB/SL B-1 (10-12) 5/11/2009	KB/SL B-1 (21-23) 5/11/2009	KB/SL B-3 (14-16) 5/11/2009	KB/SL B-3 (4-6) 5/11/2009	KB/SL B-3 (9-11) 5/11/2009	KB/SL B-5 (4-6) 5/11/2009	KB/SL B-6 (10-12) 5/4/2009
Vinyl acetate	NE	NE	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 U	0.12 U	0.011 U	14 U	0.057 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Vinyl chloride	0.02	13	0.012 U	0.011 U	0.057 UJ	0.06 U	0.12 UJ	0.12 UJ	0.011 UJ	14 U	0.057 UJ	0.012 U	0.012 U	0.012 U	0.011 UJ	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Total Other VOCs	NE	NE	28.422	41.317	168.365	8.799	399.471	0.93	0.042	316	15.446	0	0.005	0.005	0.009	0	0.007	0.006	0.015	0.041	0.245	0.006	0.002	0.003	0.007	0	0.021
Non-carcinogenic PAHs (mg/kg)																											
Acenaphthene	20	500	1.1	0.67	3.4	0.92	0.93	0.39 U	0.38 U	5.2	4	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Acenaphthylene	100	500	0.9	0.21 J	1.7	0.9	0.73	0.37 J	2.1	0.76	0.56	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Anthracene	100	500	1.1	0.7	4.3	1.9	0.97	0.61	0.47	2.3	3.3	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Benzo[g,h,i]perylene	100	500	0.23 J	0.18 J	0.64 J	0.3 J	0.19 J	0.37 J	1.8 J	0.4	0.47	0.38 UJ	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Fluoranthene	100	500	1.7	1.3	6	2.7	1.4	2.1	0.38 U	2.6	4	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Fluorene	30	500	2.8	1.4	4.1	1.8	1	0.39 U	0.38 U	3.5	3	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Methylnaphthalene, 2-	NE	NE	11	0.25 J	38	2.6	8.1	0.39 U	0.38 U	29	1.2	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Naphthalene	12	500	0.37 J	0.38 U	19	0.2 J	10	0.39 U	0.38 U	28	1.1	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.11 J	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Phenanthrene	100	500	5.5	3.2	14	5.1	3.5	0.83	0.38 U	8.9	9.2	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Pyrene	100	500	2.8	2.1	11	4.2	2	3.7	0.93 J	5.1	6.3	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Total Non-carcinogenic PAHs	NE	NE	27.5	10.01	102.14	20.62	28.82	7.98	5.3	85.76	33.13	0	0	0	0	0	0	0	0	0	0.11	0	0	0	0	0	0
Carcinogenic PAHs (mg/kg)																											
Benz[a]anthracene	1	5.6	1	0.83	3.8 J	1.7	0.76	1.4	R	1.8	2.6	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Benzo[a]pyrene	1	1	0.69	0.58	2.3 J	1.2	0.46	0.94	0.17 J	1.2	1.5	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Benzo[b]fluoranthene	1	5.6	0.59	0.47	1.1 J	1	0.19 J	0.42	0.44 J	0.89	1.1	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Benzo[k]fluoranthene	0.8	56	0.14 J	0.15 J	1.8 J	0.34 J	0.39 J	0.79	0.68 J	0.34 J	0.5	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Chrysene	1	56	1.1	0.89	3.3 J	1.5	0.74	1.3	R	1.7	2.1	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Dibenz[a,h]anthracene	0.33	0.56	0.39 U	0.38 U	0.27 J	0.096 J	0.4 U	0.15 J	R	0.12 J	0.15 J	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Indeno[1,2,3-cd]pyrene	0.5	5.6	0.19 J	0.14 J	0.55 J	0.26 J	0.14 J	0.3 J	0.69 J	0.33 J	0.37 J	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Total Carcinogenic PAHs	NE	NE	3.71	3.06	13.12	6.096	2.68	5.3	1.98	6.38	8.32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total PAHs	NE	NE	31.21	13.07	115.26	26.716	31.5	13.28	7.28	92.14	41.45	0	0	0	0	0	0	0	0	0	0.11	0	0	0	0	0	0
Other SVOCs (mg/kg)																											
Bis(2-chloroethoxy)methane	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Bis(2-chloroethyl)ether	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Bis(2-ethylhexyl)phthalate	NE	NE	0.39 U	0.1 J	0.38 UJ	0.39 U	0.4 U	0.39 U	R	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.17 J	0.38 U	0.38 U	0.18 J	0.37 U	0.13 J	0.4 U	0.1 J	0.39 U	0.37 U
Bis(chloroisopropyl)ether	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 UJ	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Bromophenyl phenyl ether, 4-	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Butyl benzyl phthalate	NE	NE	0.39 U	0.38 U	0.38 UJ	0.39 U	0.4 U	0.39 U	R	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Carbazole	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Chloro-3-methylphenol, 4-	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Chloroaniline, 4-	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Chloronaphthalene, 2-	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 UJ	0.38 UJ	0.38 U	0.4 UJ	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Chlorophenol, 2-	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Chlorophenyl phenyl ether, 4-	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Dibenzofuran	7	350	0.49	0.16 J	0.67	0.17 J	0.4 U	0.39 U	0.38 U	0.45	0.25 J	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Dichlorobenzene, 1,2-	1.1	500	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Dichlorobenzene, 1,3-	2.4	280	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Dichlorobenzene, 1,4-	1.8	130	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Dichlorobenzidine, 3,3-	NE	NE	0.39 U	0.38 U	0.38 UJ	0.39 U	0.4 U	0.39 U	0.38 UJ	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 UJ	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Dichlorophenol, 2,4-	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Diethyl phthalate	NE	NE	0.19 J	0.38 U	0.14 J	0.39 U	0.13 J	0.39 U	0.38 U	0.37 U	0.25 J	0.38 U	0.4 U	0.4 U	0.35 J	0.12 J	0.1 J	0.39 J	0.12 J	0.12 J	0.11 J	0.11 J	0.25 J	0.12 J	0.13 J	0.13 J	0.13 J
Dimethyl phthalate	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Dimethylphenol, 2,4-	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Di-n-butyl phthalate	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.082 J	0.4 U	0.38 U	0.092 J	0.38 U	0.38 U	0.1 J	0.37 U	0.087 J	0.4 U	0.4 U	0.39 U	0.37 U
Dinitro-2-methylphenol, 4,6-	NE	NE	0.98 U	0.95 U	0.95 U	0.99 U	1 U	0.98 U	0.95 U	0.93 U	0.95 U	0.96 UJ	1 U	1 U	0.95 U	1 U	0.96 U	1 U	0.95 U	0.96 U	1 U	0.94 U	0.98 U	1 U	1 U	0.97 U	0.93 U
Dinitrophenol, 2,4-	NE	NE	0.98 UJ	0.95 U	0.95 U	0.99 U	1 U	0.98 UJ	0.95 U	0.93 U	0.95 U	0.96 UJ	1 U	1 U	0.95 U	1 UJ	0.96 UJ	1 UJ	0.95 UJ	0.96 UJ	1 UJ	0.94 UJ	0.98 UJ	1 UJ	1 UJ	0.97 U	0.93 U
Dinitrotoluene, 2,4-	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Dinitrotoluene, 2,6-	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Di-n-octyl phthalate	NE	NE	0.39 U	0.38 U	0.38 UJ	0.39 U	0.4 U	0.39 U	R	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Hexachlorobenzene	0.33	6	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Hexachlorobutadiene	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Hexachlorocyclopentadiene	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Hexachloroethane	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Isophorone	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 UJ	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 UJ	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Methylphenol, 2-	0.33	500	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Methylphenol, 4-	0.33	500	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Nitroaniline, 2-	NE	NE	0.98 U	0.95 U	0.95 U	0.99 U	1 U	0.98 U	0.95 U	0.93 U	0.95 U	0.96 U	1 U	1 U	0.95 U	1 U	0.96 U	1 U	0.95 U	0.96 U	1 U	0.94 U	0.98 U	1 U	1 U	0.97 U	0.93 U
Nitroaniline, 3-	NE	NE	0.98 U	0.95 U	0.95 U	0.99 U	1 U	0.98 U	0.95 U	0.93 U	0.95 U	0.96 U	1 U	1 U	0.95 U	1 U	0.96 U	1 U	0.95 U	0.96 U	1 U	0.94 U	0.98 U	1 U	1 U	0.97 U	0.93 U
Nitroaniline, 4-	NE	NE	0.98 U	0.95 U	0.95 U	0.99 U	1 U	0.98 U	0.95 U	0.93 U	0.95 U	0.96 U	1 U	1 U	0.95 U	1 U	0.96 U	1 U	0.95 U	0.96 U	1 U	0.94 U	0.98 U	1 U	1 U	0.97 U	0.93 U
Nitrobenzene	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Nitrophenol, 2-	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Nitrophenol, 4-	NE	NE	0.98 U	0.95 U	0.95 U	0.99 U	1 U	0.98 U	0.95 U	0.93 U	0.95 U	0.96 U	1 U	1 U	0.95 U	1 U	0.96 U	1 U	0.95 U	0.96 U	1 U	0.94 U	0.98 U	1 U	1 U	0.97 U	0.93 U
Nitrosodi-n-propylamine, N-	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Nitrosodiphenylamine, N-	NE	NE	0.39 U	0.38 U	0.64	0.39 U	0.3 J	0.36 J	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Pentachlorophenol	0.8	6.7	0.98 U	0.95 U	0.95 U	0.99 U	1 U	0.98 U	0.95 U	0.93 U	0.95 U	0.96 U	1 U	1 U	0.95 U	1 U	0.96 U	1 U	0.95 U	0.96 U	1 U	0.94 U	0.98 U	1 U	1 U	0.97 U	0.93 U

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KB/SL B-1 (4-6) 5/11/2009	KB/SL C-2 (7.5-9.5) 5/5/2009	KB/SL D-1 (8-10) 5/12/2009	KB/SL E-1 (8-10) 4/28/2009	KB/SL F-1 (9-11) 5/13/2009	KB/SL G-1 (8-10) 5/15/2009	KB/SL H-2 (6-8) 5/15/2009	KB/SL SB-01 (8-10) 6/1/2009	KB/SL SB-02 (7-9) 6/1/2009	Duplicate of: KB/SL C-6 (12-14) 5/12/2009	Duplicate of: KB/SL D-2 (23-25) 5/28/2009	Duplicate of: KB/SL D-5 (15-17) 4/30/2009	Duplicate of: KB/SL F-1 (36-38) 5/14/2009	Duplicate of: KB/SL H-4 (19-21) 5/18/2009	KB/SL A-5 (4-6) 5/11/2009	KB/SL A-6 (15-17) 5/11/2009	KB/SL A-6 (4-6) 5/11/2009	KB/SL A-6 (12-14) 5/11/2009	KB/SL B-1 (10-12) 5/11/2009	KB/SL B-1 (21-23) 5/11/2009	KB/SL B-3 (14-16) 5/11/2009	KB/SL B-3 (4-6) 5/11/2009	KB/SL B-3 (9-11) 5/11/2009	KB/SL B-5 (4-6) 5/11/2009	KB/SL B-6 (10-12) 5/4/2009
Phenol	0.33	500	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	**0.083 J**	**0.086 J**	0.39 U	0.4 U	0.4 U	**0.12 J**	0.37 U
Trichlorobenzene, 1,2,4-	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Trichlorophenol, 2,4,5-	NE	NE	0.98 U	0.95 U	0.95 U	0.99 U	1 U	0.98 U	0.95 U	0.93 U	0.95 U	0.96 U	1 U	1 U	0.95 U	1 U	0.96 U	1 U	0.95 U	0.96 U	1 U	0.94 U	0.98 U	1 U	1 U	0.97 U	0.93 U
Trichlorophenol, 2,4,6-	NE	NE	0.39 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.4 U	0.4 U	0.38 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U	0.4 U	0.37 U	0.39 U	0.4 U	0.4 U	0.39 U	0.37 U
Total Other SVOCs	NE	NE	**0.68**	**0.26**	**1.45**	**0.17**	**0.43**	**0.36**	**0**	**0.45**	**0.5**	0	0	0	**0.432**	**0.12**	**0.1**	**0.652**	**0.12**	**0.12**	**0.473**	**0.196**	**0.467**	**0.12**	**0.23**	**0.25**	**0.13**
Total Petroleum Hydrocarbons	NE	NE	**7200**	NA	**4800**	NA	**1700**	**3300**	**11000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8 U	**18**	NA	NA	NA	8 U	NA	NA
PCBs (mg/kg)																											
Aroclor 1016	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.078 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (mg/kg)																											
Aldrin	0.005	0.68	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-bhc	0.02	3.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-chlordane	0.094	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beta-BHC	0.036	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane, trans-	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDD, 4,4-	0.0033	92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDE, 4,4-	0.0033	62	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDT, 4,4-	0.0033	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	2.4	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	2.4	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	89	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin aldehyde	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin ketone	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-BHC	0.1	9.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.02 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)																											
Aluminum	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**902 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.32 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.33 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.5 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	7.2	590	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.11 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	9.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.027 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**36.6 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.0**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.65 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.6 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1770 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	1000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.72 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**126 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**17.4 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	2.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.1 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**72.6 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	1500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.31 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	2	1500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.070 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.2 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.38 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.3 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.4 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanides (mg/kg)																											
Cyanide, Total	27	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.58 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other (%)																											
Moisture, percent	NE	NE	**15.1**	**12.5**	**12.6**	**16.3**	**18.2**	**15.2**	**12.3**	**11.0**	**12.8**	**13.1**	**16.9**	**17.6**	**12.8**	**16.7**	**13.4**	**16.7**	**13.0**	**13.8**	**16.9**	**11.7**	**15.7**	**17.0**	**17.3**	**14.3**	**10.8**

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KB/SL B-6 (5-7) 5/4/2009	KB/SL B-6 (8-10) 5/4/2009	KB/SL B-7 (12-14) 6/1/2009	KB/SL B-7 (4-6) 6/1/2009	KB/SL B-7 (9-11) 6/1/2009	KB/SL C-2 (23-25) 5/5/2009	KB/SL C-2 (5-7) 5/5/2009	KB/SL C-4 (10-12) 5/12/2009	KB/SL C-4 (15-17) 5/12/2009	KB/SL C-4 (4-6) 5/12/2009	KB/SL C-6 (12-14) 5/12/2009	KB/SL C-6 (15-17) 5/12/2009	KB/SL C-6 (4-6) 5/12/2009	KB/SL C-7 (12-14) 6/1/2009	KB/SL C-7 (15-17) 6/1/2009	KB/SL C-7 (4-6) 6/1/2009	KB/SL D-1 (11-13) 5/12/2009	KB/SL D-1 (26-28) 5/12/2009	KB/SL D-1 (4-6) 5/12/2009	KB/SL D-2 (10-12) 5/28/2009	KB/SL D-2 (23-25) 5/28/2009	KB/SL D-2 (5-7) 5/28/2009	KB/SL D-3 (11-13) 5/13/2009	KB/SL D-3 (16-18) 5/13/2009	KB/SL D-3 (4-6) 5/13/2009
BTEX (mg/kg)																											
Benzene	0.06	44	0.012 U	**0.001 J**	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Toluene	0.7	500	**0.031**	**0.055**	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.002 J**	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Ethylbenzene	1	390	0.012 U	**0.004 J**	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.2**	0.012 U	0.011 U	**0.003 J**	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Xylene, m,p-	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.16**	0.012 U	0.011 U	**0.007**	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Xylene, o-	NE	NE	0.012 U	**0.004 J**	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.075**	0.012 U	0.011 U	**0.003 J**	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Xylene, Total	0.26	500	ND	**0.004**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.235**	ND	ND	**0.010**	ND	ND	ND	ND	ND
Total BTEX	NE	NE	**0.031**	**0.068**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.672**	0	0	**0.023**	0	0	0	0	0
Other VOCs (mg/kg)																											
Acetaldehyde	NE	NE	0.012 UJ	**0.017 J**	R	R	R	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	R	R	R	0.011 U	0.012 U	0.011 U	R	R	R	0.012 U	0.012 U	0.011 U
Acetone	0.05	500	**0.006 J**	**0.017 J**	0.012 UJ	0.012 UJ	0.012 UJ	**0.004 J**	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.011 U	0.012 UJ	0.011 U	0.017 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U
Allyl chloride	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Bromodichloromethane	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Bromoform	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Bromomethane	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U	0.011 UJ	0.012 UJ	0.011 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.011 UJ
Butadiene, 1,3-	NE	NE	R	R	R	R	R	R	R	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	R	R	R	0.011 U	0.012 U	0.011 U	R	R	R	0.012 U	0.012 U	0.011 U
Butanone, 2-	0.12	500	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	**0.003 J**	0.012 U	0.012 U	**0.004 J**	0.012 U	0.011 U	**0.002 J**	0.012 U	0.011 U	**0.008**	**0.004 J**	0.012 U	0.012 U	**0.002 J**	0.011 U
Carbon disulfide	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Carbon tetrachloride	0.76	22	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Chlorobenzene	1.1	500	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Chloroethane	NE	NE	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.011 UJ	0.011 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U
Chloroform	0.37	350	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Chloromethane	NE	NE	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.011 UJ	0.011 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U
Chlorotoluene	NE	NE	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U	0.011 UJ	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.011 UJ
Cryofluorane	NE	NE	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.011 UJ	0.011 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U
Cyclohexane	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dibromochloromethane	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dibromoethane, 1,2-	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichlorobenzene, 1,2-	1.1	500	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichlorobenzene, 1,3-	2.4	280	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichlorobenzene, 1,4-	1.8	130	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichlorodifluoromethane	NE	NE	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.011 UJ	0.011 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U
Dichloroethane, 1,1-	0.27	240	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichloroethane, 1,2-	0.02	30	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichloroethene, 1,1-	0.33	500	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.011 UJ	0.011 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U
Dichloroethene, cis-1,2-	0.25	500	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichloropropane, 1,2-	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichloropropene, cis-1,3	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dichloropropene, trans-1,3	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Dioxane, 1,4-	0.1	130	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Ethanol	NE	NE	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Heptane, n-	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Hexachlorobutadiene	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Hexane, n-	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Hexanone, 2-	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Isopropyl benzene	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.015**	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Methyl tert-butyl ether	0.93	500	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Methyl-2-pentanone, 4-	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Methylene chloride	0.05	500	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Naphthalene	12	500	0.012 U	**0.007**	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.023 J**	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U	**0.21 J**	0.012 UJ	0.011 U	**0.076**	**0.002 J**	0.012 U	0.012 UJ	0.012 UJ	0.011 UJ
Propanol, 2-	NE	NE	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Propylbenzene, n-	3.9	500	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.007**	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Styrene	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Tetrachloroethane, 1,1,1,2-	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Tetrachloroethane,1,1,2,2-	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Tetrachloroethene	1.3	150	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.011 UJ	0.011 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U
Tetrahydrofuran	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U	0.011 UJ	0.012 UJ	0.011 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.011 UJ
Trans-1,2-dichloroethene	0.19	500	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	NE	NE	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.011 UJ	0.011 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U
Trichlorobenzene, 1,2,4-	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trichloroethane, 1,1,1-	0.68	500	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trichloroethane, 1,1,2-	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trichloroethene	0.47	200	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trichlorofluoromethane	NE	NE	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.011 UJ	0.011 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.011 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	8.4	190	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.056**	0.012 U	0.011 U	**0.008**	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trimethylbenzene, 1,2,4-	3.6	190	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.075**	0.012 U	0.011 U	**0.01**	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Trimethylpentane, 2,2,4-	NE	NE	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KB/SL B-6 (5-7) 5/4/2009	KB/SL B-6 (8-10) 5/4/2009	KB/SL B-7 (12-14) 6/1/2009	KB/SL B-7 (4-6) 6/1/2009	KB/SL B-7 (9-11) 6/1/2009	KB/SL C-2 (23-25) 5/5/2009	KB/SL C-2 (5-7) 5/5/2009	KB/SL C-4 (10-12) 5/12/2009	KB/SL C-4 (15-17) 5/12/2009	KB/SL C-4 (4-6) 5/12/2009	KB/SL C-6 (12-14) 5/12/2009	KB/SL C-6 (15-17) 5/12/2009	KB/SL C-6 (4-6) 5/12/2009	KB/SL C-7 (12-14) 6/1/2009	KB/SL C-7 (15-17) 6/1/2009	KB/SL C-7 (4-6) 6/1/2009	KB/SL D-1 (11-13) 5/12/2009	KB/SL D-1 (26-28) 5/12/2009	KB/SL D-1 (4-6) 5/12/2009	KB/SL D-2 (10-12) 5/28/2009	KB/SL D-2 (23-25) 5/28/2009	KB/SL D-2 (5-7) 5/28/2009	KB/SL D-3 (11-13) 5/13/2009	KB/SL D-3 (16-18) 5/13/2009	KB/SL D-3 (4-6) 5/13/2009
Vinyl acetate	NE	NE	0.012 U	**0.008**	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Vinyl chloride	0.02	13	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U
Total Other VOCs	NE	NE	**0.006**	**0.049**	0	0	0	**0.004**	0	**0.023**	0	0	**0.003**	0	0	**0.004**	0	0	**0.365**	0	0	**0.102**	**0.006**	0	0	**0.002**	0
Non-carcinogenic PAHs (mg/kg)																											
Acenaphthene	20	500	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Acenaphthylene	100	500	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	**0.35 J**	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	**0.28 J**	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Anthracene	100	500	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Benzo[g,h,i]perylene	100	500	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	**0.38**	0.39 UJ	0.39 UJ	0.39 UJ	0.39 UJ	0.4 UJ	0.4 UJ	0.4 U	0.4 U	0.38 U	0.38 U	0.39 UJ	**0.31 J**	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Fluoranthene	100	500	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Fluorene	30	500	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Methylnaphthalene, 2-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Naphthalene	12	500	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Phenanthrene	100	500	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	**0.074 J**	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	**0.14 J**	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Pyrene	100	500	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	**0.16 J**	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	**0.15 J**	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Total Non-carcinogenic PAHs	NE	NE	0	0	0	0	0	0	**0.964**	0	0	0	0	0	0	0	0	0	**0.14**	0	**0.74**	0	0	0	0	0	0
Carcinogenic PAHs (mg/kg)																											
Benz[a]anthracene	1	5.6	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Benzo[a]pyrene	1	1	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 UJ	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Benzo[b]fluoranthene	1	5.6	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 UJ	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Benzo[k]fluoranthene	0.8	56	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	**0.12 J**	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Chrysene	1	56	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Dibenz[a,h]anthracene	0.33	0.56	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 UJ	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Indeno[1,2,3-cd]pyrene	0.5	5.6	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 UJ	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Total Carcinogenic PAHs	NE	NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0.12**	0	0	0	0	0	0
Total PAHs	NE	NE	0	0	0	0	0	0	**0.964**	0	0	0	0	0	0	0	0	0	**0.14**	0	**0.86**	0	0	0	0	0	0
Other SVOCs (mg/kg)																											
Bis(2-chloroethoxy)methane	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Bis(2-chloroethyl)ether	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Bis(2-ethylhexyl)phthalate	NE	NE	**0.084 J**	0.41 U	0.38 U	0.39 U	0.39 U	**0.091 J**	**0.081 J**	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	**0.16 J**	0.4 U	**0.12 J**	0.4 U	0.38 U	0.38 U
Bis(chloroisopropyl)ether	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Bromophenyl phenyl ether, 4-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Butyl benzyl phthalate	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Carbazole	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Chloro-3-methylphenol, 4-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Chloroaniline, 4-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Chloronaphthalene, 2-	NE	NE	0.39 U	0.41 U	0.38 UJ	0.39 UJ	0.39 UJ	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 UJ	0.4 UJ	0.38 UJ	0.38 U	0.39 U	0.38 U	0.41 UJ	0.4 UJ	0.38 UJ	0.4 U	0.38 U	0.38 U
Chlorophenol, 2-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Chlorophenyl phenyl ether, 4-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Dibenzofuran	7	350	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Dichlorobenzene, 1,2-	1.1	500	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Dichlorobenzene, 1,3-	2.4	280	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Dichlorobenzene, 1,4-	1.8	130	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Dichlorobenzidine, 3,3-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Dichlorophenol, 2,4-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Diethyl phthalate	NE	NE	**0.08 J**	**0.094 J**	0.38 U	0.39 U	0.39 U	**0.1 J**	**0.34 J**	**0.1 J**	0.39 U	**0.1 J**	0.39 U	**0.15 J**	0.4 U	0.4 U	0.4 U	0.38 U	**0.12 J**	0.39 U	**0.12 J**	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Dimethyl phthalate	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Dimethylphenol, 2,4-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Di-n-butyl phthalate	NE	NE	0.39 U	**0.1 J**	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Dinitro-2-methylphenol, 4,6-	NE	NE	0.97 U	1 U	0.96 U	0.98 U	0.98 U	1 U	0.89 U	0.98 UJ	0.99 UJ	0.97 UJ	0.98 UJ	1 UJ	1 UJ	1 U	1 U	0.95 U	0.95 U	0.99 UJ	0.95 U	1 U	1 U	0.96 U	1 U	0.96 U	0.95 U
Dinitrophenol, 2,4-	NE	NE	0.97 U	1 U	0.96 U	0.98 U	0.98 U	1 U	0.89 U	0.98 UJ	0.99 UJ	0.97 UJ	0.98 UJ	1 UJ	1 UJ	1 U	1 U	0.95 U	0.95 U	0.99 UJ	0.95 U	1 U	1 U	0.96 U	1 U	0.96 U	0.95 U
Dinitrotoluene, 2,4-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Dinitrotoluene, 2,6-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Di-n-octyl phthalate	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 UJ	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Hexachlorobenzene	0.33	6	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Hexachlorobutadiene	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Hexachlorocyclopentadiene	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Hexachloroethane	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Isophorone	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	**0.16 J**	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Methylphenol, 2-	0.33	500	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Methylphenol, 4-	0.33	500	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Nitroaniline, 2-	NE	NE	0.97 U	1 U	0.96 U	0.98 U	0.98 U	1 U	0.89 U	0.98 U	0.99 U	0.97 U	0.98 U	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.99 U	0.95 U	1 U	1 U	0.96 U	1 U	0.96 U	0.95 U
Nitroaniline, 3-	NE	NE	0.97 U	1 U	0.96 U	0.98 U	0.98 U	1 U	0.89 U	0.98 U	0.99 U	0.97 U	0.98 U	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.99 U	0.95 U	1 U	1 U	0.96 U	1 U	0.96 U	0.95 U
Nitroaniline, 4-	NE	NE	0.97 U	1 U	0.96 U	0.98 U	0.98 U	1 U	0.89 U	0.98 U	0.99 U	0.97 U	0.98 U	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.99 U	0.95 U	1 U	1 U	0.96 U	1 U	0.96 U	0.95 U
Nitrobenzene	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Nitrophenol, 2-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Nitrophenol, 4-	NE	NE	0.97 U	1 U	0.96 U	0.98 U	0.98 U	1 U	0.89 U	0.98 U	0.99 U	0.97 U	0.98 U	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.99 U	0.95 U	1 U	1 U	0.96 U	1 U	0.96 U	0.95 U
Nitrosodi-n-propylamine, N-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Nitrosodiphenylamine, N-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Pentachlorophenol	0.8	6.7	0.97 U	1 U	0.96 U	0.98 U	0.98 U	1 U	0.89 U	0.98 U	0.99 U	0.97 U	0.98 U	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.99 U	0.95 U	1 U	1 U	0.96 U	1 U	0.96 U	0.95 U

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KB/SL B-6 (5-7) 5/4/2009	KB/SL B-6 (8-10) 5/4/2009	KB/SL B-7 (12-14) 6/1/2009	KB/SL B-7 (4-6) 6/1/2009	KB/SL B-7 (9-11) 6/1/2009	KB/SL C-2 (23-25) 5/5/2009	KB/SL C-2 (5-7) 5/5/2009	KB/SL C-4 (10-12) 5/12/2009	KB/SL C-4 (15-17) 5/12/2009	KB/SL C-4 (4-6) 5/12/2009	KB/SL C-6 (12-14) 5/12/2009	KB/SL C-6 (15-17) 5/12/2009	KB/SL C-6 (4-6) 5/12/2009	KB/SL C-7 (12-14) 6/1/2009	KB/SL C-7 (15-17) 6/1/2009	KB/SL C-7 (4-6) 6/1/2009	KB/SL D-1 (11-13) 5/12/2009	KB/SL D-1 (26-28) 5/12/2009	KB/SL D-1 (4-6) 5/12/2009	KB/SL D-2 (10-12) 5/28/2009	KB/SL D-2 (23-25) 5/28/2009	KB/SL D-2 (5-7) 5/28/2009	KB/SL D-3 (11-13) 5/13/2009	KB/SL D-3 (16-18) 5/13/2009	KB/SL D-3 (4-6) 5/13/2009
Phenol	0.33	500	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	**0.088 J**	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Trichlorobenzene, 1,2,4-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Trichlorophenol, 2,4,5-	NE	NE	0.97 U	1 U	0.96 U	0.98 U	0.98 U	1 U	0.89 U	0.98 U	0.99 U	0.97 U	0.98 U	1 U	1 U	1 U	1 U	0.95 U	0.95 U	0.99 U	0.95 U	1 U	1 U	0.96 U	1 U	0.96 U	0.95 U
Trichlorophenol, 2,4,6-	NE	NE	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U	0.4 U	0.36 U	0.39 U	0.39 U	0.39 U	0.39 U	0.4 U	0.4 U	0.4 U	0.4 U	0.38 U	0.38 U	0.39 U	0.38 U	0.41 U	0.4 U	0.38 U	0.4 U	0.38 U	0.38 U
Total Other SVOCs	NE	NE	**0.164**	**0.194**	0	0	0	**0.191**	**0.421**	**0.188**	0	**0.1**	0	**0.15**	0	0	0	0	**0.28**	0	**0.12**	**0.16**	0	**0.12**	0	0	0
Total Petroleum Hydrocarbons	NE	NE	NA	NA	NA	NA	NA	NA	NA	**8**	NA	NA	8 U	NA	NA	NA	NA	NA	8 U	NA	NA	NA	NA	NA	8 U	NA	NA
PCBs (mg/kg)																											
Aroclor 1016	NE	NE	NA	NA	NA	0.039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.036 U
Aroclor 1221	NE	NE	NA	NA	NA	0.079 U	NA	NA	NA	NA	NA	NA	NA	NA	0.076 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.074 U
Aroclor 1232	NE	NE	NA	NA	NA	0.039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.036 U
Aroclor 1242	NE	NE	NA	NA	NA	0.039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.036 U
Aroclor 1248	NE	NE	NA	NA	NA	0.039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.036 U
Aroclor 1254	NE	NE	NA	NA	NA	0.039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.036 U
Aroclor 1260	NE	NE	NA	NA	NA	0.039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.036 U
Pesticides (mg/kg)																											
Aldrin	0.005	0.68	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U
Alpha-bhc	0.02	3.4	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U
Alpha-chlordane	0.094	24	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U
Beta-BHC	0.036	3	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U
Chlordane, trans-	NE	NE	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U
DDD, 4,4-	0.0033	92	NA	NA	NA	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0036 U
DDE, 4,4-	0.0033	62	NA	NA	NA	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0036 U
DDT, 4,4-	0.0033	47	NA	NA	NA	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0036 U
Delta-BHC	0.04	500	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U
Dieldrin	0.005	1.4	NA	NA	NA	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0036 U
Endosulfan I	2.4	200	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U
Endosulfan II	2.4	200	NA	NA	NA	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0036 U
Endosulfan sulfate	2.4	200	NA	NA	NA	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0036 U
Endrin	0.014	89	NA	NA	NA	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0036 U
Endrin aldehyde	NE	NE	NA	NA	NA	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0036 U
Endrin ketone	NE	NE	NA	NA	NA	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0037 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0036 U
Gamma-BHC	0.1	9.2	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U
Heptachlor	0.042	15	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U
Heptachlor epoxide	NE	NE	NA	NA	NA	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0019 U
Methoxychlor	NE	NE	NA	NA	NA	0.02 U	NA	NA	NA	NA	NA	NA	NA	NA	0.019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.019 U
Toxaphene	NE	NE	NA	NA	NA	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	0.19 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.19 U
Total Metals (mg/kg)																											
Aluminum	NE	NE	NA	NA	NA	**739 J**	NA	NA	NA	NA	NA	NA	NA	NA	**886 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1600**
Antimony	NE	NE	NA	NA	NA	**0.48 J**	NA	NA	NA	NA	NA	NA	NA	NA	0.31 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.30 U
Arsenic	13	16	NA	NA	NA	0.33 U	NA	NA	NA	NA	NA	NA	NA	NA	0.32 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.31 U
Barium	350	400	NA	NA	NA	**2.0 J**	NA	NA	NA	NA	NA	NA	NA	NA	**2.2 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.2 J**
Beryllium	7.2	590	NA	NA	NA	0.079 UJ	NA	NA	NA	NA	NA	NA	NA	NA	0.091 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.17 UJ
Cadmium	2.5	9.3	NA	NA	NA	0.027 U	NA	NA	NA	NA	NA	NA	NA	NA	0.026 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.026 U
Calcium	NE	NE	NA	NA	NA	**31.9 J**	NA	NA	NA	NA	NA	NA	NA	NA	**47.9 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**63.7 J**
Chromium	NE	NE	NA	NA	NA	**1.5**	NA	NA	NA	NA	NA	NA	NA	NA	**1.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**6.5 J**
Cobalt	NE	NE	NA	NA	NA	**0.81 J**	NA	NA	NA	NA	NA	NA	NA	NA	**1.1 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.69 J**
Copper	50	270	NA	NA	NA	**1.2 J**	NA	NA	NA	NA	NA	NA	NA	NA	**1.7 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.8**
Iron	NE	NE	NA	NA	NA	**1240**	NA	NA	NA	NA	NA	NA	NA	NA	**1510 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2680 J**
Lead	63	1000	NA	NA	NA	**0.73**	NA	NA	NA	NA	NA	NA	NA	NA	**1.4**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.3**
Magnesium	NE	NE	NA	NA	NA	**105 J**	NA	NA	NA	NA	NA	NA	NA	NA	**120 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**158 J**
Manganese	1600	10,000	NA	NA	NA	**6.4**	NA	NA	NA	NA	NA	NA	NA	NA	**18.2 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**12.7**
Mercury	0.18	2.8	NA	NA	NA	**0.020**	NA	NA	NA	NA	NA	NA	NA	NA	0.019 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.018**
Nickel	30	310	NA	NA	NA	**0.75 J**	NA	NA	NA	NA	NA	NA	NA	NA	**1.6 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.97 J**
Potassium	NE	NE	NA	NA	NA	**82.6 J**	NA	NA	NA	NA	NA	NA	NA	NA	**92.8 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**122 J**
Selenium	3.9	1500	NA	NA	NA	0.31 U	NA	NA	NA	NA	NA	NA	NA	NA	0.30 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29 UJ
Silver	2	1500	NA	NA	NA	0.070 U	NA	NA	NA	NA	NA	NA	NA	NA	0.068 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.066 U
Sodium	NE	NE	NA	NA	NA	4.4 UJ	NA	NA	NA	NA	NA	NA	NA	NA	8.2 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13.2 J**
Thallium	NE	NE	NA	NA	NA	0.38 U	NA	NA	NA	NA	NA	NA	NA	NA	0.37 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.36 U
Vanadium	NE	NE	NA	NA	NA	**2.1 J**	NA	NA	NA	NA	NA	NA	NA	NA	**2.3 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**4.0 J**
Zinc	109	10,000	NA	NA	NA	**9.8**	NA	NA	NA	NA	NA	NA	NA	NA	**11.3 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**9.7**
Cyanides (mg/kg)																											
Cyanide, Total	27	27	NA	NA	NA	0.59 U	NA	NA	NA	NA	NA	NA	NA	NA	0.56 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.55 U
Other (%)																											
Moisture, percent	NE	NE	**14.3**	**19.8**	**13.7**	**15.5**	**15.1**	**16.9**	**7.2**	**15.0**	**15.8**	**14.7**	**15.7**	**17.4**	**16.8**	**17.8**	**16.7**	**12.5**	**12.9**	**16.1**	**12.8**	**20.0**	**17.6**	**13.6**	**17.7**	**13.3**	**12.6**

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Table 5 2009 Soil

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KB/SL D-5 (12-14) 4/30/2009	KB/SL D-5 (15-17) 4/30/2009	KB/SL D-5 (5-7) 4/30/2009	KB/SL D-6 (13-15) 5/13/2009	KB/SL D-6 (16-18) 5/13/2009	KB/SL D-6 (4-6) 5/13/2009	KB/SL E-1 (16-18) 4/28/2009	KB/SL E-1 (23-25) 4/28/2009	KB/SL E-2 (11-13) 5/28/2009	KB/SL E-2 (22-24) 5/28/2009	KB/SL E-2 (9-10) 5/28/2009	KB/SL E-3 (13-15) 5/13/2009	KB/SL E-3 (15-17) 5/13/2009	KB/SL E-3 (4-6) 5/13/2009	KB/SL E-5 (13-15) 5/13/2009	KB/SL E-5 (16-18) 5/13/2009	KB/SL E-5 (4-6) 5/13/2009	KB/SL E-6 (4-6) 5/13/2009	KB/SL F-1 (16-18) 5/13/2009	KB/SL F-1 (36-38) 5/14/2009	KB/SL F-1 (5-7) 5/13/2009	KB/SL F-2 (10.5-12.5) 6/1/2009	KB/SL F-2 (21-23) 6/1/2009	KB/SL F-2 (5-7) 6/1/2009	KB/SL F-2 (8-10) 6/1/2009	KB/SL F-3 (13-15) 4/29/2009
BTEX (mg/kg)																												
Benzene	0.06	44	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Toluene	0.7	500	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Ethylbenzene	1	390	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.29**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	**0.006**	0.011 U	0.011 U	**0.014**	0.012 U	0.011 U	0.012 U	0.012 U
Xylene, m,p-	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.062**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	**0.007 J**	0.011 U	0.011 U	**0.023**	0.012 U	0.011 U	0.012 U	0.012 U
Xylene, o-	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	**0.003 J**	0.012 U	0.012 U	0.011 U	**0.19**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	**0.01**	0.011 U	0.011 U	**0.011**	0.012 U	0.011 U	0.012 U	0.012 U
Xylene, Total	0.26	500	ND	ND	ND	ND	ND	ND	**0.003**	ND	ND	ND	**0.252**	ND	ND	ND	ND	ND	ND	ND	**0.017**	ND	ND	**0.034**	ND	ND	ND	ND
Total BTEX	NE	NE	0	0	0	0	0	0	**0.006**	0	0	0	**0.794**	0	0	0	0	0	0	0	**0.04**	0	0	**0.082**	0	0	0	0
Other VOCs (mg/kg)																												
Acetaldehyde	NE	NE	0.012 UJ	0.012 UJ	0.011 UJ	R	R	R	0.012 UJ	0.012 UJ	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	0.012 UJ
Acetone	0.05	500	**0.005 J**	**0.005 J**	**0.003 J**	**0.014 J**	**0.01 J**	**0.006 J**	**0.015 J**	**0.006 J**	0.012 UJ	0.011 UJ	**0.026 J**	0.012 U	**0.007 J**	**0.005 J**	**0.01 J**	**0.008 J**	**0.008 J**	**0.006 J**	0.012 UJ	0.011 UJ	**0.006 J**	0.012 UJ	0.012 UJ	**0.003 J**	**0.024 J**	**0.009 J**
Allyl chloride	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Bromodichloromethane	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Bromoform	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 UJ	0.011 UJ	0.012 UJ	0.012 U
Bromomethane	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Butadiene, 1,3-	NE	NE	R	R	R	0.012 UJ	0.012 UJ	0.012 UJ	R	R	R	R	R	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.011 UJ	R	R	R	R	R
Butanone, 2-	0.12	500	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	**0.002 J**	0.012 U	0.012 U	**0.003 J**	**0.006 J**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	**0.005**	0.012 U	0.011 U	**0.007 J**	0.012 U
Carbon disulfide	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Carbon tetrachloride	0.76	22	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Chlorobenzene	1.1	500	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Chloroethane	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 UJ	0.012 U	0.011 U	0.012 U	0.012 U
Chloroform	0.37	350	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Chloromethane	NE	NE	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.024 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 U
Chlorotoluene	NE	NE	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.011 U	0.024 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.011 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 UJ
Cryofluorane	NE	NE	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	R	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.011 UJ	0.012 UJ	R	R	R	0.012 UJ
Cyclohexane	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Dibromochloromethane	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Dibromoethane, 1,2-	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Dichlorobenzene, 1,2-	1.1	500	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Dichlorobenzene, 1,3-	2.4	280	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Dichlorobenzene, 1,4-	1.8	130	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Dichlorodifluoromethane	NE	NE	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.024 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ
Dichloroethane, 1,1-	0.27	240	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Dichloroethane, 1,2-	0.02	30	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.011 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Dichloroethene, 1,1-	0.33	500	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.024 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 U
Dichloroethene, cis-1,2-	0.25	500	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Dichloropropane, 1,2-	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Dichloropropene, cis-1,3	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Dichloropropene, trans-1,3	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Dioxane, 1,4-	0.1	130	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Ethanol	NE	NE	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Heptane, n-	NE	NE	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.011 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Hexachlorobutadiene	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Hexane, n-	NE	NE	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.011 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Hexanone, 2-	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Isopropyl benzene	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.12**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	**0.003 J**	0.012 U	0.011 U	0.012 U	0.012 U
Methyl tert-butyl ether	0.93	500	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.011 UJ	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Methyl-2-pentanone, 4-	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Methylene chloride	0.05	500	0.012 UJ	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 UJ
Naphthalene	12	500	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	**0.039**	**0.002 J**	**1**	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	**0.096 J**	**0.004 J**	0.011 UJ	**0.026**	**0.002 J**	**0.005 J**	**0.008**	0.012 U
Propanol, 2-	NE	NE	R	R	R	R	R	R	R	0.62 U	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Propylbenzene, n-	3.9	500	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.067**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Styrene	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	**0.003 J**	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Tetrachloroethane, 1,1,1,2-	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Tetrachloroethane,1,1,2,2-	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Tetrachloroethene	1.3	150	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.024 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 U
Tetrahydrofuran	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Trans-1,2-dichloroethene	0.19	500	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.024 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 U
Trichlorobenzene, 1,2,4-	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 UJ	0.011 UJ	0.012 UJ	0.012 U
Trichloroethane, 1,1,1-	0.68	500	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Trichloroethane, 1,1,2-	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Trichloroethene	0.47	200	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Trichlorofluoromethane	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.011 U	0.012 UJ	0.012 U	0.011 U	0.012 U	0.012 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	8.4	190	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.54**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	**0.003 J**	0.011 U	0.011 U	**0.016**	0.012 U	0.011 U	0.012 U	0.012 U
Trimethylbenzene, 1,2,4-	3.6	190	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	**0.09**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	**0.004 J**	0.011 U	0.011 U	**0.015**	0.012 U	0.011 U	0.012 U	0.012 U
Trimethylpentane, 2,2,4-	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 UJ	0.011 UJ	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KB/SL D-5 (12-14) 4/30/2009	KB/SL D-5 (15-17) 4/30/2009	KB/SL D-5 (5-7) 4/30/2009	KB/SL D-6 (13-15) 5/13/2009	KB/SL D-6 (16-18) 5/13/2009	KB/SL D-6 (4-6) 5/13/2009	KB/SL E-1 (16-18) 4/28/2009	KB/SL E-1 (23-25) 4/28/2009	KB/SL E-2 (11-13) 5/28/2009	KB/SL E-2 (22-24) 5/28/2009	KB/SL E-2 (9-10) 5/28/2009	KB/SL E-3 (13-15) 5/13/2009	KB/SL E-3 (15-17) 5/13/2009	KB/SL E-3 (4-6) 5/13/2009	KB/SL E-5 (13-15) 5/13/2009	KB/SL E-5 (16-18) 5/13/2009	KB/SL E-5 (4-6) 5/13/2009	KB/SL E-6 (4-6) 5/13/2009	KB/SL F-1 (16-18) 5/13/2009	KB/SL F-1 (36-38) 5/14/2009	KB/SL F-1 (5-7) 5/13/2009	KB/SL F-2 (10.5-12.5) 6/1/2009	KB/SL F-2 (21-23) 6/1/2009	KB/SL F-2 (5-7) 6/1/2009	KB/SL F-2 (8-10) 6/1/2009	KB/SL F-3 (13-15) 4/29/2009
Vinyl acetate	NE	NE	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.024 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U
Vinyl chloride	0.02	13	0.012 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.012 U	0.011 U	0.024 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.011 UJ	0.012 U	0.012 UJ	0.011 UJ	0.012 UJ	0.012 U
Total Other VOCs	NE	NE	**0.005**	**0.005**	**0.003**	**0.014**	**0.01**	**0.006**	**0.017**	**0.006**	**0.039**	**0.005**	**1.849**	0	**0.007**	**0.005**	**0.01**	**0.008**	**0.008**	**0.006**	**0.106**	**0.004**	**0.006**	**0.065**	**0.002**	**0.008**	**0.039**	**0.009**
Non-carcinogenic PAHs (mg/kg)																												
Acenaphthene	20	500	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Acenaphthylene	100	500	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	**0.47**	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	**0.46**	0.39 U	0.39 U	**0.69**	0.38 U	0.39 U
Anthracene	100	500	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	**0.13 J**	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	**0.097 J**	0.39 U	0.39 U	**0.16 J**	0.38 U	0.39 U
Benzo[g,h,i]perylene	100	500	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	**0.49**	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	**0.45**	0.39 U	0.39 U	**0.76**	0.38 U	0.39 U
Fluoranthene	100	500	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	**0.36 J**	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	**0.13 J**	0.39 U
Fluorene	30	500	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Methylnaphthalene, 2-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Naphthalene	12	500	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Phenanthrene	100	500	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Pyrene	100	500	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	**0.085 J**	**0.79**	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	**0.19 J**	0.39 U	0.39 U	**0.34 J**	**0.17 J**	0.39 U
Total Non-carcinogenic PAHs	NE	NE	0	0	0	0	0	0	0	0	0	**0.085**	**2.24**	0	0	0	0	0	0	0	0	0	**1.197**	0	0	**1.95**	**0.3**	0
Carcinogenic PAHs (mg/kg)																												
Benz[a]anthracene	1	5.6	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	**0.27 J**	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	**0.081 J**	0.39 U
Benzo[a]pyrene	1	1	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	**0.42**	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	**0.079 J**	0.39 U
Benzo[b]fluoranthene	1	5.6	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	**0.24 J**	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Benzo[k]fluoranthene	0.8	56	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	**0.13 J**	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Chrysene	1	56	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	**0.28 J**	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Dibenz[a,h]anthracene	0.33	0.56	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Indeno[1,2,3-cd]pyrene	0.5	5.6	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	**0.18 J**	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	**0.1 J**	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Total Carcinogenic PAHs	NE	NE	0	0	0	0	0	0	0	0	0	0	**1.52**	0	0	0	0	0	0	0	0	0	**0.1**	0	0	0	**0.16**	0
Total PAHs	NE	NE	0	0	0	0	0	0	0	0	0	**0.085**	**3.76**	0	0	0	0	0	0	0	0	0	**1.297**	0	0	**1.95**	**0.46**	0
Other SVOCs (mg/kg)																												
Bis(2-chloroethoxy)methane	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Bis(2-chloroethyl)ether	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Bis(2-ethylhexyl)phthalate	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Bis(chloroisopropyl)ether	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Bromophenyl phenyl ether, 4-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Butyl benzyl phthalate	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Carbazole	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Chloro-3-methylphenol, 4-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Chloroaniline, 4-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Chloronaphthalene, 2-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 UJ	0.38 UJ	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 UJ	0.38 UJ	0.39 U
Chlorophenol, 2-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Chlorophenyl phenyl ether, 4-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Dibenzofuran	7	350	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Dichlorobenzene, 1,2-	1.1	500	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Dichlorobenzene, 1,3-	2.4	280	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Dichlorobenzene, 1,4-	1.8	130	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Dichlorobenzidine, 3,3-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Dichlorophenol, 2,4-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Diethyl phthalate	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	**0.23 J**	0.39 U	**0.08 J**	**0.12 J**	0.4 U	0.38 U	0.4 U	**0.17 J**	0.4 U	0.38 U	0.4 U	0.41 U	**0.45**	**0.28 J**	**0.1 J**	**0.087 J**	**1**	0.39 U	0.39 U	**0.24 J**	**0.2 J**	0.39 U
Dimethyl phthalate	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Dimethylphenol, 2,4-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Di-n-butyl phthalate	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	**0.097 J**	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Dinitro-2-methylphenol, 4,6-	NE	NE	0.97 U	1 U	0.95 U	0.98 U	1 U	0.99 U	0.99 U	1 U	1 U	0.95 U	1 U	1 U	1 U	0.96 U	1 U	1 U	0.97 U	0.97 U	0.96 U	0.95 U	0.92 U	0.98 U	0.98 U	0.94 U	0.96 U	0.98 U
Dinitrophenol, 2,4-	NE	NE	0.97 U	1 U	0.95 U	0.98 U	1 U	0.99 U	0.99 U	1 U	1 U	0.95 U	1 U	1 U	1 U	0.96 U	1 U	1 U	0.97 U	0.97 U	0.96 U	0.95 U	0.92 U	0.98 U	0.98 U	0.94 U	0.96 U	0.98 U
Dinitrotoluene, 2,4-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Dinitrotoluene, 2,6-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Di-n-octyl phthalate	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Hexachlorobenzene	0.33	6	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Hexachlorobutadiene	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Hexachlorocyclopentadiene	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Hexachloroethane	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Isophorone	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 UJ	0.38 UJ	0.37 UJ	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Methylphenol, 2-	0.33	500	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Methylphenol, 4-	0.33	500	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Nitroaniline, 2-	NE	NE	0.97 U	1 U	0.95 U	0.98 U	1 U	0.99 U	0.99 U	1 U	1 U	0.95 U	1 U	1 U	1 U	0.96 U	1 U	1 U	0.97 U	0.97 U	0.96 U	0.95 U	0.92 U	0.98 U	0.98 U	0.94 U	0.96 U	0.98 U
Nitroaniline, 3-	NE	NE	0.97 U	1 U	0.95 U	0.98 U	1 U	0.99 U	0.99 U	1 U	1 U	0.95 U	1 U	1 U	1 U	0.96 U	1 U	1 U	0.97 U	0.97 U	0.96 U	0.95 U	0.92 U	0.98 U	0.98 U	0.94 U	0.96 U	0.98 U
Nitroaniline, 4-	NE	NE	0.97 U	1 U	0.95 U	0.98 U	1 U	0.99 U	0.99 U	1 U	1 U	0.95 U	1 U	1 U	1 U	0.96 U	1 U	1 U	0.97 U	0.97 U	0.96 U	0.95 U	0.92 U	0.98 U	0.98 U	0.94 U	0.96 U	0.98 U
Nitrobenzene	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Nitrophenol, 2-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Nitrophenol, 4-	NE	NE	0.97 U	1 U	0.95 U	0.98 U	1 U	0.99 U	0.99 U	1 U	1 U	0.95 U	1 U	1 U	1 U	0.96 U	1 U	1 U	0.97 U	0.97 U	0.96 U	0.95 U	0.92 U	0.98 U	0.98 U	0.94 U	0.96 U	0.98 U
Nitrosodi-n-propylamine, N-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Nitrosodiphenylamine, N-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Pentachlorophenol	0.8	6.7	0.97 U	1 U	0.95 U	0.98 U	1 U	0.99 U	0.99 U	1 U	1 U	0.95 U	1 U	1 U	1 U	0.96 U	1 U	1 U	0.97 U	0.97 U	0.96 U	0.95 U	0.92 U	0.98 U	0.98 U	0.94 U	0.96 U	0.98 U

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KB/SL D-5 (12-14) 4/30/2009	KB/SL D-5 (15-17) 4/30/2009	KB/SL D-5 (5-7) 4/30/2009	KB/SL D-6 (13-15) 5/13/2009	KB/SL D-6 (16-18) 5/13/2009	KB/SL D-6 (4-6) 5/13/2009	KB/SL E-1 (16-18) 4/28/2009	KB/SL E-1 (23-25) 4/28/2009	KB/SL E-2 (11-13) 5/28/2009	KB/SL E-2 (22-24) 5/28/2009	KB/SL E-2 (9-10) 5/28/2009	KB/SL E-3 (13-15) 5/13/2009	KB/SL E-3 (15-17) 5/13/2009	KB/SL E-3 (4-6) 5/13/2009	KB/SL E-5 (13-15) 5/13/2009	KB/SL E-5 (16-18) 5/13/2009	KB/SL E-5 (4-6) 5/13/2009	KB/SL E-6 (4-6) 5/13/2009	KB/SL F-1 (16-18) 5/13/2009	KB/SL F-1 (36-38) 5/14/2009	KB/SL F-1 (5-7) 5/13/2009	KB/SL F-2 (10.5-12.5) 6/1/2009	KB/SL F-2 (21-23) 6/1/2009	KB/SL F-2 (5-7) 6/1/2009	KB/SL F-2 (8-10) 6/1/2009	KB/SL F-3 (13-15) 4/29/2009
Phenol	0.33	500	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Trichlorobenzene, 1,2,4-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Trichlorophenol, 2,4,5-	NE	NE	0.97 U	1 U	0.95 U	0.98 U	1 U	0.99 U	0.99 U	1 U	1 U	0.95 U	1 U	1 U	1 U	0.96 U	1 U	1 U	0.97 U	0.97 U	0.96 U	0.95 U	0.92 U	0.98 U	0.98 U	0.94 U	0.96 U	0.98 U
Trichlorophenol, 2,4,6-	NE	NE	0.39 U	0.4 U	0.38 U	0.39 U	0.4 U	0.39 U	0.39 U	0.41 U	0.4 U	0.38 U	0.4 U	0.4 U	0.4 U	0.38 U	0.4 U	0.41 U	0.38 U	0.39 U	0.38 U	0.38 U	0.37 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U
Total Other SVOCs	NE	NE	0	0	0	0	**0.23**	0	**0.08**	**0.12**	0	0	0	**0.17**	0	0	0	0	**0.45**	**0.28**	**0.1**	**0.087**	**1.097**	0	0	**0.24**	**0.2**	0
Total Petroleum Hydrocarbons	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8 U	NA	NA	8 U	NA	NA	NA	8 U	NA	NA	NA	NA	NA	NA	NA
PCBs (mg/kg)																												
Aroclor 1016	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.039 UJ
Aroclor 1221	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.081 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.079 U
Aroclor 1232	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.039 U
Aroclor 1242	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.039 U
Aroclor 1248	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.039 U
Aroclor 1254	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.039 U
Aroclor 1260	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.039 U
Pesticides (mg/kg)																												
Aldrin	0.005	0.68	NA	NA	NA	NA	NA	NA	NA	NA	0.0021 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Alpha-bhc	0.02	3.4	NA	NA	NA	NA	NA	NA	NA	NA	0.0021 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Alpha-chlordane	0.094	24	NA	NA	NA	NA	NA	NA	NA	NA	0.0021 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Beta-BHC	0.036	3	NA	NA	NA	NA	NA	NA	NA	NA	0.0021 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Chlordane, trans-	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.0021 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.0026**
DDD, 4,4-	0.0033	92	NA	NA	NA	NA	NA	NA	NA	NA	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0039 U
DDE, 4,4-	0.0033	62	NA	NA	NA	NA	NA	NA	NA	NA	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0039 U
DDT, 4,4-	0.0033	47	NA	NA	NA	NA	NA	NA	NA	NA	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0039 U
Delta-BHC	0.04	500	NA	NA	NA	NA	NA	NA	NA	NA	0.0021 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Dieldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0039 U
Endosulfan I	2.4	200	NA	NA	NA	NA	NA	NA	NA	NA	0.0021 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Endosulfan II	2.4	200	NA	NA	NA	NA	NA	NA	NA	NA	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0039 U
Endosulfan sulfate	2.4	200	NA	NA	NA	NA	NA	NA	NA	NA	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0039 U
Endrin	0.014	89	NA	NA	NA	NA	NA	NA	NA	NA	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0039 U
Endrin aldehyde	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0039 U
Endrin ketone	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.004 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0039 U
Gamma-BHC	0.1	9.2	NA	NA	NA	NA	NA	NA	NA	NA	0.0021 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Heptachlor	0.042	15	NA	NA	NA	NA	NA	NA	NA	NA	0.0021 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Heptachlor epoxide	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.0021 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Methoxychlor	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.021 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.02 U
Toxaphene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.21 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U
Total Metals (mg/kg)																												
Aluminum	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	**621 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**534 J**
Antimony	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	**0.76 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.32 U
Arsenic	13	16	NA	NA	NA	NA	NA	NA	NA	NA	**0.74 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.33 U
Barium	350	400	NA	NA	NA	NA	NA	NA	NA	NA	**2.0 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.0 J**
Beryllium	7.2	590	NA	NA	NA	NA	NA	NA	NA	NA	0.12 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.13 UJ
Cadmium	2.5	9.3	NA	NA	NA	NA	NA	NA	NA	NA	0.028 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.080 UJ
Calcium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	**41.5 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**27.6 J**
Chromium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	**1.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.6**
Cobalt	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	**0.98 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.41 J**
Copper	50	270	NA	NA	NA	NA	NA	NA	NA	NA	**4.3**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.4 J**
Iron	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	**1420**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**700 J**
Lead	63	1000	NA	NA	NA	NA	NA	NA	NA	NA	**0.97**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.76 U
Magnesium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	**123 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**75.2 J**
Manganese	1600	10,000	NA	NA	NA	NA	NA	NA	NA	NA	**9.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.9 J**
Mercury	0.18	2.8	NA	NA	NA	NA	NA	NA	NA	NA	**0.020**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.020**
Nickel	30	310	NA	NA	NA	NA	NA	NA	NA	NA	**1.1 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.91 J**
Potassium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	**97.2 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**70.9 J**
Selenium	3.9	1500	NA	NA	NA	NA	NA	NA	NA	NA	0.32 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.32 U
Silver	2	1500	NA	NA	NA	NA	NA	NA	NA	NA	0.072 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.20 UJ
Sodium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	**17.0 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.6 UJ
Thallium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	0.65 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.38 U
Vanadium	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	**2.5 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.6 J**
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	NA	NA	**5.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**6.4**
Cyanides (mg/kg)																												
Cyanide, Total	27	27	NA	NA	NA	NA	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.59**
Other (%)																												
Moisture, percent	NE	NE	**14.3**	**17.6**	**12.4**	**15.2**	**18.3**	**16.3**	**16.1**	**19.5**	**16.6**	**12.9**	**17.2**	**17.0**	**17.5**	**13.2**	**16.7**	**18.6**	**14.0**	**14.5**	**13.4**	**12.3**	**9.7**	**15.6**	**15.7**	**12.0**	**13.2**	**15.2**

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KB/SL F-3 (18-20) 4/29/2009	KB/SL F-3 (6-8) 4/29/2009	KB/SL F-5 (15-17) 5/14/2009	KB/SL F-5 (20-22) 5/14/2009	KB/SL F-5 (4-6) 5/14/2009	KB/SL F-6 (10-12) 5/14/2009	KB/SL F-6 (4-8) 5/14/2009	KB/SL G-1 (12-14) 5/15/2009	KB/SL G-1 (26-28) 5/15/2009	KB/SL G-1 (5-7) 5/15/2009	KB/SL G-3 (12-14) 5/15/2009	KB/SL G-3 (18-20) 5/15/2009	KB/SL G-3 (6-8) 5/15/2009	KB/SL G-5 (16-18) 5/14/2009	KB/SL G-5 (20-22) 5/14/2009	KB/SL G-5 (4-6) 5/14/2009	KB/SL H-2 (13-15) 5/15/2009	KB/SL H-2 (27-29) 5/15/2009	KB/SL H-4 (15-17) 5/18/2009	KB/SL H-4 (19-21) 5/18/2009	KB/SL H-4 (4-6) 5/18/2009	KB/SL H-6 (13-15) 5/18/2009	KB/SL H-6 (16-18) 5/18/2009
BTEX (mg/kg)																									
Benzene	0.06	44	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Toluene	0.7	500	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Ethylbenzene	1	390	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Xylene, m,p-	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Xylene, o-	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Xylene, Total	0.26	500	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total BTEX	NE	NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other VOCs (mg/kg)																									
Acetaldehyde	NE	NE	0.012 UJ	0.011 UJ	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Acetone	0.05	500	**0.004 J**	**0.004 J**	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.037 UJ	0.012 UJ	0.013 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Allyl chloride	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Bromodichloromethane	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Bromoform	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Bromomethane	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Butadiene, 1,3-	NE	NE	R	R	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Butanone, 2-	0.12	500	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	**0.004 J**	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	**0.004 J**	0.012 U	0.012 U	0.012 U	0.012 U
Carbon disulfide	NE	NE	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Carbon tetrachloride	0.76	22	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Chlorobenzene	1.1	500	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Chloroethane	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Chloroform	0.37	350	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Chloromethane	NE	NE	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Chlorotoluene	NE	NE	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Cryofluorane	NE	NE	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Cyclohexane	NE	NE	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Dibromochloromethane	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dibromoethane, 1,2-	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichlorobenzene, 1,2-	1.1	500	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichlorobenzene, 1,3-	2.4	280	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichlorobenzene, 1,4-	1.8	130	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichlorodifluoromethane	NE	NE	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Dichloroethane, 1,1-	0.27	240	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichloroethane, 1,2-	0.02	30	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Dichloroethene, 1,1-	0.33	500	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichloroethene, cis-1,2-	0.25	500	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichloropropane, 1,2-	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichloropropene, cis-1,3	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichloropropene, trans-1,3	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dioxane, 1,4-	0.1	130	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Ethanol	NE	NE	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Heptane, n-	NE	NE	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Hexachlorobutadiene	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Hexane, n-	NE	NE	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Hexanone, 2-	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Isopropyl benzene	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Methyl tert-butyl ether	0.93	500	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Methyl-2-pentanone, 4-	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Methylene chloride	0.05	500	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Naphthalene	12	500	0.012 U	0.011 U	0.012 UJ	0.012 UJ	**0.002 J**	0.012 UJ	0.011 UJ	**0.074 J**	**0.005 J**	**0.012 J**	**0.005 J**	**0.003 J**	**0.004 J**	**0.002 J**	0.012 U	0.012 UJ	**0.06 J**	**0.003 J**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Propanol, 2-	NE	NE	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Propylbenzene, n-	3.9	500	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Styrene	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Tetrachloroethane, 1,1,1,2-	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Tetrachloroethane,1,1,2,2-	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Tetrachloroethene	1.3	150	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Tetrahydrofuran	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trans-1,2-dichloroethene	0.19	500	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trichlorobenzene, 1,2,4-	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trichloroethane, 1,1,1-	0.68	500	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trichloroethane, 1,1,2-	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trichloroethene	0.47	200	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trichlorofluoromethane	NE	NE	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Trimethylbenzene 1,3,5-/P-ethyltoluene	8.4	190	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trimethylbenzene, 1,2,4-	3.6	190	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trimethylpentane, 2,2,4-	NE	NE	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KB/SL F-3 (18-20) 4/29/2009	KB/SL F-3 (6-8) 4/29/2009	KB/SL F-5 (15-17) 5/14/2009	KB/SL F-5 (20-22) 5/14/2009	KB/SL F-5 (4-6) 5/14/2009	KB/SL F-6 (10-12) 5/14/2009	KB/SL F-6 (4-8) 5/14/2009	KB/SL G-1 (12-14) 5/15/2009	KB/SL G-1 (26-28) 5/15/2009	KB/SL G-1 (5-7) 5/15/2009	KB/SL G-3 (12-14) 5/15/2009	KB/SL G-3 (18-20) 5/15/2009	KB/SL G-3 (6-8) 5/15/2009	KB/SL G-5 (16-18) 5/14/2009	KB/SL G-5 (20-22) 5/14/2009	KB/SL G-5 (4-6) 5/14/2009	KB/SL H-2 (13-15) 5/15/2009	KB/SL H-2 (27-29) 5/15/2009	KB/SL H-4 (15-17) 5/18/2009	KB/SL H-4 (19-21) 5/18/2009	KB/SL H-4 (4-6) 5/18/2009	KB/SL H-6 (13-15) 5/18/2009	KB/SL H-6 (16-18) 5/18/2009
Vinyl acetate	NE	NE	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Vinyl chloride	0.02	13	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 U	0.012 UJ	0.012 UJ	0.012 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Total Other VOCs	NE	NE	**0.004**	**0.004**	0	0	**0.002**	0	0	**0.074**	**0.005**	**0.012**	**0.009**	**0.003**	**0.004**	**0.002**	0	0	**0.06**	**0.003**	**0.004**	0	0	0	0
Non-carcinogenic PAHs (mg/kg)																									
Acenaphthene	20	500	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Acenaphthylene	100	500	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	**0.48**	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Anthracene	100	500	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	**0.11 J**	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Benzo[g,h,i]perylene	100	500	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	**0.49**	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Fluoranthene	100	500	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Fluorene	30	500	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Methylnaphthalene, 2-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Naphthalene	12	500	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Phenanthrene	100	500	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Pyrene	100	500	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	**0.19 J**	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Total Non-carcinogenic PAHs	NE	NE	0	0	0	0	0	0	0	0	0	**1.27**	0	0	0	0	0	0	0	0	0	0	0	0	0
Carcinogenic PAHs (mg/kg)																									
Benz[a]anthracene	1	5.6	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Benzo[a]pyrene	1	1	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	**0.1 J**	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Benzo[b]fluoranthene	1	5.6	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Benzo[k]fluoranthene	0.8	56	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Chrysene	1	56	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Dibenz[a,h]anthracene	0.33	0.56	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	**0.1 J**	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Indeno[1,2,3-cd]pyrene	0.5	5.6	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	**0.34 J**	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Total Carcinogenic PAHs	NE	NE	0	0	0	0	0	0	0	0	0	**0.54**	0	0	0	0	0	0	0	0	0	0	0	0	0
Total PAHs	NE	NE	0	0	0	0	0	0	0	0	0	**1.81**	0	0	0	0	0	0	0	0	0	0	0	0	0
Other SVOCs (mg/kg)																									
Bis(2-chloroethoxy)methane	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Bis(2-chloroethyl)ether	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Bis(2-ethylhexyl)phthalate	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	**0.24 J**	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Bis(chloroisopropyl)ether	NE	NE	0.41 U	0.37 U	0.39 UJ	0.4 UJ	0.39 UJ	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 UJ	0.37 U	0.39 UJ	0.4 UJ	0.38 UJ	0.38 UJ	0.39 UJ	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Bromophenyl phenyl ether, 4-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Butyl benzyl phthalate	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Carbazole	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Chloro-3-methylphenol, 4-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Chloroaniline, 4-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Chloronaphthalene, 2-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Chlorophenol, 2-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Chlorophenyl phenyl ether, 4-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Dibenzofuran	7	350	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Dichlorobenzene, 1,2-	1.1	500	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Dichlorobenzene, 1,3-	2.4	280	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Dichlorobenzene, 1,4-	1.8	130	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Dichlorobenzidine, 3,3-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 UJ	0.39 UJ	0.38 UJ	0.39 UJ	0.38 UJ
Dichlorophenol, 2,4-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Diethyl phthalate	NE	NE	**0.095 J**	0.37 U	0.39 U	0.4 U	0.39 U	**0.096 J**	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	**0.54**	0.39 U	**0.52**	**0.34 J**	**0.19 J**
Dimethyl phthalate	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Dimethylphenol, 2,4-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Di-n-butyl phthalate	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Dinitro-2-methylphenol, 4,6-	NE	NE	1 U	0.92 U	0.99 U	1 U	0.97 U	0.98 U	0.94 U	0.99 UJ	0.96 UJ	0.94 U	1 UJ	0.98 U	0.93 UJ	0.98 U	1 U	0.96 U	0.96 U	0.98 U	1 U	0.98 U	0.96 U	0.97 U	0.96 U
Dinitrophenol, 2,4-	NE	NE	1 U	0.92 U	0.99 UJ	1 UJ	0.97 UJ	0.98 U	0.94 U	0.99 UJ	0.96 UJ	0.94 UJ	1 UJ	0.98 UJ	0.93 UJ	0.98 UJ	1 UJ	0.96 UJ	0.96 UJ	0.98 UJ	1 UJ	0.98 UJ	0.96 UJ	0.97 UJ	0.96 UJ
Dinitrotoluene, 2,4-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Dinitrotoluene, 2,6-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Di-n-octyl phthalate	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Hexachlorobenzene	0.33	6	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Hexachlorobutadiene	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Hexachlorocyclopentadiene	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Hexachloroethane	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Isophorone	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 UJ	0.38 UJ	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Methylphenol, 2-	0.33	500	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Methylphenol, 4-	0.33	500	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Nitroaniline, 2-	NE	NE	1 U	0.92 U	0.99 U	1 U	0.97 U	0.98 U	0.94 U	0.99 U	0.96 U	0.94 U	1 U	0.98 U	0.93 U	0.98 U	1 U	0.96 U	0.96 U	0.98 U	1 U	0.98 U	0.96 U	0.97 U	0.96 U
Nitroaniline, 3-	NE	NE	1 U	0.92 U	0.99 U	1 U	0.97 U	0.98 U	0.94 U	0.99 U	0.96 U	0.94 U	1 U	0.98 U	0.93 U	0.98 U	1 U	0.96 U	0.96 U	0.98 U	1 U	0.98 U	0.96 U	0.97 U	0.96 U
Nitroaniline, 4-	NE	NE	1 U	0.92 U	0.99 U	1 U	0.97 U	0.98 U	0.94 U	0.99 U	0.96 U	0.94 U	1 U	0.98 U	0.93 U	0.98 U	1 U	0.96 U	0.96 U	0.98 U	1 U	0.98 U	0.96 U	0.97 U	0.96 U
Nitrobenzene	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Nitrophenol, 2-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Nitrophenol, 4-	NE	NE	1 U	0.92 U	0.99 U	1 U	0.97 U	0.98 U	0.94 U	0.99 U	0.96 U	0.94 UJ	1 U	0.98 U	0.93 U	0.98 U	1 U	0.96 U	0.96 U	0.98 U	1 U	0.98 U	0.96 U	0.97 U	0.96 U
Nitrosodi-n-propylamine, N-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Nitrosodiphenylamine, N-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Pentachlorophenol	0.8	6.7	1 U	0.92 U	0.99 U	1 U	0.97 U	0.98 U	0.94 U	0.99 U	0.96 U	0.94 U	1 U	0.98 U	0.93 U	0.98 U	1 U	0.96 U	0.96 U	0.98 U	1 U	0.98 U	0.96 U	0.97 U	0.96 U

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KB/SL F-3 (18-20) 4/29/2009	KB/SL F-3 (6-8) 4/29/2009	KB/SL F-5 (15-17) 5/14/2009	KB/SL F-5 (20-22) 5/14/2009	KB/SL F-5 (4-6) 5/14/2009	KB/SL F-6 (10-12) 5/14/2009	KB/SL F-6 (4-8) 5/14/2009	KB/SL G-1 (12-14) 5/15/2009	KB/SL G-1 (26-28) 5/15/2009	KB/SL G-1 (5-7) 5/15/2009	KB/SL G-3 (12-14) 5/15/2009	KB/SL G-3 (18-20) 5/15/2009	KB/SL G-3 (6-8) 5/15/2009	KB/SL G-5 (16-18) 5/14/2009	KB/SL G-5 (20-22) 5/14/2009	KB/SL G-5 (4-6) 5/14/2009	KB/SL H-2 (13-15) 5/15/2009	KB/SL H-2 (27-29) 5/15/2009	KB/SL H-4 (15-17) 5/18/2009	KB/SL H-4 (19-21) 5/18/2009	KB/SL H-4 (4-6) 5/18/2009	KB/SL H-6 (13-15) 5/18/2009	KB/SL H-6 (16-18) 5/18/2009
Phenol	0.33	500	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Trichlorobenzene, 1,2,4-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Trichlorophenol, 2,4,5-	NE	NE	1 U	0.92 U	0.99 U	1 U	0.97 U	0.98 U	0.94 U	0.99 U	0.96 U	0.94 U	1 U	0.98 U	0.93 U	0.98 U	1 U	0.96 U	0.96 U	0.98 U	1 U	0.98 U	0.96 U	0.97 U	0.96 U
Trichlorophenol, 2,4,6-	NE	NE	0.41 U	0.37 U	0.39 U	0.4 U	0.39 U	0.39 U	0.38 U	0.4 U	0.38 U	0.38 U	0.41 U	0.39 U	0.37 U	0.39 U	0.4 U	0.38 U	0.38 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.38 U
Total Other SVOCs	NE	NE	**0.095**	0	0	0	0	**0.096**	0	0	0	0	0	0	0	0	0	**0.24**	**0**	0	**0.54**	0	**0.52**	**0.34**	**0.19**
Total Petroleum Hydrocarbons	NE	NE	NA	NA	8 U	NA	NA	NA	8 U	8 U	NA	NA	8 U	NA	NA	8 U	NA	NA	**19 J**	NA	8 U	NA	NA	8 U	NA
PCBs (mg/kg)																									
Aroclor 1016	NE	NE	NA	NA	NA	NA	NA	NA	0.038 U	NA	NA	NA	NA	NA	0.037 U	0.039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.038 U
Aroclor 1221	NE	NE	NA	NA	NA	NA	NA	NA	0.076 U	NA	NA	NA	NA	NA	0.075 U	0.079 U	NA	NA	NA	NA	NA	NA	NA	NA	0.078 U
Aroclor 1232	NE	NE	NA	NA	NA	NA	NA	NA	0.038 U	NA	NA	NA	NA	NA	0.037 U	0.039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.038 U
Aroclor 1242	NE	NE	NA	NA	NA	NA	NA	NA	0.038 U	NA	NA	NA	NA	NA	0.037 U	0.039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.038 U
Aroclor 1248	NE	NE	NA	NA	NA	NA	NA	NA	0.038 U	NA	NA	NA	NA	NA	0.037 U	0.039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.038 U
Aroclor 1254	NE	NE	NA	NA	NA	NA	NA	NA	0.038 U	NA	NA	NA	NA	NA	0.037 U	0.039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.038 U
Aroclor 1260	NE	NE	NA	NA	NA	NA	NA	NA	0.038 U	NA	NA	NA	NA	NA	0.037 U	0.039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.038 U
Pesticides (mg/kg)																									
Aldrin	0.005	0.68	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	0.0019 U	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Alpha-bhc	0.02	3.4	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	0.0019 U	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Alpha-chlordane	0.094	24	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	0.0019 U	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Beta-BHC	0.036	3	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	0.0019 U	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Chlordane, trans-	NE	NE	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	0.0019 U	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
DDD, 4,4-	0.0033	92	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	0.0037 U	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U
DDE, 4,4-	0.0033	62	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	0.0037 UJ	0.0039 UJ	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 UJ
DDT, 4,4-	0.0033	47	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	0.0037 U	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U
Delta-BHC	0.04	500	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	0.0019 U	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Dieldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	0.0037 U	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U
Endosulfan I	2.4	200	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	0.0019 U	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Endosulfan II	2.4	200	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	0.0037 U	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U
Endosulfan sulfate	2.4	200	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	0.0037 U	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U
Endrin	0.014	89	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	0.0037 U	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U
Endrin aldehyde	NE	NE	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	0.0037 U	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U
Endrin ketone	NE	NE	NA	NA	NA	NA	NA	NA	0.0038 U	NA	NA	NA	NA	NA	0.0037 U	0.0039 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0038 U
Gamma-BHC	0.1	9.2	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	0.0019 U	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Heptachlor	0.042	15	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	0.0019 U	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Heptachlor epoxide	NE	NE	NA	NA	NA	NA	NA	NA	0.0019 U	NA	NA	NA	NA	NA	0.0019 U	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U
Methoxychlor	NE	NE	NA	NA	NA	NA	NA	NA	0.019 U	NA	NA	NA	NA	NA	0.019 U	0.02 U	NA	NA	NA	NA	NA	NA	NA	NA	0.02 U
Toxaphene	NE	NE	NA	NA	NA	NA	NA	NA	0.19 U	NA	NA	NA	NA	NA	0.19 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U
Total Metals (mg/kg)																									
Aluminum	NE	NE	NA	NA	NA	NA	NA	NA	**1430 J**	NA	NA	NA	NA	NA	**1130 J**	**270 J**	NA	NA	NA	NA	NA	NA	NA	NA	**413 J**
Antimony	NE	NE	NA	NA	NA	NA	NA	NA	0.31 U	NA	NA	NA	NA	NA	**0.34 J**	**0.65 J**	NA	NA	NA	NA	NA	NA	NA	NA	0.32 U
Arsenic	13	16	NA	NA	NA	NA	NA	NA	0.32 U	NA	NA	NA	NA	NA	0.32 U	0.33 U	NA	NA	NA	NA	NA	NA	NA	NA	0.33 U
Barium	350	400	NA	NA	NA	NA	NA	NA	**4.1 J**	NA	NA	NA	NA	NA	**3.4 J**	**1.0 J**	NA	NA	NA	NA	NA	NA	NA	NA	**2.6 J**
Beryllium	7.2	590	NA	NA	NA	NA	NA	NA	0.12 UJ	NA	NA	NA	NA	NA	0.13 UJ	0.18 UJ	NA	NA	NA	NA	NA	NA	NA	NA	0.15 UJ
Cadmium	2.5	9.3	NA	NA	NA	NA	NA	NA	0.026 U	NA	NA	NA	NA	NA	0.026 U	0.027 U	NA	NA	NA	NA	NA	NA	NA	NA	0.027 U
Calcium	NE	NE	NA	NA	NA	NA	NA	NA	**87.8 J**	NA	NA	NA	NA	NA	**38.1 J**	**21.7 J**	NA	NA	NA	NA	NA	NA	NA	NA	**20.6 J**
Chromium	NE	NE	NA	NA	NA	NA	NA	NA	**2.2**	NA	NA	NA	NA	NA	**2.0**	0.65 UJ	NA	NA	NA	NA	NA	NA	NA	NA	**0.99 J**
Cobalt	NE	NE	NA	NA	NA	NA	NA	NA	**0.68 J**	NA	NA	NA	NA	NA	**1.0 J**	**0.19 J**	NA	NA	NA	NA	NA	NA	NA	NA	**0.32 J**
Copper	50	270	NA	NA	NA	NA	NA	NA	**1.3 J**	NA	NA	NA	NA	NA	**1.4 J**	0.14 UJ	NA	NA	NA	NA	NA	NA	NA	NA	0.14 UJ
Iron	NE	NE	NA	NA	NA	NA	NA	NA	**1330 J**	NA	NA	NA	NA	NA	**3330 J**	**684 J**	NA	NA	NA	NA	NA	NA	NA	NA	**1290 J**
Lead	63	1000	NA	NA	NA	NA	NA	NA	**1.4**	NA	NA	NA	NA	NA	**1.0**	0.65 U	NA	NA	NA	NA	NA	NA	NA	NA	0.76 U
Magnesium	NE	NE	NA	NA	NA	NA	NA	NA	**241 J**	NA	NA	NA	NA	NA	**240 J**	**62.6 J**	NA	NA	NA	NA	NA	NA	NA	NA	**83.1 J**
Manganese	1600	10,000	NA	NA	NA	NA	NA	NA	**9.4 J**	NA	NA	NA	NA	NA	**40.4 J**	**2.3 J**	NA	NA	NA	NA	NA	NA	NA	NA	**4.0 J**
Mercury	0.18	2.8	NA	NA	NA	NA	NA	NA	0.019 U	NA	NA	NA	NA	NA	**0.019**	0.020 U	NA	NA	NA	NA	NA	NA	NA	NA	0.019 U
Nickel	30	310	NA	NA	NA	NA	NA	NA	**1.1 J**	NA	NA	NA	NA	NA	**0.92 J**	0.26 UJ	NA	NA	NA	NA	NA	NA	NA	NA	0.28 UJ
Potassium	NE	NE	NA	NA	NA	NA	NA	NA	**117 J**	NA	NA	NA	NA	NA	**119 J**	36.0 UJ	NA	NA	NA	NA	NA	NA	NA	NA	**65.0 J**
Selenium	3.9	1500	NA	NA	NA	NA	NA	NA	0.30 UJ	NA	NA	NA	NA	NA	0.30 UJ	0.31 UJ	NA	NA	NA	NA	NA	NA	NA	NA	0.31 UJ
Silver	2	1500	NA	NA	NA	NA	NA	NA	0.068 U	NA	NA	NA	NA	NA	0.067 U	0.19 UJ	NA	NA	NA	NA	NA	NA	NA	NA	0.15 UJ
Sodium	NE	NE	NA	NA	NA	NA	NA	NA	**11.2 J**	NA	NA	NA	NA	NA	**5.8 J**	4.4 UJ	NA	NA	NA	NA	NA	NA	NA	NA	4.3 UJ
Thallium	NE	NE	NA	NA	NA	NA	NA	NA	0.37 U	NA	NA	NA	NA	NA	0.37 U	0.38 U	NA	NA	NA	NA	NA	NA	NA	NA	0.38 U
Vanadium	NE	NE	NA	NA	NA	NA	NA	NA	**2.3 J**	NA	NA	NA	NA	NA	**2.6 J**	**0.63 J**	NA	NA	NA	NA	NA	NA	NA	NA	**1.2 J**
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	**15.0**	NA	NA	NA	NA	NA	**5.5**	3.4 U	NA	NA	NA	NA	NA	NA	NA	NA	3.6 U
Cyanides (mg/kg)																									
Cyanide, Total	27	27	NA	NA	NA	NA	NA	NA	0.57 U	NA	NA	NA	NA	NA	0.56 U	0.59 U	NA	NA	NA	NA	NA	NA	NA	NA	0.58 U
Other (%)																									
Moisture, percent	NE	NE	**19.9**	**9.9**	**16.4**	**16.7**	**14.5**	**15.2**	**12.0**	**16.5**	**13.3**	**12.1**	**18.6**	**15.7**	**11.5**	**14.5**	**17.8**	**13.1**	**13.3**	**15.5**	**16.7**	**15.0**	**13.2**	**14.4**	**13.8**

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KB/SL H-6 (4-6) 5/18/2009	KB/SL SB-01 (14-16) 6/1/2009	KB/SL SB-01 (27-29) 6/1/2009	KB/SL SB-01 (5-7) 6/1/2009	KB/SL SB-02 (28-30) 6/1/2009	KB/SL SB-02 (4.5-6.5) 6/1/2009	OZMW-22 (20.5-22') 1/15/2008	OZMW-22 (40.25-41') 1/15/2008	OZMW-22 (60-61.5) 1/15/2008	OZMW-22 (8-10') 1/14/2008	OU2MW-48 (10-12) 5/6/2009	OU2MW-48 (25-30) 5/6/2009	OU2MW-48 (45-50) 5/6/2009	OU2MW-48 (65-70) 5/6/2009	OU2MW-49 (12-15) 5/7/2009	OU2MW-49 (25-30) 5/7/2009	OU2MW-49 (45-50) 5/7/2009
BTEX (mg/kg)																			
Benzene	0.06	44	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Toluene	0.7	500	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Ethylbenzene	1	390	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	**130**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Xylene, m,p-	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	**300**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Xylene, o-	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	**100**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Xylene, Total	0.26	500	ND	ND	ND	ND	ND	ND	**0.012**	**0.012**	**0.012**	**400**	ND	ND	ND	ND	ND	ND	ND
Total BTEX	NE	NE	0	0	0	0	0	0	0	0	0	**530**	0	0	0	0	0	0	0
Other VOCs (mg/kg)																			
Acetaldehyde	NE	NE	R	R	R	R	R	R	0.012 U	0.012 U	0.012 U	0.062 UJ	R	R	R	R	R	R	R
Acetone	0.05	500	0.012 UJ	**0.014 J**	**0.011 J**	**0.003 J**	**0.008 J**	**0.009 J**	0.012 UJ	0.012 UJ	0.012 UJ	0.062 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Allyl chloride	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Bromodichloromethane	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Bromoform	NE	NE	0.012 U	0.012 UJ	0.013 UJ	0.011 UJ	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Bromomethane	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Butadiene, 1,3-	NE	NE	0.012 UJ	R	R	R	R	R	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Butanone, 2-	0.12	500	0.012 U	**0.005**	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	**0.003 J**	0.012 U	0.012 U
Carbon disulfide	NE	NE	0.012 UJ	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Carbon tetrachloride	0.76	22	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Chlorobenzene	1.1	500	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Chloroethane	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Chloroform	0.37	350	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Chloromethane	NE	NE	0.012 UJ	0.012 UJ	0.013 UJ	0.011 UJ	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Chlorotoluene	NE	NE	0.012 UJ	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.062 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.012 UJ
Cryofluorane	NE	NE	0.012 UJ	R	R	R	R	R	0.012 UJ	0.012 UJ	0.012 UJ	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Cyclohexane	NE	NE	0.012 UJ	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dibromochloromethane	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dibromoethane, 1,2-	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichlorobenzene, 1,2-	1.1	500	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichlorobenzene, 1,3-	2.4	280	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichlorobenzene, 1,4-	1.8	130	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichlorodifluoromethane	NE	NE	0.012 UJ	0.012 UJ	0.013 UJ	0.011 UJ	0.012 UJ	0.011 UJ	0.012 UJ	0.012 UJ	0.012 UJ	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichloroethane, 1,1-	0.27	240	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichloroethane, 1,2-	0.02	30	0.012 UJ	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichloroethene, 1,1-	0.33	500	0.012 U	0.012 UJ	0.013 UJ	0.011 UJ	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichloroethene, cis-1,2-	0.25	500	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichloropropane, 1,2-	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichloropropene, cis-1,3	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dichloropropene, trans-1,3	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Dioxane, 1,4-	0.1	130	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Ethanol	NE	NE	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Heptane, n-	NE	NE	0.012 UJ	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	**0.56 J**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Hexachlorobutadiene	NE	NE	0.012 UJ	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Hexane, n-	NE	NE	0.012 UJ	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	**0.021 J**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Hexanone, 2-	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Isopropyl benzene	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	**39**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Methyl tert-butyl ether	0.93	500	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Methyl-2-pentanone, 4-	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Methylene chloride	0.05	500	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 UJ	0.012 UJ	0.012 UJ	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Naphthalene	12	500	0.012 U	**0.002 J**	**0.01**	0.011 U	**0.004 J**	**0.018**	**0.006 J**	**0.005 J**	**0.008 J**	**320**	**0.003 J**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Propanol, 2-	NE	NE	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Propylbenzene, n-	3.9	500	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	**13 J**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Styrene	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Tetrachloroethane, 1,1,1,2-	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Tetrachloroethane,1,1,2,2-	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Tetrachloroethene	1.3	150	0.012 UJ	0.012 UJ	0.013 UJ	0.011 UJ	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Tetrahydrofuran	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trans-1,2-dichloroethene	0.19	500	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	NE	NE	0.012 U	0.012 UJ	0.013 UJ	0.011 UJ	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trichlorobenzene, 1,2,4-	NE	NE	0.012 U	0.012 UJ	0.013 UJ	0.011 UJ	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trichloroethane, 1,1,1-	0.68	500	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trichloroethane, 1,1,2-	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trichloroethene	0.47	200	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trichlorofluoromethane	NE	NE	0.012 UJ	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	8.4	190	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	**160**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trimethylbenzene, 1,2,4-	3.6	190	0.012 U	0.012 U	**0.002 J**	0.011 U	0.012 U	**0.002 J**	0.012 U	0.012 U	0.012 U	**150**	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Trimethylpentane, 2,2,4-	NE	NE	0.012 UJ	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U

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Table 5 2009 Soil

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KB/SL H-6 (4-6) 5/18/2009	KB/SL SB-01 (14-16) 6/1/2009	KB/SL SB-01 (27-29) 6/1/2009	KB/SL SB-01 (5-7) 6/1/2009	KB/SL SB-02 (28-30) 6/1/2009	KB/SL SB-02 (4.5-6.5) 6/1/2009	OZMW-22 (20.5-22') 1/15/2008	OZMW-22 (40.25-41') 1/15/2008	OZMW-22 (60-61.5) 1/15/2008	OZMW-22 (8-10') 1/14/2008	OU2MW-48 (10-12) 5/6/2009	OU2MW-48 (25-30) 5/6/2009	OU2MW-48 (45-50) 5/6/2009	OU2MW-48 (65-70) 5/6/2009	OU2MW-49 (12-15) 5/7/2009	OU2MW-49 (25-30) 5/7/2009	OU2MW-49 (45-50) 5/7/2009
Vinyl acetate	NE	NE	0.012 U	0.012 U	0.013 U	0.011 U	0.012 U	0.011 U	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Vinyl chloride	0.02	13	0.012 U	0.012 UJ	0.013 UJ	0.011 UJ	0.012 UJ	0.011 UJ	0.012 U	0.012 U	0.012 U	0.062 UJ	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
Total Other VOCs	NE	NE	0	**0.021**	**0.023**	**0.003**	**0.012**	**0.029**	**0.006**	**0.005**	**0.008**	**1212.581**	**0.003**	0	0	0	**0.003**	0	0
Non-carcinogenic PAHs (mg/kg)																			
Acenaphthene	20	500	0.39 U	0.4 U	0.43 U	0.36 U	**0.11 J**	**0.12 J**	0.38 U	0.4 U	0.41 U	**3.3**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Acenaphthylene	100	500	0.39 U	0.4 U	0.43 U	**0.67**	0.4 U	**0.26 J**	0.38 U	0.4 U	0.41 U	**1.3**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Anthracene	100	500	0.39 U	0.4 U	0.43 U	**0.14 J**	0.4 U	**0.1 J**	0.38 U	0.4 U	0.41 U	**3.1**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Benzo[g,h,i]perylene	100	500	0.39 U	0.4 U	0.43 U	**0.62**	0.4 U	**0.32 J**	0.38 U	0.4 U	0.41 U	**0.87**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Fluoranthene	100	500	0.39 U	0.4 U	0.43 U	**0.13 J**	0.4 U	**0.15 J**	0.38 U	0.4 U	0.41 U	**5.7**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Fluorene	30	500	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	**0.1 J**	0.38 U	0.4 U	0.41 U	**2.7**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Methylnaphthalene, 2-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	**0.43**	**0.4**	**0.12 J**	0.4 U	0.41 U	**39**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Naphthalene	12	500	0.39 U	0.4 U	0.43 U	0.36 U	**0.52**	**0.57**	**0.16 J**	0.4 U	0.41 U	**170**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Phenanthrene	100	500	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	**0.19 J**	**0.12 J**	0.4 U	0.41 U	**11 J**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Pyrene	100	500	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	**0.57**	**0.12 J**	0.4 U	0.41 U	**12 J**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Total Non-carcinogenic PAHs	NE	NE	0	0	0	**1.56**	**1.06**	**2.78**	**0.52**	0	0	**248.97**	0	0	0	0	0	0	0
Carcinogenic PAHs (mg/kg)																			
Benz[a]anthracene	1	5.6	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	**0.11 J**	0.38 U	0.4 U	0.41 U	**3.7**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Benzo[a]pyrene	1	1	0.39 U	0.4 U	0.43 U	**0.086 J**	0.4 U	**0.33 J**	0.38 U	0.4 U	0.41 U	**2.5**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Benzo[b]fluoranthene	1	5.6	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	**0.21 J**	0.38 U	0.4 U	0.41 U	**1.9**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Benzo[k]fluoranthene	0.8	56	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	**0.54 J**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Chrysene	1	56	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	**0.18 J**	0.38 U	0.4 U	0.41 U	**3**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Dibenz[a,h]anthracene	0.33	0.56	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	**0.24 J**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Indeno[1,2,3-cd]pyrene	0.5	5.6	0.39 U	0.4 U	0.43 U	**0.39**	0.4 U	**0.15 J**	0.38 U	0.4 U	0.41 U	**0.65**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Total Carcinogenic PAHs	NE	NE	0	0	0	**0.476**	0	**0.98**	0	0	0	**12.53**	0	0	0	0	0	0	0
Total PAHs	NE	NE	0	0	0	**2.036**	**1.06**	**3.76**	**0.52**	0	0	**261.5**	0	0	0	0	0	0	0
Other SVOCs (mg/kg)																			
Bis(2-chloroethoxy)methane	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Bis(2-chloroethyl)ether	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Bis(2-ethylhexyl)phthalate	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	**0.081 J**	**0.13 J**	0.38 U	0.39 U	0.39 U
Bis(chloroisopropyl)ether	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Bromophenyl phenyl ether, 4-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Butyl benzyl phthalate	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Carbazole	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Chloro-3-methylphenol, 4-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Chloroaniline, 4-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Chloronaphthalene, 2-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 UJ	0.38 UJ	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Chlorophenol, 2-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Chlorophenyl phenyl ether, 4-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Dibenzofuran	7	350	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	**0.66**	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Dichlorobenzene, 1,2-	1.1	500	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Dichlorobenzene, 1,3-	2.4	280	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Dichlorobenzene, 1,4-	1.8	130	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Dichlorobenzidine, 3,3-	NE	NE	0.39 UJ	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Dichlorophenol, 2,4-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Diethyl phthalate	NE	NE	**0.32 J**	0.4 U	0.43 U	0.36 U	**0.22 J**	**0.29 J**	**0.2 J**	**0.19 J**	**0.19 J**	**0.18 J**	**0.08 J**	**0.096 J**	**0.15 J**	**0.12 J**	**0.15 J**	**0.084 J**	**0.1 J**
Dimethyl phthalate	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Dimethylphenol, 2,4-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Di-n-butyl phthalate	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	**0.085 J**	0.39 U
Dinitro-2-methylphenol, 4,6-	NE	NE	0.97 U	1 U	1.1 U	0.9 U	1 U	0.94 U	0.96 U	1 U	1 U	1 U	0.99 U	1 U	0.97 U	1 U	0.96 U	0.98 U	0.98 U
Dinitrophenol, 2,4-	NE	NE	0.97 UJ	1 U	1.1 U	0.9 U	1 U	0.94 U	0.96 UJ	1 U	1 UJ	1 UJ	0.99 U	1 U	0.97 U	1 U	0.96 U	0.98 U	0.98 U
Dinitrotoluene, 2,4-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Dinitrotoluene, 2,6-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Di-n-octyl phthalate	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Hexachlorobenzene	0.33	6	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Hexachlorobutadiene	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 UJ	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Hexachlorocyclopentadiene	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 UJ	0.4 UJ	0.41 UJ	0.41 UJ	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Hexachloroethane	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 UJ	0.41 UJ	0.41 UJ	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Isophorone	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Methylphenol, 2-	0.33	500	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Methylphenol, 4-	0.33	500	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Nitroaniline, 2-	NE	NE	0.97 U	1 U	1.1 U	0.9 U	1 U	0.94 U	0.96 U	1 U	1 U	1 U	0.99 U	1 U	0.97 U	1 U	0.96 U	0.98 U	0.98 U
Nitroaniline, 3-	NE	NE	0.97 U	1 U	1.1 U	0.9 U	1 U	0.94 U	0.96 U	1 U	1 U	1 U	0.99 U	1 U	0.97 U	1 U	0.96 U	0.98 U	0.98 U
Nitroaniline, 4-	NE	NE	0.97 U	1 U	1.1 U	0.9 U	1 U	0.94 U	0.96 U	1 U	1 U	1 U	0.99 U	1 U	0.97 U	1 U	0.96 U	0.98 U	0.98 U
Nitrobenzene	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Nitrophenol, 2-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Nitrophenol, 4-	NE	NE	0.97 U	1 U	1.1 U	0.9 UJ	1 U	0.94 U	0.96 U	1 U	1 U	1 U	0.99 U	1 U	0.97 U	1 U	0.96 U	0.98 U	0.98 U
Nitrosodi-n-propylamine, N-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Nitrosodiphenylamine, N-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Pentachlorophenol	0.8	6.7	0.97 U	1 U	1.1 U	0.9 UJ	1 U	0.94 U	0.96 UJ	1 UJ	1 UJ	1 UJ	0.99 U	1 U	0.97 U	1 U	0.96 U	0.98 U	0.98 U

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	6 NYCRR 375 SCO COMMERCIAL USE	KB/SL H-6 (4-6) 5/18/2009	KB/SL SB-01 (14-16) 6/1/2009	KB/SL SB-01 (27-29) 6/1/2009	KB/SL SB-01 (5-7) 6/1/2009	KB/SL SB-02 (28-30) 6/1/2009	KB/SL SB-02 (4.5-6.5) 6/1/2009	OZMW-22 (20.5-22') 1/15/2008	OZMW-22 (40.25-41') 1/15/2008	OZMW-22 (60-61.5) 1/15/2008	OZMW-22 (8-10') 1/14/2008	OU2MW-48 (10-12) 5/6/2009	OU2MW-48 (25-30) 5/6/2009	OU2MW-48 (45-50) 5/6/2009	OU2MW-48 (65-70) 5/6/2009	OU2MW-49 (12-15) 5/7/2009	OU2MW-49 (25-30) 5/7/2009	OU2MW-49 (45-50) 5/7/2009
Phenol	0.33	500	0.39 U	0.4 U	0.43 U	0.36 U	**0.087 J**	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Trichlorobenzene, 1,2,4-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Trichlorophenol, 2,4,5-	NE	NE	0.97 U	1 U	1.1 U	0.9 U	1 U	0.94 U	0.96 U	1 U	1 U	1 U	0.99 U	1 U	0.97 U	1 U	0.96 U	0.98 U	0.98 U
Trichlorophenol, 2,4,6-	NE	NE	0.39 U	0.4 U	0.43 U	0.36 U	0.4 U	0.38 U	0.38 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.39 U	0.41 U	0.38 U	0.39 U	0.39 U
Total Other SVOCs	NE	NE	**0.32**	0	0	0	**0.307**	**0.29**	**0.72**	**0.19**	**0.19**	**262.34**	**0.08**	**0.096**	**0.231**	**0.25**	**0.15**	**0.169**	**0.1**
Total Petroleum Hydrocarbons	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (mg/kg)																				
Aroclor 1016	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (mg/kg)																				
Aldrin	0.005	0.68	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-bhc	0.02	3.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha-chlordane	0.094	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beta-BHC	0.036	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane, trans-	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDD, 4,4-	0.0033	92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDE, 4,4-	0.0033	62	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DDT, 4,4-	0.0033	47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.005	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	2.4	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	2.4	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	2.4	200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	0.014	89	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin aldehyde	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin ketone	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-BHC	0.1	9.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	0.042	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (mg/kg)																				
Aluminum	NE	NE	NA	NA	NA	NA	NA	NA	**675 J**	**808 J**	**998 J**	**576 J**	**762**	**525**	**450**	**1580**	**574**	**348**	**606**
Antimony	NE	NE	NA	NA	NA	NA	NA	NA	0.27 UJ	0.28 U	0.29 U	0.32 UJ	0.33 U	0.34 U	0.32 U	**0.36 J**	0.32 U	0.32 U	0.32 U
Arsenic	13	16	NA	NA	NA	NA	NA	NA	**0.34 J**	**0.38 J**	**0.41 J**	**0.76 J**	0.34 U	0.34 U	0.33 U	**1.4**	**0.52 J**	0.33 U	0.33 U
Barium	350	400	NA	NA	NA	NA	NA	NA	**2.2 J**	**7.4 J**	**4.5 J**	**2.2 J**	**1.7 J**	**3.5 J**	**2.3 J**	**7.4 J**	**1.7 J**	**1.5 J**	**3.7 J**
Beryllium	7.2	590	NA	NA	NA	NA	NA	NA	**0.10 J**	**0.092 J**	**0.092 J**	**0.082 J**	0.040 UJ	0.053 UJ	0.033 UJ	**0.13 J**	0.043 UJ	0.030 UJ	0.043 UJ
Cadmium	2.5	9.3	NA	NA	NA	NA	NA	NA	0.042 UJ	0.074 UJ	0.064 UJ	0.066 UJ	0.028 U	0.029 U	0.027 U	0.029 U	0.056 UJ	0.028 U	0.028 U
Calcium	NE	NE	NA	NA	NA	NA	NA	NA	**30.4 J**	**44.1 J**	**167 J**	**61.2 J**	**41.6 J**	**27.6 J**	**24.8 J**	**403 J**	**41.3 J**	**20.2 J**	**34.2 J**
Chromium	NE	NE	NA	NA	NA	NA	NA	NA	**2.6**	**2.6**	**2.7**	**2.1**	**1.9**	**2.1**	**1.3**	**4.8**	**4.9**	**2.0**	**1.8**
Cobalt	NE	NE	NA	NA	NA	NA	NA	NA	**0.73 J**	**2.2 J**	**1.0 J**	**0.55 J**	**0.58 J**	**0.63 J**	**0.66 J**	**1.6 J**	**0.39 J**	**0.23 J**	**0.67 J**
Copper	50	270	NA	NA	NA	NA	NA	NA	**1.9 J**	**2.6 J**	**2.9 J**	**1.0 J**	**1.7 J**	**1.7 J**	**1.2 J**	**4.9**	**2.0 J**	**1.3 J**	**1.6 J**
Iron	NE	NE	NA	NA	NA	NA	NA	NA	**2390 J**	**3050 J**	**3080 J**	**762 J**	**1170**	**1470**	**844**	**4450**	**1820**	**858**	**997**
Lead	63	1000	NA	NA	NA	NA	NA	NA	**0.78**	**1.5**	**1.6**	**1.0**	**1.1**	**1.1**	**0.86**	**2.1**	**1.1**	**0.88**	**1.1**
Magnesium	NE	NE	NA	NA	NA	NA	NA	NA	**77.8 J**	**144 J**	**249 J**	**87.2 J**	**85.2 J**	**96.6 J**	**96.4 J**	**556 J**	**89.2 J**	**62.8 J**	**126 J**
Manganese	1600	10,000	NA	NA	NA	NA	NA	NA	**24.0 J**	**279 J**	**21.9 J**	**4.5 J**	**5.0**	**33.4**	**21.8**	**34.4**	**4.8**	**9.4**	**66.8**
Mercury	0.18	2.8	NA	NA	NA	NA	NA	NA	0.019 U	0.020 U	0.021 U	0.021 U	0.020 U	0.020 U	0.020 U	0.021 U	0.019 U	0.020 U	0.020 U
Nickel	30	310	NA	NA	NA	NA	NA	NA	**1.2 J**	**2.3 J**	**2.3 J**	**0.91 J**	**1.0 J**	**0.98 J**	**0.82 J**	**3.1 J**	**0.91 J**	**0.64 J**	**1.1 J**
Potassium	NE	NE	NA	NA	NA	NA	NA	NA	**72.4 J**	**90.6 J**	**139 J**	**60.2 J**	**73.5 J**	**88.5 J**	**92.7 J**	**314 J**	**87.8 J**	**52.4 J**	**121 J**
Selenium	3.9	1500	NA	NA	NA	NA	NA	NA	0.28 U	0.29 U	0.29 U	0.30 U	0.32 UJ	0.33 UJ	0.31 UJ	0.33 UJ	0.31 UJ	0.32 UJ	0.32 UJ
Silver	2	1500	NA	NA	NA	NA	NA	NA	0.048 U	0.050 U	0.051 U	**0.064 J**	0.072 U	0.073 U	0.070 U	0.074 U	0.069 U	0.071 U	0.071 U
Sodium	NE	NE	NA	NA	NA	NA	NA	NA	**6.4 J**	**8.7 J**	**10.9 J**	**13.3 J**	**12.3 J**	**19.0 J**	**21.2 J**	**41.1 J**	**19.4 J**	**26.3 J**	**22.9 J**
Thallium	NE	NE	NA	NA	NA	NA	NA	NA	0.27 U	0.28 U	0.28 U	**0.54 J**	0.39 U	0.40 U	0.38 U	0.40 U	0.38 U	0.38 U	0.39 U
Vanadium	NE	NE	NA	NA	NA	NA	NA	NA	**2.5 J**	**4.1 J**	**4.8 J**	**1.9 J**	**2.4 J**	**2.9 J**	**1.6 J**	**6.8**	**4.7 J**	**2.0 J**	**2.0 J**
Zinc	109	10,000	NA	NA	NA	NA	NA	NA	**3.4**	**5.0**	**7.1**	**17.5**	**7.3**	**3.9**	**3.9**	**9.5**	**13.8**	**3.5**	**3.9**
Cyanides (mg/kg)																				
Cyanide, Total	27	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other (%)																				
Moisture, percent	NE	NE	**14.8**	**16.8**	**22.8**	**7.4**	**17.4**	**12.0**	**13.7**	**17.5**	**18.7**	**19.1**	**16.5**	**18.4**	**14.7**	**19.1**	**13.6**	**15.3**	**15.5**

Table 5
Pre-Design Soil and Groundwater Investigation – Subsurface Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Notes:

mg/kg - milligrams/kilogram or parts per million (ppm)
BTEX - benzene, toluene, ethylbenzene, and xylenes
VOCs - volatile organic compounds
PAHs - polycyclic aromatic hydrocarbons
SVOCs - semivolatile organic compounds
PCBs - Polychlorinated Biphenyls
Total PCBs was calculated using detects only

6 NYCRR - New York State Register and Official Compilation of Codes, Rules and Regulations of the State of New York
6 NYCRR 375 SCO UNRESTRICTED USE - regulatory comparison against NYCRR, Chapter IV, Part 375-6 Unrestricted Use Soil Cleanup Objectives
6 NYCRR 375 SCO COMMERCIAL USE - regulatory comparison against NYCRR, Chapter IV, Part 375-6 Commercial Use Soil Cleanup Objectives

NE - not established
NA - not analyzed

Bolding indicates a detected concentration
Grey Shading and bolding indicates that the detected concentration is above the Unrestricted Use SCOs
Yellow Shading and bolding indicates that the detected concentration is above the Commercial Use SCOs

Validation Qualifiers:

J - estimated value
U - indicates not detected at or above the reporting limit shown.
UJ - not detected at or above the reporting limit shown and the reporting limit is estimated
R - rejected

Table 6
Pre-Design Soil and Groundwater Investigation - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	NYS AWQS	KB/SL GW-1 (4-8) 5/21/2009	KB/SL GW-1 (16-20) 5/21/2009	Duplicate of: KB/SL GW-1 (16-20) 5/21/2009	KB/SL GW-2 (4-8) 5/21/2009	KB/SL GW-2 (16-20) 5/21/2009	KB/SL GW-3 (4-8) 5/28/2009	KB/SL GW-3 (16-20) 5/28/2009	KB/SL GW-4 (4-8) 5/21/2009	KB/SL GW-4 (16-20) 5/21/2009	KB/SL GW-5 (4-8) 5/21/2009	KB/SL GW-5 (16-20) 5/21/2009
BTEX (ug/L)												
Benzene	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	5	10 U	10 U	10 U	10 U	10 U	**21**	10 U	10 U	10 U	10 U	10 U
Xylene, m,p-	5	10 U	10 U	10 U	10 U	10 U	**9 J**	10 U	10 U	10 U	10 U	10 U
Xylene, o-	5	10 U	10 U	10 U	10 U	10 U	**25**	10 U	10 U	10 U	10 U	**1 J**
Other VOCs (ug/L)												
Acetaldehyde	8*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	50*	10 U	10 U	10 U	**3 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Allyl chloride	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butadiene, 1,3-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	60*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorotoluene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cryofluorane	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyclohexane	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromoethane, 1,2-	0.0006	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,2-	0.6	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, 1,1-	0.07	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, cis-1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropane, 1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, cis-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, trans-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dioxane, 1,4-	NE	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U
Ethanol	NE	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U
Heptane, n-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexane, n-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isopropyl benzene	5	10 U	10 U	10 U	10 U	10 U	**30**	10 U	10 U	10 U	10 U	10 U
Methyl tert-butyl ether	10*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl-2-pentanone, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Table 6
Pre-Design Soil and Groundwater Investigation - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	NYS AWQS	KB/SL GW-1 (4-8) 5/21/2009	KB/SL GW-1 (16-20) 5/21/2009	Duplicate of: KB/SL GW-1 (16-20) 5/21/2009	KB/SL GW-2 (4-8) 5/21/2009	KB/SL GW-2 (16-20) 5/21/2009	KB/SL GW-3 (4-8) 5/28/2009	KB/SL GW-3 (16-20) 5/28/2009	KB/SL GW-4 (4-8) 5/21/2009	KB/SL GW-4 (16-20) 5/21/2009	KB/SL GW-5 (4-8) 5/21/2009	KB/SL GW-5 (16-20) 5/21/2009
Naphthalene	10*	10 U	10 U	10 U	10 U	10 U	**34**	**2 J**	10 U	10 U	10 U	**6 J**
Propanol, 2-	NE	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U	500 U
Propylbenzene, n-	5	10 U	10 U	10 U	10 U	10 U	**14**	10 U	10 U	10 U	10 U	10 U
Styrene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane, 1,1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane,1,1,2,2-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,2-dichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	10 U	10 U	10 U	10 U	10 U	**49**	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	**45**	10 U	10 U	10 U	10 U	10 U
Trimethylpentane, 2,2,4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl acetate	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Non-carcinogenic PAHs (ug/L)												
Acenaphthene	20*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**1 J**
Phenanthrene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carcinogenic PAHs (ug/L)												
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Other SVOCs (ug/L)												
Bis(2-chloroethoxy)methane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(chloroisopropyl)ether	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Table 6
Pre-Design Soil and Groundwater Investigation - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-1 (4-8) 5/21/2009	KB/SL GW-1 (16-20) 5/21/2009	Duplicate of: KB/SL GW-1 (16-20) 5/21/2009	KB/SL GW-2 (4-8) 5/21/2009	KB/SL GW-2 (16-20) 5/21/2009	KB/SL GW-3 (4-8) 5/28/2009	KB/SL GW-3 (16-20) 5/28/2009	KB/SL GW-4 (4-8) 5/21/2009	KB/SL GW-4 (16-20) 5/21/2009	KB/SL GW-5 (4-8) 5/21/2009	KB/SL GW-5 (16-20) 5/21/2009
Chloro-3-methylphenol, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroaniline, 4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloronaphthalene, 2-	10*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzidine, 3,3-	5	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Dichlorophenol, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphenol, 2,4-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dinitro-2-methylphenol, 4,6-	NE	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrophenol, 2,4-	10*	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrotoluene, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dinitrotoluene, 2,6-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 2-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 4-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitroaniline, 2-	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 3-	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 4-	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitrobenzene	0.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 4-	NE	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitrosodi-n-propylamine, N-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrosodiphenylamine, N-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Phenol	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorophenol, 2,4,5-	NE	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Trichlorophenol, 2,4,6-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
PCBs (ug/L)												
Aroclor 1016	NE	NA	NA	NA	NA	NA	NA	1.0 U	NA	NA	NA	NA
Aroclor 1221	NE	NA	NA	NA	NA	NA	NA	2.0 U	NA	NA	NA	NA
Aroclor 1232	NE	NA	NA	NA	NA	NA	NA	1.0 U	NA	NA	NA	NA
Aroclor 1242	NE	NA	NA	NA	NA	NA	NA	1.0 U	NA	NA	NA	NA
Aroclor 1248	NE	NA	NA	NA	NA	NA	NA	1.0 U	NA	NA	NA	NA
Aroclor 1254	NE	NA	NA	NA	NA	NA	NA	1.0 U	NA	NA	NA	NA

Table 6
Pre-Design Soil and Groundwater Investigation - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	NYS AWQS	KB/SL GW-1 (4-8) 5/21/2009	KB/SL GW-1 (16-20) 5/21/2009	Duplicate of: KB/SL GW-1 (16-20) 5/21/2009	KB/SL GW-2 (4-8) 5/21/2009	KB/SL GW-2 (16-20) 5/21/2009	KB/SL GW-3 (4-8) 5/28/2009	KB/SL GW-3 (16-20) 5/28/2009	KB/SL GW-4 (4-8) 5/21/2009	KB/SL GW-4 (16-20) 5/21/2009	KB/SL GW-5 (4-8) 5/21/2009	KB/SL GW-5 (16-20) 5/21/2009
Aroclor 1260	NE	NA	NA	NA	NA	NA	NA	1.0 U	NA	NA	NA	NA
Total PCBs	0.09	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA
Pesticides (ug/L)												
Aldrin	ND	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA	NA
Alpha-bhc	0.01	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA	NA
Alpha-chlordane	NE	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA	NA
Beta-BHC	0.04	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA	NA
Chlordane, trans-	NE	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA	NA
DDD, 4,4-	0.3	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA	NA
DDE, 4,4-	0.2	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA	NA
DDT, 4,4-	0.2	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA	NA
Delta-BHC	0.04	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA	NA
Dieldrin	0.004	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA	NA
Endosulfan I	NE	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA	NA
Endosulfan II	NE	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA	NA
Endosulfan sulfate	NE	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA	NA
Endrin	ND	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA	NA
Endrin aldehyde	5	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA	NA
Endrin ketone	5	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA	NA
Gamma-BHC	0.05	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA	NA
Heptachlor	0.04	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA	NA
Heptachlor epoxide	0.03	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA	NA
Methoxychlor	35	NA	NA	NA	NA	NA	NA	0.50 U	NA	NA	NA	NA
Toxaphene	0.06	NA	NA	NA	NA	NA	`	5.0 U	NA	NA	NA	NA
Total Metals (ug/L)												
Aluminum	NE	NA	NA	NA	NA	NA	NA	22.1 UJ	NA	NA	NA	NA
Antimony	3	NA	NA	NA	NA	NA	NA	2.7 U	NA	NA	NA	NA
Arsenic	25	NA	NA	NA	NA	NA	NA	2.8 U	NA	NA	NA	NA
Barium	1000	NA	NA	NA	NA	NA	NA	**16.8 J**	NA	NA	NA	NA
Beryllium	3	NA	NA	NA	NA	NA	NA	0.16 U	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA	NA	NA	0.23 U	NA	NA	NA	NA
Calcium	NE	NA	NA	NA	NA	NA	NA	**24300**	NA	NA	NA	NA
Chromium	50	NA	NA	NA	NA	NA	NA	**1.1 J**	NA	NA	NA	NA
Cobalt	NE	NA	NA	NA	NA	NA	NA	**1.6 J**	NA	NA	NA	NA
Copper	200	NA	NA	NA	NA	NA	NA	**3.2 J**	NA	NA	NA	NA
Iron	300	NA	NA	NA	NA	NA	NA	**1530**	NA	NA	NA	NA
Lead	25	NA	NA	NA	NA	NA	NA	1.5 U	NA	NA	NA	NA
Magnesium	35000*	NA	NA	NA	NA	NA	NA	**4490 J**	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	**436**	NA	NA	NA	NA
Mercury	0.7	NA	NA	NA	NA	NA	NA	**0.10**	NA	NA	NA	NA
Nickel	100	NA	NA	NA	NA	NA	NA	**3.5 J**	NA	NA	NA	NA
Potassium	NE	NA	NA	NA	NA	NA	NA	**2180 J**	NA	NA	NA	NA
Selenium	10	NA	NA	NA	NA	NA	NA	2.7 U	NA	NA	NA	NA
Silver	50	NA	NA	NA	NA	NA	NA	0.60 U	NA	NA	NA	NA
Sodium	20000	NA	NA	NA	NA	NA	NA	**32300 J**	NA	NA	NA	NA
Thallium	0.5*	NA	NA	NA	NA	NA	NA	3.3 U	NA	NA	NA	NA
Vanadium	NE	NA	NA	NA	NA	NA	NA	0.97 U	NA	NA	NA	NA
Zinc	2000*	NA	NA	NA	NA	NA	NA	16.4 UJ	NA	NA	NA	NA
Cyanides (ug/L)												
Cyanide, Total	200	NA	NA	NA	NA	NA	NA	10 U	NA	NA	NA	NA

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Sample Name: Sample Interval (feet): Sample Date:	NYS AWQS	KB/SL GW-6 (4-8) 5/28/2009	KB/SL GW-6 (16-20) 5/28/2009	KB/SL GW-7 (4-8) 5/27/2009	KB/SL GW-7 (16-20) 5/27/2009	Duplicate of: KB/SL GW-7 (16-20) 5/27/2009	KB/SL GW-7 (26-30) 5/27/2009	KB/SL GW-7 (36-40) 5/27/2009	KB/SL GW-7 (46-50) 5/27/2009	KB/SL GW-7 (56-60) 5/27/2009	KB/SL GW-7 (66-70) 5/27/2009
BTEX (ug/L)											
Benzene	1	10 U	**2 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	5	**1 J**	**3 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	5	**110**	**1300**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene, m,p-	5	**53**	**1400**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene, o-	5	**85**	**750**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Other VOCs (ug/L)											
Acetaldehyde	8*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	50*	10 U	10 U	**4 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Allyl chloride	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butadiene, 1,3-	NE	10 U	10 U	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 UJ	10 U	10 U
Butanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	60*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorotoluene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cryofluorane	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyclohexane	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 UJ	10 UJ	10 UJ
Dibromochloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromoethane, 1,2-	0.0006	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**2 J**	10 U
Dichloroethane, 1,2-	0.6	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, 1,1-	0.07	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, cis-1,2-	5	**9**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropane, 1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, cis-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, trans-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dioxane, 1,4-	NE	R	R	R	R	R	R	500 U	R	R	R
Ethanol	NE	R	R	R	R	R	R	500 U	R	R	R
Heptane, n-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 UJ	10 UJ	10 UJ
Hexachlorobutadiene	0.5	10 UJ	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Hexane, n-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 UJ	10 UJ	10 UJ
Hexanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isopropyl benzene	5	**13**	**300**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl tert-butyl ether	10*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**1 J**	10 U
Methyl-2-pentanone, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

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Sample Name: Sample Interval (feet): Sample Date:	NYS AWQS	KB/SL GW-6 (4-8) 5/28/2009	KB/SL GW-6 (16-20) 5/28/2009	KB/SL GW-7 (4-8) 5/27/2009	KB/SL GW-7 (16-20) 5/27/2009	Duplicate of: KB/SL GW-7 (16-20) 5/27/2009	KB/SL GW-7 (26-30) 5/27/2009	KB/SL GW-7 (36-40) 5/27/2009	KB/SL GW-7 (46-50) 5/27/2009	KB/SL GW-7 (56-60) 5/27/2009	KB/SL GW-7 (66-70) 5/27/2009
Naphthalene	10*	**95**	**2000**	10 U	**3 J**	10 U	10 U	10 U	10 U	10 U	10 U
Propanol, 2-	NE	R	R	R	R	R	R	500 U	R	R	R
Propylbenzene, n-	5	**4 J**	**120**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane, 1,1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane,1,1,2,2-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	5	**18**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,2-dichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	**2 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	**100**	**470**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene, 1,2,4-	5	**82**	**1100**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylpentane, 2,2,4-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U	**15 J**	**6 J**	10 UJ
Vinyl acetate	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	2	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Non-carcinogenic PAHs (ug/L)											
Acenaphthene	20*	10 U	**10**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	NE	**1 J**	**2 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	50*	10 U	**4 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	10 U	**20**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	**540**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenanthrene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carcinogenic PAHs (ug/L)											
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Other SVOCs (ug/L)											
Bis(2-chloroethoxy)methane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(chloroisopropyl)ether	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

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Chloro-3-methylphenol, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroaniline, 4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloronaphthalene, 2-	10*	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 UJ	10 UJ	10 UJ
Chlorophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzidine, 3,3-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorophenol, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphenol, 2,4-	50*	10 U	**2 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dinitro-2-methylphenol, 4,6-	NE	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrophenol, 2,4-	10*	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrotoluene, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dinitrotoluene, 2,6-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	50*	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 2-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 4-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitroaniline, 2-	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 3-	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 4-	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitrobenzene	0.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 4-	NE	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitrosodi-n-propylamine, N-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrosodiphenylamine, N-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Phenol	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorophenol, 2,4,5-	NE	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Trichlorophenol, 2,4,6-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
PCBs (ug/L)											
Aroclor 1016	NE	NA	NA	NA	NA	NA	NA	1.0 U	NA	NA	NA
Aroclor 1221	NE	NA	NA	NA	NA	NA	NA	2.0 U	NA	NA	NA
Aroclor 1232	NE	NA	NA	NA	NA	NA	NA	1.0 U	NA	NA	NA
Aroclor 1242	NE	NA	NA	NA	NA	NA	NA	1.0 U	NA	NA	NA
Aroclor 1248	NE	NA	NA	NA	NA	NA	NA	1.0 U	NA	NA	NA
Aroclor 1254	NE	NA	NA	NA	NA	NA	NA	1.0 U	NA	NA	NA

Table 6
Pre-Design Soil and Groundwater Investigation - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-6 (4-8) 5/28/2009	KB/SL GW-6 (16-20) 5/28/2009	KB/SL GW-7 (4-8) 5/27/2009	KB/SL GW-7 (16-20) 5/27/2009	Duplicate of: KB/SL GW-7 (16-20) 5/27/2009	KB/SL GW-7 (26-30) 5/27/2009	KB/SL GW-7 (36-40) 5/27/2009	KB/SL GW-7 (46-50) 5/27/2009	KB/SL GW-7 (56-60) 5/27/2009	KB/SL GW-7 (66-70) 5/27/2009
Aroclor 1260	NE	NA	NA	NA	NA	NA	NA	1.0 U	NA	NA	NA
Total PCBs	0.09	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA
Pesticides (ug/L)											
Aldrin	ND	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA
Alpha-bhc	0.01	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA
Alpha-chlordane	NE	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA
Beta-BHC	0.04	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA
Chlordane, trans-	NE	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA
DDD, 4,4-	0.3	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA
DDE, 4,4-	0.2	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA
DDT, 4,4-	0.2	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA
Delta-BHC	0.04	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA
Dieldrin	0.004	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA
Endosulfan I	NE	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA
Endosulfan II	NE	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA
Endosulfan sulfate	NE	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA
Endrin	ND	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA
Endrin aldehyde	5	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA
Endrin ketone	5	NA	NA	NA	NA	NA	NA	0.10 U	NA	NA	NA
Gamma-BHC	0.05	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA
Heptachlor	0.04	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA
Heptachlor epoxide	0.03	NA	NA	NA	NA	NA	NA	0.050 U	NA	NA	NA
Methoxychlor	35	NA	NA	NA	NA	NA	NA	0.50 U	NA	NA	NA
Toxaphene	0.06	NA	NA	NA	NA	NA	NA	5.0 U	NA	NA	NA
Total Metals (ug/L)											
Aluminum	NE	NA	NA	NA	NA	NA	NA	9.2 U	NA	NA	NA
Antimony	3	NA	NA	NA	NA	NA	NA	2.7 U	NA	NA	NA
Arsenic	25	NA	NA	NA	NA	NA	NA	2.8 U	NA	NA	NA
Barium	1000	NA	NA	NA	NA	NA	NA	**24.0 J**	NA	NA	NA
Beryllium	3	NA	NA	NA	NA	NA	NA	0.16 U	NA	NA	NA
Cadmium	5	NA	NA	NA	NA	NA	NA	0.23 U	NA	NA	NA
Calcium	NE	NA	NA	NA	NA	NA	NA	**19300**	NA	NA	NA
Chromium	50	NA	NA	NA	NA	NA	NA	**2.1 J**	NA	NA	NA
Cobalt	NE	NA	NA	NA	NA	NA	NA	**5.3 J**	NA	NA	NA
Copper	200	NA	NA	NA	NA	NA	NA	**5.5 J**	NA	NA	NA
Iron	300	NA	NA	NA	NA	NA	NA	**7090**	NA	NA	NA
Lead	25	NA	NA	NA	NA	NA	NA	1.5 U	NA	NA	NA
Magnesium	35000*	NA	NA	NA	NA	NA	NA	**3650 J**	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA	**7140**	NA	NA	NA
Mercury	0.7	NA	NA	NA	NA	NA	NA	**0.10**	NA	NA	NA
Nickel	100	NA	NA	NA	NA	NA	NA	**12.4 J**	NA	NA	NA
Potassium	NE	NA	NA	NA	NA	NA	NA	**3210 J**	NA	NA	NA
Selenium	10	NA	NA	NA	NA	NA	NA	2.7 U	NA	NA	NA
Silver	50	NA	NA	NA	NA	NA	NA	**1.2 J**	NA	NA	NA
Sodium	20000	NA	NA	NA	NA	NA	NA	**33500 J**	NA	NA	NA
Thallium	0.5*	NA	NA	NA	NA	NA	NA	3.3 U	NA	NA	NA
Vanadium	NE	NA	NA	NA	NA	NA	NA	0.97 U	NA	NA	NA
Zinc	2000*	NA	NA	NA	NA	NA	NA	**25.7**	NA	NA	NA
Cyanides (ug/L)											
Cyanide, Total	200	NA	NA	NA	NA	NA	NA	10 U	NA	NA	NA

Table 6
Pre-Design Soil and Groundwater Investigation - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	NYS AWQS	KB/SL GW-8 (4-8) 5/26/2009	KB/SL GW-8 (16-20) 5/26/2009	KB/SL GW-8 (26-30) 5/26/2009	KB/SL GW-8 (36-40) 5/26/2009	KB/SL GW-8 (46-50) 5/26/2009	KB/SL GW-8 (56-60) 5/26/2009	KB/SL GW-8 (66-70) 5/26/2009
BTEX (ug/L)								
Benzene	1	**4 J**	**10**	10 U	10 U	10 U	10 U	10 U
Toluene	5	**10**	**4 J**	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	5	**370**	**240**	**2 J**	10 U	**2 J**	**3 J**	**2 J**
Xylene, m,p-	5	**480**	**62**	**2 J**	**1 J**	**3 J**	**4 J**	**2 J**
Xylene, o-	5	**210**	**150**	10 U	10 U	10 U	10 U	10 U
Other VOCs (ug/L)								
Acetaldehyde	8*	**4 J**	**5 J**	10 U	10 U	10 U	10 U	10 U
Acetone	50*	**3 J**	10 U	10 U	10 U	10 U	10 U	10 U
Allyl chloride	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butadiene, 1,3-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butanone, 2-	50*	**2 J**	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	60*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorotoluene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cryofluorane	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cyclohexane	NE	10 UJ	10 U	10 U	10 U	10 U	10 U	10 UJ
Dibromochloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromoethane, 1,2-	0.0006	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,2-	0.6	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, 1,1-	0.07	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, cis-1,2-	5	**2 J**	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropane, 1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, cis-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, trans-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dioxane, 1,4-	NE	R	500 U	500 U	500 U	500 U	500 U	R
Ethanol	NE	R	500 U	500 U	500 U	500 U	500 U	R
Heptane, n-	NE	10 UJ	10 U	10 U	10 U	10 U	10 U	10 UJ
Hexachlorobutadiene	0.5	10 UJ	10 U	10 U	10 U	10 U	10 U	10 UJ
Hexane, n-	NE	10 UJ	10 U	10 U	10 U	10 U	10 U	10 UJ
Hexanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isopropyl benzene	5	**38**	**180**	10 U	10 U	10 U	10 U	10 U
Methyl tert-butyl ether	10*	10 U	10 U	10 U	10 U	**8 J**	**2 J**	10 U
Methyl-2-pentanone, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Table 6
Pre-Design Soil and Groundwater Investigation - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-8 (4-8) 5/26/2009	KB/SL GW-8 (16-20) 5/26/2009	KB/SL GW-8 (26-30) 5/26/2009	KB/SL GW-8 (36-40) 5/26/2009	KB/SL GW-8 (46-50) 5/26/2009	KB/SL GW-8 (56-60) 5/26/2009	KB/SL GW-8 (66-70) 5/26/2009
Naphthalene	10*	**770**	**200**	**4 J**	**2 J**	**3 J**	**4 J**	**2 J**
Propanol, 2-	NE	R	500 U	500 U	500 U	500 U	500 U	R
Propylbenzene, n-	5	**10**	**45**	10 U	10 U	10 U	10 U	10 U
Styrene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane, 1,1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane,1,1,2,2-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,2-dichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	**360**	**27**	10 U	10 U	10 U	**2 J**	10 U
Trimethylbenzene, 1,2,4-	5	**290**	**150**	10 U	10 U	10 U	**2 J**	10 U
Trimethylpentane, 2,2,4-	NE	10 UJ	10 U	10 U	10 U	10 U	10 U	10 UJ
Vinyl acetate	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	2	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Non-carcinogenic PAHs (ug/L)								
Acenaphthene	20*	**18**	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	NE	**4 J**	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	50*	**2 J**	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	R	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50*	**4 J**	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	50*	**5**	10 U	10 U	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	**4 J**	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	**110**	10 U	10 U	10 U	10 U	10 U	10 U
Phenanthrene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	**9 J**	10 U	10 U	10 U	10 U	10 U	10 U
Carcinogenic PAHs (ug/L)								
Benz[a]anthracene	0.002*	**2 J**	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	**2 J**	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	R	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	**2 J**	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002*	**2 J**	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	R	10 U	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	R	10 U	10 U	10 U	10 U	10 U	10 U
Other SVOCs (ug/L)								
Bis(2-chloroethoxy)methane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U
Bis(chloroisopropyl)ether	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	50*	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U

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Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	NYS AWQS	KB/SL GW-8 (4-8) 5/26/2009	KB/SL GW-8 (16-20) 5/26/2009	KB/SL GW-8 (26-30) 5/26/2009	KB/SL GW-8 (36-40) 5/26/2009	KB/SL GW-8 (46-50) 5/26/2009	KB/SL GW-8 (56-60) 5/26/2009	KB/SL GW-8 (66-70) 5/26/2009
Chloro-3-methylphenol, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroaniline, 4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloronaphthalene, 2-	10*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzidine, 3,3-	5	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Dichlorophenol, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	50*	**3 J**	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphenol, 2,4-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dinitro-2-methylphenol, 4,6-	NE	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrophenol, 2,4-	10*	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrotoluene, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dinitrotoluene, 2,6-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	50*	R	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 2-	1	**22**	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 4-	1	**9**	10 U	10 U	10 U	10 U	10 U	10 U
Nitroaniline, 2-	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 3-	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 4-	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitrobenzene	0.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 4-	NE	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitrosodi-n-propylamine, N-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrosodiphenylamine, N-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Phenol	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorophenol, 2,4,5-	NE	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Trichlorophenol, 2,4,6-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
PCBs (ug/L)								
Aroclor 1016	NE	1.0 U	NA	NA	NA	NA	NA	NA
Aroclor 1221	NE	2.0 U	NA	NA	NA	NA	NA	NA
Aroclor 1232	NE	1.0 U	NA	NA	NA	NA	NA	NA
Aroclor 1242	NE	1.0 U	NA	NA	NA	NA	NA	NA
Aroclor 1248	NE	1.0 U	NA	NA	NA	NA	NA	NA
Aroclor 1254	NE	1.0 U	NA	NA	NA	NA	NA	NA

Table 6
Pre-Design Soil and Groundwater Investigation - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	NYS AWQS	KB/SL GW-8 (4-8) 5/26/2009	KB/SL GW-8 (16-20) 5/26/2009	KB/SL GW-8 (26-30) 5/26/2009	KB/SL GW-8 (36-40) 5/26/2009	KB/SL GW-8 (46-50) 5/26/2009	KB/SL GW-8 (56-60) 5/26/2009	KB/SL GW-8 (66-70) 5/26/2009
Aroclor 1260	NE	1.0 U	NA	NA	NA	NA	NA	NA
Total PCBs	0.09	ND	NA	NA	NA	NA	NA	NA
Pesticides (ug/L)								
Aldrin	ND	0.050 U	NA	NA	NA	NA	NA	NA
Alpha-bhc	0.01	0.050 U	NA	NA	NA	NA	NA	NA
Alpha-chlordane	NE	0.050 U	NA	NA	NA	NA	NA	NA
Beta-BHC	0.04	0.050 U	NA	NA	NA	NA	NA	NA
Chlordane, trans-	NE	0.050 U	NA	NA	NA	NA	NA	NA
DDD, 4,4-	0.3	0.10 U	NA	NA	NA	NA	NA	NA
DDE, 4,4-	0.2	0.10 U	NA	NA	NA	NA	NA	NA
DDT, 4,4-	0.2	0.10 U	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	0.050 U	NA	NA	NA	NA	NA	NA
Dieldrin	0.004	0.10 U	NA	NA	NA	NA	NA	NA
Endosulfan I	NE	0.050 U	NA	NA	NA	NA	NA	NA
Endosulfan II	NE	0.10 U	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	NE	0.10 U	NA	NA	NA	NA	NA	NA
Endrin	ND	0.10 U	NA	NA	NA	NA	NA	NA
Endrin aldehyde	5	0.10 U	NA	NA	NA	NA	NA	NA
Endrin ketone	5	0.10 U	NA	NA	NA	NA	NA	NA
Gamma-BHC	0.05	0.050 U	NA	NA	NA	NA	NA	NA
Heptachlor	0.04	0.050 U	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	0.03	0.050 U	NA	NA	NA	NA	NA	NA
Methoxychlor	35	0.50 U	NA	NA	NA	NA	NA	NA
Toxaphene	0.06	5.0 U	NA	NA	NA	NA	NA	NA
Total Metals (ug/L)								
Aluminum	NE	62.6 UJ	NA	NA	NA	NA	NA	NA
Antimony	3	2.7 U	NA	NA	NA	NA	NA	NA
Arsenic	25	**11.9**	NA	NA	NA	NA	NA	NA
Barium	1000	**67.5 J**	NA	NA	NA	NA	NA	NA
Beryllium	3	0.16 U	NA	NA	NA	NA	NA	NA
Cadmium	5	0.23 U	NA	NA	NA	NA	NA	NA
Calcium	NE	**149000**	NA	NA	NA	NA	NA	NA
Chromium	50	**11.3**	NA	NA	NA	NA	NA	NA
Cobalt	NE	1.2 U	NA	NA	NA	NA	NA	NA
Copper	200	**5.1 J**	NA	NA	NA	NA	NA	NA
Iron	300	**25500**	NA	NA	NA	NA	NA	NA
Lead	25	1.5 U	NA	NA	NA	NA	NA	NA
Magnesium	35000*	**13600**	NA	NA	NA	NA	NA	NA
Manganese	300	**619**	NA	NA	NA	NA	NA	NA
Mercury	0.7	**0.10**	NA	NA	NA	NA	NA	NA
Nickel	100	**6.3 J**	NA	NA	NA	NA	NA	NA
Potassium	NE	**12000**	NA	NA	NA	NA	NA	NA
Selenium	10	2.7 U	NA	NA	NA	NA	NA	NA
Silver	50	0.60 U	NA	NA	NA	NA	NA	NA
Sodium	20000	**27900 J**	NA	NA	NA	NA	NA	NA
Thallium	0.5*	3.3 U	NA	NA	NA	NA	NA	NA
Vanadium	NE	**4.8 J**	NA	NA	NA	NA	NA	NA
Zinc	2000*	**74.6**	NA	NA	NA	NA	NA	NA
Cyanides (ug/L)								
Cyanide, Total	200	**11.3**	NA	NA	NA	NA	NA	NA

Table 6
Pre-Design Soil and Groundwater Investigation - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Notes:

ug/L - micrograms per liter or parts per billion (ppb)
BTEX - benzene, toluene, ethylbenzene, and xylenes
VOCs - volatile organic compounds
PAHs - polycyclic aromatic hydrocarbons
SVOCs - semivolatile organic compounds
PCBs - polychlorinated biphenyls
Total PCBs is calculated using detects only.

NYS AWQS - New York State Ambient Water Quality Standards and Guidance Values for GA groundwater
* indicates the value is a guidance value and not a standard

NE - not established
NA - not analyzed
ND - not detected; total concentration is listed as ND because no compounds were detected in the group

Bolding indicates a detected concentration
Shading and bolding indicates that the detected concentration is above the NYS AWQS objective it was compared to

Validation Qualifiers:

J - estimated value
U - indicates not detected at or above the reporting limit shown.
UJ - not detected at or above the reporting limit shown and the reporting limit is estimated
R - rejected

Table 7
Pre-Design Soil and Groundwater Investigation - Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Screen Interval (feet): Sample Date:	NYS AWQS	OU2MW-48S (3-13) 6/29/2009	OU2MW-48I (25-30) 6/29/2009	OU2MW-48I2 (45-50) 6/29/2009	OU2MW-48D (65-70) 6/29/2009	OU2MW-49S (3-13) 6/29/2009	OU2MW-49I (25-30) 6/29/2009	OU2MW-49I2 (45-50) 6/29/2009	OU2MW-49D (63-68) 6/29/2009
BTEX (ug/L)									
Benzene	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	5	**3 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene, m,p-	5	**4 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene, o-	5	**1 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total BTEX	**NE**	**8**	0	0	0	0	0	0	0
Other VOCs (ug/L)									
Acetaldehyde	8*	10 U	10 U	10 U	10 UJ	10 UJ	10 U	10 UJ	10 U
Acetone	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Allyl chloride	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butadiene, 1,3-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butanone, 2-	50*	10 U	10 U	10 U	10 U	**2 J**	10 U	**2 J**	10 U
Carbon disulfide	60*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorotoluene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cryofluorane	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Cyclohexane	NE	**4 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromoethane, 1,2-	0.0006	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,1-	5	10 U	10 U	10 U	**2 J**	10 U	10 U	10 U	10 U

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Pre-Design Soil and Groundwater Investigation - Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Screen Interval (feet):** **Sample Date:**	NYS AWQS	OU2MW-48S (3-13) 6/29/2009	OU2MW-48I (25-30) 6/29/2009	OU2MW-48I2 (45-50) 6/29/2009	OU2MW-48D (65-70) 6/29/2009	OU2MW-49S (3-13) 6/29/2009	OU2MW-49I (25-30) 6/29/2009	OU2MW-49I2 (45-50) 6/29/2009	OU2MW-49D (63-68) 6/29/2009
Dichloroethane, 1,2-	0.6	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, 1,1-	0.07	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, cis-1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropane, 1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, cis-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, trans-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dioxane, 1,4-	NE	R	R	R	R	R	R	R	R
Ethanol	NE	R	R	R	R	R	R	R	R
Heptane, n-	NE	10 U	10 U	10 U	10 UJ	10 UJ	10 U	10 UJ	10 U
Hexachlorobutadiene	0.5	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Hexane, n-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Hexanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isopropyl benzene	5	**5 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl tert-butyl ether	10*	10 U	10 U	**1 J**	10 U	10 U	10 U	**6**	10 U
Methyl-2-pentanone, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	**4 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Propanol, 2-	NE	R	R	R	R	R	R	R	R
Propylbenzene, n-	5	**6**	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane, 1,1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane,1,1,2,2-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,2-dichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 UJ	10 UJ	10 UJ	10 U	10 U	10 UJ	10 U	10 UJ
Trichloroethane, 1,1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Table 7
Pre-Design Soil and Groundwater Investigation - Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Screen Interval (feet):** **Sample Date:**	NYS AWQS	OU2MW-48S (3-13) 6/29/2009	OU2MW-48I (25-30) 6/29/2009	OU2MW-48I2 (45-50) 6/29/2009	OU2MW-48D (65-70) 6/29/2009	OU2MW-49S (3-13) 6/29/2009	OU2MW-49I (25-30) 6/29/2009	OU2MW-49I2 (45-50) 6/29/2009	OU2MW-49D (63-68) 6/29/2009
Trichlorofluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	**13**	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene, 1,2,4-	5	**18**	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylpentane, 2,2,4-	NE	10 U	10 U	**5**	10 UJ	10 UJ	10 U	**9 J**	10 U
Vinyl acetate	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total Other VOCs	**NE**	**50**	0	**6**	**2**	**2**	0	**17**	0
Non-carcinogenic PAHs (ug/L)									
Acenaphthene	20*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenanthrene	50*	**3 J**	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total Non-carcinogenic PAHs	NE	**3**	0	0	0	0	0	0	0
Carcinogenic PAHs (ug/L)									
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total Carcinogenic PAHs	NE	0	0	0	0	0	0	0	0
Total PAHs	NE	**3**	0	0	0	0	0	0	0

Table 7
Pre-Design Soil and Groundwater Investigation - Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Screen Interval (feet):** **Sample Date:**	NYS AWQS	OU2MW-48S (3-13) 6/29/2009	OU2MW-48I (25-30) 6/29/2009	OU2MW-48I2 (45-50) 6/29/2009	OU2MW-48D (65-70) 6/29/2009	OU2MW-49S (3-13) 6/29/2009	OU2MW-49I (25-30) 6/29/2009	OU2MW-49I2 (45-50) 6/29/2009	OU2MW-49D (63-68) 6/29/2009
Other SVOCs (ug/L)									
Bis(2-chloroethoxy)methane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**3 J**
Bis(chloroisopropyl)ether	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloro-3-methylphenol, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroaniline, 4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloronaphthalene, 2-	10*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzidine, 3,3-	5	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Dichlorophenol, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphenol, 2,4-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dinitro-2-methylphenol, 4,6-	NE	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrophenol, 2,4-	10	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrotoluene, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dinitrotoluene, 2,6-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

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Bay Shore/Brightwaters Former MGP Site
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Sample Name: Screen Interval (feet): Sample Date:	NYS AWQS	OU2MW-48S (3-13) 6/29/2009	OU2MW-48I (25-30) 6/29/2009	OU2MW-48I2 (45-50) 6/29/2009	OU2MW-48D (65-70) 6/29/2009	OU2MW-49S (3-13) 6/29/2009	OU2MW-49I (25-30) 6/29/2009	OU2MW-49I2 (45-50) 6/29/2009	OU2MW-49D (63-68) 6/29/2009
Methylphenol, 2-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 4-	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitroaniline, 2-	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 3-	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 4-	5	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitrobenzene	0.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 4-	NE	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Nitrosodi-n-propylamine, N-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrosodiphenylamine, N-	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Phenol	1	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorophenol, 2,4,5-	NE	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Trichlorophenol, 2,4,6-	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total Other SVOCs	NE	0	0	0	0	0	0	0	0
Total Metals (ug/L)									
Aluminum	NE	53.7 UJ	59.4 UJ	58.0 UJ	**772**	118 UJ	67.4 UJ	31.6 UJ	90.6 UJ
Antimony	3	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
Arsenic	25	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	**6.0 J**	2.8 U
Barium	1000	**14.2 J**	**18.2 J**	**20.7 J**	**28.4 J**	**10.5 J**	**18.3 J**	**23.2 J**	**5.2 J**
Beryllium	3*	0.28 UJ	0.53 UJ	0.37 UJ	0.85 UJ	0.81 UJ	0.40 UJ	0.42 UJ	0.32 UJ
Cadmium	5	0.23 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.23 UJ
Calcium	NE	**39000**	**17500**	**18900**	**8950**	**31300**	**18600**	**24000**	**3010 J**
Chromium	50	**1.0 J**	**1.0 J**	**4.7 J**	**5.4 J**	**5.9 J**	**0.94 J**	**0.58 J**	**1.2 J**
Cobalt	NE	**2.9 J**	1.2 U	**1.5 J**	**1.9 J**	1.2 U	1.2 U	**3.6 J**	1.2 U
Copper	200	1.2 UJ	1.2 UJ	1.2 UJ	**1.5 J**	1.2 UJ	1.2 UJ	1.2 UJ	1.2 UJ
Iron	300	**1920**	**55.8 J**	**68.6 J**	**1770**	**1610**	48.4 UJ	27.1 UJ	**2640**
Lead	25	1.5 U	1.5 U	**1.8 J**	**1.8 J**	**22.2**	1.5 U	1.5 U	1.5 U
Magnesium	35000*	**3990 J**	**3470 J**	**4350 J**	**4800 J**	**3900 J**	**4120 J**	**5640**	**1160 J**
Manganese	300	**221**	**413**	**10800**	**438**	**39.5**	**2220**	**10000**	**42.6**
Mercury	0.7	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Nickel	100	1.4 U	1.4 U	1.4 U	**4.4 J**	1.4 U	1.4 U	1.4 U	1.4 U

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Table 7 2009 MW_GW

Table 7
Pre-Design Soil and Groundwater Investigation - Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Screen Interval (feet):** **Sample Date:**	NYS AWQS	OU2MW-48S (3-13) 6/29/2009	OU2MW-48I (25-30) 6/29/2009	OU2MW-48I2 (45-50) 6/29/2009	OU2MW-48D (65-70) 6/29/2009	OU2MW-49S (3-13) 6/29/2009	OU2MW-49I (25-30) 6/29/2009	OU2MW-49I2 (45-50) 6/29/2009	OU2MW-49D (63-68) 6/29/2009
Potassium	NE	**2430 J**	**2380 J**	**3170 J**	**1980 J**	**2850 J**	**3280 J**	**4350 J**	**739 J**
Selenium	10	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
Silver	50	0.60 U	0.60 U	2.2 UJ	1.3 UJ	0.71 UJ	0.86 UJ	2.1 UJ	0.60 U
Sodium	20000	**4200 J**	**24900**	**42400**	**20600**	**7200**	**34100**	**41800**	**8070**
Thallium	0.5*	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
Vanadium	NE	0.97 U	0.97 U	0.97 U	**1.7 J**	**1.6 J**	0.97 U	0.97 U	0.97 U
Zinc	2000*	**29.0**	**12.0 J**	**2.0 J**	**43.2**	**69.0**	**17.2 J**	1.3 U	**18.8 J**
Other (ug/L)									
Nitrogen, Ammonia	2000	100 U	**130**	**130**	100 U	100 U	**650**	**160**	100 U
Nitrogen, Nitrate	10000	**580**	**1950**	**950**	**1750**	**1590**	**1530**	**220**	100 U
Nitrogen, Nitrite	1000	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Nitrogen, Total	NE	**1020**	**2510**	**1450**	**2000**	**2160**	**2910**	**940**	**150**
Nitrogen, Total Kjeldahl	NE	**440**	**560**	**500**	**250**	**570**	**1380**	**720**	**150**
Standard Plate Count (cfu/ml)	NE	**560 J**	**270 J**	**430 J**	**3900 J**	**280 J**	**400 J**	**2600 J**	**880 J**
Sulfate	250000	**8710**	**15900**	**15800**	**22800**	**22300**	**17600**	**16400**	**14200**
Sulfide	50*	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Total Phosphorous	NE	50 U	50 U	50 U	50 U	**320**	50 U	50 U	50 U

Table 7
Pre-Design Soil and Groundwater Investigation - Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Notes:

ug/L - micrograms per liter or parts per billion (ppb)
BTEX - benzene, toluene, ethylbenzene, and xylenes
VOCs - volatile organic compounds
PAHs - polycyclic aromatic hydrocarbons
SVOCs - semivolatile organic compounds

NYS AWQS - New York State Ambient Water Quality Standards and Guidance Values for GA groundwater
* indicates the value is a guidance value and not a standard

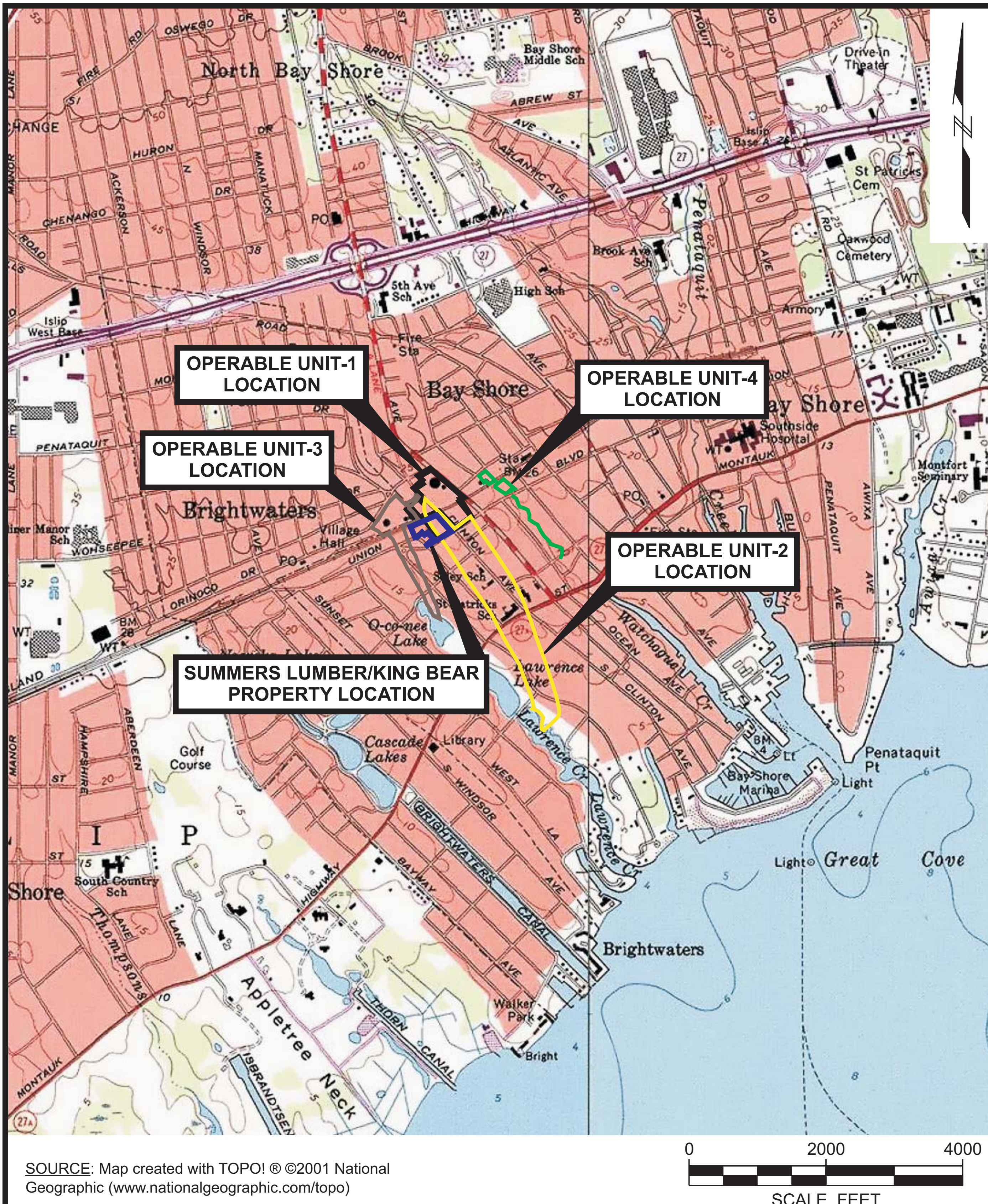
NE- not established
ND - not detected; total concentration is listed as ND because no compounds were detected in the group

Bolding indicates a detected concentration
Shading and bolding indicates that the detected concentration is above the NYS AWQS objective it was compared to

Validation Qualifiers:

J - estimated value
U - indicates not detected at or above the reporting limit shown.
UJ - not detected at or above the reporting limit shown and the reporting limit is estimated
R - rejected

Figures



SOURCE: Map created with TOPO! ® ©2001 National Geographic (www.nationalgeographic.com/topo)

OU-1 REMEDIAL ACTION PLAN - PHASE IV
BAY SHORE/BRIGHTWATERS FORMER MGP SITE
BAY SHORE, NEW YORK

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Project 093180-1-1114

SITE LOCATION MAP

February 2010

Figure 1

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL B-3 (4-6) 5/11/2009	KB/SL B-3 (9-11) 5/11/2009	KB/SL B-3 (14-16) 5/11/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	**0.003**	**0.007**	**0.002**
Total Non-carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	**0.12**	**0.23**	**0.467**
Total Petroleum Hydrocarbons	NE	NA	8 U	NA
Total Cyanide	27	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL D-3 (4-6) 5/13/2009	KB/SL D-3 (11-13) 5/13/2009	KB/SL D-3 (16-18) 5/13/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	0	0	**0.002**
Total Non-carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	0	0	0
Total Petroleum Hydrocarbons	NE	NA	8 U	NA
Total Cyanide	27	0.55 U	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL C-2 (5-7) 5/5/2009	KB/SL C-2 (7.5-9.5) 5/5/2009	KB/SL C-2 (23-25) 5/5/2009
Total BTEX	NE	0	**0.007**	0
Total Other VOCs	NE	0	**41.317**	**0.004**
Total Non-carcinogenic PAHs	NE	**0.964**	**10.01**	0
Total PAHs	NE	**0.964**	**13.07**	0
Total Other SVOCs	NE	**0.421**	**0.26**	**0.191**
Total Petroleum Hydrocarbons	NE	NA	NA	NA
Total Cyanide	27	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL D-2 (5-7) 5/28/2009	KB/SL D-2 (10-12) 5/28/2009	KB/SL D-2 (23-25) 5/28/2009	Duplicate of: KB/SL D-2 (23-25) 5/28/2009
Total BTEX	NE	0	**0.023**	0	0
Total Other VOCs	NE	0	**0.102**	**0.006**	**0.005**
Total Non-carcinogenic PAHs	NE	0	0	0	0
Total PAHs	NE	0	0	0	0
Total Other SVOCs	NE	**0.12**	**0.16**	0	0
Total Petroleum Hydrocarbons	NE	NA	NA	NA	NA
Total Cyanide	27	NA	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL B-5 (4-6) 5/11/2009
Total BTEX	NE	0
Total Other VOCs	NE	0
Total Non-carcinogenic PAHs	NE	0
Total PAHs	NE	0
Total Other SVOCs	NE	**0.25**
Total Petroleum Hydrocarbons	NE	NA
Total Cyanide	27	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL A-5 (4-6) 5/11/2009
Total BTEX	NE	0
Total Other VOCs	NE	**0.007**
Total Non-carcinogenic PAHs	NE	0
Total PAHs	NE	0
Total Other SVOCs	NE	**0.1**
Total Petroleum Hydrocarbons	NE	NA
Total Cyanide	27	0.58 UJ

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL C-4 (4-6) 5/12/2009	KB/SL C-4 (10-12) 5/12/2009	KB/SL C-4 (15-17) 5/12/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	0	**0.023**	0
Total Non-carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	**0.1**	**0.188**	0
Total Petroleum Hydrocarbons	NE	NA	**8**	NA
Total Cyanide	27	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	BBSB-83 (8-10) 2/28/2002	BBSB-83 18-20 2/28/2002
Total BTEX	NE	0	**0.002**
Total Other VOCs	NE	NA	NA
Total Non-carcinogenic PAHs	NE	0	0
Total Carcinogenic PAHs	NE	0	0
Total PAHs	NE	0	0
Total Other SVOCs	NE	NA	NA
Total Petroleum Hydrocarbons	NE	NA	NA
Total Cyanide	27	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL B-1 (4-6) 5/11/2009	KB/SL B-1 (10-12) 5/11/2009	KB/SL B-1 (21-23) 5/11/2009
Total BTEX	NE	**0.155**	**0.224**	0
Total Other VOCs	NE	**28.422**	**0.245**	**0.006**
Total Non-carcinogenic PAHs	NE	**27.5**	**0.11**	0
Total PAHs	NE	**31.21**	**0.11**	0
Total Other SVOCs	NE	**0.68**	**0.473**	**0.196**
Total Petroleum Hydrocarbons	NE	**7200**	**18**	NA
Total Cyanide	27	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL D-1 (4-6) 5/12/2009	KB/SL D-1 (8-10) 5/12/2009	KB/SL D-1 (11-13) 5/12/2009	KB/SL D-1 (26-28) 5/12/2009
Total BTEX	NE	0	**40.4**	**0.672**	0
Total Other VOCs	NE	0	**168.365**	**0.365**	0
Total Non-carcinogenic PAHs	NE	**0.74**	**102.14**	**0.14**	0
Total PAHs	NE	**0.86**	**115.26**	**0.14**	0
Total Other SVOCs	NE	**0.12**	**1.45**	**0.28**	0
Total Petroleum Hydrocarbons	NE	NA	**4800**	8 U	NA
Total Cyanide	27	NA	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL B-6 (5-7) 5/4/2009	KB/SL B-6 (8-10) 5/4/2009	KB/SL B-6 (10-12) 5/4/2009
Total BTEX	NE	**0.031**	**0.068**	**0.027**
Total Other VOCs	NE	**0.006**	**0.049**	**0.021**
Total Non-carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	**0.164**	**0.194**	**0.13**
Total Petroleum Hydrocarbons	NE	NA	NA	NA
Total Cyanide	27	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL A-6 (12-14) 5/11/2009	KB/SL A-6 (15-17) 5/11/2009
Total BTEX	NE	**0.026**	0
Total Other VOCs	NE	**0.041**	**0.006**
Total Non-carcinogenic PAHs	NE	0	0
Total PAHs	NE	0	0
Total Other SVOCs	NE	**0.12**	**0.652**
Total Petroleum Hydrocarbons	NE	8 U	NA
Total Cyanide	27	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	BBSB-84 (8-10) 2/28/2002	BBSB-84 (18-20) 2/28/2002
Total BTEX	NE	0	**0.005**
Total Other VOCs	NE	NA	NA
Total Non-carcinogenic PAHs	NE	**1.535**	0
Total Carcinogenic PAHs	NE	**1.59**	0
Total PAHs	NE	**3.125**	0
Total Other SVOCs	NE	NA	NA
Total Petroleum Hydrocarbons	NE	NA	NA
Total Cyanide	27	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL B-7 (4-6) 6/1/2009	KB/SL B-7 (9-11) 6/1/2009	KB/SL B-7 (12-14) 6/1/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	0	0	0
Total Non-carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	0	0	0
Total Petroleum Hydrocarbons	NE	NA	NA	NA
Total Cyanide	27	0.59 U	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL C-6 (4-6) 5/12/2009	KB/SL C-6 (12-14) 5/12/2009	Duplicate of: KB/SL C-6 (12-14) 5/12/2009	KB/SL C-6 (15-17) 5/12/2009
Total BTEX	NE	0	0	0	0
Total Other VOCs	NE	0	**0.003**	0	0
Total Non-carcinogenic PAHs	NE	0	0	0	0
Total PAHs	NE	0	0	0	0
Total Other SVOCs	NE	0	0	0	**0.15**
Total Petroleum Hydrocarbons	NE	NA	8 U	NA	NA
Total Cyanide	27	0.56 UJ	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL C-7 (4-6) 6/1/2009	KB/SL C-7 (12-14) 6/1/2009	KB/SL C-7 (15-17) 6/1/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	0	**0.004**	0
Total Non-carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	0	0	0
Total Petroleum Hydrocarbons	NE	NA	NA	NA
Total Cyanide	27	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL D-5 (5-7) 4/30/2009	KB/SL D-5 (12-14) 4/30/2009	KB/SL D-5 (15-17) 4/30/2009	Duplicate of: KB/SL D-5 (15-17) 4/30/2009
Total BTEX	NE	0	0	0	0
Total Other VOCs	NE	**0.003**	**0.005**	**0.005**	**0.005**
Total Non-carcinogenic PAHs	NE	0	0	0	0
Total PAHs	NE	0	0	0	0
Total Other SVOCs	NE	0	0	0	0
Total Petroleum Hydrocarbons	NE	NA	NA	NA	NA
Total Cyanide	27	NA	NA	NA	NA

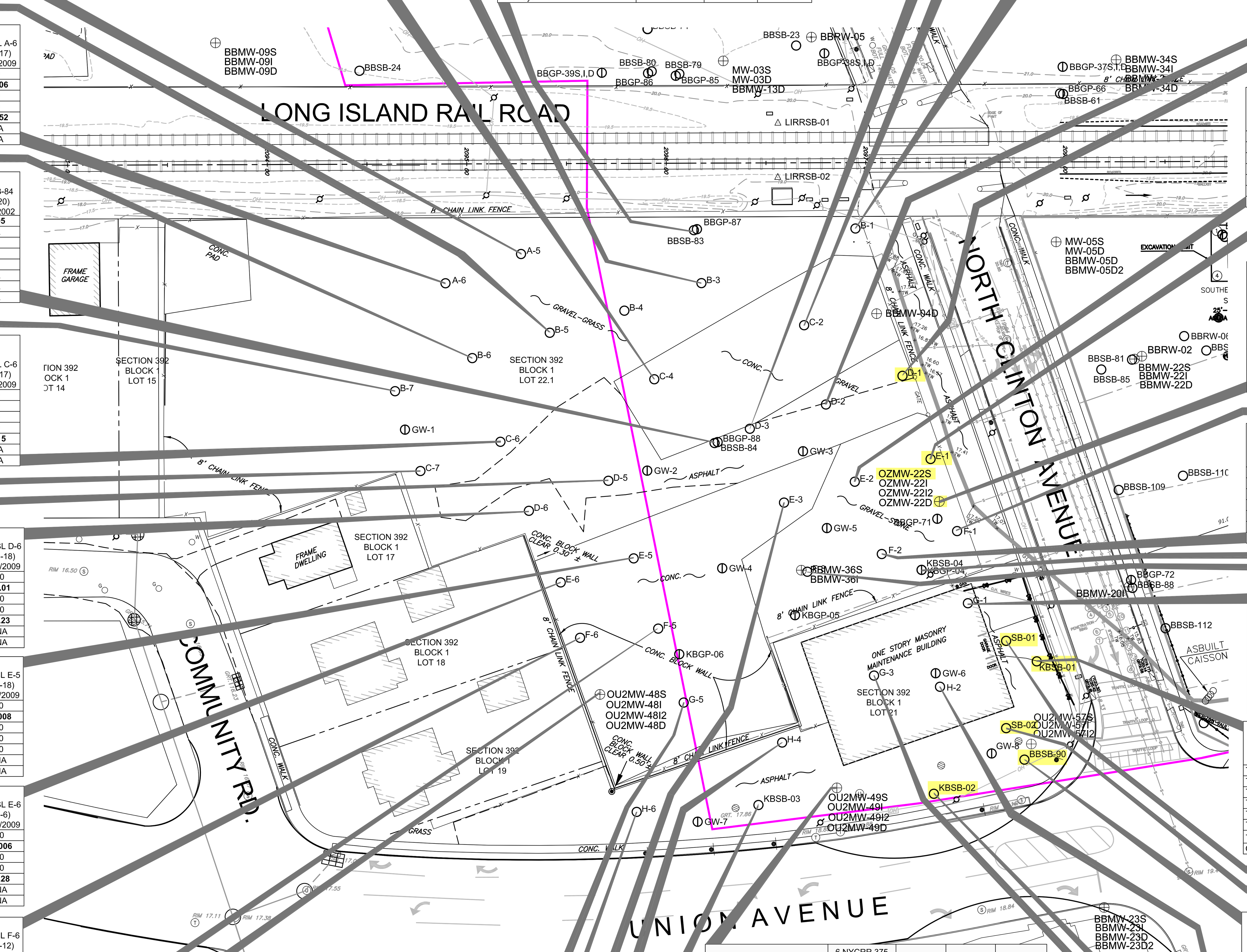
Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL D-6 (4-6) 5/13/2009	KB/SL D-6 (13-15) 5/13/2009	KB/SL D-6 (16-18) 5/13/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	**0.006**	**0.014**	**0.01**
Total Non-carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	0	0	**0.23**
Total Petroleum Hydrocarbons	NE	NA	NA	NA
Total Cyanide	27	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL E-5 (4-6) 5/13/2009	KB/SL E-5 (13-15) 5/13/2009	KB/SL E-5 (16-18) 5/13/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	**0.008**	**0.01**	**0.008**
Total Non-carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	**0.45**	0	0
Total Petroleum Hydrocarbons	NE	NA	8 U	NA
Total Cyanide	27	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL E-6 (4-6) 5/13/2009
Total BTEX	NE	0
Total Other VOCs	NE	**0.006**
Total Non-carcinogenic PAHs	NE	0
Total PAHs	NE	0
Total Other SVOCs	NE	**0.28**
Total Petroleum Hydrocarbons	NE	NA
Total Cyanide	27	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL F-6 (4-8) 5/14/2009	KB/SL F-6 (10-12) 5/14/2009
Total BTEX	NE	0	0
Total Other VOCs	NE	0	0
Total Non-carcinogenic PAHs	NE	0	0
Total PAHs	NE	0	0
Total Other SVOCs	NE	0	**0.096**
Total Petroleum Hydrocarbons	NE	8 U	NA
Total Cyanide	27	0.57 U	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL F-5 (4-6) 5/14/2009	KB/SL F-5 (15-17) 5/14/2009	KB/SL F-5 (20-22) 5/14/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	**0.002**	0	0
Total Non-carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	0	0	0
Total Petroleum Hydrocarbons	NE	NA	8 U	NA
Total Cyanide	27	NA	NA	NA



Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL E-2 (9-10) 5/28/2009	KB/SL E-2 (11-13) 5/28/2009	KB/SL E-2 (22-24) 5/28/2009
Total BTEX	NE	**0.794**	0	0
Total Other VOCs	NE	**1.849**	**0.039**	**0.005**
Total Non-carcinogenic PAHs	NE	**2.24**	0	**0.085**
Total PAHs	NE	**3.76**	0	**0.085**
Total Other SVOCs	NE	0	0	0
Total Petroleum Hydrocarbons	NE	NA	NA	NA
Total Cyanide	27	NA	0.60 U	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL E-1 (8-10) 4/28/2009	KB/SL E-1 (16-18) 4/28/2009	KB/SL E-1 (23-25) 4/28/2009
Total BTEX	NE	**0.281**	**0.006**	0
Total Other VOCs	NE	**8.799**	**0.017**	**0.006**
Total Non-carcinogenic PAHs	NE	**20.62**	0	0
Total PAHs	NE	**26.716**	0	0
Total Other SVOCs	NE	**0.17**	**0.08**	**0.12**
Total Petroleum Hydrocarbons	NE	NA	NA	NA
Total Cyanide	27	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	OZMW-22 (8-10') 1/14/2008	OZMW-22 (20.5-22') 1/15/2008	OZMW-22 (40.25-41') 1/15/2008	OZMW-22 (60-61.5) 1/15/2008
Total BTEX	NE	**530**	0	0	0
Total Other VOCs	NE	**1895.16**	**0.012**	**0.01**	**0.016**
Total Non-carcinogenic PAHs	NE	**248.97**	**0.52**	0	0
Total Carcinogenic PAHs	NE	**12.53**	0	0	0
Total PAHs	NE	**261.5**	**0.52**	0	0
Total Other SVOCs	NE	**263.18**	**0.92**	**0.38**	**0.38**
Total Petroleum Hydrocarbons	NE	NA	NA	NA	NA
Total Cyanide	27	NA	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL F-1 (5-7) 5/13/2009	KB/SL F-1 (9-11) 5/13/2009	KB/SL F-1 (16-18) 5/13/2009	KB/SL F-1 (36-38) 5/14/2009
Total BTEX	NE	0	**900.072**	**0.04**	0
Total Other VOCs	NE	**0.006**	**399.471**	**0.106**	**0.004**
Total Non-carcinogenic PAHs	NE	**1.197**	**28.82**	0	0
Total PAHs	NE	**1.297**	**31.5**	0	0
Total Other SVOCs	NE	**1.097**	**0.43**	**0.1**	**0.087**
Total Petroleum Hydrocarbons	NE	NA	**1700**	8 U	NA
Total Cyanide	27	NA	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL F-2 (5-7) 6/1/2009	KB/SL F-2 (8-10) 6/1/2009	KB/SL F-2 (10.5-12.5) 6/1/2009	KB/SL F-2 (21-23) 6/1/2009
Total BTEX	NE	0	0	**0.082**	0
Total Other VOCs	NE	**0.008**	**0.039**	**0.065**	**0.002**
Total Non-carcinogenic PAHs	NE	**1.95**	**0.3**	0	0
Total PAHs	NE	**1.95**	**0.46**	0	0
Total Other SVOCs	NE	**0.24**	**0.2**	0	0
Total Petroleum Hydrocarbons	NE	NA	NA	NA	NA
Total Cyanide	27	NA	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KBSB-04 10 - 12 ft 6/23/2004	KBSB-04 18 - 20 ft 6/23/2004	KBSB-04 38 - 40 ft 6/23/2004	KBSB-04 68 - 70 ft 6/24/2004
Total BTEX	NE	0	0	0	0
Total Other VOCs	NE	0	0	**0.008**	0
Total Non-carcinogenic PAHs	NE	0	0	**0.16**	0
Total Carcinogenic PAHs	NE	0	0	0	0
Total PAHs	NE	0	0	**0.16**	0
Total Other SVOCs	NE	0	0	0	0
Total Petroleum Hydrocarbons	NE	NA	NA	NA	NA
Cyanide, Total	27	0.6 U	0.62 U	0.62 U	0.64 U

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL F-3 (6-8) 4/29/2009	KB/SL F-3 (13-15) 4/29/2009	KB/SL F-3 (18-20) 4/29/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	**0.004**	**0.009**	**0.004**
Total Non-carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	0	0	**0.095**
Total Petroleum Hydrocarbons	NE	NA	NA	NA
Total Cyanide	27	NA	**0.59**	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL G-1 (5-7) 5/15/2009	KB/SL G-1 (8-10) 5/15/2009	KB/SL G-1 (12-14) 5/15/2009	KB/SL G-1 (26-28) 5/15/2009
Total BTEX	NE	0	**0.094**	0	0
Total Other VOCs	NE	**0.012**	**0.93**	**0.074**	**0.005**
Total Non-carcinogenic PAHs	NE	**1.27**	**7.98**	0	0
Total PAHs	NE	**1.81**	**13.28**	0	0
Total Other SVOCs	NE	0	**0.36**	0	0
Total Petroleum Hydrocarbons	NE	NA	**3300**	8 U	NA
Total Cyanide	27	NA	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KBSB-01 9 - 11 ft 6/21/2004	KBSB-01 20 - 22 ft 6/21/2004	KBSB-01 37 - 39 ft 6/21/2004	KBSB-01 64 - 66 ft 6/21/2004	KBSB-01 76 - 78 ft 6/22/2004
Total BTEX	NE	**7.641**	**0.062**	**0.021**	**0.003**	0
Total Other VOCs	NE	**0.04**	**0.016**	**0.001**	0	0
Total Non-carcinogenic PAHs	NE	**121.31**	**0.526**	**0.4**	0	**1.111**
Total Carcinogenic PAHs	NE	**11.16**	0	0	0	**0.26**
Total PAHs	NE	**132.47**	**0.526**	**0.4**	0	**1.371**
Total Other SVOCs	NE	0	0	0	0	0
Total Petroleum Hydrocarbons	NE	NA	NA	NA	NA	NA
Cyanide, Total	27	0.58 U	0.58 U	0.61 U	0.62 U	0.62 U

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL SB-01 (5-7) 6/1/2009	KB/SL SB-01 (8-10) 6/1/2009	KB/SL SB-01 (14-16) 6/1/2009	KB/SL SB-01 (27-29) 6/1/2009
Total BTEX	NE	0	**3.6**	0	0
Total Other VOCs	NE	**0.003**	**316**	**0.021**	**0.023**
Total Non-carcinogenic PAHs	NE	**1.56**	**85.76**	0	0
Total PAHs	NE	**2.036**	**92.14**	0	0
Total Other SVOCs	NE	0	**0.45**	0	0
Total Petroleum Hydrocarbons	NE	NA	NA	NA	NA
Total Cyanide	27	NA	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL SB-02 (4.5-6.5) 6/1/2009	KB/SL SB-02 (7-9) 6/1/2009	KB/SL SB-02 (28-30) 6/1/2009
Total BTEX	NE	0	**3.3**	0
Total Other VOCs	NE	**0.029**	**15.446**	**0.012**
Total Non-carcinogenic PAHs	NE	**2.78**	**33.13**	**1.06**
Total PAHs	NE	**3.76**	**41.45**	**1.06**
Total Other SVOCs	NE	**0.29**	**0.5**	**0.307**
Total Petroleum Hydrocarbons	NE	NA	NA	NA
Total Cyanide	27	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	BBSB-90 (8-10) 4/8/2002	BBSB-90 (12-14) 4/8/2002	BBSB-90 (48-50) 4/8/2002	BBSB-90 (72-74) 4/8/2002
Total BTEX	NE	**0.089**	0	0	0
Total Other VOCs	NE	NA	NA	NA	NA
Total Non-carcinogenic PAHs	NE	**57.48**	**0.448**	0	0
Total Carcinogenic PAHs	NE	**15.4**	0	0	0
Total PAHs	NE	**72.88**	**0.448**	0	0
Total Other SVOCs	NE	NA	NA	NA	NA
Total Petroleum Hydrocarbons	NE	NA	NA	NA	NA
Total Cyanide	27	NA	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	OU2MW-49 (12-15) 5/7/2009	OU2MW-49 (25-30) 5/7/2009	OU2MW-49 (45-50) 5/7/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	**0.003**	0	0
Total Non-carcinogenic PAHs	NE	0	0	0
Total Carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	**0.15**	**0.169**	**0.1**
Total Petroleum Hydrocarbons	NE	NA	NA	NA
Total Cyanide	27	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	OU2MW-48 (10-12) 5/6/2009	OU2MW-48 (25-30) 5/6/2009	OU2MW-48 (45-50) 5/6/2009	OU2MW-48 (65-70) 5/6/2009
Total BTEX	NE	0	0	0	0
Total Other VOCs	NE	**0.003**	0	0	0
Total Non-carcinogenic PAHs	NE	0	0	0	0
Total Carcinogenic PAHs	NE	0	0	0	0
Total PAHs	NE	0	0	0	0
Total Other SVOCs	NE	0.08	0.096	0.231	0.25
Total Petroleum Hydrocarbons	NE	NA	NA	NA	NA
Total Cyanide	27	NA	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KBSB-03 15 - 17 ft 6/22/2004	Duplicate Of KBSB-03 15 - 17 ft 6/22/2004	KBSB-03 38 - 40 ft 6/22/2004	KBSB-03 68 - 70 ft 6/22/2004
Total BTEX	NE	0	**0.007**	0	0
Total Other VOCs	NE	**0.002**	0	0	0
Total Non-carcinogenic PAHs	NE	0	0	0	0
Total Carcinogenic PAHs	NE	0	0	0	0
Total PAHs	NE	0	0	0	0
Total Other SVOCs	NE	**0.3**	0	0	0
Total Petroleum Hydrocarbons	NE	NA	NA	NA	NA
Cyanide, Total	27	0.6 U	0.62 U	0.63 U	0.63 U

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KBSB-02 7 - 8 ft 6/21/2004	KBSB-02 9 - 11 ft 6/21/2004	KBSB-02 38 - 40 ft 6/21/2004	KBSB-02 68 - 70 ft 6/21/2004
Total BTEX	NE	**0.007**	0	0	0
Total Other VOCs	NE	**0.029**	**0.036**	**0.02**	0
Total Non-carcinogenic PAHs	NE	**100.8**	**2.089**	0	0
Total Carcinogenic PAHs	NE	**30.7**	0	0	0
Total PAHs	NE	**131.5**	**2.089**	0	0
Total Other SVOCs	NE	**0.12**	0	0	0
Total Petroleum Hydrocarbons	NE	NA	NA	NA	NA
Cyanide, Total	27	0.58 U	0.62 U	0.62 U	0.63 U

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL H-2 (6-8) 5/15/2009	KB/SL H-2 (13-15) 5/15/2009	KB/SL H-2 (27-29) 5/15/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	**0.042**	**0.06**	**0.003**
Total Non-carcinogenic PAHs	NE	**5.3**	0	0
Total PAHs	NE	**7.28**	0	0
Total Other SVOCs	NE	**0**	**0**	0
Total Petroleum Hydrocarbons	NE	**11000**	**19 J**	NA
Total Cyanide	27	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL G-5 (4-6) 5/14/2009	KB/SL G-5 (16-18) 5/14/2009	KB/SL G-5 (20-22) 5/14/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	0	**0.002**	0
Total Non-carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	**0.24**	0	0
Total Petroleum Hydrocarbons	NE	NA	8 U	NA
Total Cyanide	27	NA	0.59 U	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL H-4 (4-6) 5/18/2009	KB/SL H-4 (15-17) 5/18/2009	KB/SL H-4 (19-21) 5/18/2009	Duplicate of: KB/SL H-4 (19-21) 5/18/2009
Total BTEX	NE	0	0	0	0
Total Other VOCs	NE	0	**0.004**	0	0
Total Non-carcinogenic PAHs	NE	0	0	0	0
Total PAHs	NE	0	0	0	0
Total Other SVOCs	NE	**0.52**	**0.54**	0	**0.12**
Total Petroleum Hydrocarbons	NE	NA	8 U	NA	NA
Total Cyanide	27	NA	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL G-3 (6-8) 5/15/2009	KB/SL G-3 (12-14) 5/15/2009	KB/SL G-3 (18-20) 5/15/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	**0.004**	**0.009**	**0.003**
Total Non-carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	0	0	0
Total Petroleum Hydrocarbons	NE	NA	8 U	NA
Total Cyanide	27	0.56 U	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL H-6 (4-6) 5/18/2009	KB/SL H-6 (13-15) 5/18/2009	KB/SL H-6 (16-18) 5/18/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	0	0	0
Total Non-carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	**0.32**	**0.34**	**0.19**
Total Petroleum Hydrocarbons	NE	NA	8 U	NA
Total Cyanide	27	NA	NA	0.58 U

Sample Name: / Sample Interval (feet): / Sample Date:	6 NYCRR 375 SCO UNRESTRICTED USE	KB/SL E-3 (4-6) 5/13/2009	KB/SL E-3 (13-15) 5/13/2009	KB/SL E-3 (15-17) 5/13/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	**0.005**	0	**0.007**
Total Non-carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	0	**0.17**	0
Total Petroleum Hydrocarbons	NE	NA	8 U	NA
Total Cyanide	27	NA	NA	NA

0 40 80
SCALE, FEET

LEGEND:

	CURRENT STRUCTURE
	FENCE LINE
	SUBSURFACE CONTAINMENT WALL
	OPERABLE UNIT 1 BOUNDARY
OU2MW-48 S,I,I2,D	MONITORING WELL LOCATION (S=SHALLOW, I, I2=INTERMEDIATE, D=DEEP
GW-1	GEOPROBE LOCATION
A-5	SOIL BORING LOCATION/
6NYCRR 375 SCO UNRESTRICTED USE	CHAPTER VI, SUBPART 375-6: REMEDIAL PROGRAM SOIL CLEANUP OBJECTIVES (SCO) (UNRESTRICTED USE)
NE	NOT ESTABLISHED
NA	NOT ANALYZED
mg/kg	MILLIGRAMS PER KILOGRAM
J	ESTIMATED VALUE
U	INDICATES NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN
UJ	INDICATES NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN, AND THE REPORTING LIMIT IS ESTIMATED
VOCs	VOLATILE ORGANIC COMPOUNDS
SVOCs	SEMIVOLATILE ORGANIC COMPOUNDS
BTEX	BENZENE, TOLUENE, ETHYLBENZENE AND XYLENE
PAHs	POLYCYCLIC AROMATIC HYDROCARBONS
BOLD	INDICATES DETECTED RESULT
BOLD	INDICATES THAT ONE OR MORE COMPOUNDS DETECTED EXCEEDS 6NYCRR PART 375 UNRESTRICTED USE CRITERIA
BOLD SB-01	INDICATES THAT ONE OR MORE COMPOUNDS DETECTED EXCEEDS 6NYCRR PART 375 UNRESTRICTED USE AND COMMERCIAL USE CRITERIA

SOURCE:

1. PLAN BASED ON MAP PREPARED BY KS ENGINEERS, P.C., 24 COMMERCE STREET, NEWARK, N.J. 07102, TITLED *BOUNDARY AND TOPOGRAPHIC SURVEY, PORTION OF SEC. 392, BLOCK 1 SUFFOLK COUNTY, NEW YORK,* SCALE 1"=30', DATED 7/09/09.

SUMMERS LUMBER/KING BEAR
PHASE IV REMEDIAL DESIGN REPORT
BAY SHORE/BRIGHTWATERS FORMER MGP SITE
BAY SHORE, NEW YORK

nationalgrid

PROJECT 093180-1-1107

GEI Consultants
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HUNTINGTON STATION, NY 11746

SOIL BORING LOCATIONS AND ANALYTICAL RESULTS (mg/kg)

February 2010

Figure 2

I:\Project\National Grid\Bay Shore\OU-1\Summers Lumber-King Bear\PHASE IV RDR\ F2 and F3.dwg \Jun 23, 2010

LEGEND:

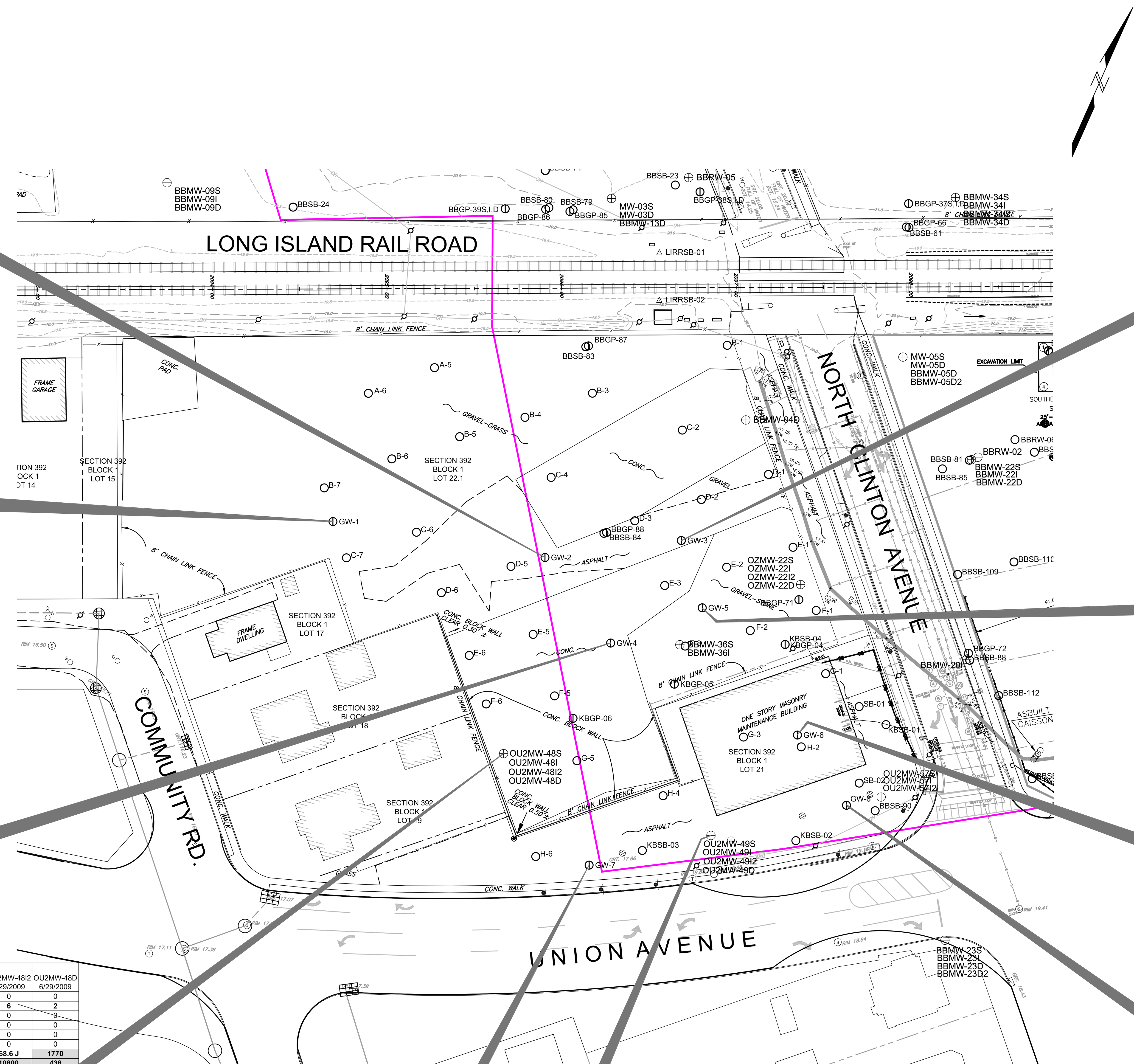
(hatched box)	CURRENT STRUCTURE
(line with x)	FENCE LINE
(grey line)	SUBSURFACE CONTAINMENT WALL
(magenta line)	OPERABLE UNIT 1 BOUNDARY
OU2MW-48 S,I,I2,D	MONITORING WELL LOCATION (S=SHALLOW, I, I2=INTERMEDIATE, D=DEEP
GW-1	GEOPROBE LOCATION
A-5	SOIL BORING LOCATION/
NYS AWQS	NEW YORK STATE AMBIENT WATER QUALITY STANDARDS (JUNE 1998)
NE	NOT ESTABLISHED
NA	NOT ANALYZED
J	ESTIMATED VALUE
U	INDICATES NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN
UJ	INDICATES NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN, AND THE REPORTING LIMIT IS ESTIMATED
ug/L	MICROGRAMS PER LITER
VOCs	VOLATILE ORGANIC COMPOUNDS
SVOCs	SEMIVOLATILE ORGANIC COMPOUNDS
BTEX	
PAHs	POLYCYCLIC AROMATIC HYDROCARBONS
PCBs	POLYCHLORINATED BIPHENYLS
BOLD	INDICATES DETECTED RESULT
BOLD (shaded)	INDICATES THAT ONE OR MORE COMPOUNDS DETECTED EXCEEDS NYS AWQS
GW-3 (highlighted)	INDICATES THAT ONE OR MORE VOCs OR SVOCs EXCEED THE NYS AWQS AT THE SAMPLE LOCATION

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-2 (4-8) 5/21/2009	KB/SL GW-2 (16-20) 5/21/2009
Total BTEX	NE	0	0
Total Other VOCs	NE	3	0
Total Non-carcinogenic PAHs	NE	0	0
Total Carcinogenic PAHs	NE	0	0
Total PAHs	NE	0	0
Total Other SVOCs	NE	0	0
Total PCBs	0.09	NA	NA
Iron	300	NA	NA
Manganese	300	NA	NA
Sodium	20000	NA	NA
Total Cyanide	200	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-1 (4-8) 5/21/2009	KB/SL GW-1 (16-20) 5/21/2009	Duplicate of: KB/SL GW-1 (16-20) 5/21/2009
Total BTEX	NE	0	0	0
Total Other VOCs	NE	0	0	0
Total Non-carcinogenic PAHs	NE	0	0	0
Total Carcinogenic PAHs	NE	0	0	0
Total PAHs	NE	0	0	0
Total Other SVOCs	NE	0	0	0
Total PCBs	0.09	NA	NA	NA
Iron	300	NA	NA	NA
Manganese	300	NA	NA	NA
Sodium	20000	NA	NA	NA
Total Cyanide	200	NA	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-3 (4-8) 5/28/2009	KB/SL GW-3 (16-20) 5/28/2009
Total BTEX	NE	**55**	0
Total Other VOCs	NE	**172**	2
Total Non-carcinogenic PAHs	NE	0	0
Total Carcinogenic PAHs	NE	0	0
Total PAHs	NE	0	0
Total Other SVOCs	NE	0	0
Total PCBs	0.09	NA	ND
Iron	300	NA	**1530**
Manganese	300	NA	**436**
Sodium	20000	NA	**32300 J**
Total Cyanide	200	NA	10 U

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-5 (4-8) 5/21/2009	KB/SL GW-5 (16-20) 5/21/2009
Total BTEX	NE	0	**1**
Total Other VOCs	NE	0	**6**
Total Non-carcinogenic PAHs	NE	0	**1**
Total Carcinogenic PAHs	NE	0	0
Total PAHs	NE	0	**1**
Total Other SVOCs	NE	0	0
Total PCBs	0.09	NA	NA
Iron	300	NA	NA
Manganese	300	NA	NA
Sodium	20000	NA	NA
Total Cyanide	200	NA	NA



Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-4 (4-8) 5/21/2009	KB/SL GW-4 (16-20) 5/21/2009
Total BTEX	NE	0	0
Total Other VOCs	NE	0	0
Total Non-carcinogenic PAHs	NE	0	0
Total Carcinogenic PAHs	NE	0	0
Total PAHs	NE	0	0
Total Other SVOCs	NE	0	0
Total PCBs	0.09	NA	NA
Iron	300	NA	NA
Manganese	300	NA	NA
Sodium	20000	NA	NA
Total Cyanide	200	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-6 (4-8) 5/28/2009	KB/SL GW-6 (16-20) 5/28/2009
Total BTEX	NE	**249**	**3455**
Total Other VOCs	NE	**323**	**3990**
Total Non-carcinogenic PAHs	NE	**1**	**576**
Total Carcinogenic PAHs	NE	0	0
Total PAHs	NE	**1**	**576**
Total Other SVOCs	NE	0	**2**
Total PCBs	0.09	NA	NA
Iron	300	NA	NA
Manganese	300	NA	NA
Sodium	20000	NA	NA
Total Cyanide	200	NA	NA

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-8 (4-8) 5/26/2009	KB/SL GW-8 (16-20) 5/26/2009	KB/SL GW-8 (26-30) 5/26/2009	KB/SL GW-8 (36-40) 5/26/2009	KB/SL GW-8 (46-50) 5/26/2009	KB/SL GW-8 (56-60) 5/26/2009	KB/SL GW-8 (66-70) 5/26/2009
Total BTEX	NE	**1074**	**466**	**4**	**1**	**5**	**7**	**4**
Total Other VOCs	NE	**1479**	**607**	**4**	**2**	**11**	**10**	**2**
Total Non-carcinogenic PAHs	NE	**156**	0	0	0	0	0	0
Total Carcinogenic PAHs	NE	**8**	0	0	0	0	0	0
Total PAHs	NE	**164**	0	0	0	0	0	0
Total Other SVOCs	NE	**34**	0	0	0	0	0	0
Total PCBs	0.09	ND	NA	NA	NA	NA	NA	NA
Iron	300	**25500**	NA	NA	NA	NA	NA	NA
Manganese	300	**619**	NA	NA	NA	NA	NA	NA
Sodium	20000	**27900 J**	NA	NA	NA	NA	NA	NA
Total Cyanide	200	**11.3**	NA	NA	NA	NA	NA	NA

Sample Name: / Sample Date:	NYS AWQS	OU2MW-48S 6/29/2009	OU2MW-48I 6/29/2009	OU2MW-48I2 6/29/2009	OU2MW-48D 6/29/2009
Total BTEX	NE	**8**	0	0	0
Total Other VOCs	NE	**50**	0	**6**	**2**
Total Non-carcinogenic PAHs	NE	**3**	0	0	0
Total Carcinogenic PAHs	NE	0	0	0	0
Total PAHs	NE	**3**	0	0	0
Total Other SVOCs	NE	0	0	0	0
Iron	300	**1920**	**55.8 J**	**68.6 J**	**1770**
Manganese	300	**221**	**413**	**10800**	**438**
Sodium	20000	**4200 J**	**24900**	**42400**	**20600**

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-7 (4-8) 5/27/2009	KB/SL GW-7 (16-20) 5/27/2009	Duplicate of: KB/SL GW-7 (16-20) 5/27/2009	KB/SL GW-7 (26-30) 5/27/2009	KB/SL GW-7 (36-40) 5/27/2009	KB/SL GW-7 (46-50) 5/27/2009	KB/SL GW-7 (56-60) 5/27/2009	KB/SL GW-7 (66-70) 5/27/2009
Total BTEX	NE	0	0	0	0	0	0	0	0
Total Other VOCs	NE	**4**	**3**	0	0	0	**15**	**9**	0
Total Non-carcinogenic PAHs	NE	0	0	0	0	0	0	0	0
Total Carcinogenic PAHs	NE	0	0	0	0	0	0	0	0
Total PAHs	NE	0	0	0	0	0	0	0	0
Total Other SVOCs	NE	0	0	0	0	0	0	0	0
Total PCBs	0.09	NA	NA	NA	NA	ND	NA	NA	NA
Iron	300	NA	NA	NA	NA	**7090**	NA	NA	NA
Manganese	300	NA	NA	NA	NA	**7140**	NA	NA	NA
Sodium	20000	NA	NA	NA	NA	**33500 J**	NA	NA	NA
Total Cyanide	200	NA	NA	NA	NA	10 U	NA	NA	NA

Sample Name: / Sample Date:	NYS AWQS	OU2MW-49S 6/29/2009	OU2MW-49I 6/29/2009	OU2MW-49I2 6/29/2009	OU2MW-49D 6/29/2009
Total BTEX	NE	0	0	0	0
Total Other VOCs	NE	**2**	0	**17**	0
Total Non-carcinogenic PAHs	NE	0	0	0	0
Total Carcinogenic PAHs	NE	0	0	0	0
Total PAHs	NE	0	0	0	0
Total Other SVOCs	NE	0	0	0	0
Iron	300	**1610**	48.4 UJ	27.1 UJ	**2640**
Manganese	300	**39.5**	**2220**	**10000**	**42.6**
Sodium	20000	**7200**	**34100**	**41800**	**8070**

0 40 80
SCALE, FEET

SOURCE:

1. PLAN BASED ON MAP PREPARED BY KS ENGINEERS, P.C., 24 COMMERCE STREET, NEWARK, N.J. 07102, TITLED *BOUNDARY AND TOPOGRAPHIC SURVEY, PORTION OF SEC. 392, BLOCK 1 SUFFOLK COUNTY, NEW YORK*, SCALE 1"=30', DATED 7/09/09.

SUMMERS LUMBER/KING BEAR
PHASE IV REMEDIAL DESIGN REPORT
BAY SHORE/BRIGHTWATERS FORMER MGP SITE
BAY SHORE, NEW YORK

nationalgrid

PROJECT 093180-1-1107

GEI Consultants
110 WALT WHITMAN ROAD
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GROUNDWATER PROBE AND MONITORING WELL LOCATIONS AND ANALYTICAL RESULTS (ug/L)

February 2010 | Figure 3

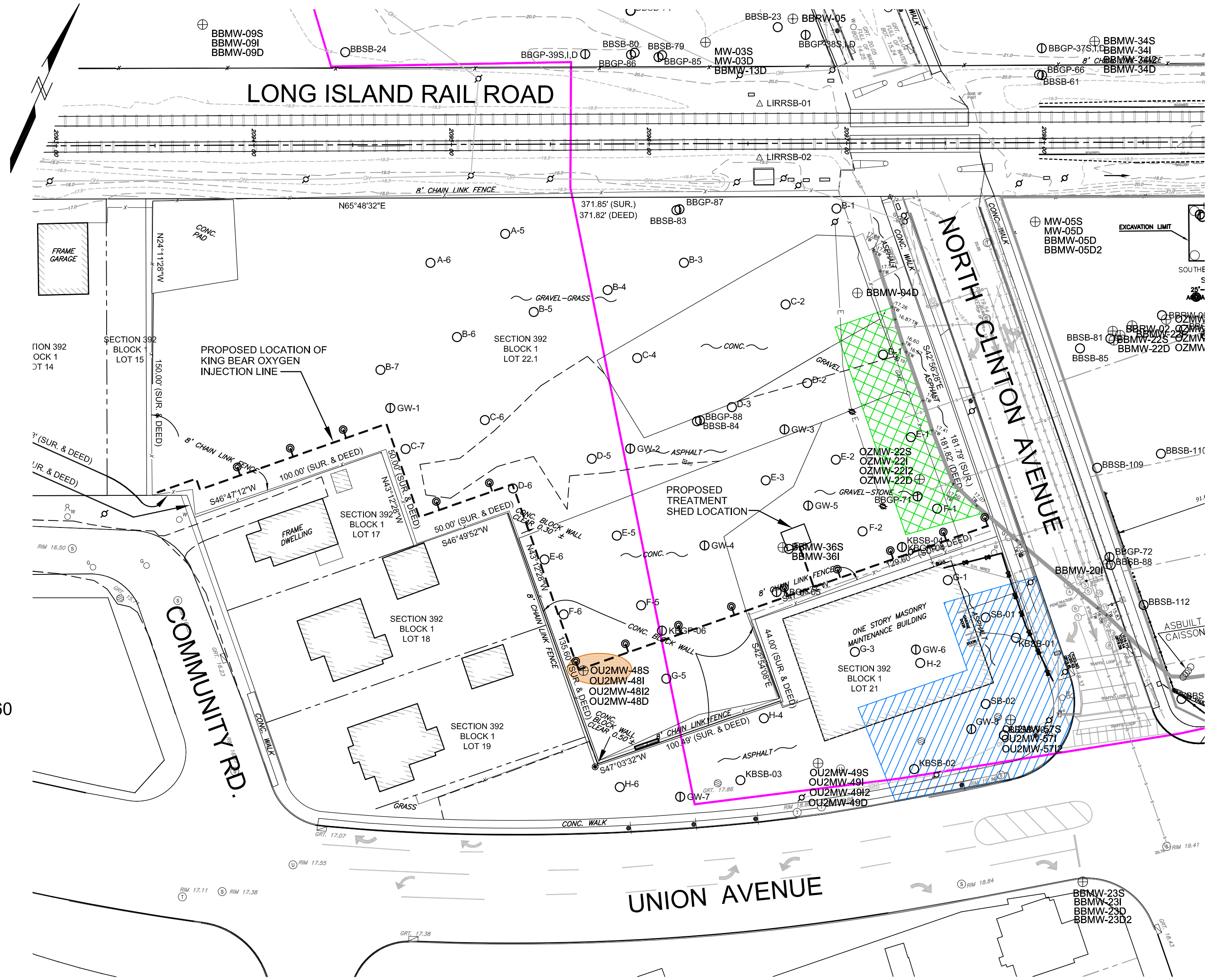
I:\Project\National Grid\Bay Shore\OU-1\Summers Lumber-King Bear\PHASE IV RDR\ F2 and F3.dwg \Jun 23, 2010

LEGEND:

- CURRENT STRUCTURE
- FENCE LINE
- SUBSURFACE CONTAINMENT WALL
- OPERABLE UNIT 1 BOUNDARY
- OU2MW-48 S,I,I2,D — MONITORING WELL LOCATION (S=SHALLOW, I,I2=INTERMEDIATE, D=DEEP)
- GW-1 — GEOPROBE LOCATION
- KB/SB-03 — SOIL BORING LOCATION/
- APPROXIMATE LIMITS OF PROPOSED EXCAVATION/ ISCO INJECTION IRM
- APPROXIMATE LIMITS OF CHEMICAL IMPACTS TO BE MANAGED THROUGH ENVIRONMENTAL LAND USE RESTRICTION
- NON MGP-RELATED GROUNDWATER IMPACTS

0 80 160

SCALE, FEET



SOURCE:

1. PLAN BASED ON MAP PREPARED BY KS ENGINEERS, P.C., 24 COMMERCE STREET, NEWARK, N.J. 07102, TITLED *BOUNDARY AND TOPOGRAPHIC SURVEY, PORTION OF SEC. 392, BLOCK 1 SUFFOLK COUNTY, NEW YORK,* SCALE 1"=30', DATED 7/09/09.

SUMMERS LUMBER/KING BEAR
PHASE IV REMEDIAL DESIGN REPORT
BAY SHORE/BRIGHTWATERS FORMER MGP SITE
BAY SHORE, NEW YORK

nationalgrid

PROJECT 093180-1-1107

GEI Consultants
110 WALT WHITMAN ROAD
SUITE 204
HUNTINGTON STATION, NY 11746

PHASE IV REMEDIAL DESIGN SUMMARY

February 2010

Figure 4

I:\Project\National Grid\Bay Shore\OU-1\Summers Lumber-King Bear\PHASE IV RDR\ F4 Summary.dwg \Jun 23, 2010

LEGEND:

CURRENT STRUCTURE
FENCE LINE
SUBSURFACE CONTAINMENT WALL
OU2MW-48 S,I,I2,D — MONITORING WELL LOCATION (S=SHALLOW, I, I2=INTERMEDIATE, D=DEEP)
GW-1 — GEOPROBE
A-5 — SOIL BORING
SIW-1A — INJECTION WELL
SHIW-1B — HORIZONTAL INJECTION WELL RISER
VM-1 — VAPOR MONITORING POINT
EXCAVATION

NOTES:

1. INJECTION WELL LOCATIONS SELECTED BY XDD, LLC.

SUMMERS LUMBER/KING BEAR IRM
BAY SHORE/BRIGHTWATERS FORMER MGP SITE
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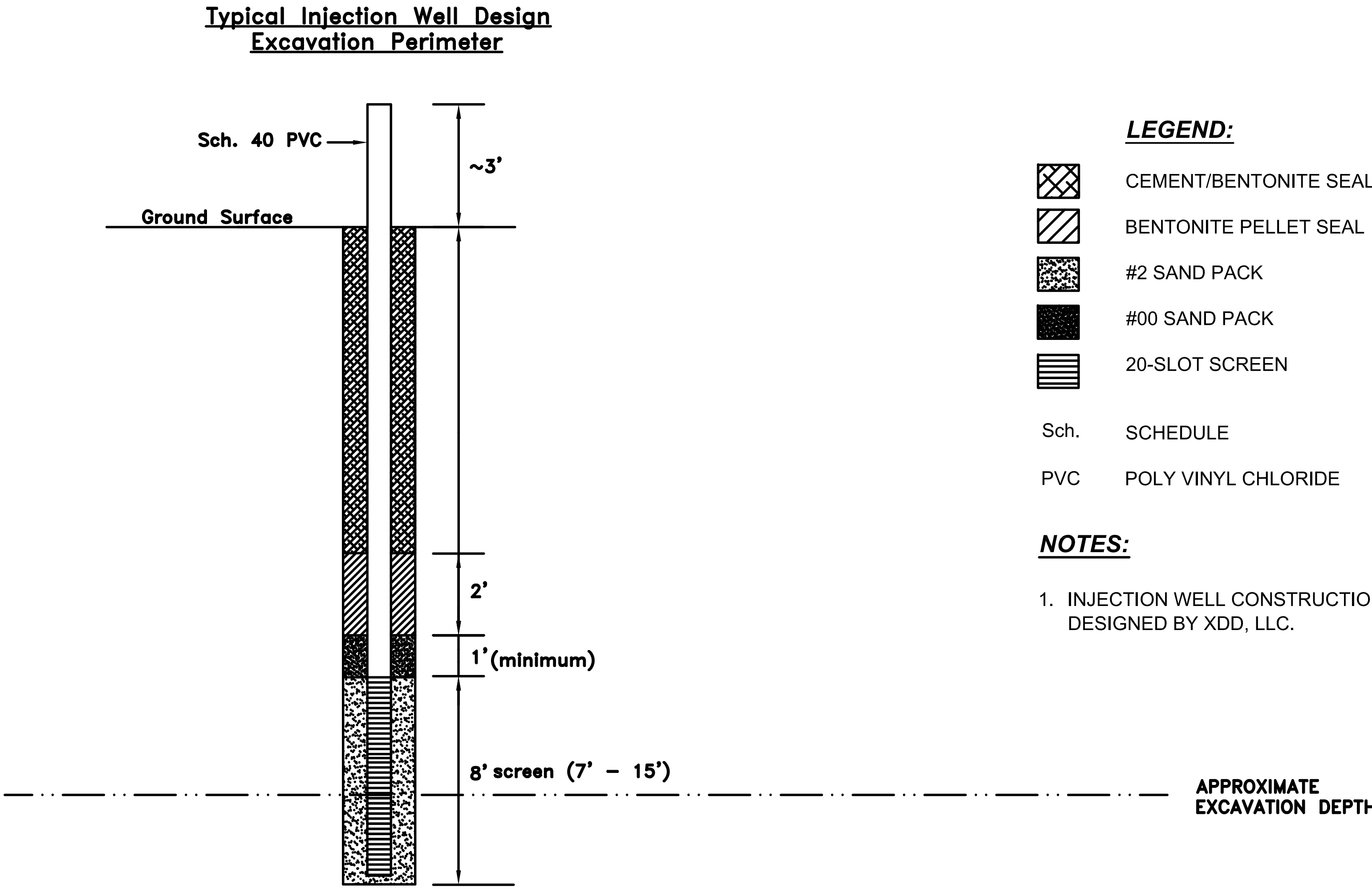
ISCO INJECTION WELL AND VAPOR MONITORING LOCATIONS

February 2010

Figure 5

I:\Project\National Grid\Bay Shore\OU-1\Summers Lumber-King Bear\PHASE IV RDR\ XDD Figure 5 ISCO WELL AND VAPOR LOCATIONS.dwg \Jun 23, 2010

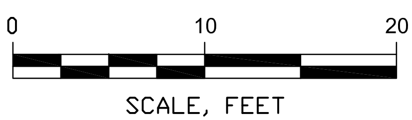


LEGEND:

	CEMENT/BENTONITE SEAL MIXTURE
	BENTONITE PELLET SEAL
	#2 SAND PACK
	#00 SAND PACK
	20-SLOT SCREEN
Sch.	SCHEDULE
PVC	POLY VINYL CHLORIDE

NOTES:

1. INJECTION WELL CONSTRUCTION DESIGNED BY XDD, LLC.



SUMMERS LUMBER/KING BEAR IRM
BAY SHORE/BRIGHTWATERS FORMER MGP SITE
BAY SHORE, NEW YORK

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TYPICAL ISCO INJECTION WELL CONSTRUCTION

Project 093180-1-1107 | February 2010 | Figure 6

I:\Project\National Grid\Bay Shore\OU-1\Summers Lumber-King Bear\PHASE IV RDR\ XDD Figure 6 Typical Well Design.dwg \Jun 23, 2010

Appendix A

Previous Investigation Boring and Monitoring Well Logs (electronic only)

Dvirka and Bartilucci
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: BBSB-83

Location: Bay Shore/Brightwaters

Purpose: Soil Boring

Date(s): 02/28/02 – 02/28/02

Total Depth: 20.00'

Elevation: 20.12'

Datum: Mean Sea Level

Logged By: Innocent Taziva

Drilling Method: Hand Augered 0–4', Geoprobe 4–20'

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Remarks: Samples selected for analysis at 8–10' and 18–20'.

Sample Interval	PID	Material Description
0–4'	0.0 ppm	Brown, TOPSOIL, fine–medium sand, some clay, little silt, roots Tan, fine–medium SAND, some clay, little silt, trace gravel (composite sample, 0–4')
4–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Same as above, tan/light brown, loose, moist Brown, coarse–very coarse SAND and rounded GRAVEL, trace silt
8–12'	12 ppm 407 ppm 21 ppm 20 ppm 23 ppm 23 ppm 161 ppm 87 ppm	Brown, coarse SAND and GRAVEL, lens of silty sand with clay at 9.5', loose, hydrocarbon–like odor, moist Gray, coarse SAND and GRAVEL, gray staining
12–16'	0.5 ppm 2.0 ppm 13 ppm 15 ppm 10 ppm	Brown, very coarse SAND and fine GRAVEL, loose, slight hydrocarbon–like odor, wet Gray, very coarse SAND and fine GRAVEL, gray staining (as in 10–12')
16–20'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, medium–coarse SAND, some rounded gravel, loose, gray staining from 17–18.5', slight hydrocarbon–like odor, wet Base of boring – 20 ft.

Depth (ft): 5, 10, 15, 20, 25

Dvirka and Bartilucci
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: BBSB-84	Elevation: 20.29'
Location: Bay Shore/Brightwaters	Datum: Mean Sea Level
Purpose: Soil Boring	Logged By: Innocent Taziva
Date(s): 02/28/02 – 02/28/02	Drilling Method: Hand Augered 0–4', Geoprobe 4–20'
Total Depth: 20.00'	Contractor: Zebra Environmental
Remarks: Samples selected for analysis at 8–10' and 18–20'.	Borehole Dia.: 2.00in

Sample Interval	PID
0–4'	0.0 ppm
4–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm
8–12'	8.0 ppm 7.0 ppm 6.0 ppm 13 ppm 4.0 ppm 3.5 ppm
12–16'	0.0 ppm 0.0 ppm 12 ppm 27 ppm 32 ppm 47 ppm
16–20'	0.0 ppm 0.0 ppm 38 ppm 11 ppm 16 ppm 20 ppm 12 ppm 1.5 ppm

Depth (ft): 5, 10, 15, 20, 25

Material Description

Dark gray–black, FILL, asphalt paving, sand and fine gravel

Light brown/tan, fine–medium SAND, some silt, little clay, trace gravel (composite sample, 0–4')

Brown, coarse–very coarse SAND and rounded GRAVEL, loose, moist

Brown, medium–coarse SAND and fine GRAVEL, lens of gray–black silty sand with clay at 9', fine–medium sand with light gray staining from 10–11', slight hydrocarbon–like odor, wet at 9'

Brown, coarse SAND and fine GRAVEL, loose, wet

Gray, medium–coarse SAND, gray staining, hydrocarbon–like odor

Light gray, very coarse SAND and rounded GRAVEL, loose, hydrocarbon–like odor, wet

Same as above, brown, slight hydrocarbon–like odor

Gray, medium–coarse SAND, some fine gravel, trace silt, gray staining, hydrocarbon–like odor

Gray, coarse SAND and GRAVEL, loose, gray staining, hydrocarbon–like odor, wet

Base of boring – 20 ft.

Dvirka and Bartilucci
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: BBSB-90

Location: Bay Shore/Brightwaters

Purpose: Soil Boring

Date(s): 04/08/02 – 04/09/02

Total Depth: 74.00'

Remarks: Samples selected for analysis at 8–10', 12–14', 48–50', and 72–74'.

Elevation: 20.82'

Datum: Mean Sea Level

Logged By: Innocent Taziva

Drilling Method: Geoprobe

Contractor: Zebra Environmental

Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		0–4'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		ASPHALT (0–.5') Brown, fine–medium sandy FILL, some clay, little silt, trace gravel, loose, trace ash and cinders, moist
5		4–8'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 24.1 ppm		Brown/tan, coarse sandy FILL, some gravel, trace brick debris, loose, moist Brown, fine–medium SAND, little silt, trace clay, moist (wet at 7'), to coarse SAND and GRAVEL with gray staining, sheen and hydrocarbon–like odor
10		8–12'	46 ppm 83 ppm 30 ppm 16 ppm 4.2 ppm 4.1 ppm		Gray, coarse SAND, some gravel, loose, saturated with NAPL, gray staining, yellowish staining on gloves, sheen, strong gasoline/petroleum–like odor, wet
15		12–16'	2.6 ppm 2.7 ppm 2.4 ppm 2.1 ppm 0.9 ppm 0.8 ppm		Gray, medium–coarse SAND, little gravel, loose, gray discoloration/ staining, moderate hydrocarbon–like odor, wet
		16–20'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, coarse, some gravel, slight hydrocarbon–like odor Brown/light brown, coarse SAND, some gravel, loose, wet
20		20–24'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above, mild hydrocarbon–like odor
25		24–28'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above
		28–32'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Same as above

Location: Bay Shore/Brightwaters	Site Id: BBSB-90
Purpose: Soil Boring	Total Depth: 74.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Sample Interval	PID	Material Description
		0.0 ppm	Brown/lt brown, coarse SAND, some gravel, loose, mild hydrocarbon-like odor, wet
	32-36'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Same as above, no odor Brown, medium SAND, loose, wet
35	36-40'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, medium-coarse SAND, trace gravel, loose, wet
40	40-44'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Same as above
45	44-48'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Same as above
50	48-52'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, medium SAND, well sorted, loose, wet
	52-56'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Same as above
55	56-60'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Same as above
60	60-64'		No recovery - sample washed out
65	64-66'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, medium SAND, well sorted, slightly dense, wet
	66-68'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, medium SAND, slightly dense, some mottled orange brown discoloration, wet
	68-70'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm	Brown, medium-coarse SAND, slightly dense, wet

Location: Bay Shore/Brightwaters	Site Id: BBSB-90
Purpose: Soil Boring	Total Depth: 74.00'
Consulting Firm: Dvirka & Bartilucci	Borehole Dia.: 2.00in

Depth (ft)	Recovery	Sample Interval	PID	Graphic Log	Material Description
		70–72'	0.0 ppm 0.0 ppm 0.0 ppm 0.0 ppm		Brown, medium—coarse SAND, slightly dense, wet Brown, coarse SAND and GRAVEL, dense, wet
		72–74'	0.0 ppm 0.0 ppm 0.0 ppm		Gray, CLAY, some silt, dense, wet Gray, silty SAND, dense, wet Base of boring — 74 ft.
75					
80					
85					
90					
95					
100					
105					

GEI Consultants, Inc.
188 Norwich Avenue
Colchester, CT 06415

PROJECT NAME: Keyspan Bayshore	BORING LOG	
CITY/STATE: Bay Shore, New York	PAGE 1 of 3	KBSB-01
GEI PROJECT NUMBER: 982482-3-1412		

BORING ID:	KBSB-01	LOCATION:	King Bear
GROUND SURFACE ELEVATION (FT):		TOTAL DEPTH (FT):	80.00
NORTHING:	EASTING:	VERT. DATUM:	
DRILLED BY:	Zebra Env. Luke Caberriello	HOR. DATUM:	
LOGGED BY:	John Schafer	DATE START / END:	6/21/2004 - 6/22/2004

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN IN.	REC IN.	PID (ppm)	STRATA	SOIL / BEDROCK DESCRIPTION
0	S1	60	60	0		S1: Moist, brown, loose, fine sand with some medium to coarse sand with some fine to coarse gravel (SP). No visual or olfactory evidence of contamination.
2						
4						S2(5-6'): Moist, brown, medium dense, fines sand (SP). No visual or olfactory evidence of contamination.
	S2	48	36	0-130		
6						S2(6-6.25'): Moist, brown, soft, plastic, clay (CL). Hydrocarbon like odor.
						S2(6.25-8)': Moist, brown, loose, fine to coarse sand with fine gravel (SW). Hydrocarbon like odor.
8	S3	48	42	100-710		
10						S3: Wet, brown, loose, fine to coarse sand with fine to coarse gravel (SW). Strong hydrocarbon like odor.
12	S4	48	30	3-10		S4: Wet, tan, loose, fine to coarse sand with some fine to coarse gravel (SW). Slight hydrocarbon like odor.
14						
16	S5	48	24	15-25		S5: Wet, light brown, loose, fine to coarse sand with some fine to coarse gravel (SW). Slight hydrocarbon like odor.
18						
20	S6	48	18	0		S6: Wet, light brown, loose, fine to coarse sand with trace fine gravel (SW). No visual or olfactory evidence of contamination.
22						
24	S7	48	18	0		S7: Wet, light brown, loose, fine to coarse sand with trace fine gravel (SW). No visual or olfactory evidence of contamination.
26						
28	S8	48	42	0		S8: Wet, light brown, loose to medium dense, fine to coarse sand with some fine to coarse gravel (SW). No visual or olfactory evidence of contamination.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
NM = NOT MEASURED

(ppm) = PARTS PER MILLION
IN. = INCHES
FT. = FEET
Used hand augers in upper 5 feet, then advanced with Geoprobes.

GEI Consultants, Inc.
188 Norwich Avenue
Colchester, CT 06415

PROJECT NAME: Keyspan Bayshore
CITY/STATE: Bay Shore, New York
GEI PROJECT NUMBER: 982482-3-1412

KBSB-01

DEPTH FT.	SAMPLE INFORMATION				STRATA	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN IN.	REC IN.	PID (ppm)		
30						
32	S9	48	24	0		S9: Wet, light brown, medium dense, fine to medium sand (SP). No visual or olfactory evidence of contamination.
34						
36	S10	48	36	0-0.8		S10: Wet, brown, semi-loose, fine to medium sand (SP). No visual or olfactory evidence of contamination.
38						
40	S11	48	30	0		S11: Wet, brown, semi-loose, fine to medium sand with some coarse sand (SP). No visual or olfactory evidence of contamination.
42						
44	S12	48	24	0		S12: Wet, light brown, semi-loose, fine to medium sand with some coarse sand and trace fine gravel (SP). No visual or olfactory evidence of contamination.
46						
48	S13	48	24	0		S13: Wet, brown, medium dense to loose, fine to medium sand with some coarse sand and trace fine gravel (SP). No visual or olfactory evidence of contamination.
50						
52	S14	48	36	0		S14: Wet, brown, micaceous, dense, fine sand (SP). No visual or olfactory evidence of contamination.
54						
56	S15	48	30	0		S15: Moist, brown, micaceous, dense, fine sand (SP). No visual or olfactory evidence of contamination.
58						
60	S16	48	18	0.6		S16: Brown, micaceous, dense, very fine to fine sand (SP). No visual or olfactory evidence of contamination.
62						
64	S17	48	24	1		S17: Brown, micaceous, dense, very fine to fine sand (SP). Slight creosote like odor.

NOTES:

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FT. = FEET
Used hand augers in upper 5 feet, then advanced with Geoprobes.

GEI Consultants, Inc.
188 Norwich Avenue
Colchester, CT 06415

PROJECT NAME:	Keyspan Bayshore
CITY/STATE:	Bay Shore, New York
GEI PROJECT NUMBER:	982482-3-1412

BORING LOG

KBSB-01

DEPTH FT.	TYPE and NO.	PEN IN.	REC IN.	PID (ppm)	STRATA	SOIL / BEDROCK DESCRIPTION
66						
68	S18	48	18	0		S18: Wet, brown, dense, very fine to fine sand (SP). No visual or olfactory evidence of contamination.
70						
72	S19	48	24	0		S19(72-74'): Wet, brown, dense, fine sand with some medium sand (SP). No visual or olfactory evidence of contamination.
74						S19(74-76'): Wet, gray, dense, plastic, clay with some medium to coarse sand (CL). No visual or olfactory evidence of contamination.
76	S20	48	36	0		S20(76-78.5'): Wet, gray, slightly plastic, silty very fine sand with trace clay (SM). No visual or olfactory evidence of contamination.
78						S20(78.5-80'): Moist, brown, hard, plastic clay (CL). No visual or olfactory evidence of contamination.
80						

NOTES:

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(ppm) = PARTS PER MILLION
IN. = INCHES
FT. = FEET
Used hand augers in upper 5 feet, then advanced with Geoprobes.

GEI Consultants, Inc.
188 Norwich Avenue
Colchester, CT 06415

PROJECT NAME:	Keyspan Bayshore
CITY/STATE:	Bay Shore, New York
GEI PROJECT NUMBER:	982482-3-1412

BORING ID:	KBSB-02	LOCATION:	King Bear
GROUND SURFACE ELEVATION (FT):		TOTAL DEPTH (FT):	72.00
NORTHING: EASTING:		VERT. DATUM:	
DRILLED BY:	Zebra Env. Charles Green	HOR. DATUM:	
LOGGED BY:	Dan Burke	DATE START / END:	6/21/2004 - 6/21/2004

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN IN.	REC IN.	PID (ppm)	STRATA	SOIL / BEDROCK DESCRIPTION
0	S1	60	48	0		S1: Light Brown, non-cohesive, poorly sorted, fine to coarse sand with trace fine well rounded gravel (SW). No visual or olfactory evidence of contamination.
2						
4	S2	48	32.4	0-120		S2(4-5.3'): Dry, light brown, non-cohesive, poorly sorted, fine to coarse sand with trace gravel (SW). Slight hydrocarbon like odor.
6						S2(5.3-6.3'): Moist, brown-gray, cohesive, well sorted, silt, fine sand and clay (ML/MH). Hydrocarbon like odor.
						S2(6.3-6.7'): Moist, light brown, non-cohesive, poorly sorted, fine to coarse sand with trace gravel (SW). Hydrocarbon like odor.
8	S3	48	48	6.4-14.6		S3: Wet; light brown-gray, non-cohesive, poorly sorted, fine to coarse sand with trace fine well rounded gravel (SW). Black staining from 10-12 ft. Slight hydrocarbon like odor from 8-9', slight organic/sewage odor.
10						
12	S4	48	15.6	12.8-55.8		S4: Wet, gray, non-cohesive, poorly sorted, fine to coarse sand with trace well rounded fine gravel (SW). Black staining at 14.5'. Slight hydrocarbon like odor.
14						
16	S5	48	21.6	0.6-2		S5: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to coarse sand with trace fine well rounded gravel (SW). Black staining in top 1.1'. Very slight hydrocarbon like odor in top 1.1'.
18						
20	S6	48	10.8	0		S6: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to coarse sand with trace well rounded fine gravel (SW). No visual or olfactory evidence of contamination.
22						
24	S7	48	14	0		S7: Wet, light brown, non-cohesive, poorly sorted, fine to medium sand with some coarse sand and trace fine gravel (SW). No visual or olfactory evidence of contamination.
26						
28	S8	48	19.2	0		S8: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand with some coarse sand and trace fine well rounded gravel (SW). No visual or olfactory evidence of contamination.

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IN. = INCHES
FT. = FEET
Used hand augers in upper 5 feet, then advanced with Geoprobes.

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN IN.	REC IN.	PID (ppm)	STRATA	SOIL / BEDROCK DESCRIPTION
30						
32	S9	48	28	0		S9: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand with some coarse sand and trace fine well rounded gravel (SW). No visual or olfactory evidence of contamination.
34						
36	S10	48	25.2	0		S10: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to coarse sand with trace fine gravel (SW). No visual or olfactory evidence of contamination.
38						
40	S11	48	28.8	0		S11: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand with trace coarse sand and fine gravel (SW). No visual or olfactory evidence of contamination.
42						
44	S12	48	30	0		S12: Light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand with trace coarse sand (SW). No visual or olfactory evidence of contamination.
46						
48	S13	48	22.8	0		S13: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand (SW). No visual or olfactory evidence of contamination.
50						
52	S14	48	24	0		S14: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand with trace coarse sand (SW). No visual or olfactory evidence of contamination.
54						
56	S15	48	24	0		S15: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand with trace coarse sand (SW). No visual or olfactory evidence of contamination.
58						
60	S16	48	33.6	0		S16: Wet, light brown with orange iron banding between 60.2 and 60.6', dense, non-cohesive, well sorted, fine sand with some medium sand (SP). No visual or olfactory evidence of contamination.
62						
64	S17	48	27.6	0		S17: Wet, light brown with orange iron banding between 66.2 and 66.6', dense, non-cohesive, poorly sorted, fine sand with some medium sand (SW). No visual

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(ppm) = PARTS PER MILLION
IN. = INCHES
FT. = FEET
Used hand augers in upper 5 feet, then advanced with Geoprobes.

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN IN.	REC IN.	PID (ppm)	STRATA	SOIL / BEDROCK DESCRIPTION
66						or olfactory evidence of contamination.
68	S18	48	18	0		S18: Wet, light brown with orange iron banding, dense, non-cohesive, poorly sorted, fine sand with some medium sand (SW). No visual or olfactory evidence of contamination.
70						
72						

NOTES:

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(ppm) = PARTS PER MILLION
IN. = INCHES
FT. = FEET
Used hand augers in upper 5 feet, then advanced with Geoprobes.

GEI Consultants, Inc.
188 Norwich Avenue
Colchester, CT 06415

PROJECT NAME: Keyspan Bayshore
CITY/STATE: Bay Shore, New York
GEI PROJECT NUMBER: 982482-3-1412

BORING LOG

KBSB-03

BORING ID:	KBSB-03	**LOCATION:**	King Bear
GROUND SURFACE ELEVATION (FT):		**TOTAL DEPTH (FT):**	70
NORTHING:	**EASTING:**	**VERT. DATUM:**	
DRILLED BY:	Zebra Env. Charles Green	**HOR. DATUM:**	
LOGGED BY:	Dan Burke	**DATE START / END:**	6/22/2004 - 6/22/2004

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN IN.	REC IN.	PID (ppm)	STRATA	SOIL / BEDROCK DESCRIPTION
0	S1	60	48	NM		S1: Brown, fine to coarse sand with some fine well rounded gravel (SW). No visual or olfactory evidence of contamination.
4	S2	48	31.2	0-1.1		S2: Moist, light brown to orange, non-cohesive, poorly sorted, fine to coarse sand with little fine well rounded gravel (SW). No visual or olfactory evidence of contamination.
8	S3	48	32.4	0		S3: Wet, light brown, non-cohesive, poorly sorted, fine to coarse sand with trace fine gravel (SW). No visual or olfactory evidence of contamination.
12	S4	48	24	0-0.8		S4: Light brown, medium dense, non-cohesive, poorly sorted, fine to coarse sand with trace fine gravel (SW). Gray/black staining at 14.8-16'. Slight hydrocarbon like odor at 14.8-16'.
16	S5	48	14.4	0		S5: Wet, gray, non-cohesive, poorly sorted, fine to medium sand with some coarse sand and trace fine gravel (SW). Gray staining. Slight hydrocarbon like odor.
20	S6	48	22.8	0		S6: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to coarse sand with trace fine gravel (SW). No visual or olfactory evidence of contamination.
24	S7	48	25.2	0		S7: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to coarse sand with some fine gravel (SW). No visual or olfactory evidence of contamination.
28	S8	48	19.2	0		S8: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to coarse sand with some fine gravel (SW). No visual or olfactory evidence of contamination.

NOTES:
PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
NM = NOT MEASURED
(ppm) = PARTS PER MILLION
IN. = INCHES
FT. = FEET
Used hand augers in upper 5 feet, then advanced with Geoprobes.

GEI Consultants, Inc. 188 Norwich Avenue Colchester, CT 06415	PROJECT NAME: Keyspan Bayshore CITY/STATE: Bay Shore, New York GEI PROJECT NUMBER: 982482-3-1412	PAGE 2 of 3	BORING LOG KBSB-03

DEPTH FT.	SAMPLE INFORMATION				STRATA	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN IN.	REC IN.	PID (ppm)		
30						
32	S9	48	24	0		S9: Wet, light brown, non-cohesive, poorly sorted, medium dense, fine to medium sand with some coarse sand and trace fine gravel (SW). No visual or olfactory evidence of contamination.
36	S10	48	26.4	0		S10: Wet, light brown, non-cohesive, poorly sorted, medium dense, fine to medium sand with some coarse sand and trace fine gravel (SW). No visual or olfactory evidence of contamination.
40	S11	48	21.6	0		S11: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand with trace coarse sand (SW). No visual or olfactory evidence of contamination.
44	S12	48	16.8	0		S12: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand (SW). No visual or olfactory evidence of contamination.
48	S13	48	21.6	0		S13: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand (SW). No visual or olfactory evidence of contamination.
52	S14	48	25.2	0		S14: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand with trace coarse sand (SW). No visual or olfactory evidence of contamination.
56	S15	48	25.2	0		S15: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand with trace coarse sand (SW). No visual or olfactory evidence of contamination.
60	S16	48	26.4	0		S16: Wet, light brown with iron banding throughout, dense, non-cohesive, poorly sorted, fine to medium sand (SW). No visual or olfactory evidence of contamination.
64	S17	48	8.4	0		S17: Wet, light brown with iron banding, dense, non-cohesive, poorly sorted, fine to medium sand (SW). No visual or olfactory evidence of contamination.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
NM = NOT MEASURED

(ppm) = PARTS PER MILLION
IN. = INCHES
FT. = FEET
Used hand augers in upper 5 feet, then advanced with Geoprobes.

GEI Consultants, Inc.
188 Norwich Avenue
Colchester, CT 06415

PROJECT NAME: Keyspan Bayshore		BORING LOG	
CITY/STATE: Bay Shore, New York		PAGE	KBSB-03
GEI PROJECT NUMBER: 982482-3-1412		3 of 3	

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN IN.	REC IN.	PID (ppm)	STRATA	SOIL / BEDROCK DESCRIPTION
66						
68	S18	24	16.8	0		S18: Wet, light brown with iron banding, dense, non-cohesive, poorly sorted, fine to medium sand (SW). No visual or olfactory evidence of contamination.
70						Refusal at 70 feet. Bottom of Boring.

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(ppm) = PARTS PER MILLION
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FT. = FEET
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GEI Consultants, Inc.
188 Norwich Avenue
Colchester, CT 06415

PROJECT NAME: Keyspan Bayshore
CITY/STATE: Bay Shore, New York
GEI PROJECT NUMBER: 982482-3-1412

BORING ID:	KBSB-04	**LOCATION:**	King Bear
GROUND SURFACE ELEVATION (FT):		**TOTAL DEPTH (FT):**	72.00
NORTHING:	**EASTING:**	**VERT. DATUM:**	
DRILLED BY:	Zebra Env. Charles Green	**HOR. DATUM:**	
LOGGED BY:	Dan Burke	**DATE START / END:**	6/23/2004 - 6/24/2004

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN IN.	REC IN.	PID (ppm)	STRATA	SOIL / BEDROCK DESCRIPTION
0	S1	48	48	0		S1: Brown to light brown, fine to coarse sand with some fine gravel and trace silt. No visual or olfactory evidence of contamination (SW).
4	S2	48	30	0.8-101		S2: Moist, light brown, non-cohesive, poorly sorted, fine to coarse sand with little fine gravel (SW). Black staining 7.7-8'. Hydrocarbon like odor.
8	S3	48	33.6	45.7-139		S3: Black, non-cohesive, poorly sorted, fine to coarse sand with trace fine gravel (SW). Black staining , slight sheen on soil grains. Strong hydrocarbon odor.
12	S4	48	31.2	0.8-17.7		S4: Wet, gray, medium dense, non-cohesive, poorly sorted, fine to coarse sand with trace fine gravel (SW). Gray staining. Moderate hydrocarbon like odor.
16	S5	48	19.2	0.7-3.7		S5: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand with trace fine gravel (SW). Slight gray staining 16-17.25'. Slight hydrocarbon like odor 16-18.5'.
20	S6	48	25.2	0-0.4		S6: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to coarse sand with trace fine gravel (SW). No visual or olfactory evidence of contamination.
24	S7	48	22.8	0		S7: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to coarse sand with trace fine gravel (SW). No visual or olfactory evidence of contamination.
28	S8	48	28.8	0		S8: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to coarse sand with trace fine gravel (SW). No visual or olfactory evidence of contamination.

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FT. = FEET
Used hand augers in upper 5 feet, then advanced with Geoprobes.

GEI Consultants, Inc.
188 Norwich Avenue
Colchester, CT 06415

PROJECT NAME: Keyspan Bayshore
CITY/STATE: Bay Shore, New York
GEI PROJECT NUMBER: 982482-3-1412

BORING LOG

KBSB-04

DEPTH FT.	TYPE and NO.	PEN IN.	REC IN.	PID (ppm)	STRATA	SOIL / BEDROCK DESCRIPTION
30						
32	S9	48	30	0		S9: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to coarse sand with trace fine gravel (SW). No visual or olfactory evidence of contamination.
34						
36	S10	48	27.6	0		S10: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand with coarse sand and trace fine gravel (SW). No visual or olfactory evidence of contamination.
38						
40	S11	48	28.8	0		S11: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand with coarse sand and trace fine gravel (SW). No visual or olfactory evidence of contamination.
42						
44	S12	48	25.2	0		S12: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine sand with some medium sand and trace coarse sand and fine gravel (SW). No visual or olfactory evidence of contamination.
46						
48	S13	48	25.2	0		S13: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine sand with some medium sand and trace coarse sand and fine gravel (SW). No visual or olfactory evidence of contamination.
50						
52	S14	48	22.8	0		S14: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine sand with some medium and trace coarse sand (SW). No visual or olfactory evidence of contamination.
54						
56	S15	48		0		S15: Wet, light brown, medium dense, non-cohesive, poorly sorted, fine to medium sand (SW). No visual or olfactory evidence of contamination.
58						
60	S16	48		0		S16: Wet, light brown, dense, non-cohesive, well sorted, fine sand with some medium sand (SP). No visual or olfactory evidence of contamination.
62						
64	S17	48		0		S17: Wet, light brown, dense, non-cohesive, well sorted, fine sand with some medium sand (SP). No visual or olfactory evidence of contamination.

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FT. = FEET
Used hand augers in upper 5 feet, then advanced with Geoprobes.

GEI Consultants, Inc.
188 Norwich Avenue
Colchester, CT 06415

PROJECT NAME:	Keyspan Bayshore	BORING LOG	
CITY/STATE:	Bay Shore, New York	PAGE 3 of 3	KBSB-04
GEI PROJECT NUMBER:	982482-3-1412		

DEPTH FT.	SAMPLE INFORMATION TYPE and NO.	PEN IN.	REC IN.	PID (ppm)	STRATA	SOIL / BEDROCK DESCRIPTION
66						
68	S18	48		0		S18: Wet, light brown, dense, non-cohesive, well sorted, fine sand with some medium sand (SP). No visual or olfactory evidence of contamination.
70						
72						

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
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NM = NOT MEASURED
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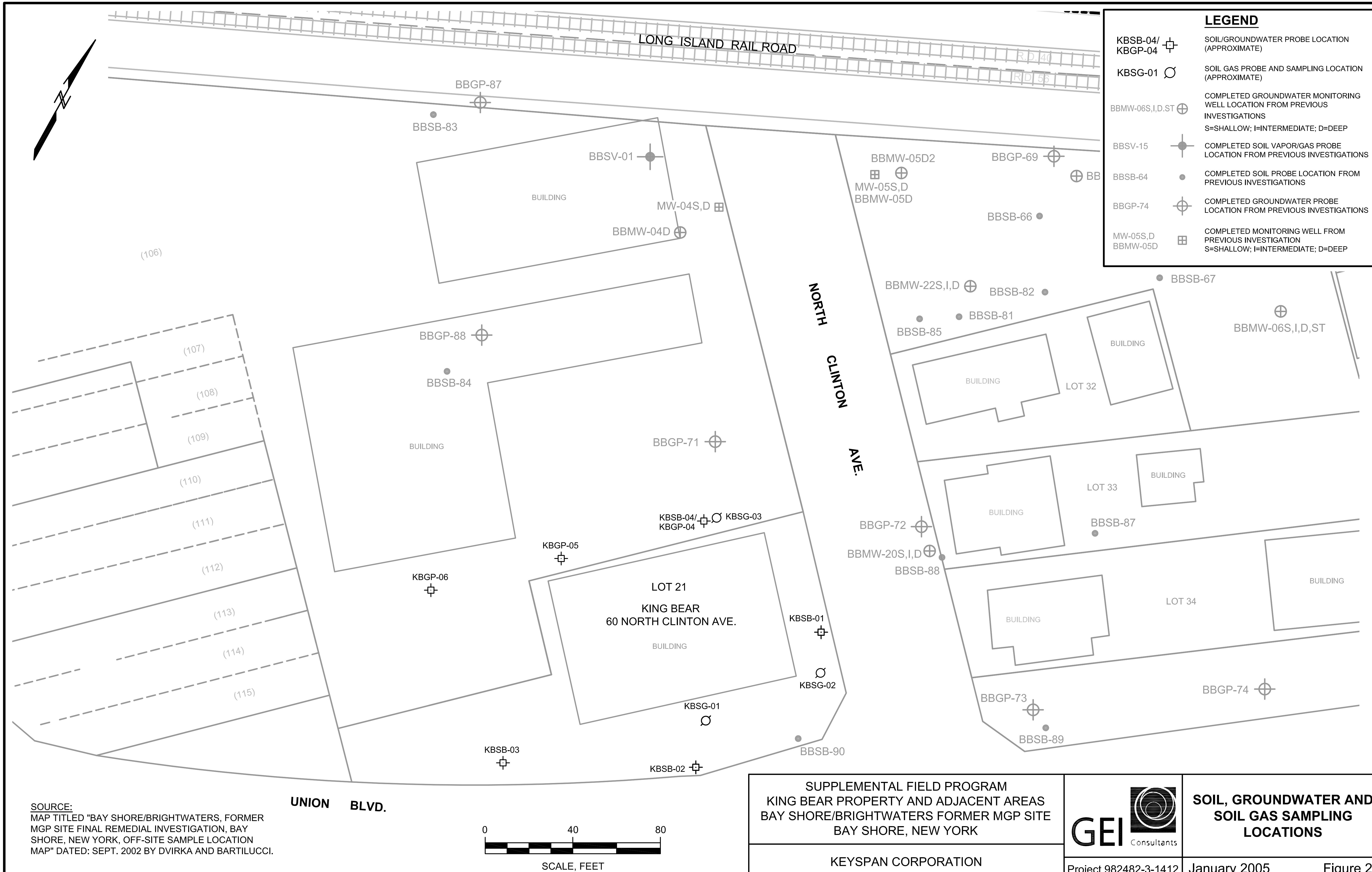
IN. = INCHES
FT. = FEET
Used hand augers in upper 5 feet, then advanced with Geoprobes.



KEYSPAN\BAYSHORE\TAYLOR RENTAL\FIGS\BAY-PSAMP 8-2004

Dvirka and Bartilucci
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

Site Id: BBMW-04D	
Date(s): 10/06/99 - 10/07/99	
Datum: Mean Sea Level	
Elevation: 20.09'	Measuring Point: 20.92'
Completed Depth: 75.00'	Total Depth: 79.50'

Location: Bay Shore/Brightwaters

Purpose: Monitoring Well, Deep

Logged By: Jeff Diamond

Drilling Method: B-61 Mobile Drill Rig w/ 4 1/4" HSA

Borehole Dia.: 6.00in

Contractor: Land,Air,Water Envir

Screens:

type: Slotted	size: 0.010in	dia: 2.00in	fm: 4.00'	to: 14.00'
type: Slotted	size: 0.010in	dia: 2.00in	fm: 35.00'	to: 45.00'
type: Slotted	size: 0.020in	dia: 2.00in	fm: 63.00'	to: 73.00'

Remarks: Includes well screens for monitoring wells: MW-04S, MW-04D and BBMW-04D

Depth (ft)	Recovery	Sample Interval	Vapor	Material Description	Graphic Log	Monitoring Well Screen Zones
				CONCRETE		
				Dark yellow-orange, medium coarse SAND w/gravel		
5		4-6'	56.7 ppm 58.6 ppm 24.9 ppm	Same as above w/a brown-yellow, SILTY CLAY lens		
				Dark yellow-orange med-very coarse SAND w/fine gravel		
		6-8'	272 ppm 475 ppm 936 ppm	Med gray, med-fine SAND, trace GRAVEL		
				Yellow-brown, very coarse-med. SAND w/fine GRAVEL		
		8-10'	2000 ppm 1230 ppm 1415 ppm	Gray-orange, med-v coarse SAND, w/gravel, petroleum-like odor, sheen, wet		
10		10-12'	573 ppm 88 ppm	Gray-orange, v coarse-coarse SAND w/fine gravel, petroleum-like odor, sheen		
		12-14'	125 ppm	Grayish-orange/pale yellowish brown, coarse-med SAND w/fine-med subround gravel, hydrocarbon-like odor		
15		14-16'	158 ppm 10.1 ppm	Pale yellow-brown-gray, coarse-v coarse SAND w/subrounded GRAVEL, slight hydrocarbon-like odor		
20		20-22'	10.0 ppm 13.7 ppm 10.8 ppm	Same as above, but pale yellowish orange Dark yellow-orange, medium-coarse SAND, w/fine GRAVEL		
25		25-27'	5.4 ppm 4.7 ppm 4.6 ppm	Pale yellow-orange, med-very coarse SAND w/fine-med subrounded GRAVEL		

Consulting Firm: Dvirka & Bartilucci	Site Id: BBMW-04D
Location: Bay Shore/Brightwaters	Date(s): 10/06/99 - 10/07/99
Purpose: Monitoring Well, Deep	Total Depth: 79.50'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
		30-32'	5.0 ppm 5.7 ppm 6.6 ppm 5.2 ppm	Grayish-orange, very coarse-med SAND w/subrounded GRAVEL		
35						
40		40-42'	0.7 ppm 1.0 ppm	Dark yellow-orange/yellow-brown, coarse-very coarse SAND w/subrounded GRAVEL		
45		45-47'	1.3 ppm 1.2 ppm	Same as above, w/slight hydrocarbon-like odor		
50		50-52'	0.0 ppm	Dark yellow-orange, coarse-med micaceous SAND w/subrounded-subangular GRAVEL		
55		55-57'	0.0 ppm	Yellow-brown, coarse-med micaceous SAND w/trace subangular GRAVEL		
60		60-62'	0.0 ppm	Same as above		
65		65-67'	0.0 ppm	Dark yellow-orange-brown, micaceous med-fine SAND, trace subrounded GRAVEL		

Consulting Firm: Dvirka & Bartilucci	Site Id: BBMW-04D
Location: Bay Shore/Brightwaters	Date(s): 10/06/99 - 10/07/99
Purpose: Monitoring Well, Deep	Total Depth: 79.50'

Depth (ft)	Recovery	Sample Interval	PID	Material Description	Graphic Log	Monitoring Well Screen Zones
		70-72'	0.0 ppm	Same as above		
				Gray, med-coarse SAND interbedded w/dark gray micaceous silty CLAY		
		73-75'	0.0 ppm	Black, silty CLAY w/lignite, some gravel		
75				Dk gray, micaceous CLAY, plastic, trace silt, thin bed of m-f SAND		
		75-77'	0.0 ppm	Dark gray, silty CLAY, micaceous, lignite		
				Gray, fine, micaceous SAND		
		77-79.5'	0.0 ppm	Black, SILTY CLAY (Shelby tube sample from 77-79.5')		
80				Base of Boring - 79.5 ft.		
85						
90						
95						
100						
105						

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid		BORING LOG	
PROJECT NAME: Ozone Injection MWs		PAGE 1 of 3	OZMW-22
CITY/STATE: BayShore, New York			
GEI PROJECT NUMBER: 061140-8-1705			

GROUND SURFACE ELEVATION (FT): 19.88 **LOCATION:** OU-1
NORTHING: 203370.0035 **EASTING:** 1190097.363 **TOTAL DEPTH (FT):** 65.00
DRILLED BY: Fenley & Nicol Environmental, Inc. / Kevin Kegel **DATUM VERT. / HORZ.:** NAVD 88 / NAD83 NY Long Island Zone
LOGGED BY: Jeff Parillo & Chris Scharkopf **DATE START / END:** 1/14/2008 - 1/15/2008
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ⊻ 9.25

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0									0 - 5 HAND CLEARED.
5	S-1	5.0	40	857			NLO	OZMW-22 (8-10)	5 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, subangular to subrounded, ~5% gravel, fine, ~5% fines; strong naphthalene-like odor, wet, black to gray, brown stained, possible LNAPL at 9.25 feet bgs.
10	S-2	5.0	36	4.6			NLO		10 - 15 WIDELY GRADED SAND (SW); ~90% sand, subangular to subrounded, ~5% gravel, fine, ~5% fines; moderate naphthalene-like odor, gray stained.
15	S-3	5.0	39				NLO		15 - 20 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, subangular to subrounded, ~5% gravel, fine, ~5% fines; slight naphthalene-like odor, stained gray to tan.
20	S-4	5.0	38	0.3			NLO	OZMW-22 (20.5-22)	20 - 25 WIDELY GRADED SAND WITH SILT (SW-SM); ~75% sand, fine to coarse, ~15% gravel, fine, ~10% fines; slight naphthalene-like odor, wet, light brown and tan, loose, thin lens (~1/8") of dark brown staining at 21.8 feet bgs.

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FT. = FEET

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PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR
OLO = ORGANIC LIKE ODOR
SLO = SULFUR LIKE ODOR
MLO = MUSTY LIKE ODOR

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Ozone Injection MWs
CITY/STATE: BayShore, New York
GEI PROJECT NUMBER: 061140-8-1705

OZMW-22

DEPTH FT.	TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
					NLO		
25	S-5	5.0	36	0.2	NLO		25 - 30 WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine, ~10% fines; slight naphthalene-like odor, wet, light brown and tan, loose.
30	S-6	5.0	34	0.1	NLO		30 - 35 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines; slight naphthalene-like odor, wet, light brown and tan, loose.
35	S-7	5.0	32	0.1	NLO		35 - 40 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines; slight naphthalene-like odor, wet, light brown and tan, loose.
40	S-8	5.0	40	0.5	NLO NLO NLO	OZMW-22 (40.25-41)	40 - 41.8 SILTY SAND (SM); ~85% sand, fine to coarse, ~15% fines; slight naphthalene-like odor, wet, light brown and tan, loose, slight gray staining. 41.8 - 42.1 SILTY SAND (SM); ~60% sand, fine, ~40% fines; slight naphthalene-like odor, wet, light brown and tan, moderately dense, slight gray staining. 42.1 - 45 SILTY SAND (SM); ~85% sand, fine to coarse, ~15% fines; slight naphthalene-like odor, wet, light brown and tan, loose, slight gray staining.
45	S-9	5.0	34	0.2	NLO		45 - 50 SILTY SAND (SM); ~85% sand, fine to coarse, ~15% fines; slight naphthalene-like odor, wet, light brown and gray, loose, slight gray staining.
50	S-10	5.0	36	0.2	NLO		50 - 53.5 SILTY SAND (SM); ~80% sand, fine to coarse, ~20% fines; slight naphthalene-like odor, wet, light brown and tan, moderately dense.

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SLO = SULFUR LIKE ODOR
MLO = MUSTY LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300	CLIENT: National Grid PROJECT NAME: Ozone Injection MWs CITY/STATE: BayShore, New York GEI PROJECT NUMBER: 061140-8-1705	BORING LOG PAGE 3 of 3 OZMW-22

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
							NLO		53.5 - 55 SILTY SAND (SM); ~75% sand, fine to coarse, ~25% fines; slight naphthalene-like odor, wet, light brown and tan, moderately dense.
							NLO		
55	S-11	5.0	28	0.1			NLO		55 - 60 SILTY SAND (SM); ~80% sand, fine to coarse, ~20% fines; slight naphthalene-like odor, wet, light gray and tan, very slight light gray staining.
60	S-12	5.0	33	0.5			NLO	OZMW-22 (60-61.5)	60 - 65 SILTY SAND (SM); ~80% sand, fine to coarse, ~20% fines; slight naphthalene-like odor, wet, light gray and tan, moderately dense, very slight gray staining, thin bands of orange fine sand (~1/8-1/4" wide).
65									Bottom of borehole at 65.0 feet. Ground surface elevation is estimated

NOTES:

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FT. = FEET

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CLO = CHEMICAL LIKE ODOR
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OLO = ORGANIC LIKE ODOR
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MLO = MUSTY LIKE ODOR

Appendix B

Pre-Design Data Collection Boring and Monitoring Well Logs (electronic only)

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

PAGE 1 of 1

KB/SL A-5

GROUND SURFACE ELEVATION (FT): 17.99
LOCATION: King Bear/Summers Lumber
NORTHING: 203398.86 **EASTING:** 1189855.33
TOTAL DEPTH (FT): 20.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/8/2009 - 5/11/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 4.00

DEPTH FT.	TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		4.0		0.0			0 - 0.8 Black, FILL, silty fill.
				0.0			0.8 - 1 Black, FILL, silty fill and brick. 1 - 1.3 SILTY SAND WITH GRAVEL (SM); ~40% gravel, fine to coarse, ~40% sand, fine to medium, ~20% fines; dry, brown.
				0.0			1.3 - 3.3 SILTY SAND (SM); ~60% sand, fine to medium, ~30% fines, ~10% gravel, fine; dry, brown.
				0.0			3.3 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; moist, brown, wet at ~4'.
∇	S1	6.0	50	0.0		Collected Sample 4'-6'	4 - 5.3 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown.
5				0.0			5.3 - 7.7 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0			
				0.0			
				0.0			7.7 - 10 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown.
				0.0			
10	S2	5.0	54	0.0			10 - 11.9 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0			
				0.0			11.9 - 13.8 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, light brown.
				0.0			
				0.0			13.8 - 15 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
15	S3	5.0	57	0.0			15 - 16.9 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0			
				0.0			16.9 - 18.7 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine to coarse; wet, light brown.
				0.0			
				0.0			18.7 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, light brown.
20							Bottom of borehole at 20.0 feet.

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GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL A-6

GROUND SURFACE ELEVATION (FT): 17.62
LOCATION: King Bear/Summers Lumber
NORTHING: 203372.09 **EASTING:** 1189826.27
TOTAL DEPTH (FT): 25.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/8/2009 - 5/11/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 3.80

DEPTH FT.	TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	ODOR	ANALYZED SAMPLE ID
0		4.0		0.0, 0.0, 0.0, 0.0		
4	S1	6.0	43	0.0, 0.0, 0.0, 1.7, 3.2, 2.0, 2.5, 4.3	NLO (6.4 - 7.6), NLO (7.6 - 10)	Collected Sample 4'-6'
10	S2	5.0	51	1.9, 4.7, 7.7, 8.8, 3.5, 7.9, 18.1, 9.8, 9.0, 7.2	NLO (10 - 12.2), NLO (12.2 - 13.9), NLO (13.9 - 15)	Collected Sample 12'-14'
15	S3	5.0	47	0.0, 0.0, 0.0, 0.0, 0.0		
20	S4	5.0	57	0.0, 0.0, 0.0, 0.0, 0.0		
25						

SOIL / BEDROCK DESCRIPTION

0 - 0.3 TOPSOIL.
0.3 - 1 Black, FILL, silty fill.
1 - 1.5 SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to medium, ~20% gravel, fine, ~20% fines; dry, gray, FILL.
1.5 - 1.7 FILL, broken brick.
1.7 - 2 SILTY SAND WITH GRAVEL (SM); ~40% sand, fine to medium, ~30% gravel, fine, ~30% fines; dry, brown.
2 - 3 SILTY SAND (SM); ~50% sand, fine to medium, ~50% fines; dry, brown.
3 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine; moist, brown, wet at ~3.8'.
4 - 6.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine; wet, light brown.
6.4 - 7.6 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown / gray, slight staining.
7.6 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light gray, slight staining.
10 - 12.2 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; moderate naphthalene-like odor, wet, light brown / gray, very slight staining.
12.2 - 13.9 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; moderate naphthalene-like odor, wet, light brown / slightly gray.
13.9 - 15 NARROWLY GRADED SAND WITH GRAVEL (SP); ~80% sand, fine to medium, ~20% gravel, coarse; slight naphthalene-like odor, wet, light brown.
15 - 20 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
20 - 22.1 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
22.1 - 24 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown.
24 - 25 NARROWLY GRADED SAND (SP); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
Bottom of borehole at 25.0 feet.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
ppm = PARTS PER MILLION
IN. = INCHES
FT. = FEET
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR
CrLO= CREOSOTE LIKE ODOR
OLO = ORGANIC LIKE ODOR
SLO = SULFUR LIKE ODOR
MLO = MUSTY LIKE ODOR

GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

PAGE 1 of 2

KB/SL B-1

GROUND SURFACE ELEVATION (FT): 19.47
LOCATION: King Bear/Summers Lumber
NORTHING: 203474.94 **EASTING:** 1190000.13
TOTAL DEPTH (FT): 30.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/6/2009 - 5/11/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 4.00

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0 ∇		4.0		0.0 0.0 0.0 0.0 7.7			NLO		0 - 0.9 Black / dark brown, TOPSOIL, silty sand & topsoil, little fine gravel and roots. 0.9 - 1.3 NARROWLY GRADED SAND WITH GRAVEL (SP); ~80% sand, fine to medium sand, ~20% gravel, fine; dry, light brown. 1.3 - 2.2 WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~60% sand, fine to coarse, ~30% gravel, fine, ~10% fines; moist, dark brown. 2.2 - 3.5 SILTY SAND (SM); ~60% sand, fine to medium, ~30% fines, ~10% gravel, fine; dry, brown. 3.5 - 4 SILTY SAND (SM); ~60% sand, fine to medium, ~30% fines, ~10% gravel, fine; moderate naphthalene-like odor, moist, gray.
5	S1	6.0	42	30.9 104 151 115 89.8 152 470 50.8			NLO NLO	Collected Sample 4'-6'	4 - 9.6 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate naphthalene-like odor, wet, light brown to slightly gray, PLO stronger at top of sample, NLO stronger at bottom of sample, slight staining. 9.6 - 10 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; moderate naphthalene-like odor, wet, gray, slight/moderate staining.
10	S2	5.0	56	73.7 84.2 89.7 90.6 39.5 12.5 8.4 4.4 8.9			NLO NLO	Collected Sample 10'-12'	10 - 12.4 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; moderate naphthalene-like odor, wet, gray / light brown, moderate staining. 12.4 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate naphthalene-like odor, wet, light gray, slight naphthaline-like odor at bottom of sample, slight staining.
15	S3	5.0	48	4.3 7.0 10.9 4.6 5.1 4.1 3.4 7.5 4.1 5.5			NLO NLO NLO		15 - 17.3 NARROWLY GRADED SAND (SP); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light gray, slight staining. 17.3 - 19 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine to coarse; slight naphthalene-like odor, wet, light brown / gray, slight staining. 19 - 20 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown.
20	S4	5.0	48	5.7 0.6 0.5 0.0 0.0				Collected Sample 21'-23'	20 - 22.5 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown. 22.5 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.

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TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
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CrLO= CREOSOTE LIKE ODOR
OLO = ORGANIC LIKE ODOR
SLO = SULFUR LIKE ODOR
MLO = MUSTY LIKE ODOR

GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT:	National Grid
PROJECT NAME:	Bayshore
CITY/STATE:	Bayshore, New York
GEI PROJECT NUMBER:	061140-8-1712

BORING LOG

KB/SL B-1

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
25	S5	5.0	51	0.0					25 - 27.5 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0					27.5 - 30 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine to coarse; wet, light brown.
30									Bottom of borehole at 30.0 feet.

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300	CLIENT: National Grid PROJECT NAME: Bayshore CITY/STATE: Bayshore, New York GEI PROJECT NUMBER: 061140-8-1712	BORING LOG PAGE 1 of 1 KB/SL B-3

GROUND SURFACE ELEVATION (FT): 18.13 LOCATION: King Bear/Summers Lumber
NORTHING: 203423.32 EASTING: 1189943.52 TOTAL DEPTH (FT): 25.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris DATE START / END: 5/6/2009 - 5/11/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 3.50

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		4.0		0.0 0.0 0.0 0.0					0 - 0.3 TOPSOIL. 0.3 - 1 SILTY SAND (SM); black, FILL. 1 - 1.5 SILTY SAND (SM); ~60% sand, fine to medium, ~30% fines, ~10% gravel, fine; dry, brown. 1.5 - 3 SILTY SAND (SM); ~60% sand, fine to medium, ~30% fines, ~10% gravel, fine; dry, red brown. 3 - 3.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; moist, red brown.
5	S1	6.0	44	0.0 0.0 0.0 0.7				Collected Sample 4'-6'	3.5 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown. 4 - 7.7 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown.
				1.1 4.1 7.2			NLO	Collected Sample 9'-11'	7.7 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; moderate naphthalene-like odor, wet, gray, slight staining.
10	S2	5.0	56	0.2 2.0 1.7			NLO		10 - 11.9 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; slight naphthalene-like odor, wet, gray, slight staining.
				3.1 0.3 0.4			NLO		11.9 - 13.6 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; slight naphthalene-like odor, wet, gray, slight staining.
				0.2 0.0 0.0				Collected Sample 14'-16'	13.6 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown.
15	S3	5.0	57	0.0 0.0 0.0 0.0 0.0					15 - 15.2 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown. 15.2 - 17.7 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown. 17.7 - 19.1 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown. 19.1 - 20 NARROWLY GRADED SAND WITH GRAVEL (SP); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
20	S4	5.0	56	0.0 0.0 0.0 0.0 0.0					20 - 20.9 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown. 20.9 - 24.2 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown. 24.2 - 25 NARROWLY GRADED SAND (SP); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
25									Bottom of borehole at 25.0 feet.

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GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL B-4

GROUND SURFACE ELEVATION (FT): 17.96
LOCATION: King Bear/Summers Lumber
NORTHING: 203394.09 **EASTING:** 1189914.35
TOTAL DEPTH (FT): 25.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/11/2009 - 5/12/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ▽ 3.50

DEPTH FT.	TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	ODOR	SOIL / BEDROCK DESCRIPTION
0				0.0, 0.0, 0.0, 0.0		0 - 0.3 TOPSOIL. 0.3 - 0.6 (SM); ~30% gravel, fine to coarse; dry, brown, FILL. 0.6 - 1.5 (SM); brown, FILL, silty sand and gravely fill. 1.5 - 3.5 SILTY SAND (SM); ~50% sand, fine to medium, ~50% fines; dry, brown.
	S1	6.0	47	0.0, 0.0, 0.0		3.5 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine to coarse; moist, brownish red. 4 - 7 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine to coarse; moist, brownish red.
5				0.0, 0.3, 3.4	NLO	7 - 8.4 NARROWLY GRADED SAND WITH GRAVEL (SP); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; slight naphthalene-like odor, wet, light brown.
				2.6	NLO	8.4 - 9.6 NARROWLY GRADED SAND WITH GRAVEL (SP); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; slight naphthalene-like odor, wet, light brown / gray, slight staining.
				7.7	NLO	9.6 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to medium sand, ~10% gravel, fine; slight naphthalene-like odor, wet, dark gray, moderate staining.
10	S2	5.0	56	7.7	NLO	10 - 11 WIDELY GRADED SAND (SW); ~90% sand, fine to medium sand, ~10% gravel, fine; slight naphthalene-like odor, wet, light gray to brown, slightly stained.
				2.1, 1.9	NLO	11 - 11.8 NARROWLY GRADED SAND WITH GRAVEL (SP); ~70% sand, fine to coarse, ~30% gravel, fine; slight naphthalene-like odor, wet, light gray to brown, slight staining.
				0.8, 1.6	NLO	11.8 - 12.9 NARROWLY GRADED SAND WITH GRAVEL (SP); ~70% sand, fine to coarse, ~30% gravel, fine; slight naphthalene-like odor, wet, light brown.
				0.4, 0.3, 0.2, 0.0		12.9 - 15 NARROWLY GRADED SAND (SP); ~90% sand, fine to coarse, ~10% gravel, fine to coarse; wet, light brown.
15	S3	5.0	52	0.0, 0.0, 0.0, 0.0, 0.0		15 - 20 NARROWLY GRADED SAND WITH GRAVEL (SP); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
20	S4	5.0	56	0.0, 0.0		20 - 22 NARROWLY GRADED SAND WITH GRAVEL (SP); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0, 0.0		22 - 23.4 NARROWLY GRADED SAND WITH GRAVEL (SP); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; wet, light brown.
				0.0		23.4 - 25 NARROWLY GRADED SAND WITH GRAVEL (SP); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
25						Bottom of borehole at 25.0 feet.

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GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG
PAGE 1 of 1
KB/SL B-5

GROUND SURFACE ELEVATION (FT): 17.76
LOCATION: King Bear/Summers Lumber
NORTHING: 203368.62 **EASTING:** 1189884.7
TOTAL DEPTH (FT): 20.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/8/2009 - 5/11/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT):

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		4.0		0.0			0 - 0.4 TOPSOIL, topsoil 80%, some fill asphalt, gravel 20%. 0.4 - 1.5 SILTY SAND WITH GRAVEL (SM); ~40% gravel, fine to coarse, ~40% sand, fine to medium, ~20% fines; dry, brown.
				0.0			1.5 - 3 SILTY SAND (SM); ~50% sand, fine to medium, ~50% fines; red dark brown.
				0.0			
				0.0			3 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; moist, brownish red.
	S1	6.0	46	0.0		Collected Sample 4'-6'	4 - 6.3 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, reddish brown.
5				0.0			
				0.0			6.3 - 10 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0			
				0.0			
				0.0			
10	S2	5.0	56	0.0			10 - 11.8 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0			
				0.0			11.8 - 13.1 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; wet, light brown.
				0.0			13.1 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0			
15	S3	5.0	56	0.0			15 - 17.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0			
				0.0			17.5 - 18.3 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; wet, light brown.
				0.0			18.3 - 20 NARROWLY GRADED SAND (SP); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0			
20							Bottom of borehole at 20.0 feet.

NOTES:

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300	CLIENT: National Grid PROJECT NAME: Bayshore CITY/STATE: Bayshore, New York GEI PROJECT NUMBER: 061140-8-1712	BORING LOG PAGE 1 of 3 **KB/SL B-6**

GROUND SURFACE ELEVATION (FT): 17.47
LOCATION: King Bear/Summers Lumber
NORTHING: 203341.16 EASTING: 1189854.1
TOTAL DEPTH (FT): 70.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel
DATUM VERT. / HORZ.:
LOGGED BY: John Schafer
DATE START / END: 5/4/2009 - 5/4/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 3.50

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0				0.0				0 - 0.3 ASPHALT. 0.3 - 1 Black, FILL. 1 - 1.5 Moist, Silt matrix w/brick, cobble, roots, gravel. 1.5 - 3.5 (CL); ~100% fines, medium plasticity; moist, tan.
				0.0				
				0.0				
∇				0.0				3.5 - 5 WIDELY GRADED SAND (SW); ~90% sand, ~10% gravel; wet, light brown.
				0.0				
5	S1	5.0	57	0.0			Collected Sample 5'-7'	5 - 9 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; moderate petroleum-like odor, wet, tan to light brown, hydrocarbon-like odor.
				0.0				
				0.0		PLO		
				0.5 1.4 3.3			Collected Sample 8'-10'	9 - 10 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, blackish gray.
10	S2	5.0	57	3.9 0.0 0.0			Collected Sample 10'-12'	10 - 13.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine; dark gray.
				0.0				
				0.0				
				0.0				13.5 - 15 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine to coarse; wet, tan.
15	S3	5.0	57	0.0				15 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~85% sand, fine to coarse, ~15% gravel, fine to coarse; wet, brown.
				0.0				
				0.0				
				0.0				
				0.0				
20	S4	5.0	57	0.0				20 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine to coarse; wet, brown.
				0.0				
				0.0				
				0.0				

NOTES:

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IN. = INCHES
FT. = FEET

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Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL B-6

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.0				
25	S5	5.0	57	0.0				25 - 30 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, brown.
				0.0				
				0.0				
				0.0				
				0.0				
30	S6	5.0	57	0.0				30 - 35 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine to coarse; wet, brown.
				0.0				
				0.0				
				0.0				
				0.0				
35	S7	5.0	57	0.0				35 - 40 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine to coarse; wet, brown.
				0.0				
				0.0				
				0.0				
				0.0				
40	S8	5.0	57	0.0				40 - 45 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine to coarse; wet, brown.
				0.0				
				0.0				
				0.0				
				0.0				
45	S9	5.0						45 - 50 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, brown.
50	S10	5.0	57	0.0				50 - 55 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, brown.
				0.0				

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PROJECT NAME: Bayshore
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GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL B-6

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.0				
				0.0				
				0.0				
55	S11	5.0	57	0.0				55 - 60 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, brown, micaceous.
				0.0				
				0.0				
				0.0				
				0.0				
60	S12	5.0	57	0.0				60 - 65 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, brown, micaceous.
				0.0				
				0.0				
				0.0				
				0.0				
65	S13	5.0	55	0.0				65 - 70 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, brown, micaceous.
				0.0				
				0.0				
				0.0				
				0.0				
70								Bottom of borehole at 70.0 feet.

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PROJECT NAME: Bayshore
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GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

PAGE 1 of 1

KB/SL B-7

GROUND SURFACE ELEVATION (FT): 16.84
LOCATION: King Bear/Summers Lumber
NORTHING: 203312.06 EASTING: 1189825.13
TOTAL DEPTH (FT): 20.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 6/1/2009 - 6/1/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 4.00

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0									
4	S1	6.0	26	0.0				Collected Sample 4'-6'	4 - 7.2 NARROWLY GRADED SAND (SP); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown to brown.
5				0.0					
				0.0					
				0.0					7.2 - 8.6 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.2			NLO	Collected Sample 9'-11'	8.6 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown.
10	S2	5.0	51	0.0					10 - 11.2 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, light gray, slightly stained.
				0.0					11.2 - 14 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, light gray, slightly stained.
				0.0				Collected Sample 12'-14'	
				0.0					
				0.0					14 - 15 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; wet, light brown.
15	S3	5.0	32	0.0					15 - 16.3 NARROWLY GRADED SAND WITH GRAVEL (SP); ~70% sand, fine to medium, ~30% gravel, coarse; wet, light brown.
				0.0					16.3 - 20 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					
20									Bottom of borehole at 20.0 feet.

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CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL C-2

GROUND SURFACE ELEVATION (FT): 19.69
LOCATION: King Bear/Summers Lumber
NORTHING: 203425.21 EASTING: 1189999.26
TOTAL DEPTH (FT): 70.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/5/2009 - 5/5/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 5.00

DEPTH FT.	TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		5.0		0.0 0.0 0.0 0.0 0.0					0 - 0.8 CONCRETE, Concrete rubble. 0.8 - 1.5 FILL, Asphalt/gravel. 1.5 - 4.5 SILTY SAND; ~60% sand, fine to medium, ~40% fines; moist, brown. 4.5 - 5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; dry, brown.
5	S1	5.0	52	0.0 19.8 49.2 129 275 222 29.2 33.1			PLO PLO	Collected Sample 5'-7' Collected Sample 7.5'-9.5'	5 - 7.3 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, brown. 7.3 - 9.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; strong petroleum-like odor, wet, light brown. 9.4 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; strong petroleum-like odor, gray, stained.
10	S2	5.0	58	4.9 2.3 3.9 4.5 2.6 11.0 7.9 2.9 1.8			PLO PLO PLO		10 - 11.6 WIDELY GRADED SAND (SW); ~100% sand, fine to coarse; moderate petroleum-like odor, light gray, slight staining. 11.6 - 14 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate petroleum-like odor, light gray, slight staining. 14 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; moderate petroleum-like odor, dark gray, moderate staining.
15	S3	5.0	52	4.7 5.1 10.9 8.8 5.6 4.8 4.1 1.8			PLO		15 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; moderate petroleum-like odor, wet, light brown, petroleum odor diminishes from moderate to slight from 15 to 20'.
20	S4	5.0	30	0.2 0.0			PLO	Collected Sample	20 - 25 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; slight petroleum-like odor, light brown, very slight PLO at top.

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CLIENT:	National Grid
PROJECT NAME:	Bayshore
CITY/STATE:	Bayshore, New York
GEI PROJECT NUMBER:	061140-8-1712

BORING LOG

KB/SL C-2

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
							PLO	23'-25'	
25	S5	5.0	56	0.0					25 - 29.8 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; light brown.
30	S6	5.0	57	2.2 0.0 0.0 0.0 0.0 0.0			PLO		29.8 - 30 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight petroleum-like odor, light brown / gray, slight staining. 30 - 35 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; light brown.
35	S7	5.0	56	0.0 0.0 0.0 0.0 0.0					35 - 40 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; light brown.
40	S8	5.0		0.0 0.0 0.0 0.0 0.0					40 - 45 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; light brown.
45	S9	5.0	55	0.0 0.0 0.0 0.0 0.0					45 - 50 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown / brown.
50	S10	5.0	57	0.0 0.0			NLO		50 - 55 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; slight naphthalene-like odor, wet, light brown / brown.

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CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG
PAGE 3 of 3
KB/SL C-2

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.0					
				0.0			NLO		
				0.0					
55	S11	5.0		0.0					55 - 60 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; slight naphthalene-like odor, wet, light brown / brown.
				0.5					
				0.4			NLO		
				0.3					
				0.0					
60	S12	5.0	55	0.0					60 - 64.5 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; slight naphthalene-like odor, wet, light brown / brown.
				0.0					
				0.0			NLO		
				0.0					
				0.0					64.5 - 65 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; light brown.
65	S13	5.0		0.0					65 - 70 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; brown.
				0.0					
				0.0					
				0.0					
				0.0					
70									Bottom of borehole at 70.0 feet.

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CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL C-4

GROUND SURFACE ELEVATION (FT): 19.35
LOCATION: King Bear/Summers Lumber
NORTHING: 203369.08 **EASTING:** 1189942.18
TOTAL DEPTH (FT): 25.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/12/2009 - 5/12/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 4.50

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		3.0							0 - 0.3 CONCRETE. 0.3 - 0.5 FILL, Gravel/rubble. 0.5 - 3 FILL, Concrete/rubble falling into hole, breaker bar advanced to ~3.5'.
	S1	2.0	22	0.0 0.0				Collected Sample 4'-6'	3 - 4.3 SILTY SAND (SM); ~50% sand, fine to medium, ~50% fines; dry, brownish red. 4.3 - 5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moist to wet, brown red.
5	S2	5.0	49	0.0 0.0 0.0 0.0 2.1			NLO		5 - 5.2 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, brown red. 5.2 - 9.3 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown. 9.3 - 9.7 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown gray, slight staining. 9.7 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light gray, slight staining.
10	S3	5.0	57	18.0 12.5 13.9 7.1 13.9 7.9 2.3 0.3 0.0			NLO NLO NLO	Collected Sample 10'-12'	10 - 11.6 WIDELY GRADED SAND (SW); ~90% sand, fine to medium, ~10% gravel, fine; moderate naphthalene-like odor, wet, gray, slight staining. 11.6 - 13.1 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate naphthalene-like odor, wet, gray, slight staining. 13.1 - 13.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, dark gray, slight staining. 13.5 - 15 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
15	S4	5.0	57	0.0 0.0 0.0 0.0 0.0				Collected Sample 15'-17'	15 - 17.4 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown. 17.4 - 19 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown. 19 - 20 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
20	S5	5.0	57	0.0 0.0 0.0 0.0 0.0					20 - 22.7 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown. 22.7 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown.
25									Bottom of borehole at 25.0 feet.

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CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

PAGE 1 of 1

KB/SL C-6

GROUND SURFACE ELEVATION (FT): 17.93
LOCATION: King Bear/Summers Lumber
NORTHING: 203311.4 **EASTING:** 1189883.44
TOTAL DEPTH (FT): 25.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/12/2009 - 5/12/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ▽ 4.00

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID
0		4.0		0.0, 0.0, 0.0, 0.0				
4	S1	6.0	49	0.0, 0.0, 0.0, 0.0, 0.0, 0.0			NLO (9-10)	Collected Sample 4'-6'
10	S2	5.0	57	0.5, 0.9, 1.1, 1.4, 0.8, 1.8, 3.1, 3.7, 1.3			NLO, NLO, NLO, NLO	Collected Sample 12'-14'
15	S3	5.0	57	0.0, 0.0, 0.0, 0.0, 0.0				Collected Sample 15'-17'
20	S4	5.0	56	0.0, 0.0, 0.0, 0.0, 0.0				
25								

SOIL / BEDROCK DESCRIPTION

0 - 0.3 TOPSOIL.
0.3 - 2 Brown / black, FILL, silty sand and gravel and fill.

2 - 3.5 SILTY SAND (SM); ~45% sand, fine to medium, ~45% fines, ~10% gravel, fine to coarse; dry, red / brown.

3.5 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moist, red / brown.
4 - 5.2 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, red / brown.
5.2 - 9 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, light brown.

9 - 10 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; slight naphthalene-like odor, wet, light brown / gray, slight staining.
10 - 11.6 WIDELY GRADED SAND (SW); ~90% sand, fine to medium, ~10% gravel, fine; slight naphthalene-like odor, wet, gray, stained.
11.6 - 13 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, gray, stained.
13 - 14.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, dark gray, moderately stained.
14.5 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light gray, slightly stained.
15 - 17.1 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; wet, light.
17.1 - 19.1 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
19.1 - 20 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
20 - 22.4 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.

22.4 - 24.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown.

24.5 - 25 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
Bottom of borehole at 25.0 feet.

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MLO = MUSTY LIKE ODOR

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL C-7

GROUND SURFACE ELEVATION (FT): 17.36
LOCATION: King Bear/Summers Lumber
NORTHING: 203280.91 **EASTING:** 1189853.31
TOTAL DEPTH (FT): 25.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/22/2009 - 6/1/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ⊻ 4.00

DEPTH FT.	TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	ODOR	ANALYZED SAMPLE ID
0		4.0				
4	S1	6.0	33	0.0, 0.0, 0.0, 0.0, 0.0, 0.0		Collected Sample 4'-6'
10	S2	5.0	42	0.0, 0.3, 1.5, 2.5, 2.5, 0.7, 0.0, 0.0	NLO, NLO, NLO	Collected Sample 12'-14'
15	S3	5.0	32	0.0, 0.0, 0.0, 0.0, 0.0		Collected Sample 15'-17'
20	S4	5.0	50	0.0, 0.0, 0.0, 0.0, 0.0		
25						

SOIL / BEDROCK DESCRIPTION

0 - 0.3 TOPSOIL.
0.3 - 0.5 FILL, gravel.
0.5 - 1.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; dry, light brown, FILL.
1.5 - 2.3 Black, FILL, silt and gravel.
2.3 - 3 SILTY SAND (SM); ~50% sand, fine to medium, ~45% fines, ~5% gravel, fine; dry, brown.
3 - 4 SILTY SAND (SM); ~60% sand, fine to coarse, ~30% fines, ~10% gravel, fine; dry, light brown.
4 - 5.1 SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to coarse, ~25% gravel, fine to coarse, ~15% fines; wet, brown.
5.1 - 6 SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to medium, ~20% gravel, fine to coarse, ~20% fines; wet, brown.
6 - 7.1 CLAYEY SAND (SC); ~70% sand, fine to coarse, ~30% fines; wet, light brown / gray.
7.1 - 7.5 LEAN CLAY (CL); ~100% fines; gray.
7.5 - 8.2 LEAN CLAY WITH SAND (CL); ~80% fines, ~20% sand, fine to medium; wet, gray.
8.2 - 10 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, brown / red brown.
10 - 11.2 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, light brown.
11.2 - 11.9 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; slight naphthalene-like odor, wet, light brown / gray, slight staining.
11.9 - 13.2 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; slight naphthalene-like odor, wet, light gray, slight staining.
13.2 - 13.9 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown.
13.9 - 14.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~50% gravel, fine to coarse, ~50% sand, fine to coarse; wet, red brown.
14.5 - 15 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
15 - 17.7 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
17.7 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, light brown.
20 - 23.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, light brown.
23.5 - 25 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine to coarse; wet, light brown.

Bottom of borehole at 25.0 feet.

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455 Winding Brook Road
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CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL D-1

GROUND SURFACE ELEVATION (FT): 19.57
LOCATION: King Bear/Summers Lumber
NORTHING: 203424.06 **EASTING:** 1190045.19
TOTAL DEPTH (FT): 35.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/6/2009 - 5/12/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 4.00

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID
0		4.0		0.0				
				0.0				
				0.0				
				0.0				
	S1	6.0	38	0.0				Collected Sample 4'-6'
5				0.2				
				1.7			PLO	
				4.9				
				343				
				553			PLO	
				1402			PLO	Collected Sample 8'-10'
				1272			PLO	
10	S2	5.0	53	32.7				Collected Sample 11'-13'
				42.6				
				50.2			NLO	
				57.7				
				36.8				
				46.7			NLO	
				34.0				
				11.9				
15	S3	5.0	50	16.6				
				21.4			NLO	
				29.4				
				12.6			NLO	
				218			NLO	
				21.4				
				49.9			NLO	
				32.4				
				20.8				
20	S4	5.0	54	12.3				
				15.9				
				27.4			NLO	
				21.8				
				16.6			NLO	
				8.8				

SOIL / BEDROCK DESCRIPTION

0 - 0.3 FILL, Gravel/blue stone.
0.3 - 0.7 SILTY SAND WITH GRAVEL (SM); ~50% sand, fine to medium, ~30% gravel, fine, ~20% fines; dark brown.
0.7 - 2 SILTY SAND (SM); ~45% sand, fine to medium, ~45% fines, ~10% gravel, fine; moist, brown.
2 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; moist, light brown.

4 - 4.8 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
4.8 - 6.9 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight petroleum-like odor, wet, light brown.

6.9 - 8.5 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; strong petroleum-like odor, wet, light gray, strong gasoline-like odor, slight staining.
8.5 - 9.1 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine; strong petroleum-like odor, wet, gray, greasy feel, slight product coating, heavy staining.
9.1 - 10 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; strong petroleum-like odor, wet, light gray, slight/moderate staining.
10 - 13.1 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; strong naphthalene-like odor, wet, light gray, slight staining.

13.1 - 15 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; moderate naphthalene-like odor, wet, light brown / gray, slight staining.

15 - 16.2 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; moderate naphthalene-like odor, wet, gray / dark gray, moderate staining.
16.2 - 17.2 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; moderate naphthalene-like odor, wet, light gray to dark brown, slight staining.
17.2 - 17.8 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; moderate naphthalene-like odor, wet, light brown.
17.8 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate naphthalene-like odor, wet, light brown, slight naphthalene-like odor at bottom of sample.
20 - 22.8 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown.
22.8 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; slight naphthalene-like

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300	CLIENT: National Grid PROJECT NAME: Bayshore CITY/STATE: Bayshore, New York GEI PROJECT NUMBER: 061140-8-1712	BORING LOG PAGE 2 of 2	KB/SL D-1

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				25.0 20.1			NLO		odor, wet, light brown.
25	S5	5.0	56	1.7 0.7 0.0 0.0 0.0 0.0 0.0				Collected Sample 26'-28'	25 - 27.6 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown. 27.6 - 28.1 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; wet, light brown. 28.1 - 30 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; wet, light brown.
30	S6	5.0	55	0.0 0.0 0.0 0.0 0.0					30 - 35 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; wet, light brown.
35									Bottom of borehole at 35.0 feet.

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GEI Consultants

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Glastonbury, CT 06033
(860) 368-5300

CLIENT:	National Grid
PROJECT NAME:	Bayshore
CITY/STATE:	Bayshore, New York
GEI PROJECT NUMBER:	061140-8-1712

BORING LOG

PAGE 1 of 1

KB/SL D-2

GROUND SURFACE ELEVATION (FT):	19.63	LOCATION:	King Bear/Summers Lumber
NORTHING: 203393.71	EASTING: 1190025.5	TOTAL DEPTH (FT):	25.00
DRILLED BY:	Fenley & Nicol Drilling Co. / Kevin Kegel	DATUM VERT. / HORZ.:	
LOGGED BY:	Chris Morris	DATE START / END:	5/22/2009 - 5/28/2009
DRILLING DETAILS:	Geoprobe		
WATER LEVEL DEPTHS (FT):	⊻ 4.50		

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	ODOR	ANALYZED SAMPLE ID
0 - 4		4.0		0.0, 0.0, 0.0, 0.0		
4 - 10	S1	6.0	37	0.0, 0.3, 2.5, 17.5, 10.4, 17.5, 25.3	PLO, PLO, NLO	Collected Sample 5'-7'
10 - 15	S2	5.0	43	18.4, 24.1, 22.3, 9.5, 5.1, 10.2, 6.9	NLO, NLO	Collected Sample 10'-12'
15 - 20	S3	5.0	41	0.8, 0.8, 1.1, 1.0, 0.5, 0.5, 0.3	NLO, NLO	
20 - 25	S4	5.0	54	0.8, 0.7, 0.7, 0.6, 1.1, 0.2, 0.0, 0.0, 0.0	NLO, NLO, NLO	Collected Sample 23'-25'

SOIL / BEDROCK DESCRIPTION

0 - 0.3 ASPHALT.
0.3 - 0.4 FILL, Asphalt/gravel.
0.4 - 1.5 FILL, asphalt/gravel and black silty fill.
1.5 - 2.7 SILTY SAND (SM); ~50% sand, fine to medium, ~50% fines; dry, brown.
2.7 - 3.5 SILTY SAND (SM); ~80% sand, fine to medium, ~20% fines; dry, light brown.
3.5 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; dry, light brown.
4 - 6.1 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; slight petroleum-like odor, wet, light brown.
6.1 - 7.6 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; slight petroleum-like odor, wet, light brown / gray, slight PLO with NLO.
7.6 - 10 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, gray, slightly stained, moderate naphthalene-like odor at bottom.
10 - 11.4 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; moderate naphthalene-like odor, wet, gray, stained.
11.4 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; moderate naphthalene-like odor, wet, gray, stained.

15 - 15.5 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light gray, slightly stained.
15.5 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; slight naphthalene-like odor, wet, light brown.

20 - 21.8 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown.
21.8 - 22.8 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine; slight naphthalene-like odor, wet, light brown.
22.8 - 24.6 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown, no odor at ~ 23'.
24.6 - 25 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; wet, light brown.
Bottom of borehole at 25.0 feet.

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GEI Consultants

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(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

PAGE 1 of 1

KB/SL D-3

GROUND SURFACE ELEVATION (FT): 19.27
LOCATION: King Bear/Summers Lumber
NORTHING: 203367.71 **EASTING:** 1189995.63
TOTAL DEPTH (FT): 25.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/12/2009 - 5/13/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 4.00

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		4.0		0.0 0.0 0.0 0.0					0 - 0.3 ASPHALT. 0.3 - 0.8 Black, gravelly fill and coarse gravel. 0.8 - 2 SILTY SAND WITH GRAVEL (SM); ~40% gravel, fine to coarse, ~40% sand, fine to medium, ~20% fines; dry, light brown. 2 - 3.8 SANDY SILT (ML); ~50% fines, ~40% sand, fine to medium, ~10% gravel, fine to coarse; dry, red / brown.
5	S1	6.0	40	0.0 0.0 0.0 0.0 0.3 1.2			NLO	Collected Sample 4'-6'	3.8 - 4 SILTY SAND (SM); ~60% sand, fine to coarse, ~30% fines, ~10% gravel, fine; moist, red / brown. 4 - 6.7 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown. 6.7 - 8.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown / red brown. 8.4 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown / light gray, staining.
10	S2	5.0	52	1.2 1.9 2.6 2.1 1.8 2.4 1.9 1.8 1.4 0.6			NLO NLO NLO	Collected Sample 11'-13'	10 - 11.4 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light gray, staining. 11.4 - 14.8 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, dark gray, moderate staining. 14.8 - 15 WIDELY GRADED SAND (SW); ~100% sand, fine to coarse; slight naphthalene-like odor, wet, light brown.
15	S3	5.0	56	0.1 0.2 0.0 0.0				Collected Sample 16'-18'	15 - 15.3 WIDELY GRADED SAND (SW); ~100% sand, fine to coarse; wet, light brown. 15.3 - 19.1 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown. 19.1 - 20 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown.
20	S4	5.0	56	0.0 0.0 0.0 0.0 0.0					20 - 22.4 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown. 22.4 - 24.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown. 24.5 - 25 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; wet, light brown.
25									Bottom of borehole at 25.0 feet.

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CLIENT: National Grid
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GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL D-5

GROUND SURFACE ELEVATION (FT): 18.09
LOCATION: King Bear/Summers Lumber
NORTHING: 203313.31 **EASTING:** 1189941.28
TOTAL DEPTH (FT): 70.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris & John Schaler
DATE START / END: 4/30/2009 - 5/1/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 5.00

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		5.0		0.0				0 - 0.5 ASPHALT.
								0.5 - 0.8 FILL, Stone, crumbled asphalt.
				0.0				0.8 - 2.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~25% gravel, fine to coarse, ~5% fines; light brown.
				0.0				
				0.0				2.5 - 4.5 SILTY SAND (SM); ~70% sand, fine to medium, ~25% fines, ~5% gravel, fine; moist, light brown.
				0.0				
								4.5 - 5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
5	S1	5.0	58	0.0			Collected Sample 5'-7'	5 - 7.8 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown / red brown.
				0.0				
				0.0				
								7.8 - 8.9 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown.
				0.7 0.8		NLO		8.9 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to medium, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown, slight solvent-like, several bands of red/brown soil at ~ 9.2-9.5'.
10	S2	5.0	36	0.2				10 - 15 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown, slight solvent-like odor mixed with naphthalene-like odor.
				0.4				
				0.2				
				0.8		NLO	Collected Sample 12'-14'	
				1.0				
				0.4				
15	S3	5.0	57	0.0			Collected Sample 15'-17'	15 - 16.8 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0				
				0.0				16.8 - 18.9 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine to coarse; wet.
				0.0				
				0.0				18.9 - 20 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
20	S4	5.0	53	0.0				20 - 20.3 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown. 20.3 - 22.2 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0				
				0.0				22.2 - 23.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; wet, light brown.
				0.0				23.5 - 25 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse,

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ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR
OLO = ORGANIC LIKE ODOR
SLO = SULFUR LIKE ODOR
MLO = MUSTY LIKE ODOR

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL D-5

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.0				~5% gravel, fine; wet, light brown.
25	S5	5.0	56	0.0				25 - 27.9 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0				
				0.0				
				0.0				27.9 - 29.6 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0				
								29.6 - 30 WIDELY GRADED SAND (SW); ~100% sand, fine to coarse; wet, light brown.
30	S6	5.0	52	0.0				30 - 35 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0				
				0.0				
				0.0				
				0.0				
35	S7	5.0	48	0.0				35 - 40 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0				
				0.0				
				0.0				
				0.0				
40	S8	5.0	57	0.0				40 - 45 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0				
				0.0				
				0.0				
				0.0				
45	S9	5.0	57	0.0				45 - 50 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0				
				0.0				
				0.0				
				0.0				
50	S10	5.0	60	0.0				50 - 55 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0				

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IN. = INCHES
FT. = FEET

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300	CLIENT: National Grid PROJECT NAME: Bayshore CITY/STATE: Bayshore, New York GEI PROJECT NUMBER: 061140-8-1712	BORING LOG PAGE 3 of 3 KB/SL D-5

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.0				
				0.0				
				0.0				
55	S11	5.0	60	0.0				55 - 60 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0				
				0.0				
				0.0				
				0.0				
60	S12	5.0	57	0.0				60 - 65 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown.
				0.0				
				0.0				
				0.0				
				0.0				
65	S13	5.0	57	0.0				65 - 70 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown.
				0.0				
				0.0				
				0.0				
				0.0				
70								Bottom of borehole at 70.0 feet.

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Glastonbury, CT 06033
(860) 368-5300

CLIENT:	National Grid	**BORING LOG**	
PROJECT NAME:	Bayshore	**PAGE**	**KB/SL D-6**
CITY/STATE:	Bayshore, New York	1 of 1	
GEI PROJECT NUMBER:	061140-8-1712		

GROUND SURFACE ELEVATION (FT): 17.98
LOCATION: King Bear/Summers Lumber
NORTHING: 203283.52 **EASTING:** 1189911.38
TOTAL DEPTH (FT): 20.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/12/2009 - 5/13/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ▽ 4.00

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	ANALYZED SAMPLE ID
0		4.0		0.0	
				0.0	
				0.0	
				0.0	
	S1	6.0	49	0.0	Collected Sample 4'-6'
5				0.0	
				0.0	
				0.0	
				0.0	
				0.0	
10	S2	5.0	57	0.0	
				0.0	
				0.0	
				0.0	Collected Sample 13'-15'
				0.0	
15	S3	5.0	56	0.0	
				0.0	Collected Sample 16'-18'
				0.0	
				0.0	
				0.0	
20					

SOIL / BEDROCK DESCRIPTION

0 - 0.3 TOPSOIL.
0.3 - 0.6 CONCRETE.
0.6 - 1.5 SILTY SAND WITH GRAVEL (SM); ~40% gravel, fine to coarse, ~40% sand, fine to medium, ~20% fines; dry, light brown.
1.5 - 3 SILTY SAND (SM); ~55% sand, fine to medium, ~35% fines, ~10% gravel, fine; red brown.

3 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moist, light brown.
4 - 7.2 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown, loose in top 10".

7.2 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.

10 - 11.8 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.

11.8 - 13.8 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown.

13.8 - 14.3 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, dark gray, slight septic-like odor, moderate staining.
14.3 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown.
15 - 16.2 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine to coarse; wet, light brown.
16.2 - 18.7 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.

18.7 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown.

Bottom of borehole at 20.0 feet.

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300	CLIENT: National Grid PROJECT NAME: Bayshore CITY/STATE: Bayshore, New York GEI PROJECT NUMBER: 061140-8-1712	BORING LOG PAGE 1 of 3 KB/SL E-1

GROUND SURFACE ELEVATION (FT): 19.73 LOCATION: King Bear/Summers Lumber
NORTHING: 203387.01 EASTING: 1190084.04 TOTAL DEPTH (FT): 70.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris DATE START / END: 4/28/2009 - 4/29/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 8.00

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		5.0		0.0 0.0 0.0 0.0 0.0					0 - 0.2 Gravel/stone. 0.2 - 3.5 SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to medium, ~20% gravel, fine to coarse, ~20% fines; dry, brown. 3.5 - 4.5 LEAN CLAY (CL); ~90% fines, ~10% gravel, fine to coarse; dry, light brown. 4.5 - 5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; dry, light brown.
5	S1	5.0	49	0.0 0.0 0.0 0.0 5.2 51.2 176 143 28.2 9.3			PLO PLO	Collected Sample 8'-10'	5 - 5.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; dry, light brown. 5.4 - 5.8 WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines; dry, red brown. 5.8 - 8.1 WIDELY GRADED SAND WITH GRAVEL (SW); ~85% sand, fine to coarse, ~15% gravel, fine; dry, light brown, slight solvent-like odor at top and increases to moderate at bottom. 8.1 - 8.5 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; slight petroleum-like odor, wet, dark gray / black, heavy staining. 8.5 - 10 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; slight petroleum-like odor, wet, light brown to gray, slight staining.
10	S2	5.0	43	33.7 7.8 16.2 19.8 16.6 13.6 4.4			NLO NLO		10 - 14.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate naphthalene-like odor, wet, light brown / gray, slight staining. 14.5 - 15 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; slight naphthalene-like odor, wet, gray, slight staining.
15	S3	5.0	57	8.8 16.6 15.2 18.3 24.2 3.7 24.2 14.1 21.2 12.4			NLO NLO NLO	Collected Sample 16'-18'	15 - 18.3 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; moderate naphthalene-like odor, wet, gray, slight staining. 18.3 - 19.1 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; moderate naphthalene-like odor, wet, light brown to gray, slight staining. 19.1 - 20 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; moderate naphthalene-like odor, wet, light brown.
20	S4	5.0	55	1.3 0.8 0.3 0.0			NLO	Collected Sample	20 - 22 ~90% sand, ~10% gravel; slight naphthalene-like odor, light brown. 22 - 23.9 ~90% sand, ~10% gravel; light brown.

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GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

PAGE 2 of 3

KB/SL E-1

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.0				23'-25'	23.9 - 25 NARROWLY GRADED SAND (SP); ~95% sand, fine to medium, ~5% gravel, fine; light brown.
				0.0					
25	S5	5.0	58	0.0					25 - 30 NARROWLY GRADED SAND (SP); ~95% sand, fine to medium, ~5% gravel, fine; light brown.
				0.0					
				0.0					
				0.0					
				2.0			NLO		29 - 29.5 Slight naphthalene-like odor.
30	S6	5.0	57	0.0					30 - 35 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
35	S7	5.0	57	0.0					35 - 39.2 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					39.2 - 40 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
40	S8	5.0	58	0.0					40 - 45 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
45	S9	5.0	56	0.0					45 - 49.5 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, brown.
				0.0					
				0.0					
				0.0					
				0.0					49.5 - 50 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
50	S10	5.0	58	0.0					50 - 55 WIDELY GRADED SAND (SW); fine, ~100% sand, fine to coarse; wet, light brown.
				0.0					

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CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

PAGE 3 of 3

KB/SL E-1

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.0					
				0.0					
				0.0					
55	S11	5.0	58	0.0					55 - 60 WIDELY GRADED SAND (SW); fine, ~100% sand, fine to coarse; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
60	S12	5.0	58	0.0					60 - 63.9 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown / brownish red.
				0.0					
				0.0					
				0.0					
				0.0					63.9 - 65 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown.
65	S13	5.0	58	0.0					65 - 69.1 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					69.1 - 69.7 NARROWLY GRADED SAND WITH SILT (SP); ~90% sand, fine to medium, ~10% fines; wet, light brown. 69.7 - 70 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown.
70									Bottom of borehole at 70.0 feet.

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CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL E-2

GROUND SURFACE ELEVATION (FT): 19.44
LOCATION: King Bear/Summers Lumber
NORTHING: 203364 **EASTING:** 1190054.49
TOTAL DEPTH (FT): 30.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/22/2009 - 5/28/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ⊻ 5.00

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	ODOR	ANALYZED SAMPLE ID
0		4.0		0.0		
				0.0		
				0.0		
				0.0		
	S1	6.0	18	0.0		
5				0.0		
				0.0		
				3.6	PLO	
				54.8	PLO	Collected Sample 9'-10'
10	S2	5.0	34	15.1		
				30.5	NLO	Collected Sample 11'-13'
				17.2		
				23.6	NLO	
				13.9		
				3.7	NLO	
				3.5	NLO	
15	S3	5.0	36	3.4		
				4.5		
				2.6	NLO	
				2.6		
				0.6	NLO	
				0.1		
20	S4	5.0	53	0.3		
				0.4		
				0.2		
				0.2		Collected Sample 22'-24'

SOIL / BEDROCK DESCRIPTION

0 - 0.3 FILL, sandy/gravelly.
0.3 - 0.6 CONCRETE.
0.6 - 0.8 FILL, Gravel.
0.8 - 1.2 SILTY SAND WITH GRAVEL (SM); dry, dark brown.
1.2 - 3 SILTY SAND (SM); ~50% sand, fine to medium, ~40% fines, ~10% gravel, fine; dry, brown.
3 - 4 SILTY SAND WITH GRAVEL (SM); ~50% sand, fine to medium, ~30% gravel, fine to coarse, ~20% fines; dry, brown.
4 - 4.7 SANDY SILT (ML); ~60% fines, ~40% sand, fine to medium; moist, brown.
4.7 - 5.7 LEAN CLAY (CL); ~90% fines, ~10% sand, fine to medium; moist to wet, brown, soft.
5.7 - 8.7 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight petroleum-like odor, light brown / red brown, slight solvent-like odor.
8.7 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight petroleum-like odor, gray, stained.
10 - 11.6 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; moderate naphthalene-like odor, wet, light gray, slightly stained.
11.6 - 13.2 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; moderate naphthalene-like odor, wet, light gray, slightly stained.
13.2 - 14.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; moderate naphthalene-like odor, wet, dark gray, stained.
14.4 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; moderate naphthalene-like odor, wet, light brown / slightly gray, slight staining.
15 - 19 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown / slightly gray.
19 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown.
20 - 24.6 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown / brown.

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GEI Consultants

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455 Winding Brook Road
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(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL E-2

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.0					
25	S5	5.0	55	0.0					24.6 - 25 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown. 25 - 26.2 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown. 26.2 - 30 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
30									Bottom of borehole at 30.0 feet.

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300	CLIENT: National Grid PROJECT NAME: Bayshore CITY/STATE: Bayshore, New York GEI PROJECT NUMBER: 061140-8-1712	PAGE 1 of 1	BORING LOG **KB/SL E-3**

GROUND SURFACE ELEVATION (FT): 19.55	**LOCATION:** King Bear/Summers Lumber
NORTHING: 203338.65 **EASTING:** 1190026.23	**TOTAL DEPTH (FT):** 25.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody	**DATUM VERT. / HORZ.:**
LOGGED BY: Chris Morris	**DATE START / END:** 5/13/2009 - 5/13/2009
DRILLING DETAILS: Geoprobe	
WATER LEVEL DEPTHS (FT): ⊻ 4.00	

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID
0		4.0		0.0				
				0.0				
				0.0				
				0.0				
	S1	6.0	42	0.0				Collected Sample 4'-6'
5				0.0				
				0.0				
				0.0				
				0.0				
				0.0				
10	S2	5.0	33	0.9				
				0.9				
				1.7				
				2.0			NLO	
				2.9				Collected Sample 13'-15'
				1.5				
				1.5			NLO	
15	S3	5.0	53	0.0				Collected Sample 15'-17'
				0.0				
				0.0				
				0.0				
				0.0				
20	S4	5.0	52	0.0				
				0.0				
				0.0				
				0.0				
				0.0				
25								

SOIL / BEDROCK DESCRIPTION

0 - 0.8 Fill/concrete.

0.8 - 2 Concrete rubble and gravel.

2 - 3 Fine to coarse; dry, brown.

3 - 4 SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to coarse, ~20% gravel, fine, ~20% fines; dry, brown.
4 - 5.6 WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine, ~10% fines; wet, brown.

5.6 - 7 SILTY SAND (SM); ~70% sand, fine to medium, ~25% fines, ~5% gravel, fine; wet, light brown.

7 - 7.7 LEAN CLAY (CL); wet, gray.

7.7 - 8.6 LEAN CLAY (CL); wet, gray, soft.

8.6 - 9.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, brown / red.
9.5 - 10 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
10 - 10.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
10.5 - 14.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown to gray, staining.

14.4 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, dark gray, moderate staining.
15 - 16.3 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
16.3 - 17.5 WIDELY GRADED GRAVEL WITH SAND (GW); ~80% gravel, fine to coarse, ~20% sand, fine to coarse; wet, light brown.
17.5 - 19.9 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.

19.9 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine; wet, light brown.
20 - 20.3 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine; wet, light brown.
20.3 - 22.2 NARROWLY GRADED SAND (SP); ~100% sand, fine to coarse; wet, light brown.
22 - 23.3 WIDELY GRADED SAND WITH GRAVEL (SW); ~50% gravel, fine to coarse, ~50% sand, fine to coarse; wet, light brown.
23.3 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, light brown.
Bottom of borehole at 25.0 feet.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
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IN. = INCHES
FT. = FEET

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PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR
OLO = ORGANIC LIKE ODOR
SLO = SULFUR LIKE ODOR
MLO = MUSTY LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300	CLIENT: National Grid PROJECT NAME: Bayshore CITY/STATE: Bayshore, New York GEI PROJECT NUMBER: 061140-8-1712	BORING LOG PAGE 1 of 1 KB/SL E-5

GROUND SURFACE ELEVATION (FT): 18.37
LOCATION: King Bear/Summers Lumber
NORTHING: 203285.8 **EASTING:** 1189967.6
TOTAL DEPTH (FT): 25.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/13/2009 - 5/13/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ▽ 4.00

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		4.0		0.0 0.0 0.0 0.0			0 - 0.3 CONCRETE. 0.3 - 0.7 Gravel. 0.7 - 1.5 SILTY SAND (SM); brown black, FILL. 1.5 - 2.7 SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to medium, ~20% gravel, fine to coarse, ~20% fines; dry, brown. 2.7 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; dry, red / brown.
5	S1	6.0	41	0.0 0.0 0.0 0.0 0.0 0.0		Collected Sample 4'-6'	4 - 5.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine; wet, light brown. 5.5 - 7.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine; wet, red brown. 7.4 - 8 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, brown. 8 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
10	S2	5.0	42	0.0 0.0 0.0 0.4 1.5 1.4 1.4	NLO	Collected Sample 13'-15'	10 - 14.2 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown, Slight NLO at 12'. 14.2 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown, slight solvent-like odor.
15	S3	5.0	49	1.3 0.5 0.2 0.0 0.0		Collected Sample 16'-18'	15 - 18.6 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown, very slight napthalene-like odor in top 1'. 18.6 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown.
20	S4	5.0	53	0.0 0.0 0.0 0.0 0.0			20 - 22.7 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown. 22.7 - 23.8 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown. 23.8 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown.
25							Bottom of borehole at 25.0 feet.

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GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL E-6

GROUND SURFACE ELEVATION (FT): 18.27
LOCATION: King Bear/Summers Lumber
NORTHING: 203259.2 **EASTING:** 1189939.55
TOTAL DEPTH (FT): 20.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/13/2009 - 5/13/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ⊻ 4.00

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		4.0		0.0				0 - 0.3
								0.3 - 0.6 FILL, gravel and rubble.
				0.0				0.6 - 1 Brown black, FILL, silty fill.
								1 - 2.5 SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to medium, ~20% gravel, fine to coarse, ~20% fines; dry, brown.
				0.0				
				0.0				2.5 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; dry, brown.
⊻	S1	6.0	38	0.2			Collected Sample 4'-6'	4 - 6.7 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown.
5				0.6		NLO		
				5.4				
				1.8				6.7 - 7.3 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; wet, light brown.
				0.0				7.3 - 10 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0				
				0.0				
10	S2	5.0	55	0.0				10 - 10.7 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0				10.7 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, light brown.
				0.0				
				0.0				
				0.0				
15	S3	5.0	51	0.0				15 - 17 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, light brown.
				0.0				
				0.0				17 - 17.6 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; wet, light brown.
				0.0				17.6 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, light brown.
				0.0				
20								Bottom of borehole at 20.0 feet.

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MLO = MUSTY LIKE ODOR

GEI Consultants

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Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

PAGE 1 of 2

KB/SL F-1

GROUND SURFACE ELEVATION (FT): 19.72
LOCATION: King Bear/Summers Lumber
NORTHING: 203358.67 **EASTING:** 1190110.57
TOTAL DEPTH (FT): 40.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/12/2009 - 5/14/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ▽ 4.00

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID
0		4.0		0.0, 0.0, 0.0, 0.0				
5	S1	6.0	40	0.0, 0.1, 2.1, 10.5, 227, 1180, 1894, 2761			PLO, PLO, PLO, PLO, PLO, PLO	Collected Sample 5'-7'; Collected Sample 9'-11'
10	S2	5.0	37	389, 1009, 1281, 483, 127, 97.9, 81.8			PLO, PLO	
15	S3	5.0	39	17.1, 47.2, 37.9, 28.3, 20.0, 11.4, 12.9			NLO, NLO, NLO, NLO	Collected Sample 16'-18'
20	S4	5.0	56	11.1, 7.0, 4.2, 4.3, 5.0, 4.1, 1.9			NLO, NLO	

SOIL / BEDROCK DESCRIPTION

0 - 0.3 Gravel/blue stone.
0.3 - 1 Black silty sand and fill.
1 - 2.8 SILTY SAND (SM); fine to coarse, ~80% sand, fine to medium, ~20% fines; dry, brown.
2.8 - 3.5 SILTY SAND (SM); ~70% sand, fine to medium, ~20% fines, ~10% gravel, fine; dry, brown red.
3.5 - 4 SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to medium, ~20% gravel, fine, ~20% fines; dry, brown.
4 - 5.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight petroleum-like odor, moist, light brown.
5.5 - 7.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; moderate petroleum-like odor, wet, brown.
7.5 - 8.1 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; strong petroleum-like odor, wet, gray / black, heavy staining.
8.1 - 9.1 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; strong petroleum-like odor, wet, light gray, slight/moderate staining.
9.1 - 9.4 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; strong petroleum-like odor, wet, light gray, product coating.
9.4 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; strong petroleum-like odor, wet, light gray, slight/moderate staining.
10 - 11.9 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; strong petroleum-like odor, wet, gray, slight/moderate staining.
11.9 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; strong petroleum-like odor, wet, gray, sheen visible at 13' to bottom, moderate staining, slight naphthalene-like odor begining at 13'.
15 - 15.6 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate naphthalene-like odor, wet, gray, moderate staining.
15.6 - 18 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; moderate naphthalene-like odor, wet, gray, moderate staining.
18 - 18.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate naphthalene-like odor, wet, gray, moderate staining.
18.4 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate naphthalene-like odor, wet, light brown.
20 - 22.6 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate naphthalene-like odor, wet, light brown, odor dimminishing with depth.

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455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL F-1

DEPTH FT.	TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				1.1			NLO		22.6 - 24.5 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine to coarse; slight naphthalene-like odor, wet, light brown.
				1.0			NLO		24.5 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown.
25	S5	5.0	49	8.7					25 - 30 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine to coarse; slight naphthalene-like odor, wet, light brown, odor only at top of sample.
				5.7					
				1.9					
				1.0					
				1.3					
				1.2			NLO		
				1.0					
				1.1					
				1.3					
				0.6					
30	S6	5.0	56	1.4					30 - 34.5 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine to coarse; slight naphthalene-like odor, wet, light brown.
				1.1					
				2.1					
				0.9			NLO		
				0.8					
				1.0					
				0.8					
				0.6					34.5 - 35 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel; wet, light brown.
35	S7	5.0	43	0.8					35 - 40 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown, very slight napthalene-like odor at top of sample.
				1.8					
				0.8					
				0.8					
				0.8					
				0.1					
40									Bottom of borehole at 40.0 feet.

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300	CLIENT: National Grid PROJECT NAME: Bayshore CITY/STATE: Bayshore, New York GEI PROJECT NUMBER: 061140-8-1712	BORING LOG PAGE 1 of 1 KB/SL F-2

GROUND SURFACE ELEVATION (FT): 19.88
LOCATION: King Bear/Summers Lumber
NORTHING: 203336.19 EASTING: 1190081.88
TOTAL DEPTH (FT): 25.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/6/2009 - 6/1/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 4.50

DEPTH FT.	TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		4.0		0.0 0.0 0.0 0.0					0 - 0.3 ASPHALT. 0.3 - 1.5 SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to medium, ~20% gravel, fine to coarse, ~20% fines; dry, brown, FILL, little brick. 1.5 - 3 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; dry, light brown, FILL, little brick. 3 - 4 WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~70% sand, fine to coarse, ~20% gravel, fine to coarse, ~10% fines; dry, dark brown.
5	S1	6.0	26	0.0 0.0 0.0 2.8 62.8 14.7 6.8			PLO PLO PLO	Collected Sample 5'-7' Collected Sample 8'-10'	4 - 5.4 SILTY SAND (SM); ~70% sand, fine to coarse, ~20% fines, ~10% gravel, fine to coarse; wet, brown, wet at ~4.7'. 5.4 - 7.2 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; wet, brown. 7.2 - 7.5 LEAN CLAY (CL); ~100% fines; moderate petroleum-like odor, gray. 7.5 - 9.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate petroleum-like odor, wet, gray, stained. 9.5 - 10 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; moderate petroleum-like odor, wet, dark gray, stained, slight naphthaline-like odor.
10	S2	5.0	38	49.0 77.5 38.3 29.3 17.8 10.4			NLO NLO	Collected Sample 10.5'-12.5'	10 - 12.2 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; moderate naphthalene-like odor, wet, dark gray, stained. 12.2 - 15 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; moderate naphthalene-like odor, wet, light gray, slight staining, light brown soil at 14.5'.
15	S3	5.0	28	2.7 3.2 7.7 6.5 7.8			NLO		15 - 20 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; moderate naphthalene-like odor, wet, light brown.
20	S4	5.0	56	0.1 0.0				Collected Sample 21'-23'	20 - 22 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown. 22 - 24.3 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine to coarse; wet, light brown. 24.3 - 25 NARROWLY GRADED SAND (SP); ~90% sand, fine to coarse, ~5% gravel, fine; wet, light brown. Bottom of borehole at 25.0 feet.
25									

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CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL F-3

GROUND SURFACE ELEVATION (FT): 19.82 **LOCATION:** King Bear/Summers Lumber
NORTHING: 203312.49 **EASTING:** 1190051.13 **TOTAL DEPTH (FT):** 70.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel **DATUM VERT. / HORZ.:**
LOGGED BY: Chris Morris **DATE START / END:** 4/29/2009 - 4/30/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ▽ 6.50

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		5.0		0.0					0 - 1.5 SILTY SAND WITH GRAVEL (SM); ~50% sand, fine to medium, ~30% gravel, fine to coarse, ~20% fines; dry, brown.
				0.0					1.5 - 3 WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~60% sand, fine to coarse, ~30% gravel, fine to coarse, ~10% fines; dry, light brown.
				0.0					
				0.0					3 - 5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; dry, light brown.
				0.0					
5	S1	5.0	45	0.0					5 - 7.2 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; dry, light brown.
				0.0				Collected Sample 6'-8'	
				0.0					7.2 - 8.9 SILTY SAND (SM); ~60% sand, fine, ~30% fines, ~10% gravel, fine; wet, gray.
				0.0					
				0.0					8.9 - 9.8 SANDY SILT (ML); ~70% fines, ~30% sand, fine; wet, gray.
10				1.2			NLO		9.8 - 10 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; slight naphthalene-like odor, wet, light brown.
	S2	5.0	40	0.4			NLO		10 - 10.8 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; slight naphthalene-like odor, wet, light brown.
				0.5					
				0.7			NLO		10.8 - 13.9 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown.
				1.1					
				0.8				Collected Sample 13'-15'	
				3.1			NLO		13.9 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, gray / black, heavy staining.
15	S3	5.0	58	0.3			NLO		15 - 15.2 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, gray / black, heavy staining.
				0.4					
				0.5			NLO		
				0.3					
				0.4					15.2 - 17.4 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; slight naphthalene-like odor, wet, light gray to light brown, slight staining.
				0.6					
				0.0				Collected Sample 18'-20'	
				0.0					17.4 - 20 NARROWLY GRADED SAND (SP); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0					
20	S4	5.0	55	0.0					20 - 25 NARROWLY GRADED SAND (SP); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					

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ppm = PARTS PER MILLION
IN. = INCHES
FT. = FEET
NLO = NAPHTHALENE LIKE ODOR
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GEI Consultants

GEI Consultants, Inc.
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Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL F-3

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.0					
25	S5	5.0	56	0.0					25 - 30 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
30	S6	5.0	56	0.0					30 - 35 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
35	S7	5.0	55	0.0					35 - 40 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
40	S8	5.0	58	0.0					40 - 44.2 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown / brown.
				0.0					
				0.0					
				0.0					
				0.0					44.2 - 45 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
45	S9	5.0	58	0.0					45 - 50 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
50	S10	5.0		0.0					50 - 55 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0					

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CLIENT:	National Grid
PROJECT NAME:	Bayshore
CITY/STATE:	Bayshore, New York
GEI PROJECT NUMBER:	061140-8-1712

BORING LOG

KB/SL F-3

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.0					
				0.0					
				0.0					
55	S11	5.0	53	0.0					55 - 60 NARROWLY GRADED SAND (SP); ~100% sand, fine to coarse; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
60	S12	5.0	56	0.0					60 - 65 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
65	S13	5.0	58	0.0					65 - 70 NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine to medium, ~10% fines, low plasticity; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
70									Bottom of borehole at 70.0 feet.

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CLIENT:	National Grid
PROJECT NAME:	Bayshore
CITY/STATE:	Bayshore, New York
GEI PROJECT NUMBER:	061140-8-1712

BORING LOG

KB/SL F-5

GROUND SURFACE ELEVATION (FT):	18.33	LOCATION:	King Bear/Summers Lumber
NORTHING: 203257.47	EASTING: 1189994.05	TOTAL DEPTH (FT):	25.00
DRILLED BY:	Fenley & Nicol Drilling Co. / Matt Briody	DATUM VERT. / HORZ.:	
LOGGED BY:	Chris Morris	DATE START / END:	5/14/2009 - 5/14/2009
DRILLING DETAILS:	Geoprobe		
WATER LEVEL DEPTHS (FT):	▽ 4.00		

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	ODOR	ANALYZED SAMPLE ID
0		4.0		0.0		
				0.0		
				0.0		
				0.0		
5	S1	6.0	40	0.0		Collected Sample 4'-6'
				0.0		
				0.0		
				0.0		
				0.0		
				0.0		
10	S2	5.0	32	0.0		
				0.0		
				0.0		
				0.7		
				0.9	NLO	
15	S3	5.0	52	0.5		Collected Sample 15'-17'
				1.0		
				0.4	NLO	
				0.8		
				0.9		
				0.3	NLO	
				0.2		
				0.5	NLO	
				0.4		
20	S4	5.0	53	0.9		Collected Sample 20'-22'
				0.0		
				0.0		
				0.0		
				0.0		
25				0.0		

SOIL / BEDROCK DESCRIPTION

0 - 0.2 Concrete.
0.2 - 0.5 Gravel/concrete rubble.
0.5 - 1 SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to medium, ~20% gravel, fine, ~20% fines; dry, brown.
1 - 2 SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to medium, ~20% gravel, fine to coarse, ~20% fines; dry, brown.
2 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; dry, brown.
4 - 4.7 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, brown.
4.7 - 6.2 SILTY SAND (SM); ~60% sand, fine to coarse, ~30% fines, ~10% gravel, fine; wet, brown.
6.2 - 7.3 SILTY SAND (SM); ~70% sand, fine to medium, ~20% fines, ~10% gravel, fine; dry, gray.
7.3 - 8.4 LEAN CLAY (CL); ~100% fines, medium plasticity; gray, soft, plastic.
8.4 - 9.3 LEAN CLAY (CL); ~100% fines, low plasticity; dark gray.
9.3 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
10 - 13.1 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
13.1 - 13.4 NARROWLY GRADED GRAVEL WITH SAND (GP); ~80% gravel, fine, ~20% sand, fine to coarse; wet.
13.4 - 15 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown.
15 - 17.7 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown.
17.7 - 18.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown.
18.4 - 20 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown.
20 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, light brown.

Bottom of borehole at 25.0 feet.

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(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG
PAGE 1 of 1
KB/SL F-6

GROUND SURFACE ELEVATION (FT): 18.47
LOCATION: King Bear/Summers Lumber
NORTHING: 203235 **EASTING:** 1189960.89
TOTAL DEPTH (FT): 20.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/14/2009 - 5/14/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ▽ 4.00

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		4.0		0.0				0 - 0.3 Concrete. 0.3 - 1.1 Black, FILL, Gravel/rubble.
				0.0				1.1 - 2.5 SILTY SAND (SM); ~60% sand, fine to medium, ~20% gravel, fine to coarse, ~20% fines; dry, brown.
				0.0				
				0.0				2.5 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; dry, brown.
▽	S1	6.0	35	0.0			Collected Sample 4'-8'	4 - 6.6 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, brown.
5				0.0				
				0.0				
				0.4				6.6 - 8 SILTY SAND (SM); ~70% sand, fine to coarse, ~20% fines, ~10% gravel, fine; slight petroleum-like odor, wet, light brown / gray.
				1.1		PLO		
				0.0				8 - 9 LEAN CLAY (CL); ~100% fines; wet, gray, soft.
				0.0				9 - 9.7 SILTY SAND (SM); ~80% sand, fine to medium, ~20% fines; wet, gray. 9.7 - 10 SILTY SAND (SM); ~70% sand, fine to medium, ~25% fines, ~5% gravel, fine; wet, light brown.
10				0.0				
	S2	5.0	37	0.0			Collected Sample 10'-12'	10 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0				
				0.0				
				0.0				
				0.0				
15	S3	5.0	35	0.0				15 - 20 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0				
				0.0				
				0.0				
				0.0				
20								Bottom of borehole at 20.0 feet.

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CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

PAGE 1 of 2

KB/SL G-1

GROUND SURFACE ELEVATION (FT): 20.55 **LOCATION:** King Bear/Summers Lumber
NORTHING: 203326.22 **EASTING:** 1190121.7 **TOTAL DEPTH (FT):** 30.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody **DATUM VERT. / HORZ.:**
LOGGED BY: Chris Morris **DATE START / END:** 5/14/2009 - 5/15/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 6.00

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		4.0		0.0					0 - 0.3 CONCRETE.
				0.0					0.5 - 1.5 Concrete/gravel.
				0.0					1.5 - 2.5 Brown, FILL, silty fill, obstruction at 2.5'.
				0.0					2.5 - 3 FILL, Brick. 3 - 4 Brown, FILL, silty fill.
	S1	6.0	37	0.0					4 - 4.2 Brown, FILL, silty fill.
5				1.4			PLO	Collected Sample 5'-7'	4.2 - 5.6 WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~70% sand, fine to coarse, ~20% gravel, fine, ~10% fines; moderate petroleum-like odor, dry, red brown.
∇				7.7			PLO		5.6 - 7.4 SILTY SAND (SM); ~80% sand, fine to medium, ~20% fines; moderate petroleum-like odor, wet, brown.
				5.4			PLO		7.4 - 8.2 LEAN CLAY (CL); ~100% fines, low plasticity; moderate petroleum-like odor, wet, gray.
				25				Collected Sample 8'-10'	
				65.8 131			NLO		8.2 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, gray, moderately stained, NLO & PLO noticed.
10	S2	5.0	39	10 22.5 88.5 115 135 49.8 27.6			NLO	Collected Sample 12'-14'	10 - 15 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, gray, slightly stained, dark grey soil from ~11.8 -12.2', NLO & PLO noticed from 10 to~11'.
15	S3	5.0	48	22 24.9 21.3 24.7 20.1			NLO		15 - 17.9 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; moderate naphthalene-like odor, wet, light brown to gray, slightly stained.
				22.6 26.7			NLO		17.9 - 19.3 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; moderate naphthalene-like odor, wet, light brown / gray, slight staining.
				13.5			NLO		19.3 - 20 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; moderate naphthalene-like odor, wet, light brown to gray, slightly stained.
20	S4	5.0	40	7.8 3.1 1.7 1.8 2.5			NLO		20 - 24 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown.

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CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL G-1

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				1.8			NLO		24 - 25 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown, PID ranged between 1.6-2.5 ppm.
25	S5	5.0	57	0.2					25 - 29.3 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown, slight naphthaline-like odor at top.
				0.2					
				0.2					
				0.0					
				0.0					
				0.0					29.3 - 30 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; wet, light brown.
30									Bottom of borehole at 30.0 feet.

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300	CLIENT: National Grid PROJECT NAME: Bayshore CITY/STATE: Bayshore, New York GEI PROJECT NUMBER: 061140-8-1712	PAGE 1 of 2	BORING LOG **KB/SL G-3**

GROUND SURFACE ELEVATION (FT): 20.46 **LOCATION:** King Bear/Summers Lumber
NORTHING: 203280.79 **EASTING:** 1190102.23 **TOTAL DEPTH (FT):** 30.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody **DATUM VERT. / HORZ.:**
LOGGED BY: Chris Morris **DATE START / END:** 5/15/2009 - 5/15/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 7.50

DEPTH FT.	TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		4.0		0.0 0.0 0.0 0.0					0 - 0.3 CONCRETE. 0.3 - 1.5 FILL, Gravel rubble. 1.5 - 3 Brown, FILL, silty fill and gravel. 3 - 3.6 SILTY SAND WITH GRAVEL (SM); ~50% sand, fine to medium, ~30% gravel, fine to coarse, ~20% fines; dry, brown.
5	S1	6.0	46	0.0 0.0 0.0 0.0 0.3 0.3				Collected Sample 6'-8'	3.6 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; dry, brown. 4 - 5.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; dry, brown. 5.4 - 7.4 WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~70% sand, fine to coarse, ~20% gravel, fine, ~10% fines; dry, red brown. 7.4 - 10 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown, slightly gray from ~9.8-10'.
10	S2	5.0	34	0.2 0.2 0.4 1.5 0.2 0.0			NLO NLO	Collected Sample 12'-14'	10 - 11.2 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; moderate naphthalene-like odor, wet, light brown to slightly gray. 11.2 - 14.4 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; moderate naphthalene-like odor, wet, light brown to slightly gray. 14.4 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine; wet, black, stained black, slight septic-like odor.
15	S3	5.0	27	0.0 0.0 0.0 0.0 0.0				Collected Sample 18'-20'	15 - 17.2 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, dark gray, stained dark gray, very slight septic-like odor. 17.2 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
20	S4	5.0	47	0.0 0.0 0.0 0.0					20 - 21.3 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown. 21.3 - 21.7 WIDELY GRADED GRAVEL WITH SAND (GW); ~70% gravel, fine to coarse, ~30% sand, fine to coarse; wet, light brown. 21.7 - 25 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine to coarse; wet, light brown.

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GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG
PAGE 2 of 2
KB/SL G-3

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.0					
25	S5	5.0	50	0.0					25 - 29.1 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine to coarse; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					29.1 - 30 WIDELY GRADED SAND WITH GRAVEL (SW); ~50% gravel, fine to coarse, ~50% sand, fine to coarse; wet, light brown.
30									Bottom of borehole at 30.0 feet.

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CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG
PAGE 1 of 1
KB/SL G-5

GROUND SURFACE ELEVATION (FT): 18.34
LOCATION: King Bear/Summers Lumber
NORTHING: 203227.17 **EASTING:** 1190021.11
TOTAL DEPTH (FT): 25.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/14/2009 - 5/14/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 4.50

DEPTH FT.	TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		4.0		0.0			0 - 0.2 Concrete. 0.2 - 0.5 Gravel/concrete rubble. 0.5 - 1 SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to medium, ~20% gravel, fine, ~20% fines; dry, brown.
				0.0			1 - 2 SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to medium, ~20% gravel, fine to coarse, ~20% fines; dry, brown.
				0.0			2 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; dry, brown.
				0.0			
∇ 5	S1	6.0	42	0.0		Collected Sample 4'-6'	4 - 4.6 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; dry, brown. 4.6 - 5.9 SILTY SAND (SM); ~70% sand, fine to medium, ~30% fines; wet, light brown / gray.
				0.0			5.9 - 6.8 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; wet, red brown.
				0.0			6.8 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0			
				0.0			
				0.0			
10	S2	5.0	36	0.0			10 - 10.8 WIDELY GRADED GRAVEL (GW); ~60% gravel, fine to coarse, ~40% sand, fine to coarse; wet, light brown. 10.8 - 15 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0			
				0.0			
				0.0			
				0.0			
15	S3	5.0	35	0.9	NLO		15 - 15.6 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown.
				2.0		Collected Sample 16'-18'	15.6 - 19.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown.
				1.5			
				3.3	NLO		
				1.1			
				0.0			19.5 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
20	S4	5.0	50	0.0		Collected Sample 20'-22'	20 - 22.8 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0			
				0.0			
				0.0			22.8 - 23.6 WIDELY GRADED SAND WITH GRAVEL (SW); ~50% gravel, fine to coarse, ~50% sand, fine to coarse; wet, light brown.
				0.0			23.6 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
25							Bottom of borehole at 25.0 feet.

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GEI Consultants
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455 Winding Brook Road
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(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL H-2

GROUND SURFACE ELEVATION (FT): 20.58
LOCATION: King Bear/Summers Lumber
NORTHING: 203286.23 **EASTING:** 1190135.37
TOTAL DEPTH (FT): 30.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/15/2009 - 5/15/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ⊻ 6.50

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		4.0		0.0					0 - 0.3 CONCRETE.
									0.3 - 1.5 FILL, Gravel rubble.
				0.0					
									1.5 - 3 Brown, FILL, silty fill and gravel.
				0.0					
				0.0					3 - 3.6 SILTY SAND WITH GRAVEL (SM); ~50% sand, fine to medium, ~30% gravel, fine to coarse, ~20% fines; dry, brown.
	S1	6.0	39	0.0					3.6 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; dry, brown.
5									4 - 4.6 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; dry, brown.
⊻								Collected Sample 6'-8'	4.6 - 6.5 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; dry, light brown.
				0.7					6.5 - 8.3 NARROWLY GRADED SAND WITH SILT (SP-SM); ~80% sand, fine to medium, ~10% gravel, fine, ~10% fines; slight petroleum-like odor, wet, brown, slight solvent-like odor.
							PLO		
				1.1					
				10.2			PLO		8.3 - 9.1 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; slight petroleum-like odor, wet, light brown to gray, slight solvent-like odor, slight staining.
				38.2			PLO		
10	S2	5.0	30	3.9					9.1 - 10 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; slight petroleum-like odor, wet, dark gray black, heavy staining, PLO with NLO.
				7.3					10 - 14.7 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; moderate naphthalene-like odor, wet, gray / dark gray, heavy staining.
				8.0					
							NLO		
				28.1					
				31.7					
				27.4					
15				25.4			NLO		14.7 - 15 NARROWLY GRADED SAND (SP); ~95% sand, fine to medium, ~5% gravel, fine; moderate naphthalene-like odor, wet, gray, moderate staining.
	S3	5.0	35	23.2				Collected Sample 15'-17'	
				25.6					15 - 19.5 NARROWLY GRADED SAND (SP); ~95% sand, fine to medium, ~5% gravel, fine; moderate naphthalene-like odor, wet, gray, slight/moderate staining.
				27.0					
							NLO		
				21.8					
				15.4					
				17.8					
20	S4	5.0	57	1.1			NLO		20 - 20.7 NARROWLY GRADED SAND (SP); ~95% sand, fine to medium, ~5% gravel, fine; slight naphthalene-like odor, wet, light brown.
				0.9					
				0.8					20.7 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; slight naphthalene-like odor, wet, light brown, naphthaline-like odor only to ~ 23'.
				0.7			NLO		
				0.6					
				0.4					

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(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL H-2

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.2 0.2			NLO		
25	S5	5.0	55	1.2 0.2 0.8 0.2 0.0 0.0 0.0 0.0 0.0			NLO	Collected Sample 27'-29'	25 - 30 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown, naphthaline-like odor only noticed in top 1" of sample.
30									Bottom of borehole at 30.0 feet.

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(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL H-4

GROUND SURFACE ELEVATION (FT): 18.86
LOCATION: King Bear/Summers Lumber
NORTHING: 203226.87 **EASTING:** 1190074.33
TOTAL DEPTH (FT): 30.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/15/2009 - 5/18/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ▽ 4.50

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		4.0		0.0					0 - 0.3 ASPHALT. 0.3 - 0.5 FILL, gravel. 0.5 - 2 SILTY SAND WITH GRAVEL (SM); ~50% sand, fine to medium, ~30% gravel, fine, ~20% fines; wet, brown.
				0.0					
				0.0					2 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; dry, brown / red, light brown at ~3'.
				0.0					
▽	S1	6.0	35	0.0				Collected Sample 4'-6'	4 - 5.9 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine to coarse; dry, light brown.
5				0.0					
				0.0					5.9 - 7.9 SILTY SAND (SM); ~80% sand, fine to medium, ~15% fines, ~5% gravel, fine; wet, light brown.
				0.0					
				0.0					7.9 - 10 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0					
10	S2	5.0	30	0.0					10 - 13.8 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.8			NLO		13.8 - 14.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown / gray, slightly stained.
				2.0			NLO		14.5 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, gray, moderately stained.
15	S3	9.0	50	0.9				Collected Sample 15'-17'	15 - 17.7 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; slight naphthalene-like odor, wet, gray, moderately stained. No recovery 15-20, reattempt 15-24 due to soft soils.
				0.5			NLO		
				0.4					
								Collected Sample 19'-21'	17.7 - 24 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
20									

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300	CLIENT: National Grid PROJECT NAME: Bayshore CITY/STATE: Bayshore, New York GEI PROJECT NUMBER: 061140-8-1712	BORING LOG	
		PAGE 2 of 2	KB/SL H-4

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	S4	6.0	55	0.0					24 - 30 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine to coarse; wet, light brown.
25				0.0					
				0.0					
				0.0					
				0.0					
				0.0					
30									Bottom of borehole at 30.0 feet.

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GROUND SURFACE ELEVATION (FT): 18.57
LOCATION: King Bear/Summers Lumber
NORTHING: 203166.15 EASTING: 1190021.75
TOTAL DEPTH (FT): 25.00
DRILLED BY: Fenley & Nicol Drilling Co. / Matt Briody
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/15/2009 - 5/18/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 4.50

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		4.0		0.0					0 - 0.2 ASPHALT. 0.2 - 0.5 FILL, Gravel.
				0.0					0.5 - 2.5 SILTY SAND WITH GRAVEL (SM); ~50% sand, fine to medium, ~30% gravel, fine, ~20% fines; dry, brown.
				0.0					
				0.0					2.5 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; dry, brown / red.
∇	S1	6.0	38	0.0				Collected Sample 4'-6'	4 - 5.1 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; dry, brown / red, wet at ~4.5-5'.
5				0.0					
				0.0					5.1 - 5.9 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown. 5.9 - 9.1 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					9.1 - 10 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
10	S2	5.0	43	0.0					10 - 12.3 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0					
				0.8					12.3 - 13.7 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown.
				2.7			NLO	Collected Sample 13'-15'	
				6.5			NLO		13.7 - 14.5 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown / light gray, slight staining.
				1.9					
				0.7			NLO		14.5 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown.
15	S3	5.0	52	0.0					15 - 15.8 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0				Collected Sample 16'-18'	
				0.0					15.8 - 17.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0					17.4 - 18.7 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; wet, light brown.
				0.0					18.7 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
20	S4	5.0	50	0.0					20 - 21.8 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0					
				0.0					21.8 - 22.2 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine to coarse; wet, light brown.
				0.0					
				0.0					22.2 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
25									Bottom of borehole at 25.0 feet.

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300	**CLIENT:** National Grid **PROJECT NAME:** Bayshore **CITY/STATE:** Bayshore, New York **GEI PROJECT NUMBER:** 061140-8-1712	**PAGE** 1 of 2	**BORING LOG** **KB/SL SB-01**

GROUND SURFACE ELEVATION (FT): 20.1 **LOCATION:** King Bear/Summers Lumber
NORTHING: 203316.8 **EASTING:** 1190155.53 **TOTAL DEPTH (FT):** 30.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel **DATUM VERT. / HORZ.:**
LOGGED BY: Chris Morris **DATE START / END:** 6/1/2009 - 6/2/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ▽ 5.50

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID
0		4.0		0.0				
				0.0				
				0.0				
				0.0				
	S1	6.0	32	0.5			PLO	
5 ▽				1.4			PLO	Collected Sample 5'-7'
				2.2				
				244			PLO	
				447				Collected Sample 8'-10'
				652				
				382				
10	S2	5.0	38	8.1			PLO	
				11.8				
				10.7			PLO	
				15.1				
				53.5				
				52.5				
				99.8			PLO	Collected Sample 14'-16'
15	S3	5.0	54	35.3			PLO	
				40.2				
				21.3			NLO	
				19.6				
				10.3			NLO	
				11.8				
				4.4			NLO	
				3.7				
				3.2				
				4.2				
20	S4	5.0	40	4.9			NLO	
				6.0				
				5.2			NLO	
				4.3				

SOIL / BEDROCK DESCRIPTION

0 - 0.3 CONCRETE.
0.3 - 0.7 FILL, Gravel.
0.7 - 1 SILTY SAND (SM); ~50% sand, fine to medium, ~30% gravel, fine to coarse, ~20% fines; dry, brown.
1 - 3.3 NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~70% sand, fine to medium, ~20% gravel, fine to coarse, ~10% fines; dry, brown.
3.3 - 4 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine to coarse; dry, light brown.
4 - 5.3 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; slight petroleum-like odor, dry, light brown, solvent-like odor.
5.3 - 6.8 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; moderate petroleum-like odor, wet, brown, solvent-like odor.
6.8 - 10 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; strong petroleum-like odor, wet, light brown to gray, slight staining.

10 - 10.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; strong petroleum-like odor, wet, light brown to gray, slight staining.
10.4 - 14.2 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; moderate petroleum-like odor, wet, gray, stained, naphthalene-like odor.

14.2 - 15 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; moderate petroleum-like odor, wet, light gray / brown, slight staining, naphthalene-like odor.
15 - 16.4 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; moderate petroleum-like odor, wet, light gray / brown, slight staining, naphthalene-like odor.
16.4 - 17.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; moderate naphthalene-like odor, wet, light gray / brown, slight staining.
17.4 - 18.3 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; moderate naphthalene-like odor, wet, dark gray, stained.
18.3 - 20 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; moderate naphthalene-like odor, wet, light brown.
20 - 22.1 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; moderate naphthalene-like odor, wet, light brown.
22.1 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; slight

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ppm = PARTS PER MILLION
IN. = INCHES
FT. = FEET

NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR
OLO = ORGANIC LIKE ODOR
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GEI Consultants

GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL SB-01

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				1.5 0.6			NLO		naphthalene-like odor, wet, light brown.
25	S5	5.0	56	0.2 0.6 0.9			NLO		25 - 27 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; slight naphthalene-like odor, wet, light brown.
				0.3 0.5 0.2 0.0 0.0 0.0					27 - 30 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
30									Bottom of borehole at 30.0 feet.

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CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL SB-02

GROUND SURFACE ELEVATION (FT): 19.7
LOCATION: King Bear/Summers Lumber
NORTHING: 203283.38 **EASTING:** 1190173.42
TOTAL DEPTH (FT): 30.00
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel
DATUM VERT. / HORZ.:
LOGGED BY: Chris Morris
DATE START / END: 5/22/2009 - 6/1/2009
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 5.00

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID
0		4.0		0.0				
				0.0				
				0.0				
				0.0				
	S1	6.0	35	0.1				
5 (∇)				0.2			PLO	Collected Sample 4.5'-6.5'
				44.5			PLO	
				36.5			PLO	Collected Sample 7'-9'
				218			PLO	
				328			PLO	
				149			PLO	
				72.5			PLO	
10	S2	5.0	49	65.6				
				98.1				
				141				
				135				
				75.8			PLO	
				35.0				
				6.1				
				13.5				
15	S3	5.0	52	11.6				
				10.6				
				6.4			PLO	
				10.7				
				10.0				
				8.4				
				6.3				
				9.7			NLO	
				5.8				
20	S4	5.0	55	2.3			NLO	
				4.4			NLO	
				3.0				
				5.3				
				1.5				
				1.2			NLO	
				0.5				
				1.1				

SOIL / BEDROCK DESCRIPTION

0 - 0.3 ASPHALT.
0.3 - 0.8 SILTY SAND WITH GRAVEL (SM); ~50% sand, fine to medium, ~30% gravel, fine, ~20% fines; brown.
0.8 - 2.5 SILTY SAND (SM); ~70% sand, fine to medium, ~20% fines, ~10% gravel, fine; dry, brown.
2.5 - 3 SILTY SAND (SM); ~70% sand, fine to medium, ~20% fines, ~10% gravel, fine; dry, brown.
3 - 4 SILTY SAND WITH GRAVEL (SM); ~70% sand, fine to medium, ~15% gravel, fine, ~15% fines; red brown.
4 - 5.7 WIDELY GRADED SAND (SW); ~100% sand, fine to coarse; slight petroleum-like odor, wet, brown / red, slight solvent-like odor.
5.7 - 6.4 SILTY SAND (SM); ~70% sand, fine to coarse, ~20% fines, ~10% gravel, fine; strong petroleum-like odor, wet, brown, slight solvent-like odor.
6.4 - 7.3 LEAN CLAY (CL); ~100% fines; moderate petroleum-like odor, gray, slight solvent-like odor.
7.3 - 7.8 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate petroleum-like odor, wet, light brown to gray, slight solvent-like odor, slight staining.
7.8 - 7.9 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate petroleum-like odor, wet, dark gray, slight solvent-like odor, stained.
7.9 - 8.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate petroleum-like odor, wet, light brown to gray, slight solvent-like odor, slight staining.
8.5 - 10 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate petroleum-like odor, wet, light brown, Naphthaline-like odor at bottom of sample.
10 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; moderate petroleum-like odor, wet, light brown / light gray, very slight naphthaline-like odor, slight staining.
15 - 17.9 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight petroleum-like odor, wet, light gray, slight staining, slight naphthaline-like odor.
17.9 - 19.8 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown / gray, slightly stained.
19.8 - 20 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown.
20 - 21.5 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown.
21.5 - 24 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; slight

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455 Winding Brook Road
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(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

KB/SL SB-02

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.9 0.7			NLO		naphthalene-like odor, wet, light brown. 24 - 25 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown.
25	S5	5.0	55	0.5 0.6 0.6 1.0 0.5 0.5			NLO		25 - 28 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; slight naphthalene-like odor, wet, light brown.
				0.3 0.4				Collected Sample 28'-30'	28 - 29 NARROWLY GRADED SAND WITH GRAVEL (SP); ~70% sand, fine to medium, ~30% gravel, fine to coarse; wet, light brown.
30				0.1 0.0					29 - 30 NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~10% gravel, fine; wet, light brown. Bottom of borehole at 30.0 feet.

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300	CLIENT: National Grid PROJECT NAME: Bayshore CITY/STATE: Bayshore, New York GEI PROJECT NUMBER: 061140-8-1712	PAGE 1 of 3	BORING LOG **OU2MW-48**

GROUND SURFACE ELEVATION (FT):
NORTHING: EASTING:
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel
LOGGED BY: Chris Morris
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 5.50

LOCATION: King Bear/Summers Lumber
TOTAL DEPTH (FT): 70.00
DATUM VERT. / HORZ.:
DATE START / END: 5/6/2009 - 5/6/2009

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
0		5.0						0 - 0.8 CONCRETE. 0.8 - 1 FILL, Gravel/rubble. 1 - 3 WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~70% sand, fine to coarse, ~20% gravel, fine, ~10% fines; dry, light brown. 3 - 5 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; dry, light brown / red brown.
5	S1	5.0	59	0.0 0.0 0.0 0.0 0.0				5 - 5.7 WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~40% gravel, fine to coarse; dry, light brown / red brown. 5.7 - 10 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
10	S2	5.0		1.6 2.5 0.0 0.0 0.0 0.0		NLO	Collected Sample 10'-12'	10 - 11.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown / gray. 11.5 - 12.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown. 12.5 - 15 NARROWLY GRADED SAND (SP); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
15	S3	5.0	44	0.0 0.0 0.0 0.0 0.0				15 - 16.7 NARROWLY GRADED SAND (SP); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown. 16.7 - 20 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
20	S4	5.0	44	0.0 0.0 0.0 0.0				20 - 23.2 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown. 23.2 - 24.1 WIDELY GRADED SAND WITH GRAVEL (SW); ~70%

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300	CLIENT: National Grid PROJECT NAME: Bayshore CITY/STATE: Bayshore, New York GEI PROJECT NUMBER: 061140-8-1712	BORING LOG PAGE 2 of 3 OU2MW-48

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.0				sand, fine to coarse, ~30% gravel, fine to coarse; wet, light brown. 24.1 - 25 NARROWLY GRADED SAND (SP); ~100% sand, fine to coarse; wet, light brown.
25	S5	5.0	56	0.0			Collected Sample 25'-30'	25 - 27.1 NARROWLY GRADED SAND (SP); ~100% sand, fine to coarse; wet, light brown.
				0.0				
				0.0				27.1 - 28.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0				28.4 - 30 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0				
30	S6	5.0	55	0.0				30 - 34.4 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0				
				0.0				
				0.0				
				0.0				34.4 - 34.8 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown. 34.8 - 35 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
35	S7	5.0	56	0.0				35 - 40 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0				
				0.0				
				0.0				
				0.0				
40	S8	5.0	57	0.0				40 - 44.3 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0				
				0.0				
				0.0				
				0.0				44.3 - 45 NARROWLY GRADED SAND (SP); ~100% sand, fine to coarse; wet, light brown.
45	S9	5.0	56	0.0			Collected Sample 45'-50'	45 - 50 NARROWLY GRADED SAND (SP); ~100% sand, fine to coarse; wet, light brown, 2 dark brown bands of soil, 2" in diameter, in bottom of sample.
				0.0				
				0.0				
				0.0				
				0.0				
50	S10	5.0	55	0.0				50 - 55 NARROWLY GRADED SAND (SP); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0				

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DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.0				
				0.0				
				0.0				
55	S11	5.0	57	0.0				55 - 60 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown.
				0.0				
				0.0				
				0.0				
				0.0				
60	S12	5.0	57	0.0				60 - 63.2 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown.
				0.0				
				0.0				
				0.0				63.2 - 65 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown, 3 bands of red/brow and 2 bands of dark brown sand, fine to medium ~2" in width.
				0.0				
65	S13	5.0	58	0.0			Collected Sample 65'-70'	65 - 69.3 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown.
				0.0				
				0.0				
				0.0				
				0.0				69.3 - 70 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown.
70								Bottom of borehole at 70.0 feet.

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CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

OU2MW-49

GROUND SURFACE ELEVATION (FT):
NORTHING: **EASTING:**
DRILLED BY: Fenley & Nicol Drilling Co. / Kevin Kegel
LOGGED BY: Chris Morris
DRILLING DETAILS: Geoprobe
WATER LEVEL DEPTHS (FT): ∇ 6.00
LOCATION: King Bear/Summers Lumber
TOTAL DEPTH (FT): 70.00
DATUM VERT. / HORZ.:
DATE START / END: 5/7/2009 - 5/7/2009

DEPTH FT.	TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	ODOR	ANALYZED SAMPLE ID
0		5.0		0.0, 0.0, 0.0, 0.0, 0.0		
5	S1	5.0	54	0.0, 0.0, 0.0, 0.0, 0.0		
10	S2	5.0	50	0.0, 0.0, 0.9, 1.8, 1.5, 1.4, 1.8, 0.8, 0.8, 1.0	NLO, NLO	Collected Sample 12'-15'
15	S3	5.0	52	0.9, 0.8, 1.5, 0.9, 0.8, 2.5, 1.9, 0.9, 0.8, 0.0	NLO, NLO, NLO, NLO	
20	S4	5.0	56	0.0, 0.0, 0.0, 0.0		

SOIL / BEDROCK DESCRIPTION

0 - 0.3 ASPHALT.
0.3 - 0.5 FILL, Gravel.
0.5 - 1.8 WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~60% sand, fine to coarse, ~30% gravel, fine to coarse, ~10% fines; dry, red brown, FILL.
1.8 - 3.5 WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine, ~10% fines; dry, brown.
3.5 - 5 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; dry, light brown.
5 - 6.7 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; dry, light brown, wet at 6'.
6.7 - 8.2 GRAVELLY LEAN CLAY WITH SAND (CL); ~60% fines, ~25% gravel, fine to coarse, ~15% sand, fine to medium; wet, brown / gray.
8.2 - 9.1 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
9.1 - 9.4 GRAVELLY LEAN CLAY WITH SAND (CL); ~60% fines, ~25% gravel, fine to coarse, ~15% sand, fine to medium; wet, brown / gray.
9.4 - 10 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
10 - 12.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
11.8 - 12.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown.
12.4 - 15 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown / slightly gray, slightly stained.
15 - 16.5 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; moderate naphthalene-like odor, wet, light brown / slightly gray, slightly stained.
16.5 - 17.4 WIDELY GRADED SAND WITH GRAVEL (SW); ~50% gravel, fine to coarse, ~50% sand, fine to coarse; slight naphthalene-like odor, wet, light brown / gray, slight staining.
17.4 - 18 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; moderate naphthalene-like odor, wet, gray / light brown, slight staining.
18 - 20 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; slight naphthalene-like odor, wet, light brown, no naphthalene-like odor at bottom.
20 - 22 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
22 - 23.7 WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~30% gravel, fine; wet, light brown.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
ppm = PARTS PER MILLION
IN. = INCHES
FT. = FEET
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR
CrLO= CREOSOTE LIKE ODOR
OLO = ORGANIC LIKE ODOR
SLO = SULFUR LIKE ODOR
MLO = MUSTY LIKE ODOR

GEI Consultants
GEI Consultants, Inc.
455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

OU2MW-49

DEPTH FT.	SAMPLE INFO TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.0					23.7 - 25 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
25	S5	5.0	56	0.0				Collected Sample 25'-30'	25 - 30 WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
30	S6	5.0		0.0					30 - 35 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
35	S7	5.0	55	0.0					35 - 40 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
40	S8	5.0	56	0.0					40 - 45 WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~10% gravel, fine; wet, light brown / brown.
				0.0					
				0.0					
				0.0					
				0.0					
45	S9	5.0	50	0.0				Collected Sample 45'-50'	45 - 50 WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
50	S10	5.0	57	0.0					50 - 55 NARROWLY GRADED SAND (SP); ~100% sand, fine to coarse; wet, light brown.
				0.0					

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GEI Consultants

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455 Winding Brook Road
Glastonbury, CT 06033
(860) 368-5300

CLIENT: National Grid
PROJECT NAME: Bayshore
CITY/STATE: Bayshore, New York
GEI PROJECT NUMBER: 061140-8-1712

BORING LOG

OU2MW-49

DEPTH FT.	SAMPLE INFO: TYPE and NO.	PEN FT.	REC IN.	PID (ppm)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
				0.0					
				0.0					
				0.0					
55	S11	5.0	56	0.0					55 - 58.9 NARROWLY GRADED SAND (SP); ~100% sand, fine to coarse; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					58.9 - 60 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown.
60	S12	5.0	58	0.0					60 - 65 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
65	S13	5.0	57	0.0				Collected Sample 65'-70'	65 - 70 NARROWLY GRADED SAND (SP); ~100% sand, fine to medium; wet, light brown.
				0.0					
				0.0					
				0.0					
				0.0					
70									Bottom of borehole at 70.0 feet.

NOTES:

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IN. = INCHES
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CrLO= CREOSOTE LIKE ODOR
OLO = ORGANIC LIKE ODOR
SLO = SULFUR LIKE ODOR
MLO = MUSTY LIKE ODOR

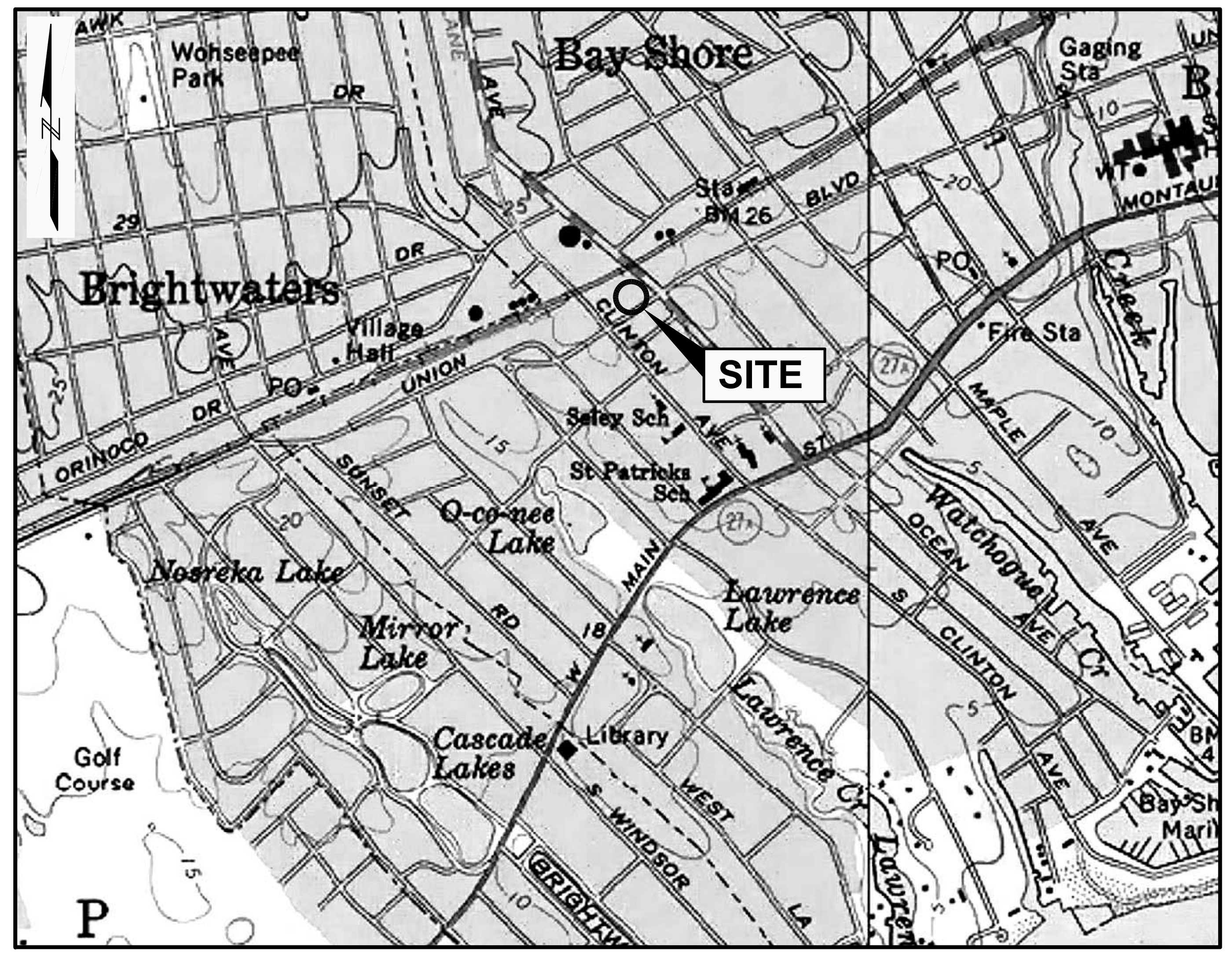
Appendix C

Excavation Engineering Drawings

EXCAVATION PHASE DRAWINGS

FORMER KING BEAR/SUMMER'S LUMBER PROPERTIES
BAY SHORE/BRIGHTWATERS FORMER MANUFACTURED GAS PLANT SITE
BAY SHORE, NEW YORK

REV. NO.	DATE	DESCRIPTION	DES	DR	CH	APP



SITE LOCATION
SCALE: 1" = 1000'

SCHEDULE OF DRAWINGS

	TITLE SHEET AND INDEX TO SHEETS
1	EXISTING CONDITIONS
2	SITE PREPARATION AND EROSION AND SEDIMENT CONTROL PLAN
3	EXTENT OF EXCAVATION
4	SITE RESTORATION PLAN
5	DETAILS

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811 Determina lo que está bajo tierra. Llama antes de excavar

PREPARED FOR:

nationalgrid

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GEI Consultants
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PROJECT NUMBER: 093180-1-1107
MARCH 12, 2010

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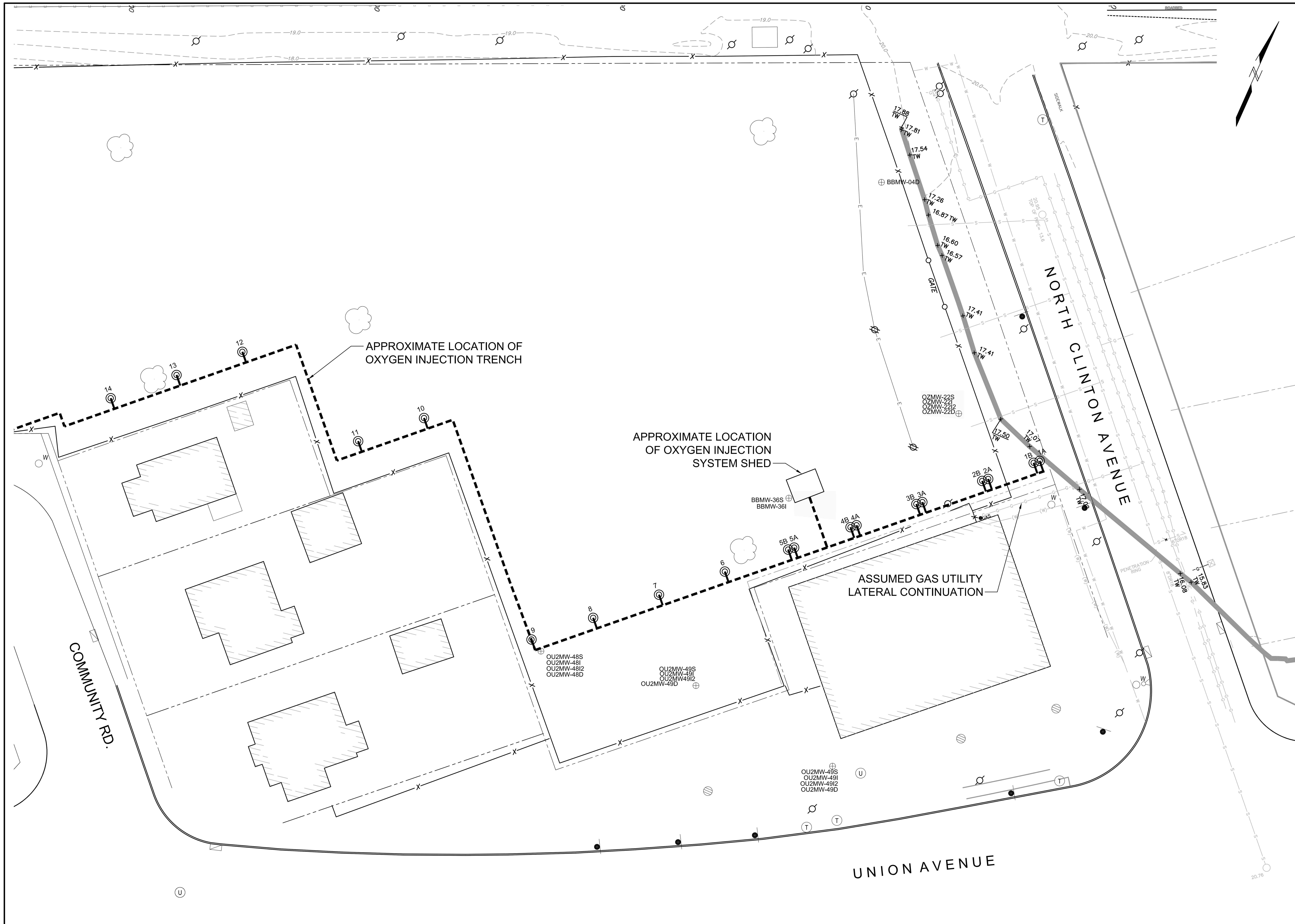

LEGEND

- EXISTING STRUCTURE
- TREE
- PROPERTY BOUNDARY
- FENCES
- CONTAINMENT WALL
- OXYGEN INJECTION TRENCH
- OXYGEN INJECTION WELL
- SIGN
- HYDRANT
- MH — MANHOLE
- DRAIN INLET
- TRAFFIC BOX
- SIGNAL POLE
- LIGHT POLE
- UTILITY POLE
- ELECTRICAL OUTLET ON POST
- TELEPHONE MANHOLE
- CATCH BASIN
- RAILROAD TIE
- MONITORING WELL
- GAS VALVE
- WATER VALVE
- SMH — SANITARY MANHOLE
- TW — TOP OF WALL ELEVATION
- T — COMMUNICATIONS LINE
- S — SANITARY
- G — GAS
- W — WATER
- (W) — WATER - NEW LOCATION: MAY 15, 2007
- E — ELECTRICAL LINE
- BBMW-04D — MONITORING WELL
- WCMW-16S, WCMW-16I, WCMW-16I2 — GROUNDWATER MONITORING WELL CLUSTER (S=SHALLOW, I, I2 = INTERMEDIATE) (WT = WATER TABLE)

NOTES:

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   MAY 8, 2007 (DRIVE LINE EXCAVATION)
   MAY 18, 2007 (DRIVE LINE LOCATION)
   MAY 22, 2007 (SOUTHERN CELL AND DRIVE LINE EXCAVATION)
   MAY 25, 2007 (DRIVE LINE LOCATION)
   JUNE 1, 2007 (DRIVE LINE LOCATION)
2. SURVEY FIELD DATE OF UTILITIES AND ROAD TOPO: APRIL 25, 2007
   SURVEY FIELD DATE OF NEW LOCATION OF WATER MAIN: MAY 15, 2007
3. UNDERGROUND UTILITY LOCATIONS AS PER UTILITY MARK OUT, EXCAVATION AND ENTACT INFORMATION.
4. UNDERGROUND, OVERHEAD AND GROUND LEVEL UTILITIES ARE NOT GUARANTEED AS TO ACCURACY, EXACT LOCATION, TYPE OR USE, ACTIVE OR INACTIVE. VERIFICATION IS MANDATORY WITH MUNICIPAL AGENCIES AND/OR PUBLIC OR PRIVATE UTILITY COMPANIES PRIOR TO CONSTRUCTION.
5. OVERHEAD WIRES NOT SHOWN.
6. LOCATION OF ELECTRIC LINE AND OUTLETS ARE APPROXIMATE.
7. OXYGEN INJECTION SYSTEM HAS NOT BEEN INSTALLED AND PROPOSED LOCATIONS ARE SHOWN.
8. TOP OF WALL ELEVATIONS REFERENCE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

SOURCES:

1. MAP PREPARED BY NATIONAL GRID ENGINEERING & SURVEY, INC. SURVEY DIVISION. ROY D. HUNT L.S. # 050220 SYSTEM SURVEYOR.

0 20 40
SCALE, FEET

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DRAWN BY: DE
CHECKED BY: MW
APPROVED BY: -
12/11/09

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FORMER KING BEAR/SUMMER'S & LUMBER PROPERTIES
BAYSHORE/BRIGHTWATERS
FORMER MANUFACTURED GAS PLANT SITE
BAY SHORE, NEW YORK

EXISTING CONDITIONS

DWG NO. 1

GEI PROJECT 093180-1-1107 | SHEET NO. 1 of 5 | ISSUE 0

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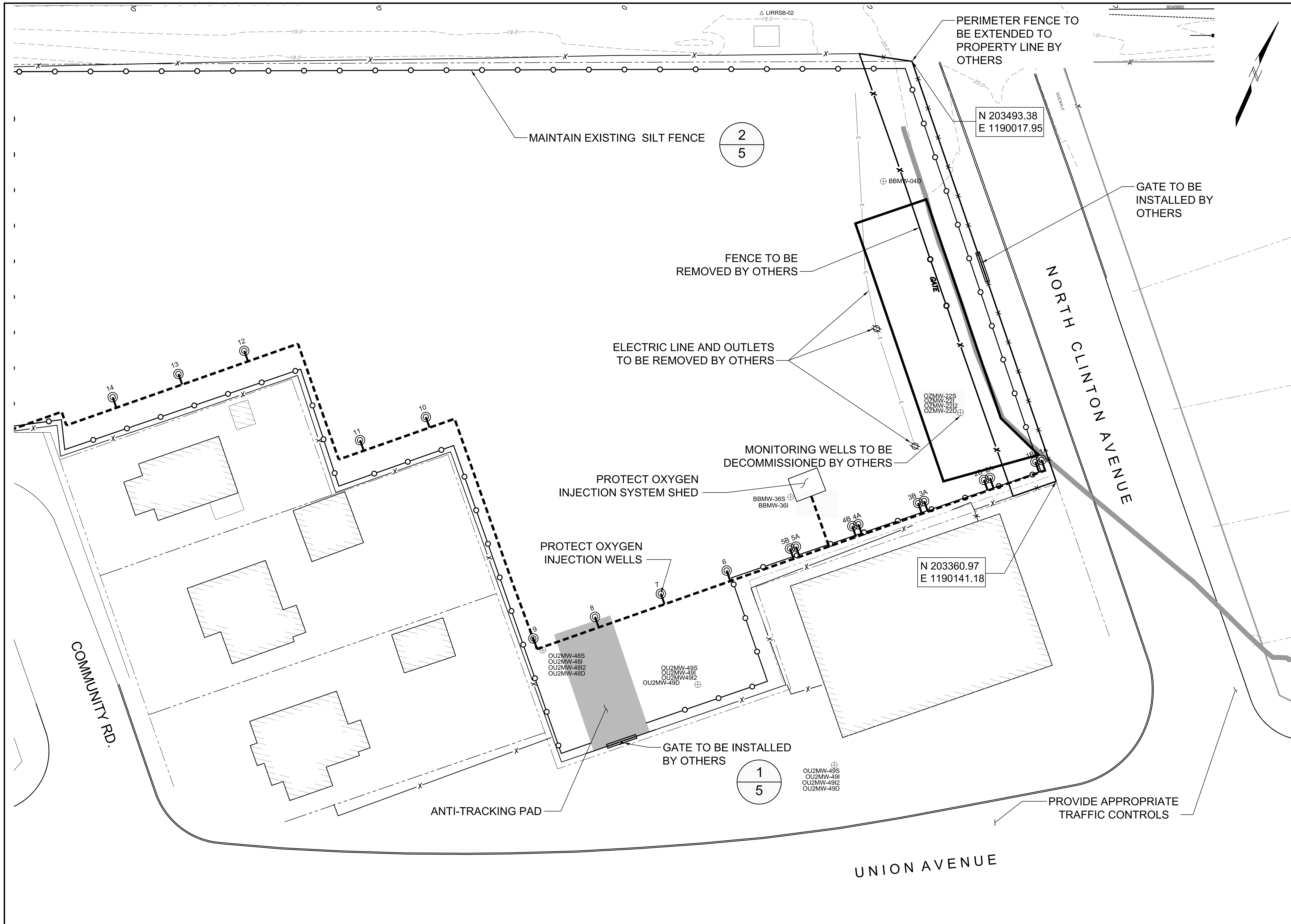

LEGEND

- EXISTING STRUCTURE
- PROPERTY BOUNDARY
- FENCE
- CONTAINMENT WALL
- OXYGEN INJECTION SYSTEM TRENCH
- OXYGEN INJECTION WELLS
- SIGN
- HYDRANT
- MH MANHOLE
- DRAIN INLET
- TRAFFIC BOX
- SIGNAL POLE
- LIGHT POLE
- UTILITY POLE
- ELECTRICAL OUTLET ON POST
- TELEPHONE MANHOLE
- CATCH BASIN
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- MONITORING WELL
- GAS VALVE
- WATER VALVE
- SMH SANITARY MANHOLE
- TW TOP OF WALL ELEVATION
- T COMMUNICATIONS LINE
- S SANITARY
- G GAS
- W WATER
- (W) WATER - NEW LOCATION: MAY 15, 2007
- E OVERHEAD WIRES
- BBMW-04D MONITORING WELL
- WCMW-16S WCMW-16I WCMW-16I2 GROUNDWATER MONITORING WELL CLUSTER (S=SHALLOW, I, I2 = INTERMEDIATE) (WT = WATER TABLE)
- GATE
- LIMITS OF EXCAVATION
- SILT FENCE

NOTES:

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   JUNE 1, 2007 (DRIVE LINE LOCATION)
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3. UNDERGROUND UTILITY LOCATIONS AS PER UTILITY MARK OUT, EXCAVATION AND ENTACT INFORMATION.
4. UNDERGROUND, OVERHEAD AND GROUND LEVEL UTILITIES ARE NOT GUARANTEED AS TO ACCURACY, EXACT LOCATION, TYPE OR USE, ACTIVE OR INACTIVE. VERIFICATION IS MANDATORY WITH MUNICIPAL AGENCIES AND/OR PUBLIC OR PRIVATE UTILITY COMPANIES PRIOR TO CONSTRUCTION.
5. OVERHEAD WIRES NOT SHOWN.
6. LOCATION OF ELECTRIC LINE AND OUTLETS ARE APPROXIMATE.
7. NORTHINGS AND EASTINGS REFERENCE NORTH AMERICAN DATUM OF 1983 (NAD83) NEW YORK STATE PLANE LONG ISLAND ZONE 3104.

SOURCES:

1. MAP PREPARED BY NATIONAL GRID ENGINEERING & SURVEY, INC. SURVEY DIVISION. ROY D. HUNT L.S. # 050220 SYSTEM SURVEYOR.

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SCALE, FEET

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FORMER KING BEAR/SUMMER'S & LUMBER PROPERTIES
BAYSHORE/BRIGHTWATERS
FORMER MANUFACTURED GAS PLANT SITE
BAY SHORE, NEW YORK

SITE PREPARATION AND EROSION AND SEDIMENT CONTROL PLAN

DWG NO. 2

GEI PROJECT 093180-1-1107
SHEET NO. 2 of 5
ISSUE 0

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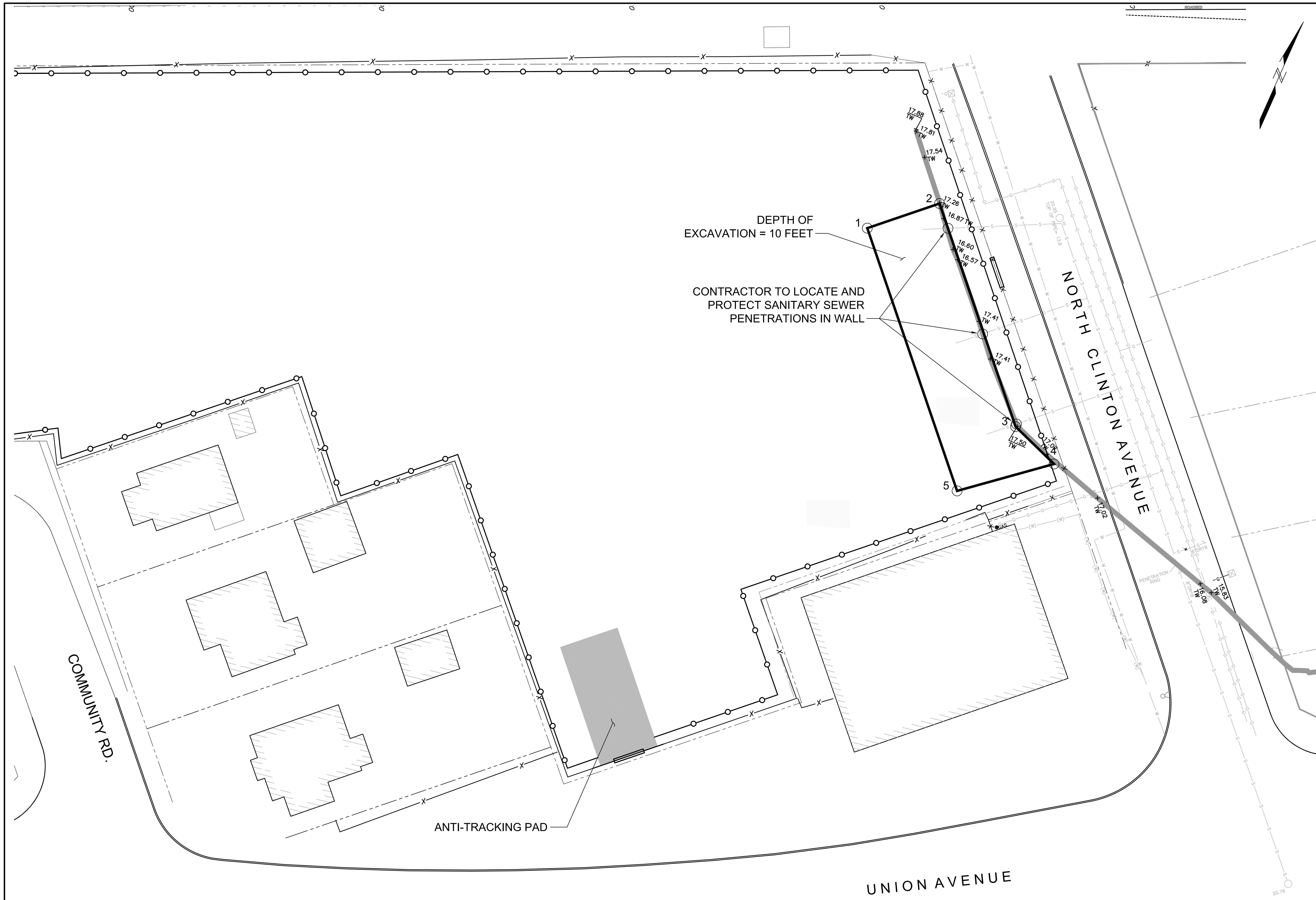

LEGEND

EXISTING STRUCTURE
PROPERTY BOUNDARY
FENCES
CONTAINMENT WALL
SIGN
HYDRANT
MANHOLE
DRAIN INLET
TRAFFIC BOX
SIGNAL POLE
LIGHT POLE
UTILITY POLE
ELECTRICAL OUTLET ON POST
TELEPHONE MANHOLE
CATCH BASIN
RAILROAD TIE
MONITORING WELL
GAS VALVE
WATER VALVE
SANITARY MANHOLE
TW — TOP OF WALL ELEVATION
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SANITARY
GAS
WATER
WATER - NEW LOCATION: MAY 15, 2007
ELECTRICAL LINE
BBMW-04D — MONITORING WELL
GATE
LIMITS OF EXCAVATION
SILT FENCE
WCMW-16S, WCMW-16I, WCMW-16I2 — GROUNDWATER MONITORING WELL CLUSTER (S=SHALLOW, I, I2 = INTERMEDIATE) (WT = WATER TABLE)

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5. OVERHEAD WIRES NOT SHOWN.
6. LOCATION OF ELECTRIC LINE AND OUTLETS ARE APPROXIMATE.
7. NORTHINGS AND EASTINGS REFERENCE NORTH AMERICAN DATUM OF 1983 (NAD83) NEW YORK STATE PLANE LONG ISLAND ZONE 3104.
8. TOP OF WALL ELEVATION REFERENCE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

SOURCES:

1. MAP PREPARED BY NATIONAL GRID ENGINEERING & SURVEY, INC. SURVEY DIVISION. ROY D. HUNT L.S. # 050220 SYSTEM SURVEYOR.

0 20 40
SCALE, FEET

FOR CONSTRUCTION

TABLE 1 - WORK POINT SCHEDULE

WPID	NORTHING	EASTING
1	203423.65	1190023.76
2	203444.40	1190046.12
3	203375.29	1190110.15
4	203367.89	1190130.26
5	203342.29	1190099.26

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EXCAVATION EXTENT

DWG NO. 3

GEI PROJECT 093180-1-1107 | SHEET NO. 3 of 5 | ISSUE 0

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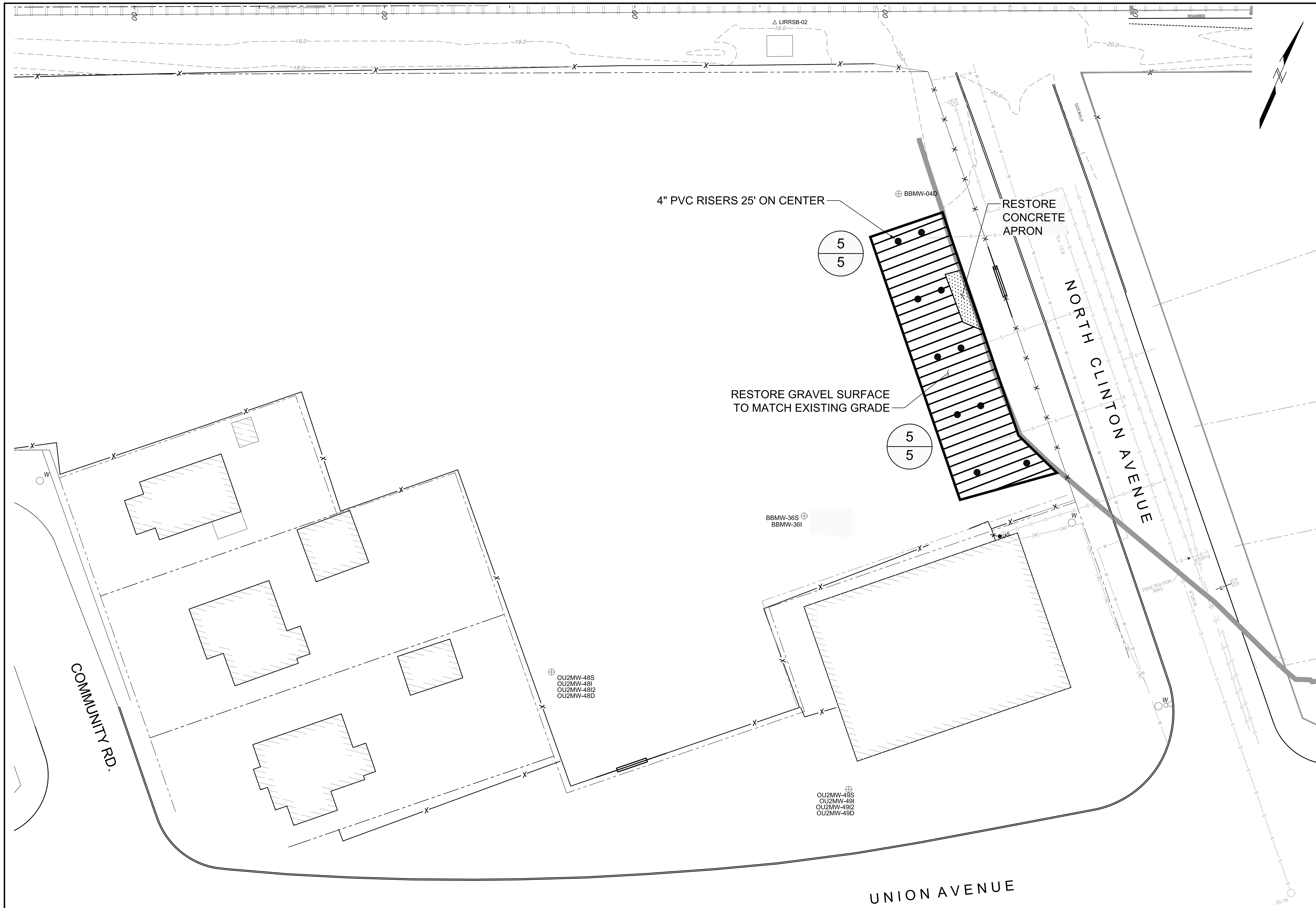

LEGEND

- EXISTING STRUCTURE
- PROPERTY BOUNDARY
- FENCE
- CONTAINMENT WALL
- SIGN
- HYDRANT
- MH — MANHOLE
- DRAIN INLET
- TRAFFIC BOX
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- LIGHT POLE
- UTILITY POLE
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- TELEPHONE MANHOLE
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- WATER VALVE
- SMH — SANITARY MANHOLE
- TW — TOP OF WALL ELEVATION
- T — COMMUNICATIONS LINE
- S — SANITARY
- G — GAS
- W — WATER
- (W) — WATER - NEW LOCATION: MAY 15, 2007
- E — OVERHEAD WIRES
- F-3 — BORING
- GW-5 — GROUNDWATER PROBE SAMPLE
- BBMW-04D — MONITORING WELL
- GATE
- LIMITS OF EXCAVATION
- WCMW-16S, WCMW-16I, WCMW-16I2 — GROUNDWATER MONITORING WELL CLUSTER (S=SHALLOW, I, I2 = INTERMEDIATE) (WT = WATER TABLE)
- PVC RISER

NOTES:

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5. OVERHEAD WIRES NOT SHOWN.
6. LOCATION OF ELECTRIC LINE AND OUTLET ARE APPROXIMATE.

SOURCES:

1. MAP PREPARED BY NATIONAL GRID ENGINEERING & SURVEY, INC. SURVEY DIVISION. ROY D. HUNT L.S. # 050220 SYSTEM SURVEYOR.

0 20 40
SCALE, FEET

FOR CONSTRUCTION

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FORMER KING BEAR/SUMMER'S & LUMBER PROPERTIES
BAYSHORE/BRIGHTWATERS
FORMER MANUFACTURED GAS PLANT SITE
BAY SHORE, NEW YORK

SITE RESTORATION PLAN

DWG NO. 4

GEI PROJECT	SHEET NO.	ISSUE
093180-1-1107	4 of 5	0

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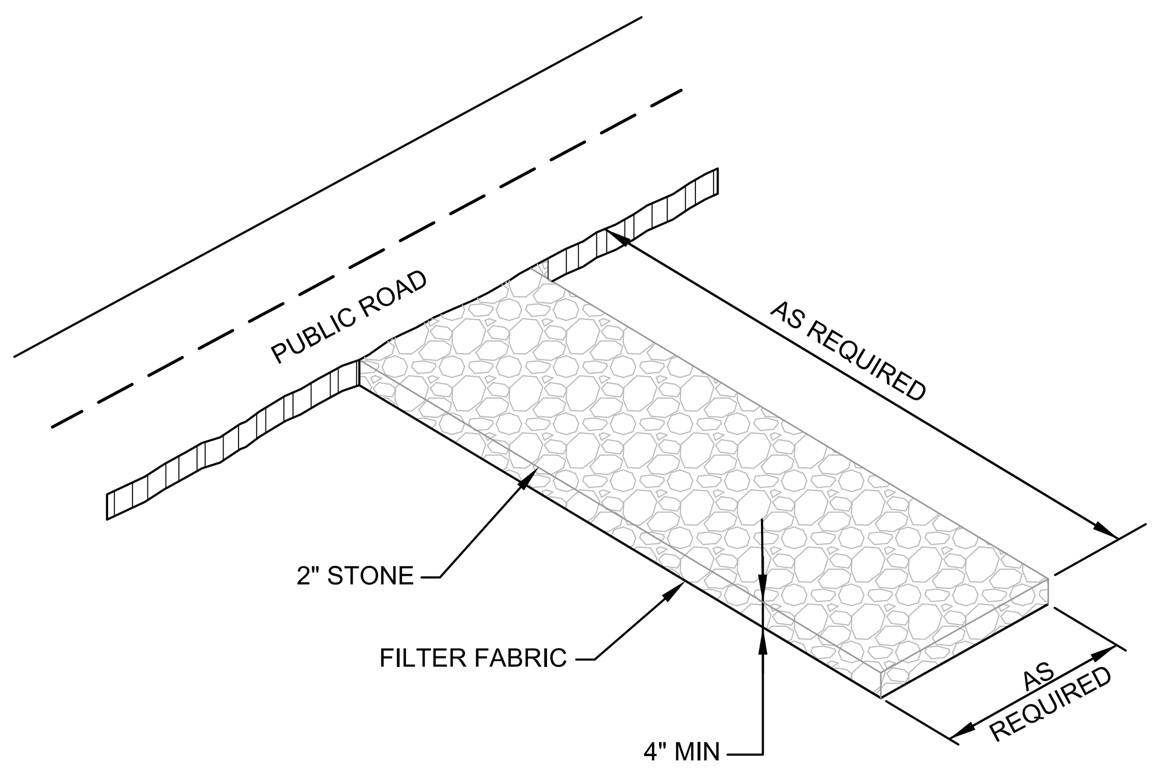
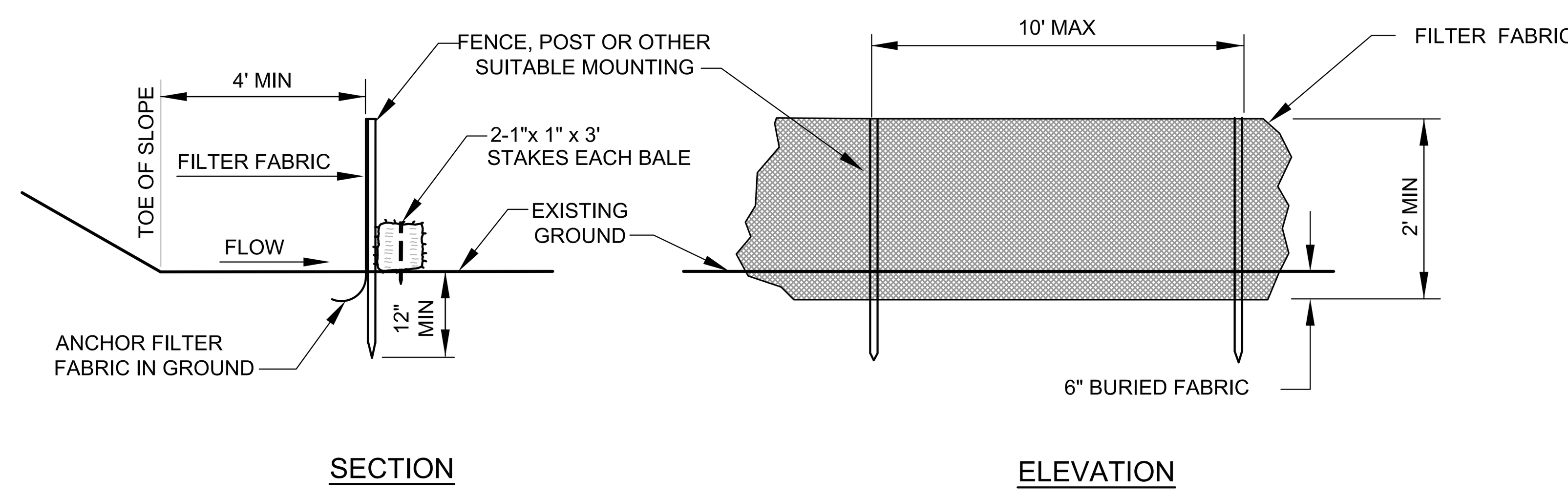
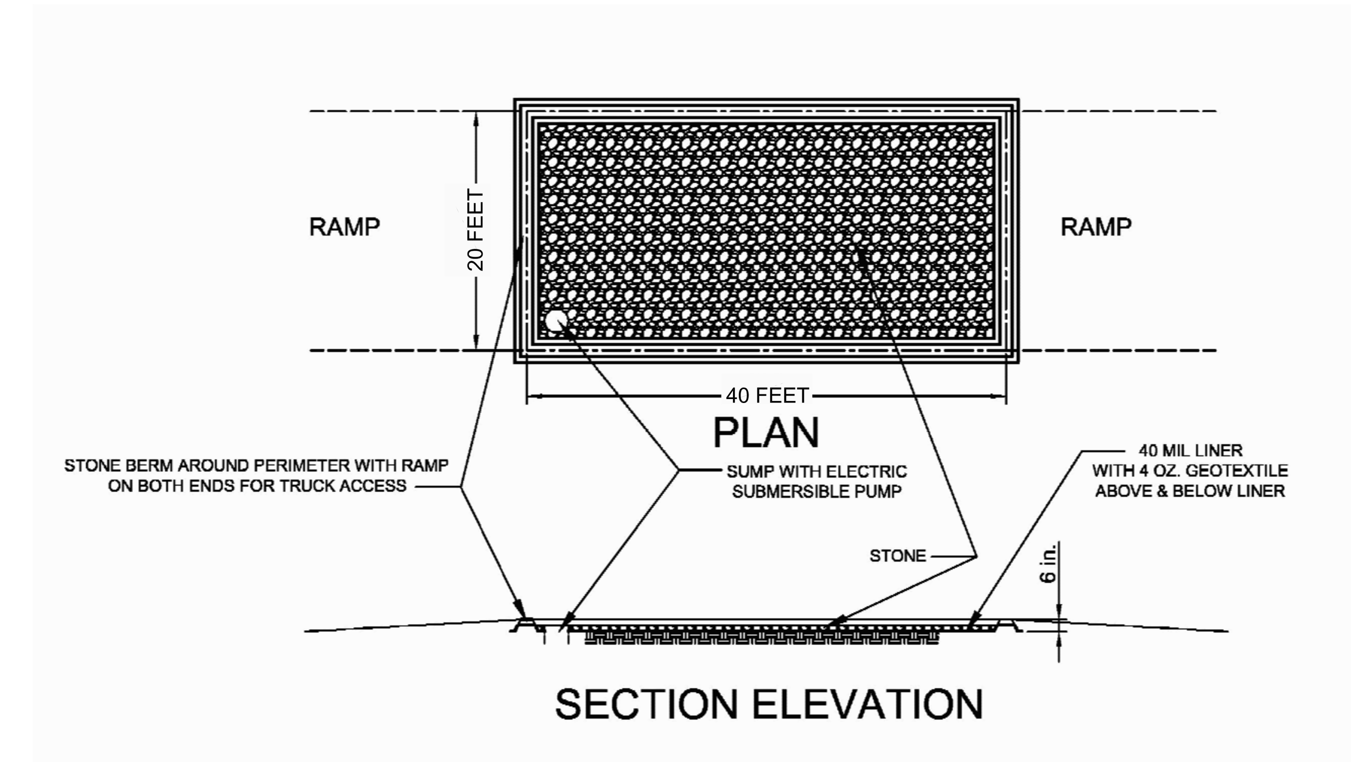


ANTI-TRACKING PAD DETAIL (1/5)
NOT TO SCALE



NOTE:
POST SPACING AND EMBEDMENT VARIES BASED ON THE FABRIC MANUFACTURER REQUIREMENTS.

SILT FENCE DETAIL (2/5)
NOT TO SCALE



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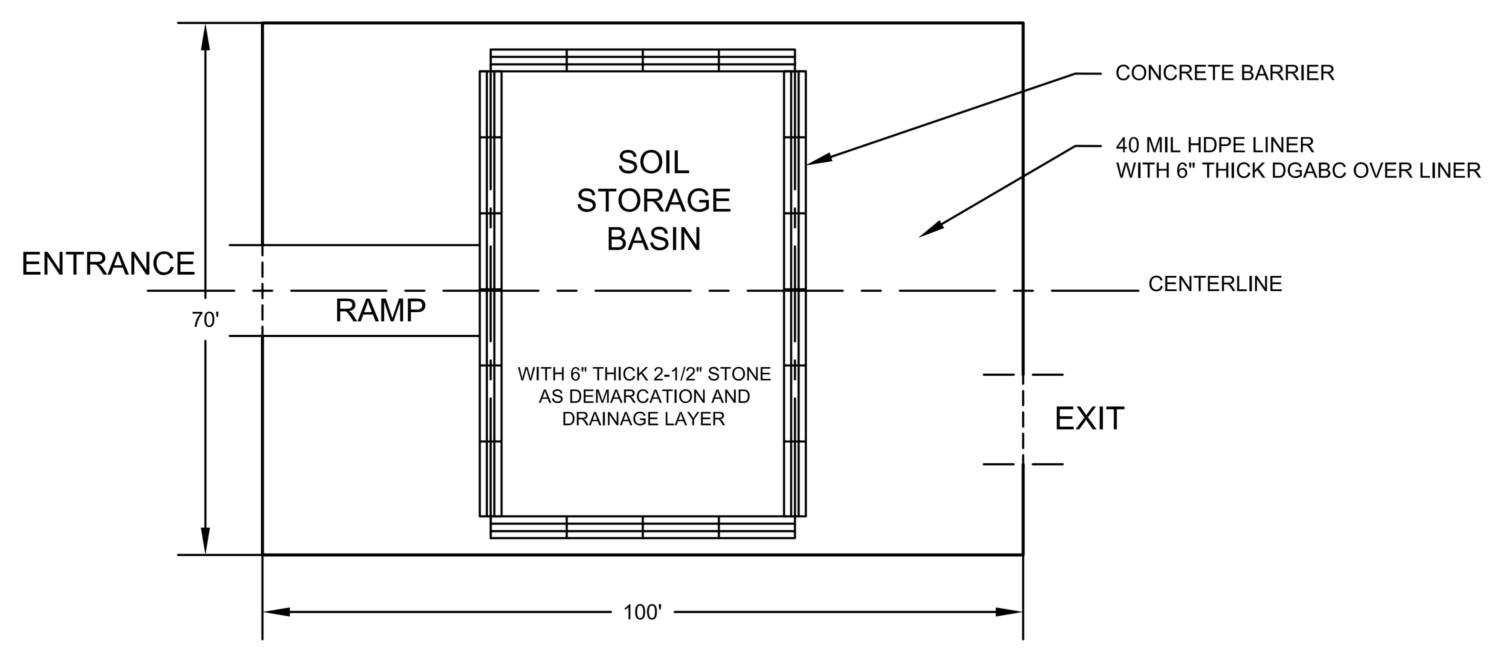

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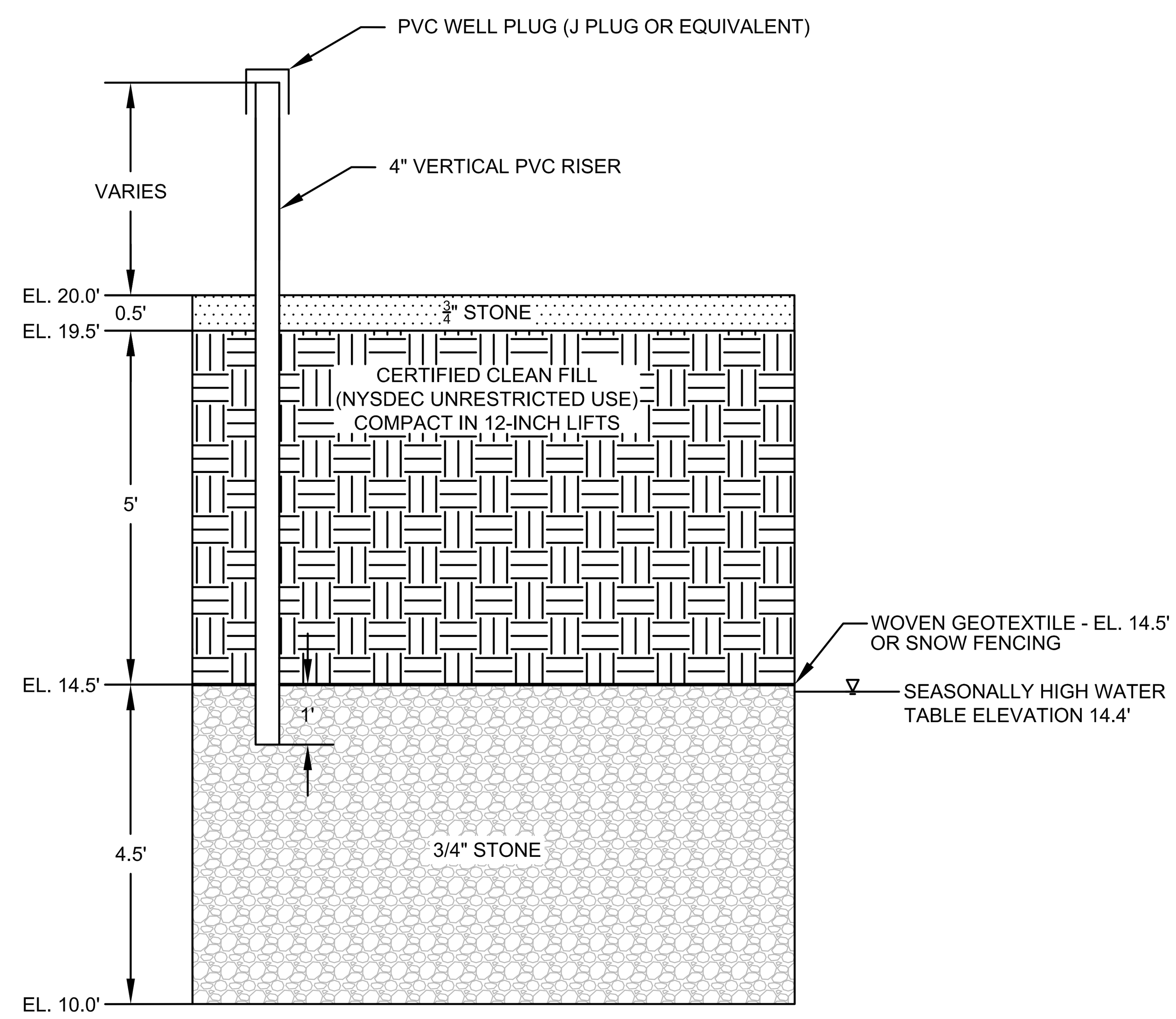

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APPROVED BY -
12/11/09

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FORMER KING BEAR/SUMMER'S & LUMBER PROPERTIES
BAYSHORE/BRIGHTWATERS
FORMER MANUFACTURED GAS PLANT SITE
BAY SHORE, NEW YORK

DETAILS

DWG NO. 5

GEI PROJECT 093180–1–1107

SHEET NO. 5 of 5

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Appendix D

Oxygen Injection System Design

GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological

Appendix D - Oxygen Injection System Design Former King Bear/Summer's Lumber IRM Work Plan

Bay Shore/Brightwaters Former MGP Site

Operable Units No. 1 and No. 3
Bay Shore, New York
AOC Index No. D1-0001-98-11

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February 2010

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Abbreviations and Acronyms

ASME	American Society of Mechanical Engineers
AGWQS	Ambient Groundwater Quality Standards
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
COCs	Contaminants Of Concern
DNAPL	Dense Non-Aqueous Phase Liquid
EPA	United States Environmental Protection Agency
GWPC	Groundwater Protection Criteria
HP	Horse Power
IRM	Intermediate Remedial Measure
MGP	Manufactured Gas Plant
NAPL	Non-aqueous Phase Liquids
NEMA	National Electrical Manufacturers Association
NYSASP	New York State Analytical Services Protocol
NYSDEC	New York State Department of Environmental Conservation
NYSDEP	New York State Department of Environmental Protection
NYSDOH	New York State Department of Health
OM&M	Operations, Maintence, and Monitoring Plan
ORP	Oxidation/Reduction Potential
OU	Operable Unit
PAH	Polycyclic Aromatic Hydrocarbon
PID	Photoionization Detector
PVC	Polyvinyl chloride
RAP	Remedial Action Plan
RAWP	Remedial Action Work Plan
RDD	Remedial Design Document
RI	Remedial Investigation
SCDEE	Suffolk County Department of Environment and Energy
SCDHS	Suffolk County Department of Health Services
STP	Standard Temperature and Pressure
SVOC	Semivolatile Organic Compound
TAL	Total Analyte List
TEFC	Totally Enclosed, Fan Cooled
TOC	Total Organic Carbon
TPAH	Total PAH
VOC	Volatile Organic Compound

Abbreviations and Acronyms (cont.)

MEASUREMENTS

ACFM	Actual cubic feet per minute
CF	Cubic feet
ft	feet
gmol	gram-mole
Hz	hertz
ID	inner diameter
L	liter
lbs	pounds
lbs/day	pounds per day
MG	million gallons
MGal	Million Gallons
MGD	million gallons per day
mg/L	Milligrams per liter
msl	mean sea level
ppb	Parts per billion
ppm	Parts per million
psi	Pounds per square inch
SCFH	Standard cubic feet per hour
ug/L	Micrograms per liter
ug/m^3	Microgram per meter cubed
mg	milligrams

1. Introduction

This design document presents the design criteria and calculations for the oxygen injection system that will operate at the 66 N. Clinton Avenue in Operable Unit No. 1 (OU-2) and the south of the Long Island Rail Road (LIRR) tracks on Operable Unit No. 3 (OU-3) of the Bay Shore/Brightwaters Former Manufactured Gas Plant (MGP) site located in Bay Shore, in the Town of Islip, Suffolk County, New York (Figure 1). The system (herein referred to as the "66 N. Clinton/Community Road Injection Lines") is divided into two injection lines. The first line runs along the property boundary between 60 N. Clinton Avenue and 66 N. Clinton Avenue (66 N. Clinton Line) in OU-1. The second line runs along the northern right of way of Community Road and a portion of Union Boulevard (Community Road Line) in OU-3. The 66 N. Clinton Line was installed between December 2009 and January 2010 and begin operation in January 2010. The Community Road Line is scheduled for installation in the winter of 2010 and operation in the by April 2010. This document is intended to supplement the preliminary design documents submitted to the NYSDEC on December 1, 2009.

The 66 N. Clinton Injection Line will operate up-gradient from and in conjunction with the oxygen injection systems that were installed as part of the 2004 Interim Remedial Measure (IRM) (GEI, 2004) along Montauk Highway and Manatuck Lane; as well as, the oxygen injection systems installed at Cooper Lane, 34 N. Clinton Avenue, and 9 N. Clinton Avenue as part of the 2009 OU-2 Remedial Design Document (OU-2 RDD) (GEI, 2009).

The Community Road Injection Line will replace the existing OU-3 Union Boulevard Injection Line that was installed as an IRM (Foster Wheeler, 2000) along Union Boulevard in September 2000.

The 66 N. Clinton/Community Road Injection Lines will inject oxygen into the subsurface below the water table within the groundwater plume, which was previously defined by groundwater sampling events. The injected oxygen will facilitate and promote the bioremediation of the MGP-related contaminants dissolved in the groundwater.

1.1 Design Document Organization

Section 1 of this design document provides a summary of the intent of the oxygen injection systems proposed for OU-1 and OU-3. Section 2 provides a summary of the remedial goals for the oxygen injection systems and the respective performance monitoring activities. Section 3 provides a description of the oxygen injection technology and the development of the 66 N. Clinton/Community Road Injection Lines design.

2. Remedial Goals and Performance Monitoring

2.1 Remedial Goals

The goal of the system is to augment the source removals in OU-3 and OU-1 by hasten the bioremediation of the remaining dissolved phase contaminant plume emanating from these areas after excavation of the source materials is completed. These systems will not serve as the final measure to address groundwater contamination associated with the Bay Shore/Brightwaters former MGP site. Removal of the source removal and in-situ treatment remedy is being implemented at the 66 N. Clinton property in OU-1. Removal of the source removal and partial containment is being implemented beneath the LIRR tracks in OU-3. The reduction in the flux of MGP-related contaminants into OU-2 and OU-3 following completion of the source removals will, over time, reduce or eliminate the discharges to OU-2 and OU-3.

National Grid proposes to implement and maintain the 66 N. Clinton Injection Line in OU-1 until the following performance based goals are met.

- A permanent remedy is implemented at the Bay Shore site (OU-1) leading to control of the source of the groundwater contamination; and,
- Groundwater concentrations of MGP-related contaminants of concern meet the Ambient Groundwater Quality Standards and Guidance Values for a GA aquifer in OU-2; or,
- Continued operation of the systems produces diminishing returns as indicated by periodic groundwater monitoring up and down gradient of the oxygen injection treatment systems.

National Grid proposes to implement and maintain the Community Road Injection Line in OU-3 until the following performance based goals are met.

- The OU-3 source removals and partial containment lead to control of the source of the groundwater contamination; and,
- Continued operation of the systems produces diminishing returns as indicated by periodic groundwater monitoring up and down gradient of the oxygen injection treatment systems.

2.2 Performance Monitoring

2.2.1 Groundwater Monitoring

Groundwater will be monitored prior to start-up of each line of the 66 N. Clinton/Community Road Injection Lines, during each system start-up phase, and at regular intervals during system operation. NYSDEC requires that targeted groundwater monitoring wells closest to the injection points be sampled before system start-up and then once per month (monthly) for three months thereafter. Following the three month period after start-up, NYSDEC may reduce the sampling frequency to quarterly. Otherwise, sampling of the targeted wells will proceed monthly. The analytical results and field measurements will be used to evaluate the performance of the 66 N. Clinton/Community Road Injection Lines. Specifically, the data collected is focused on monitoring the aerobic environments created by the system, the bioactivity of the aquifer and its ability to reduce MGP-related contaminant concentrations in the dissolved phase.

The groundwater sampling and frequency protocol established in the Operations, Maintenance, and Monitoring Plan (OM&M) Plan will be followed to monitor the performance of the 66 N. Clinton/Community Road Injection Lines. The sampling locations are identified in Figure 7.

National Grid will report the results of the pre-startup and first monthly sampling event of each oxygen injection system to the NYSDEC, NYSDOH, SCDHS, and SCDEE in a Remediation System Startup Summary 45 days after the monthly sample results are received and validated. Subsequent sample results will be reported as available in the quarterly OMM reports.

3. Oxygen Injection System Design Details

3.1 Oxygen Injection Technology Overview

Oxygen injection technology involves the injection of a 90 to 95 percent pure oxygen gas into groundwater to increase the dissolved oxygen concentration and enhance aerobic biodegradation of BTEX and naphthalene. The technology filters ambient air to generate 90 to 95 percent pure oxygen gas, which is then injected in pulsed intervals into the subsurface through a series of injection wells at low flow rates. The low flow rates and pulsed injection intervals are cycled to allow for the maximum transfer of vapor-phase oxygen to dissolved-phase oxygen. Unlike air sparging, the goal of oxygen injection is to transfer the injected vapor to the aqueous phase. The goal of air sparging is to maintain the injected vapors in the vapor phase where they can strip the VOCs, such as BTEX, from the groundwater for collection in the vadose zone and subsequent treatment. Slowly injecting oxygen at 90 to 95 percent purity can increase dissolved oxygen concentrations to a maximum of approximately 40 milligrams per liter (mg/L). Whereas air injected under sparge processes yields maximum dissolved oxygen concentrations of approximately 9 mg/L. The injected oxygen in the dissolved-phase is then used by indigenous microorganisms to aerobically degrade the organic chemicals. Therefore, by injecting oxygen under these conditions, an aerobically active treatment zone is formed in the vicinity of the injection well. When groundwater passes through this zone, it becomes oxygenated and stimulates the aerobic microbes in the groundwater to biodegrade the dissolved-phase contaminants of concern (COCs).

The injection line designed for OU-1 is constructed to traverse the flow path of the groundwater plumes outside of the existing OU-1 subsurface barrier wall. By creating and maintaining an aerobic environment along the flow path of the plume, the oxygen injection system will supplement one another by reducing the groundwater contaminant mass as the groundwater flows through each transect. The 66 N. Clinton Injection Line represents one transect and will supplement and operate up-gradient from the systems currently operating at Cooper Lane, 9 N. Clinton Avenue and 34 N. Clinton Avenue and along Montauk Highway and Manatuck and Garner Lanes.

3.2 Oxygen requirement

As described above, an oxygen injection system will slowly inject oxygen into the subsurface to increase levels of dissolved oxygen in the groundwater. This increase is necessary to stimulate the biodegradation of organic compounds by native microorganisms.

The following calculations will determine the oxygen requirements for the plume based on the average compound mass loadings estimated in the vicinity of the proposed injection line. These calculations will determine the minimum required oxygen generating capacity to meet the project objectives for the proposed system.

Plume BTEX and PAH data from historic and recent site monitoring activities are detailed on Figures 5 and 6 and summarized in Tables 1 and 2 for 66 N. Clinton and on Tables 3 and 4 for Community Road. This data was selected to represent the average plume conditions approaching the 66 N. Clinton/Community Road Injection Lines and was used to estimate the average compound mass loading.

3.2.1 Groundwater Plume Flowrate

As detailed in Figures 3 and 4, there are two lines included in the 66 N. Clinton/Community Road Injection Lines. The first line runs along the property boundary between 60 N. Clinton Avenue and 66 N. Clinton Avenue (66 N. Clinton Line) in OU-1. The second line runs along the northern right of way of Community Road and a portion of Union Boulevard (Community Road Line) in OU-3. Both lines will operate from one system with a single oxygen generator located on the 66 N. Clinton Avenue property. This oxygen generator will be designed to produce enough oxygen required to treat the highest average compound mass that is projected to make contact at the 66 N. Clinton/Community Road Injection Lines.

3.2.1.1 66 N. Clinton Injection Line

The shape of the cross-sectional area of the groundwater plume approaching 66 N. Clinton Injection Line is estimated by using data collected from groundwater probes GW-3, GW-5, GW-6, and GW-8; and groundwater monitoring well clusters OZMW-22 and OZMW-49. The analytical data used is summarized on Tables 1 and 2, groundwater probe data and groundwater monitoring well data, respectively, and a cross-section of the approaching groundwater plume is depicted in Figure 5. The volumetric flow rate of the portion of the groundwater plume that will be treated by the 66 N. Clinton Injection Line was estimated using the following assumptions:

- The cross-sectional area of the groundwater plume is conservatively estimated by assuming the cross-sectional shape of the plume is made up of two rectangles. The top rectangle represents the plume's shape from approximately 5 feet below ground surface (ft bgs) to 15 ft bgs; and the bottom rectangle represents the plume's shape from approximately 15 ft bgs to 25 ft bgs (Figure 5).

- The dimensions of the two rectangles are approximately 100 feet wide by 10 feet deep; and approximately 75 feet wide by 10 feet deep.
- The formation porosity is 30%.
- The groundwater seepage velocity is approximately 1 foot/day.

Using the data and these assumptions, the volumetric flow rate of the groundwater plume projected to pass through the 66 N. Clinton Injection Line is approximately 575 cubic feet per day (CF/day) or 0.004 million gallons per day (MGD). See calculation below.

EQUATION 3.1

Cross-Sectional Area of Approaching Groundwater Plume

$$= (100FTx10FT) + (75FTx10FT) = 1{,}750FT^2$$

EQUATION 3.2

Volumetric Flow Rate = $(1{,}750FT^2 x 1FT/DAY)x0.3 = 525FT^3/DAY$

Converting to Million Gallons per Day (Mgal/Day) =

$$525FT^3/DAY * 7.45gallons/FT^3 * 1Mgallon/1{,}000{,}000gal = 0.004MGal/DAY$$

3.2.1.2 Community Road Line

The shape of the cross-sectional area of the groundwater plume approaching Community Road Injection Lines is estimated by using historic maximum concentration data collected from the groundwater monitoring wells in the vicinity of the injection line and recent groundwater data from new groundwater probes OU3GP-01, OU3GP-02, OU3GP-07, and OU3GP-08; and new groundwater monitoring well clusters OU3MW-02. The analytical data from the groundwater probe and monitoring wells used for calculating the system requirements was collected during the Second Quarter of 2009 (Q2 2009) and is summarized on Tables 3 and 4. The historic maximum concentrations used for the depiction of the cross section approaching groundwater plume (Figure 6) are included in the Q2 2009 OM&M Report. This historic data was used to depict the full extent of the plume prior to excavation on the LIRR property. The volumetric flow rate of the portion of the groundwater plume that will be treated by the Community Road Injection Line was estimated using the following assumptions:

- The cross-sectional area of the groundwater plume is conservatively estimated by assuming the cross-sectional shape of the plume is made up a rectangle which is starting form approximately 5 feet below ground surface (ft bgs) to 25 ft bgs (Figure 6).

- The dimension of the rectangle is approximately 200 feet wide by 20 feet deep.
- The formation porosity is 30%.
- The groundwater seepage velocity is approximately 1 foot/day.

Using the data and these assumptions, the volumetric flow rate of the groundwater plume projected to pass through the Community Road Injection is approximately 1,200 cubic feet per day (CF/day) or 0.009 million gallons per day (MGD).

3.2.2 Average Compound Mass Loading

The average concentration loading of total VOCs, total SVOCs, and total metals was estimated using data collected from each 5 foot sample interval between 10 and 70 feet below ground surface at each groundwater probe and the designated sample intervals at the monitoring wells in the vicinity of the proposed injection line. The analytical data collected from the groundwater probes and monitoring well clusters are summarized in Tables 3 and 4. Only the groundwater monitoring wells on Table 4 had data available to estimate the average total dissolved metals concentration. These results and their contribution to the compound mass loading are discussed below. The estimated average contaminant (VOCs and SVOCs) concentration loading ranges between <0.01 to 1.28 mg/L across the cross-sectional area of the plume approaching the 66 N. Clinton Avenue Injection Line. The estimated average contaminant (VOCs and SVOCs) concentration loading ranges between 0.02 to 6.90 mg/L across the cross-sectional area of the plume approaching the Community Road Injection Line.

However, because a large portion of the oxygen demand is derived from the amount of oxygen consumed by the amount of carbon in a compound, this loading is converted to a carbon loading. Assuming that the estimated concentration loading for oxygen consumption is comprised of 94% carbon, the average carbon concentration loading due to the average concentration loadings across the cross-sectional area of the plume ranges between <0.01 to 1.20 mg/L at the 66 N. Clinton Injection Line and ranges between 0.02 and 6.48 mg/L at the Community Road Injection Line. Applying the average carbon concentration load to the estimated plume flow rates of 0.004 MGD and 0.009 MGD as found in Section 3.2.1 with a unit conversion factor of 8.34 (lbs)(L)/(MG)(mg), the average carbon mass loading can be estimated:

EQUATION 3.4

Average Carbon Mass Loading (lbs/DAY) =

$$1.20 mg/L * 0.004 Mgal/Day * 8.34 lbs \cdot L/Mgal \cdot mg = 0.04 lbs/_{DAY}$$

Using the above equation, the total carbon mass loading for the plume approaching the 66 N. Clinton Injection Line ranges from <0.01 to 0.04 lbs/day (Table 5).

In addition to oxygen demand from the carbon mass load, a percentage of dissolved metals will also consume oxygen as it passes through the injection line. The total metals were estimated utilizing data from groundwater probes GW-3, GW-7, and GW-8; and monitoring well clusters OU2MW-48 and OU2MW-49, as summarized by Table 2. It is assumed that 50% of the dissolved total metals will be consumed by the dissolved oxygen from the system. Therefore, 50% of the average concentration load from metals will contribute to the total compound loading for the oxygen demand in the plume. The average total metals concentration load contributing to the compound mass loading ranged between 14 to 55 mg/L or 0.46 to 1.82 lbs/day for the 66 N. Clinton Injection Line and between 56 to 57 mg/L or 4.16 to 4.29 lbs/day for the Community Road Injection Line. See Table 5 for more detail.

The total compound mass loading is then estimated by adding the carbon mass loading to the mass loading due to dissolved metals. This yields a range of total compound mass loading rates of 0.46 to 1.86 lbs/day for the 66 N. Clinton Injection Line and 4.23 to 4.79 lbs/day for the Community Road Injection Line. The system will be designed and operated such that higher amounts of oxygen can be directed to the sections of the plume that have the highest concentration loadings.

3.2.3 Estimated Oxygen Demand

As estimated in Section 3.2.2, the combined highest average compound loading entering the two treatment zones is approximately 6.64 lbs/day. This value was used to design the system for this location. For the purpose of design, the ratio of oxygen to contaminant mass is estimated from the reaction of oxygen with a carbon source (naphthalene) producing entirely carbon dioxide and water. Naphthalene was chosen based on its dominating presence within the plume and its higher recalcitrance to attenuation when compared to the BTEX molecules.

Oxidation Reaction for Naphthalene

$$C_{10}H_8 + 12O_2 \rightarrow 10CO_2 + 4H_2O$$

As noted in the reaction above, 12 gmol of oxygen are required for the oxidation of 1 gmol of naphthalene. Expressed in molecular weights:

EQUATIONS 3.5 AND 3.6

$\text{Oxygen } = (12) * (2 * 16) = 384$

$\text{Naphthalene } = (1 * ((10 * 12) + (8 * 1))) = 128$

This calculates a ratio of approximately 3.0 grams of oxygen per gram of naphthalene. This oxygen to carbon ratio was used to estimate the required oxygen demand.

A small percentage of injected oxygen will either not get dissolved or be consumed by cations or other organic matter. A factor of safety of 2.0 will be applied to oxygen in the 3:1 oxygen to carbon ratio in order to ensure that the required amount of oxygen is available for contaminant biodegradation. Therefore, a minimum 6.0 pounds of oxygen per pound of carbon must be injected into the treatment zone to sufficiently degrade the BTEX and PAH mass in the plume. Using the highest combined average compound loading entering the two treatment zones of 6.64 lbs/day, approximately 40 pounds of oxygen will need to be injected daily to effectively treat the groundwater impacts approaching the 66 N. Clinton/Community Road Injection Lines.

3.2.4 System Details

Typical well spacing within treatment transects for this technology with similar subsurface conditions is approximately 20-25 feet. Eighteen to twenty feet spacing was selected for each line of the 66 N. Clinton/Community Road Injection Lines based on the distribution of contaminated groundwater (Figures 5 and 6), aquifer hydrogeologic properties, and performance of the systems operating down-gradient along Montauk Highway and Manatuck Lane. Based on this information, the 66 N. Clinton/Community Road Injection Lines were designed using 45 injection wells to provide coverage of the approaching groundwater plume (Figures 5 and 6). The total system capacity will be greater than the required 45 injection points to facilitate system expansion if needed. Additional system installation details are included in Figure 8.

The oxygen injection system will be provided by Matrix Environmental and include the following minimum specifications:

- Oxygen Production Capacity of 160 standard cubic feet per hour (SCFH)
- Oxygen Delivery Manifold with 64 points (6 banks of 10)
- Power Supply = Three phase 230-volts
- Six foot by 14-foot insulated double axle cargo trailer with rear locking double doors, trailer jacks, lighting, wall-mounted heater, ceiling-mounted ventilator and 120-volt duplex receptacle. This may be modified based on the final location of the system as dictated by pending access agreements.

- AirSep Model AS-160 oxygen generator with a 120-gallon surge tank and regulator. Single phase/60 Hz/110 volts.
- Kaeser SM-8 rotary screw air compressor with air dryer, pressure tank with auto drain, and low sound enclosure. Rated for 32 ACFM @ 100 PSIG. 7.5 HP TEFC motor, three phase/60 Hz/230 volts. The compressor should include a programmable logic controller.
- Manifold for 60 injection points to include individual pressure gauge (0-30 PSI) and Dwyer variable area flow meter (10-100 SCFH).
- Six adjustable timers and solenoid valves (per set of ten points) to control oxygen flow for pulse injection.
- 125-amp electrical panel (NEMA 1 load center) with breakers located inside the trailer and 100-amp (NEMA 3R rainproof) safety switch on outside of trailer. All wiring is copper in Liquid-Tight flexible conduit (steel jacket) or UL listed SCH40 PVC rigid electrical conduit.
- Fully integrated remediation system with all plumbing, electrical, and mechanical components installed.
- All pressure tanks will be ASME National Board Certified for compressed gas storage (200 PSI rating).
- The pressure relief valve will be muffled for noise reduction.
- U.L. certification.
- Operations manual with plumbing and instrumentation diagrams.

3.2.5 System Equipment Capacity

The oxygen generating equipment is rated for a maximum generation capacity of 160 standard cubic feet per hour (SCFH). However, the oxygen output should not exceed 75% of the oxygen production capacity. This is an operational guideline that serves to maintain adequate oxygen gas pressure in the storage tank for injection, maintain high oxygen gas purity, and prevent excessive motor starts and load time on the compressor. Therefore, a flow rate of 120 SCFH was used for design purposes. The corresponding mass flow rate of oxygen into the aquifer is calculated below.

Flow Rate = $120SCF/H * 28.317L/CF = 3{,}398.0L/H$

For an Ideal Gas @ STP: 1 mole of gas = 22.4 L; 1 mole of Oxygen = 32 grams

$$\frac{X}{32g} = \frac{3{,}398.0L}{22.4L} \rightarrow X = 4{,}854.28g * 0.0022lbs/g = 10.68lb \text{ Oxygen}$$

Alternately using the vapor density of Oxygen @ STP of 1.43g/L

$$\frac{X}{1.43g} = \frac{3{,}398.0L}{1L} \rightarrow X = 4{,}859.14g * 0.0022 lbs/g = 10.69 lb \text{ Oxygen}$$

However, the oxygen transfer efficiency to groundwater is not 100%. It is very difficult to estimate this variable. It is dependant on both the oxygen solubility and the depth of injection. Oxygen solubility is site specific and affected by water temperature, cation content, and other factors. Oxygen solubility in groundwater is usually from 20-30 mg/L, but can range as high as 40-50 mg/L. However, oxygen solubility does not have as significant an effect on the transfer efficiency as depth of injection. The deeper the point of injection is installed below the water table, the higher the transfer efficiency due to longer contact time between the oxygen gas molecule and the groundwater. For injection points at depths of 25 to 80 feet bgs, the assumed transfer efficiency ranges from 75-95%, respectively.

Assuming 90% oxygen generation efficiency, a flow stream of up to 10.68 pounds of oxygen per hour is available for injection into the aquifer. This equates to a maximum daily injection of approximately 256.3 pounds of oxygen per day across all injection points at a continuous injection rate. At a transfer efficiency range of 75-90%, approximately 8.0 to 9.6 pounds of oxygen per hour is likely to transfer from the vapor phase into the aqueous phase. This estimates a daily available injection range of approximately 192 to 230.4 pounds of oxygen per day at a continuous injection rate.

As detailed in Section 3.2.3, approximately 40 lbs of oxygen a day is required to effectively degrade the combined average compound loading of 6.64 lbs/day from the plume. The minimum of 192 lbs/day of oxygen delivered by the oxygen system is sufficient enough to supply the 40 lbs/day requirement. Based on an oxygen supply rate of 192 lbs/day, it would take approximately 300 minutes/day to inject 40 lbs of oxygen into the plume. This equates to a rate of approximately 0.13 pounds of oxygen per minute. Injecting oxygen at this rate across a 45 injection point system will inject approximately 5.85 pounds of oxygen into the aquifer every minute [0.13 lbs/min x 45 injection points = 5.85 lbs/min]. Therefore, to satisfy the estimated requirement of 40 lbs of oxygen, the system will need to inject oxygen for approximately 7 minutes. To maintain and increase the transfer efficiency of the oxygen gas into the aqueous phase, the injection system will inject oxygen on a cycle of at least 7 minutes every hour.

One operational advantage of this system is that larger amounts of oxygen mass can be routed to any particular section of the plume. Therefore, if monitoring activities during system operation indicates that a specific section of the approaching plume has a higher carbon loading relative to the rest of the plume, then higher amounts of oxygen mass can be directed to this section without sacrificing the lower oxygen demand across the rest of the plume.

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Tables

Table 1
66 N. Clinton Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / **Sample Interval (feet):** / **Sample Date:**	NYS AWQS	KB/SL GW-1 (4-8) 5/21/2009	KB/SL GW-1 (16-20) 5/21/2009	Duplicate of: KB/SL GW-1 (16-20) 5/21/2009	KB/SL GW-2 (4-8) 5/21/2009	KB/SL GW-2 (16-20) 5/21/2009	KB/SL GW-3 (4-8) 5/28/2009
BTEX (ug/L)							
Benzene	1	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	5	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	5	10 U	10 U	10 U	10 U	10 U	**21**
Xylene, m,p-	5	10 U	10 U	10 U	10 U	10 U	**9 J**
Xylene, o-	5	10 U	10 U	10 U	10 U	10 U	**25**
Other VOCs (ug/L)							
Acetaldehyde	8*	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	50*	10 U	10 U	10 U	**3 J**	10 U	10 U
Allyl chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Butadiene, 1,3-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Butanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	60*	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorotoluene	5	10 U	10 U	10 U	10 U	10 U	10 U
Cryofluorane	NE	10 U	10 U	10 U	10 U	10 U	10 U
Cyclohexane	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dibromoethane, 1,2-	0.0006	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,2-	0.6	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, 1,1-	0.07	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, cis-1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropane, 1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, cis-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, trans-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dioxane, 1,4-	NE	500 U	500 U	500 U	500 U	500 U	500 U
Ethanol	NE	500 U	500 U	500 U	500 U	500 U	500 U
Heptane, n-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 U
Hexane, n-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Hexanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Isopropyl benzene	5	10 U	10 U	10 U	10 U	10 U	**30**
Methyl tert-butyl ether	10*	10 U	10 U	10 U	10 U	10 U	10 U
Methyl-2-pentanone, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	10 U	10 U	10 U	**34**
Propanol, 2-	NE	500 U	500 U	500 U	500 U	500 U	500 U
Propylbenzene, n-	5	10 U	10 U	10 U	10 U	10 U	**14**
Styrene	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane, 1,1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane,1,1,2,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	50*	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,2-dichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	10 U	10 U	10 U	10 U	10 U	**49**
Trimethylbenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	**45**
Trimethylpentane, 2,2,4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl acetate	NE	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	2	10 U	10 U	10 U	10 U	10 U	10 U

Table 1
66 N. Clinton Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-1 (4-8) 5/21/2009	KB/SL GW-1 (16-20) 5/21/2009	Duplicate of: KB/SL GW-1 (16-20) 5/21/2009	KB/SL GW-2 (4-8) 5/21/2009	KB/SL GW-2 (16-20) 5/21/2009	KB/SL GW-3 (4-8) 5/28/2009
Non-carcinogenic PAHs (ug/L)							
Acenaphthene	20*	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	10 U	10 U	10 U	10 U
Phenanthrene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Carcinogenic PAHs (ug/L)							
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Other SVOCs (ug/L)							
Bis(2-chloroethoxy)methane	5	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	1	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	10 U	10 U	10 U	10 U	10 U	10 U
Bis(chloroisopropyl)ether	5	10 U	10 U	10 U	10 U	10 U	10 U
Bromophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chloro-3-methylphenol, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chloroaniline, 4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloronaphthalene, 2-	10*	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzidine, 3,3-	5	10 U	10 U	10 UJ	10 U	10 U	10 U
Dichlorophenol, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphenol, 2,4-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	50	10 U	10 U	10 U	10 U	10 U	10 U
Dinitro-2-methylphenol, 4,6-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrophenol, 2,4-	10*	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrotoluene, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dinitrotoluene, 2,6-	5	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	50*	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 4-	1	10 U	10 U	10 U	10 U	10 U	10 U
Nitroaniline, 2-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 3-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 4-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitrobenzene	0.4	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 4-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Nitrosodi-n-propylamine, N-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Nitrosodiphenylamine, N-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	25 U	25 U	25 U	25 U	25 U	25 U
Phenol	1	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorophenol, 2,4,5-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Trichlorophenol, 2,4,6-	NE	10 U	10 U	10 U	10 U	10 U	10 U

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Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	NYS AWQS	KB/SL GW-1 (4-8) 5/21/2009	KB/SL GW-1 (16-20) 5/21/2009	Duplicate of: KB/SL GW-1 (16-20) 5/21/2009	KB/SL GW-2 (4-8) 5/21/2009	KB/SL GW-2 (16-20) 5/21/2009	KB/SL GW-3 (4-8) 5/28/2009
PCBs (ug/L)							
Aroclor 1016	NE	NA	NA	NA	NA	NA	NA
Aroclor 1221	NE	NA	NA	NA	NA	NA	NA
Aroclor 1232	NE	NA	NA	NA	NA	NA	NA
Aroclor 1242	NE	NA	NA	NA	NA	NA	NA
Aroclor 1248	NE	NA	NA	NA	NA	NA	NA
Aroclor 1254	NE	NA	NA	NA	NA	NA	NA
Aroclor 1260	NE	NA	NA	NA	NA	NA	NA
Total PCBs	0.09	NA	NA	NA	NA	NA	NA
Pesticides (ug/L)							
Aldrin	ND	NA	NA	NA	NA	NA	NA
Alpha-bhc	0.01	NA	NA	NA	NA	NA	NA
Alpha-chlordane	NE	NA	NA	NA	NA	NA	NA
Beta-BHC	0.04	NA	NA	NA	NA	NA	NA
Chlordane, trans-	NE	NA	NA	NA	NA	NA	NA
DDD, 4,4-	0.3	NA	NA	NA	NA	NA	NA
DDE, 4,4-	0.2	NA	NA	NA	NA	NA	NA
DDT, 4,4-	0.2	NA	NA	NA	NA	NA	NA
Delta-BHC	0.04	NA	NA	NA	NA	NA	NA
Dieldrin	0.004	NA	NA	NA	NA	NA	NA
Endosulfan I	NE	NA	NA	NA	NA	NA	NA
Endosulfan II	NE	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	NE	NA	NA	NA	NA	NA	NA
Endrin	ND	NA	NA	NA	NA	NA	NA
Endrin aldehyde	5	NA	NA	NA	NA	NA	NA
Endrin ketone	5	NA	NA	NA	NA	NA	NA
Gamma-BHC	0.05	NA	NA	NA	NA	NA	NA
Heptachlor	0.04	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	0.03	NA	NA	NA	NA	NA	NA
Methoxychlor	35	NA	NA	NA	NA	NA	NA
Toxaphene	0.06	NA	NA	NA	NA	NA	`
Total Metals (ug/L)							
Aluminum	NE	NA	NA	NA	NA	NA	NA
Antimony	3	NA	NA	NA	NA	NA	NA
Arsenic	25	NA	NA	NA	NA	NA	NA
Barium	1000	NA	NA	NA	NA	NA	NA
Beryllium	3	NA	NA	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA	NA	NA
Calcium	NE	NA	NA	NA	NA	NA	NA
Chromium	50	NA	NA	NA	NA	NA	NA
Cobalt	NE	NA	NA	NA	NA	NA	NA
Copper	200	NA	NA	NA	NA	NA	NA
Iron	300	NA	NA	NA	NA	NA	NA
Lead	25	NA	NA	NA	NA	NA	NA
Magnesium	35000*	NA	NA	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA	NA	NA
Mercury	0.7	NA	NA	NA	NA	NA	NA
Nickel	100	NA	NA	NA	NA	NA	NA
Potassium	NE	NA	NA	NA	NA	NA	NA
Selenium	10	NA	NA	NA	NA	NA	NA
Silver	50	NA	NA	NA	NA	NA	NA
Sodium	20000	NA	NA	NA	NA	NA	NA
Thallium	0.5*	NA	NA	NA	NA	NA	NA
Vanadium	NE	NA	NA	NA	NA	NA	NA
Zinc	2000*	NA	NA	NA	NA	NA	NA
Cyanides (ug/L)							
Cyanide, Total	200	NA	NA	NA	NA	NA	NA

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66 N. Clinton Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-3 (16-20) 5/28/2009	KB/SL GW-4 (4-8) 5/21/2009	KB/SL GW-4 (16-20) 5/21/2009	KB/SL GW-5 (4-8) 5/21/2009	KB/SL GW-5 (16-20) 5/21/2009	KB/SL GW-6 (4-8) 5/28/2009
BTEX (ug/L)							
Benzene	1	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	5	10 U	10 U	10 U	10 U	10 U	**1 J**
Ethylbenzene	5	10 U	10 U	10 U	10 U	10 U	**110**
Xylene, m,p-	5	10 U	10 U	10 U	10 U	10 U	**53**
Xylene, o-	5	10 U	10 U	10 U	10 U	**1 J**	**85**
Other VOCs (ug/L)							
Acetaldehyde	8*	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	50*	10 U	10 U	10 U	10 U	10 U	10 U
Allyl chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Butadiene, 1,3-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Butanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	60*	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorotoluene	5	10 U	10 U	10 U	10 U	10 U	10 U
Cryofluorane	NE	10 U	10 U	10 U	10 U	10 U	10 U
Cyclohexane	NE	10 U	10 U	10 U	10 U	10 U	10 UJ
Dibromochloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dibromoethane, 1,2-	0.0006	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,2-	0.6	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, 1,1-	0.07	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, cis-1,2-	5	10 U	10 U	10 U	10 U	10 U	**9**
Dichloropropane, 1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, cis-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, trans-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dioxane, 1,4-	NE	500 U	500 U	500 U	500 U	500 U	R
Ethanol	NE	500 U	500 U	500 U	500 U	500 U	R
Heptane, n-	NE	10 U	10 U	10 U	10 U	10 U	10 UJ
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 UJ
Hexane, n-	NE	10 U	10 U	10 U	10 U	10 U	10 UJ
Hexanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Isopropyl benzene	5	10 U	10 U	10 U	10 U	10 U	**13**
Methyl tert-butyl ether	10*	10 U	10 U	10 U	10 U	10 U	10 U
Methyl-2-pentanone, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	**2 J**	10 U	10 U	10 U	**6 J**	**95**
Propanol, 2-	NE	500 U	500 U	500 U	500 U	500 U	R
Propylbenzene, n-	5	10 U	10 U	10 U	10 U	10 U	**4 J**
Styrene	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane, 1,1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane,1,1,2,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U	10 U	**18**
Tetrahydrofuran	50*	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,2-dichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U	10 U	**2 J**
Trichlorofluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	10 U	10 U	10 U	10 U	10 U	**100**
Trimethylbenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	**82**
Trimethylpentane, 2,2,4-	NE	10 U	10 U	10 U	10 U	10 U	10 UJ
Vinyl acetate	NE	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	2	10 U	10 U	10 U	10 U	10 U	10 U

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Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-3 (16-20) 5/28/2009	KB/SL GW-4 (4-8) 5/21/2009	KB/SL GW-4 (16-20) 5/21/2009	KB/SL GW-5 (4-8) 5/21/2009	KB/SL GW-5 (16-20) 5/21/2009	KB/SL GW-6 (4-8) 5/28/2009
Non-carcinogenic PAHs (ug/L)							
Acenaphthene	20*	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	NE	10 U	10 U	10 U	10 U	10 U	**1 J**
Anthracene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	10 U	10 U	10 UJ
Fluoranthene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	10 U	10 U	**1 J**	10 U
Phenanthrene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Carcinogenic PAHs (ug/L)							
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	10 U	10 U	10 UJ
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 UJ
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 UJ
Chrysene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	10 U	10 U	10 UJ
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	10 U	10 U	10 UJ
Other SVOCs (ug/L)							
Bis(2-chloroethoxy)methane	5	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	1	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	10 U	10 U	10 U	10 U	10 U	10 U
Bis(chloroisopropyl)ether	5	10 U	10 U	10 U	10 U	10 U	10 U
Bromophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chloro-3-methylphenol, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chloroaniline, 4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloronaphthalene, 2-	10*	10 U	10 U	10 U	10 U	10 U	10 UJ
Chlorophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzidine, 3,3-	5	10 U	10 U	10 U	10 UJ	10 UJ	10 U
Dichlorophenol, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphenol, 2,4-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	50	10 U	10 U	10 U	10 U	10 U	10 U
Dinitro-2-methylphenol, 4,6-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrophenol, 2,4-	10*	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrotoluene, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dinitrotoluene, 2,6-	5	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 UJ
Hexachlorobenzene	0.04	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	50*	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 4-	1	10 U	10 U	10 U	10 U	10 U	10 U
Nitroaniline, 2-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 3-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 4-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitrobenzene	0.4	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 4-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Nitrosodi-n-propylamine, N-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Nitrosodiphenylamine, N-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	25 U	25 U	25 U	25 U	25 U	25 U
Phenol	1	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorophenol, 2,4,5-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Trichlorophenol, 2,4,6-	NE	10 U	10 U	10 U	10 U	10 U	10 U

Table 1
66 N. Clinton Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / **Sample Interval (feet):** / **Sample Date:**	NYS AWQS	KB/SL GW-3 (16-20) 5/28/2009	KB/SL GW-4 (4-8) 5/21/2009	KB/SL GW-4 (16-20) 5/21/2009	KB/SL GW-5 (4-8) 5/21/2009	KB/SL GW-5 (16-20) 5/21/2009	KB/SL GW-6 (4-8) 5/28/2009
PCBs (ug/L)							
Aroclor 1016	NE	1.0 U	NA	NA	NA	NA	NA
Aroclor 1221	NE	2.0 U	NA	NA	NA	NA	NA
Aroclor 1232	NE	1.0 U	NA	NA	NA	NA	NA
Aroclor 1242	NE	1.0 U	NA	NA	NA	NA	NA
Aroclor 1248	NE	1.0 U	NA	NA	NA	NA	NA
Aroclor 1254	NE	1.0 U	NA	NA	NA	NA	NA
Aroclor 1260	NE	1.0 U	NA	NA	NA	NA	NA
Total PCBs	0.09	ND	NA	NA	NA	NA	NA
Pesticides (ug/L)							
Aldrin	ND	0.050 U	NA	NA	NA	NA	NA
Alpha-bhc	0.01	0.050 U	NA	NA	NA	NA	NA
Alpha-chlordane	NE	0.050 U	NA	NA	NA	NA	NA
Beta-BHC	0.04	0.050 U	NA	NA	NA	NA	NA
Chlordane, trans-	NE	0.050 U	NA	NA	NA	NA	NA
DDD, 4,4-	0.3	0.10 U	NA	NA	NA	NA	NA
DDE, 4,4-	0.2	0.10 U	NA	NA	NA	NA	NA
DDT, 4,4-	0.2	0.10 U	NA	NA	NA	NA	NA
Delta-BHC	0.04	0.050 U	NA	NA	NA	NA	NA
Dieldrin	0.004	0.10 U	NA	NA	NA	NA	NA
Endosulfan I	NE	0.050 U	NA	NA	NA	NA	NA
Endosulfan II	NE	0.10 U	NA	NA	NA	NA	NA
Endosulfan sulfate	NE	0.10 U	NA	NA	NA	NA	NA
Endrin	ND	0.10 U	NA	NA	NA	NA	NA
Endrin aldehyde	5	0.10 U	NA	NA	NA	NA	NA
Endrin ketone	5	0.10 U	NA	NA	NA	NA	NA
Gamma-BHC	0.05	0.050 U	NA	NA	NA	NA	NA
Heptachlor	0.04	0.050 U	NA	NA	NA	NA	NA
Heptachlor epoxide	0.03	0.050 U	NA	NA	NA	NA	NA
Methoxychlor	35	0.50 U	NA	NA	NA	NA	NA
Toxaphene	0.06	5.0 U	NA	NA	NA	NA	NA
Total Metals (ug/L)							
Aluminum	NE	22.1 UJ	NA	NA	NA	NA	NA
Antimony	3	2.7 U	NA	NA	NA	NA	NA
Arsenic	25	2.8 U	NA	NA	NA	NA	NA
Barium	1000	**16.8 J**	NA	NA	NA	NA	NA
Beryllium	3	0.16 U	NA	NA	NA	NA	NA
Cadmium	5	0.23 U	NA	NA	NA	NA	NA
Calcium	NE	**24300**	NA	NA	NA	NA	NA
Chromium	50	**1.1 J**	NA	NA	NA	NA	NA
Cobalt	NE	**1.6 J**	NA	NA	NA	NA	NA
Copper	200	**3.2 J**	NA	NA	NA	NA	NA
Iron	300	**1530**	NA	NA	NA	NA	NA
Lead	25	1.5 U	NA	NA	NA	NA	NA
Magnesium	35000*	**4490 J**	NA	NA	NA	NA	NA
Manganese	300	**436**	NA	NA	NA	NA	NA
Mercury	0.7	**0.10**	NA	NA	NA	NA	NA
Nickel	100	**3.5 J**	NA	NA	NA	NA	NA
Potassium	NE	**2180 J**	NA	NA	NA	NA	NA
Selenium	10	2.7 U	NA	NA	NA	NA	NA
Silver	50	0.60 U	NA	NA	NA	NA	NA
Sodium	20000	**32300 J**	NA	NA	NA	NA	NA
Thallium	0.5*	3.3 U	NA	NA	NA	NA	NA
Vanadium	NE	0.97 U	NA	NA	NA	NA	NA
Zinc	2000*	16.4 UJ	NA	NA	NA	NA	NA
Cyanides (ug/L)							
Cyanide, Total	200	10 U	NA	NA	NA	NA	NA

Table 1
66 N. Clinton Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	NYS AWQS	KB/SL GW-6 (16-20) 5/28/2009	KB/SL GW-7 (4-8) 5/27/2009	KB/SL GW-7 (16-20) 5/27/2009	Duplicate of: KB/SL GW-7 (16-20) 5/27/2009	KB/SL GW-7 (26-30) 5/27/2009	KB/SL GW-7 (36-40) 5/27/2009
BTEX (ug/L)							
Benzene	1	**2 J**	10 U	10 U	10 U	10 U	10 U
Toluene	5	**3 J**	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	5	**1300**	10 U	10 U	10 U	10 U	10 U
Xylene, m,p-	5	**1400**	10 U	10 U	10 U	10 U	10 U
Xylene, o-	5	**750**	10 U	10 U	10 U	10 U	10 U
Other VOCs (ug/L)							
Acetaldehyde	8*	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	50*	10 U	**4 J**	10 U	10 U	10 U	10 U
Allyl chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Butadiene, 1,3-	NE	10 U	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Butanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	60*	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorotoluene	5	10 U	10 U	10 U	10 U	10 U	10 U
Cryofluorane	NE	10 U	10 U	10 U	10 U	10 U	10 U
Cyclohexane	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Dibromochloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dibromoethane, 1,2-	0.0006	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,2-	0.6	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, 1,1-	0.07	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, cis-1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropane, 1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, cis-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, trans-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dioxane, 1,4-	NE	R	R	R	R	R	500 U
Ethanol	NE	R	R	R	R	R	500 U
Heptane, n-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Hexachlorobutadiene	0.5	10 UJ	10 U	10 U	10 U	10 U	10 U
Hexane, n-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Hexanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Isopropyl benzene	5	**300**	10 U	10 U	10 U	10 U	10 U
Methyl tert-butyl ether	10*	10 U	10 U	10 U	10 U	10 U	10 U
Methyl-2-pentanone, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	**2000**	10 U	**3 J**	10 U	10 U	10 U
Propanol, 2-	NE	R	R	R	R	R	500 U
Propylbenzene, n-	5	**120**	10 U	10 U	10 U	10 U	10 U
Styrene	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane, 1,1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane,1,1,2,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	50*	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,2-dichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	**470**	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene, 1,2,4-	5	**1100**	10 U	10 U	10 U	10 U	10 U
Trimethylpentane, 2,2,4-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Vinyl acetate	NE	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	2	10 U	10 U	10 U	10 U	10 U	10 U

Table 1
66 N. Clinton Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	Duplicate of: KB/SL GW-6 (16-20) 5/28/2009	KB/SL GW-7 (4-8) 5/27/2009	KB/SL GW-7 (16-20) 5/27/2009	KB/SL GW-7 (16-20) 5/27/2009	KB/SL GW-7 (26-30) 5/27/2009	KB/SL GW-7 (36-40) 5/27/2009
Non-carcinogenic PAHs (ug/L)							
Acenaphthene	20*	**10**	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	NE	**2 J**	10 U	10 U	10 U	10 U	10 U
Anthracene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	50*	**4 J**	10 U	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	**20**	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	**540**	10 U	10 U	10 U	10 U	10 U
Phenanthrene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Carcinogenic PAHs (ug/L)							
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Other SVOCs (ug/L)							
Bis(2-chloroethoxy)methane	5	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	1	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	10 U	10 U	10 U	10 U	10 U	10 U
Bis(chloroisopropyl)ether	5	10 U	10 U	10 U	10 U	10 U	10 U
Bromophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chloro-3-methylphenol, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chloroaniline, 4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloronaphthalene, 2-	10*	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Chlorophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzidine, 3,3-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorophenol, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphenol, 2,4-	50*	**2 J**	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	50	10 U	10 U	10 U	10 U	10 U	10 U
Dinitro-2-methylphenol, 4,6-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrophenol, 2,4-	10*	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrotoluene, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dinitrotoluene, 2,6-	5	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	50*	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 4-	1	10 U	10 U	10 U	10 U	10 U	10 U
Nitroaniline, 2-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 3-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 4-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitrobenzene	0.4	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 4-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Nitrosodi-n-propylamine, N-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Nitrosodiphenylamine, N-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	25 U	25 U	25 U	25 U	25 U	25 U
Phenol	1	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorophenol, 2,4,5-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Trichlorophenol, 2,4,6-	NE	10 U	10 U	10 U	10 U	10 U	10 U

Table 1
66 N. Clinton Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / **Sample Interval (feet):** / **Sample Date:**	NYS AWQS	KB/SL GW-6 (16-20) 5/28/2009	KB/SL GW-7 (4-8) 5/27/2009	KB/SL GW-7 (16-20) 5/27/2009	Duplicate of: KB/SL GW-7 (16-20) 5/27/2009	KB/SL GW-7 (26-30) 5/27/2009	KB/SL GW-7 (36-40) 5/27/2009
PCBs (ug/L)							
Aroclor 1016	NE	NA	NA	NA	NA	NA	1.0 U
Aroclor 1221	NE	NA	NA	NA	NA	NA	2.0 U
Aroclor 1232	NE	NA	NA	NA	NA	NA	1.0 U
Aroclor 1242	NE	NA	NA	NA	NA	NA	1.0 U
Aroclor 1248	NE	NA	NA	NA	NA	NA	1.0 U
Aroclor 1254	NE	NA	NA	NA	NA	NA	1.0 U
Aroclor 1260	NE	NA	NA	NA	NA	NA	1.0 U
Total PCBs	0.09	NA	NA	NA	NA	NA	ND
Pesticides (ug/L)							
Aldrin	ND	NA	NA	NA	NA	NA	0.050 U
Alpha-bhc	0.01	NA	NA	NA	NA	NA	0.050 U
Alpha-chlordane	NE	NA	NA	NA	NA	NA	0.050 U
Beta-BHC	0.04	NA	NA	NA	NA	NA	0.050 U
Chlordane, trans-	NE	NA	NA	NA	NA	NA	0.050 U
DDD, 4,4-	0.3	NA	NA	NA	NA	NA	0.10 U
DDE, 4,4-	0.2	NA	NA	NA	NA	NA	0.10 U
DDT, 4,4-	0.2	NA	NA	NA	NA	NA	0.10 U
Delta-BHC	0.04	NA	NA	NA	NA	NA	0.050 U
Dieldrin	0.004	NA	NA	NA	NA	NA	0.10 U
Endosulfan I	NE	NA	NA	NA	NA	NA	0.050 U
Endosulfan II	NE	NA	NA	NA	NA	NA	0.10 U
Endosulfan sulfate	NE	NA	NA	NA	NA	NA	0.10 U
Endrin	ND	NA	NA	NA	NA	NA	0.10 U
Endrin aldehyde	5	NA	NA	NA	NA	NA	0.10 U
Endrin ketone	5	NA	NA	NA	NA	NA	0.10 U
Gamma-BHC	0.05	NA	NA	NA	NA	NA	0.050 U
Heptachlor	0.04	NA	NA	NA	NA	NA	0.050 U
Heptachlor epoxide	0.03	NA	NA	NA	NA	NA	0.050 U
Methoxychlor	35	NA	NA	NA	NA	NA	0.50 U
Toxaphene	0.06	NA	NA	NA	NA	NA	5.0 U
Total Metals (ug/L)							
Aluminum	NE	NA	NA	NA	NA	NA	9.2 U
Antimony	3	NA	NA	NA	NA	NA	2.7 U
Arsenic	25	NA	NA	NA	NA	NA	2.8 U
Barium	1000	NA	NA	NA	NA	NA	**24.0 J**
Beryllium	3	NA	NA	NA	NA	NA	0.16 U
Cadmium	5	NA	NA	NA	NA	NA	0.23 U
Calcium	NE	NA	NA	NA	NA	NA	**19300**
Chromium	50	NA	NA	NA	NA	NA	**2.1 J**
Cobalt	NE	NA	NA	NA	NA	NA	**5.3 J**
Copper	200	NA	NA	NA	NA	NA	**5.5 J**
Iron	300	NA	NA	NA	NA	NA	**7090**
Lead	25	NA	NA	NA	NA	NA	1.5 U
Magnesium	35000*	NA	NA	NA	NA	NA	**3650 J**
Manganese	300	NA	NA	NA	NA	NA	**7140**
Mercury	0.7	NA	NA	NA	NA	NA	**0.10**
Nickel	100	NA	NA	NA	NA	NA	**12.4 J**
Potassium	NE	NA	NA	NA	NA	NA	**3210 J**
Selenium	10	NA	NA	NA	NA	NA	2.7 U
Silver	50	NA	NA	NA	NA	NA	**1.2 J**
Sodium	20000	NA	NA	NA	NA	NA	**33500 J**
Thallium	0.5*	NA	NA	NA	NA	NA	3.3 U
Vanadium	NE	NA	NA	NA	NA	NA	0.97 U
Zinc	2000*	NA	NA	NA	NA	NA	**25.7**
Cyanides (ug/L)							
Cyanide, Total	200	NA	NA	NA	NA	NA	10 U

Table 1
66 N. Clinton Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-7 (46-50) 5/27/2009	KB/SL GW-7 (56-60) 5/27/2009	KB/SL GW-7 (66-70) 5/27/2009	KB/SL GW-8 (4-8) 5/26/2009	KB/SL GW-8 (16-20) 5/26/2009	KB/SL GW-8 (26-30) 5/26/2009
BTEX (ug/L)							
Benzene	1	10 U	10 U	10 U	**4 J**	**10**	10 U
Toluene	5	10 U	10 U	10 U	**10**	**4 J**	10 U
Ethylbenzene	5	10 U	10 U	10 U	**370**	**240**	**2 J**
Xylene, m,p-	5	10 U	10 U	10 U	**480**	**62**	**2 J**
Xylene, o-	5	10 U	10 U	10 U	**210**	**150**	10 U
Other VOCs (ug/L)							
Acetaldehyde	8*	10 U	10 U	10 U	**4 J**	**5 J**	10 U
Acetone	50*	10 U	10 U	10 U	**3 J**	10 U	10 U
Allyl chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Butadiene, 1,3-	NE	10 UJ	10 U	10 U	10 U	10 U	10 U
Butanone, 2-	50*	10 U	10 U	10 U	**2 J**	10 U	10 U
Carbon disulfide	60*	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorotoluene	5	10 U	10 U	10 U	10 U	10 U	10 U
Cryofluorane	NE	10 U	10 U	10 U	10 U	10 U	10 U
Cyclohexane	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Dibromochloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dibromoethane, 1,2-	0.0006	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,1-	5	10 U	**2 J**	10 U	10 U	10 U	10 U
Dichloroethane, 1,2-	0.6	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, 1,1-	0.07	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, cis-1,2-	5	10 U	10 U	10 U	**2 J**	10 U	10 U
Dichloropropane, 1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, cis-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, trans-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dioxane, 1,4-	NE	R	R	R	R	500 U	500 U
Ethanol	NE	R	R	R	R	500 U	500 U
Heptane, n-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 UJ	10 UJ	10 UJ	10 U	10 U
Hexane, n-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Hexanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Isopropyl benzene	5	10 U	10 U	10 U	**38**	**180**	10 U
Methyl tert-butyl ether	10*	10 U	**1 J**	10 U	10 U	10 U	10 U
Methyl-2-pentanone, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	10 U	**770**	**200**	**4 J**
Propanol, 2-	NE	R	R	R	R	500 U	500 U
Propylbenzene, n-	5	10 U	10 U	10 U	**10**	**45**	10 U
Styrene	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane, 1,1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane,1,1,2,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	50*	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,2-dichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	10 U	10 U	10 U	**360**	**27**	10 U
Trimethylbenzene, 1,2,4-	5	10 U	10 U	10 U	**290**	**150**	10 U
Trimethylpentane, 2,2,4-	NE	**15 J**	**6 J**	10 UJ	10 UJ	10 U	10 U
Vinyl acetate	NE	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	2	10 U	10 U	10 U	10 U	10 U	10 U

Table 1
66 N. Clinton Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-7 (46-50) 5/27/2009	KB/SL GW-7 (56-60) 5/27/2009	KB/SL GW-7 (66-70) 5/27/2009	KB/SL GW-8 (4-8) 5/26/2009	KB/SL GW-8 (16-20) 5/26/2009	KB/SL GW-8 (26-30) 5/26/2009
Non-carcinogenic PAHs (ug/L)							
Acenaphthene	20*	10 U	10 U	10 U	**18**	10 U	10 U
Acenaphthylene	NE	10 U	10 U	10 U	**4 J**	10 U	10 U
Anthracene	50*	10 U	10 U	10 U	**2 J**	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	R	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	**4 J**	10 U	10 U
Fluorene	50*	10 U	10 U	10 U	**5**	10 U	10 U
Methylnaphthalene, 2-	NE	10 U	10 U	10 U	**4 J**	10 U	10 U
Naphthalene	10*	10 U	10 U	10 U	**110**	10 U	10 U
Phenanthrene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	**9 J**	10 U	10 U
Carcinogenic PAHs (ug/L)							
Benz[a]anthracene	0.002*	10 U	10 U	10 U	**2 J**	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	**2 J**	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	R	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	**2 J**	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	**2 J**	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	R	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	R	10 U	10 U
Other SVOCs (ug/L)							
Bis(2-chloroethoxy)methane	5	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	1	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	10 U	10 U	10 U	10 UJ	10 U	10 U
Bis(chloroisopropyl)ether	5	10 U	10 U	10 U	10 U	10 U	10 U
Bromophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	50*	10 U	10 U	10 U	10 UJ	10 U	10 U
Carbazole	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chloro-3-methylphenol, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chloroaniline, 4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloronaphthalene, 2-	10*	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U
Chlorophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzidine, 3,3-	5	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ
Dichlorophenol, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	50*	10 U	10 U	10 U	**3 J**	10 U	10 U
Dimethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphenol, 2,4-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	50	10 U	10 U	10 U	10 U	10 U	10 U
Dinitro-2-methylphenol, 4,6-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrophenol, 2,4-	10*	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrotoluene, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dinitrotoluene, 2,6-	5	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	50*	10 U	10 U	10 U	R	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	50*	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 2-	1	10 U	10 U	10 U	**22**	10 U	10 U
Methylphenol, 4-	1	10 U	10 U	10 U	**9**	10 U	10 U
Nitroaniline, 2-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 3-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 4-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitrobenzene	0.4	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 4-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Nitrosodi-n-propylamine, N-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Nitrosodiphenylamine, N-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	25 U	25 U	25 U	25 U	25 U	25 U
Phenol	1	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorophenol, 2,4,5-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Trichlorophenol, 2,4,6-	NE	10 U	10 U	10 U	10 U	10 U	10 U

Table 1
66 N. Clinton Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	NYS AWQS	KB/SL GW-7 (46-50) 5/27/2009	KB/SL GW-7 (56-60) 5/27/2009	KB/SL GW-7 (66-70) 5/27/2009	KB/SL GW-8 (4-8) 5/26/2009	KB/SL GW-8 (16-20) 5/26/2009	KB/SL GW-8 (26-30) 5/26/2009
PCBs (ug/L)							
Aroclor 1016	NE	NA	NA	NA	1.0 U	NA	NA
Aroclor 1221	NE	NA	NA	NA	2.0 U	NA	NA
Aroclor 1232	NE	NA	NA	NA	1.0 U	NA	NA
Aroclor 1242	NE	NA	NA	NA	1.0 U	NA	NA
Aroclor 1248	NE	NA	NA	NA	1.0 U	NA	NA
Aroclor 1254	NE	NA	NA	NA	1.0 U	NA	NA
Aroclor 1260	NE	NA	NA	NA	1.0 U	NA	NA
Total PCBs	0.09	NA	NA	NA	ND	NA	NA
Pesticides (ug/L)							
Aldrin	ND	NA	NA	NA	0.050 U	NA	NA
Alpha-bhc	0.01	NA	NA	NA	0.050 U	NA	NA
Alpha-chlordane	NE	NA	NA	NA	0.050 U	NA	NA
Beta-BHC	0.04	NA	NA	NA	0.050 U	NA	NA
Chlordane, trans-	NE	NA	NA	NA	0.050 U	NA	NA
DDD, 4,4-	0.3	NA	NA	NA	0.10 U	NA	NA
DDE, 4,4-	0.2	NA	NA	NA	0.10 U	NA	NA
DDT, 4,4-	0.2	NA	NA	NA	0.10 U	NA	NA
Delta-BHC	0.04	NA	NA	NA	0.050 U	NA	NA
Dieldrin	0.004	NA	NA	NA	0.10 U	NA	NA
Endosulfan I	NE	NA	NA	NA	0.050 U	NA	NA
Endosulfan II	NE	NA	NA	NA	0.10 U	NA	NA
Endosulfan sulfate	NE	NA	NA	NA	0.10 U	NA	NA
Endrin	ND	NA	NA	NA	0.10 U	NA	NA
Endrin aldehyde	5	NA	NA	NA	0.10 U	NA	NA
Endrin ketone	5	NA	NA	NA	0.10 U	NA	NA
Gamma-BHC	0.05	NA	NA	NA	0.050 U	NA	NA
Heptachlor	0.04	NA	NA	NA	0.050 U	NA	NA
Heptachlor epoxide	0.03	NA	NA	NA	0.050 U	NA	NA
Methoxychlor	35	NA	NA	NA	0.50 U	NA	NA
Toxaphene	0.06	NA	NA	NA	5.0 U	NA	NA
Total Metals (ug/L)							
Aluminum	NE	NA	NA	NA	62.6 UJ	NA	NA
Antimony	3	NA	NA	NA	2.7 U	NA	NA
Arsenic	25	NA	NA	NA	**11.9**	NA	NA
Barium	1000	NA	NA	NA	**67.5 J**	NA	NA
Beryllium	3	NA	NA	NA	0.16 U	NA	NA
Cadmium	5	NA	NA	NA	0.23 U	NA	NA
Calcium	NE	NA	NA	NA	**149000**	NA	NA
Chromium	50	NA	NA	NA	**11.3**	NA	NA
Cobalt	NE	NA	NA	NA	1.2 U	NA	NA
Copper	200	NA	NA	NA	**5.1 J**	NA	NA
Iron	300	NA	NA	NA	**25500**	NA	NA
Lead	25	NA	NA	NA	1.5 U	NA	NA
Magnesium	35000*	NA	NA	NA	**13600**	NA	NA
Manganese	300	NA	NA	NA	**619**	NA	NA
Mercury	0.7	NA	NA	NA	**0.10**	NA	NA
Nickel	100	NA	NA	NA	**6.3 J**	NA	NA
Potassium	NE	NA	NA	NA	**12000**	NA	NA
Selenium	10	NA	NA	NA	2.7 U	NA	NA
Silver	50	NA	NA	NA	0.60 U	NA	NA
Sodium	20000	NA	NA	NA	**27900 J**	NA	NA
Thallium	0.5*	NA	NA	NA	3.3 U	NA	NA
Vanadium	NE	NA	NA	NA	**4.8 J**	NA	NA
Zinc	2000*	NA	NA	NA	**74.6**	NA	NA
Cyanides (ug/L)							
Cyanide, Total	200	NA	NA	NA	**11.3**	NA	NA

Table 1
66 N. Clinton Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / **Sample Interval (feet):** / **Sample Date:**	NYS AWQS	KB/SL GW-8 (36-40) 5/26/2009	KB/SL GW-8 (46-50) 5/26/2009	KB/SL GW-8 (56-60) 5/26/2009	KB/SL GW-8 (66-70) 5/26/2009
BTEX (ug/L)					
Benzene	1	10 U	10 U	10 U	10 U
Toluene	5	10 U	10 U	10 U	10 U
Ethylbenzene	5	10 U	**2 J**	**3 J**	**2 J**
Xylene, m,p-	5	**1 J**	**3 J**	**4 J**	**2 J**
Xylene, o-	5	10 U	10 U	10 U	10 U
Other VOCs (ug/L)					
Acetaldehyde	8*	10 U	10 U	10 U	10 U
Acetone	50*	10 U	10 U	10 U	10 U
Allyl chloride	5	10 U	10 U	10 U	10 U
Bromodichloromethane	50*	10 U	10 U	10 U	10 U
Bromoform	50*	10 U	10 U	10 U	10 U
Bromomethane	5	10 U	10 U	10 U	10 U
Butadiene, 1,3-	NE	10 U	10 U	10 U	10 U
Butanone, 2-	50*	10 U	10 U	10 U	10 U
Carbon disulfide	60*	10 U	10 U	10 U	10 U
Carbon tetrachloride	5	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U
Chloromethane	5	10 U	10 U	10 U	10 U
Chlorotoluene	5	10 U	10 U	10 U	10 U
Cryofluorane	NE	10 U	10 U	10 U	10 U
Cyclohexane	NE	10 U	10 U	10 U	10 UJ
Dibromochloromethane	50*	10 U	10 U	10 U	10 U
Dibromoethane, 1,2-	0.0006	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	5	10 U	10 U	10 U	10 U
Dichloroethane, 1,1-	5	10 U	10 U	10 U	10 U
Dichloroethane, 1,2-	0.6	10 U	10 U	10 U	10 U
Dichloroethene, 1,1-	0.07	10 U	10 U	10 U	10 U
Dichloroethene, cis-1,2-	5	10 U	10 U	10 U	10 U
Dichloropropane, 1,2-	1	10 U	10 U	10 U	10 U
Dichloropropene, cis-1,3	NE	10 U	10 U	10 U	10 U
Dichloropropene, trans-1,3	NE	10 U	10 U	10 U	10 U
Dioxane, 1,4-	NE	500 U	500 U	500 U	R
Ethanol	NE	500 U	500 U	500 U	R
Heptane, n-	NE	10 U	10 U	10 U	10 UJ
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 UJ
Hexane, n-	NE	10 U	10 U	10 U	10 UJ
Hexanone, 2-	50*	10 U	10 U	10 U	10 U
Isopropyl benzene	5	10 U	10 U	10 U	10 U
Methyl tert-butyl ether	10*	10 U	**8 J**	**2 J**	10 U
Methyl-2-pentanone, 4-	NE	10 U	10 U	10 U	10 U
Methylene chloride	5	10 U	10 U	10 U	10 U
Naphthalene	10*	**2 J**	**3 J**	**4 J**	**2 J**
Propanol, 2-	NE	500 U	500 U	500 U	R
Propylbenzene, n-	5	10 U	10 U	10 U	10 U
Styrene	5	10 U	10 U	10 U	10 U
Tetrachloroethane, 1,1,1,2-	5	10 U	10 U	10 U	10 U
Tetrachloroethane,1,1,2,2-	5	10 U	10 U	10 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U
Tetrahydrofuran	50*	10 U	10 U	10 U	10 U
Trans-1,2-dichloroethene	5	10 U	10 U	10 U	10 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,1-	5	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,2-	1	10 U	10 U	10 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U
Trichlorofluoromethane	5	10 U	10 U	10 U	10 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	10 U	10 U	**2 J**	10 U
Trimethylbenzene, 1,2,4-	5	10 U	10 U	**2 J**	10 U
Trimethylpentane, 2,2,4-	NE	10 U	10 U	10 U	10 UJ
Vinyl acetate	NE	10 U	10 U	10 U	10 U
Vinyl chloride	2	10 U	10 U	10 U	10 U

Table 1
66 N. Clinton Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Sample Interval (feet): Sample Date:	NYS AWQS	KB/SL GW-8 (36-40) 5/26/2009	KB/SL GW-8 (46-50) 5/26/2009	KB/SL GW-8 (56-60) 5/26/2009	KB/SL GW-8 (66-70) 5/26/2009
Non-carcinogenic PAHs (ug/L)					
Acenaphthene	20*	10 U	10 U	10 U	10 U
Acenaphthylene	NE	10 U	10 U	10 U	10 U
Anthracene	50*	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	10 U
Fluorene	50*	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	10 U	10 U
Phenanthrene	50*	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U
Carcinogenic PAHs (ug/L)					
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	10 U
Other SVOCs (ug/L)					
Bis(2-chloroethoxy)methane	5	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	1	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	10 U	10 U	10 U	10 U
Bis(chloroisopropyl)ether	5	10 U	10 U	10 U	10 U
Bromophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	50*	10 U	10 U	10 U	10 U
Carbazole	NE	10 U	10 U	10 U	10 U
Chloro-3-methylphenol, 4-	NE	10 U	10 U	10 U	10 U
Chloroaniline, 4-	5	10 U	10 U	10 U	10 U
Chloronaphthalene, 2-	10*	10 U	10 U	10 U	10 U
Chlorophenol, 2-	NE	10 U	10 U	10 U	10 U
Chlorophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U
Dibenzofuran	NE	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U
Dichlorobenzidine, 3,3-	5	10 UJ	10 UJ	10 UJ	10 UJ
Dichlorophenol, 2,4-	5	10 U	10 U	10 U	10 U
Diethyl phthalate	50*	10 U	10 U	10 U	10 U
Dimethyl phthalate	50*	10 U	10 U	10 U	10 U
Dimethylphenol, 2,4-	50*	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	50	10 U	10 U	10 U	10 U
Dinitro-2-methylphenol, 4,6-	NE	25 U	25 U	25 U	25 U
Dinitrophenol, 2,4-	10*	25 U	25 U	25 U	25 U
Dinitrotoluene, 2,4-	5	10 U	10 U	10 U	10 U
Dinitrotoluene, 2,6-	5	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	50*	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	10 U	10 U	10 U	10 U
Hexachloroethane	5	10 U	10 U	10 U	10 U
Isophorone	50*	10 U	10 U	10 U	10 U
Methylphenol, 2-	1	10 U	10 U	10 U	10 U
Methylphenol, 4-	1	10 U	10 U	10 U	10 U
Nitroaniline, 2-	5	25 U	25 U	25 U	25 U
Nitroaniline, 3-	5	25 U	25 U	25 U	25 U
Nitroaniline, 4-	5	25 U	25 U	25 U	25 U
Nitrobenzene	0.4	10 U	10 U	10 U	10 U
Nitrophenol, 2-	NE	10 U	10 U	10 U	10 U
Nitrophenol, 4-	NE	25 U	25 U	25 U	25 U
Nitrosodi-n-propylamine, N-	NE	10 U	10 U	10 U	10 U
Nitrosodiphenylamine, N-	50*	10 U	10 U	10 U	10 U
Pentachlorophenol	1	25 U	25 U	25 U	25 U
Phenol	1	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U
Trichlorophenol, 2,4,5-	NE	25 U	25 U	25 U	25 U
Trichlorophenol, 2,4,6-	NE	10 U	10 U	10 U	10 U

Table 1
66 N. Clinton Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	KB/SL GW-8 (36-40) 5/26/2009	KB/SL GW-8 (46-50) 5/26/2009	KB/SL GW-8 (56-60) 5/26/2009	KB/SL GW-8 (66-70) 5/26/2009
PCBs (ug/L)					
Aroclor 1016	NE	NA	NA	NA	NA
Aroclor 1221	NE	NA	NA	NA	NA
Aroclor 1232	NE	NA	NA	NA	NA
Aroclor 1242	NE	NA	NA	NA	NA
Aroclor 1248	NE	NA	NA	NA	NA
Aroclor 1254	NE	NA	NA	NA	NA
Aroclor 1260	NE	NA	NA	NA	NA
Total PCBs	0.09	NA	NA	NA	NA
Pesticides (ug/L)					
Aldrin	ND	NA	NA	NA	NA
Alpha-bhc	0.01	NA	NA	NA	NA
Alpha-chlordane	NE	NA	NA	NA	NA
Beta-BHC	0.04	NA	NA	NA	NA
Chlordane, trans-	NE	NA	NA	NA	NA
DDD, 4,4-	0.3	NA	NA	NA	NA
DDE, 4,4-	0.2	NA	NA	NA	NA
DDT, 4,4-	0.2	NA	NA	NA	NA
Delta-BHC	0.04	NA	NA	NA	NA
Dieldrin	0.004	NA	NA	NA	NA
Endosulfan I	NE	NA	NA	NA	NA
Endosulfan II	NE	NA	NA	NA	NA
Endosulfan sulfate	NE	NA	NA	NA	NA
Endrin	ND	NA	NA	NA	NA
Endrin aldehyde	5	NA	NA	NA	NA
Endrin ketone	5	NA	NA	NA	NA
Gamma-BHC	0.05	NA	NA	NA	NA
Heptachlor	0.04	NA	NA	NA	NA
Heptachlor epoxide	0.03	NA	NA	NA	NA
Methoxychlor	35	NA	NA	NA	NA
Toxaphene	0.06	NA	NA	NA	NA
Total Metals (ug/L)					
Aluminum	NE	NA	NA	NA	NA
Antimony	3	NA	NA	NA	NA
Arsenic	25	NA	NA	NA	NA
Barium	1000	NA	NA	NA	NA
Beryllium	3	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA
Calcium	NE	NA	NA	NA	NA
Chromium	50	NA	NA	NA	NA
Cobalt	NE	NA	NA	NA	NA
Copper	200	NA	NA	NA	NA
Iron	300	NA	NA	NA	NA
Lead	25	NA	NA	NA	NA
Magnesium	35000*	NA	NA	NA	NA
Manganese	300	NA	NA	NA	NA
Mercury	0.7	NA	NA	NA	NA
Nickel	100	NA	NA	NA	NA
Potassium	NE	NA	NA	NA	NA
Selenium	10	NA	NA	NA	NA
Silver	50	NA	NA	NA	NA
Sodium	20000	NA	NA	NA	NA
Thallium	0.5*	NA	NA	NA	NA
Vanadium	NE	NA	NA	NA	NA
Zinc	2000*	NA	NA	NA	NA
Cyanides (ug/L)					
Cyanide, Total	200	NA	NA	NA	NA

Table 1
66 N. Clinton Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Notes:

ug/L - micrograms per liter or parts per billion (ppb)
BTEX - benzene, toluene, ethylbenzene, and xylenes
VOCs - volatile organic compounds
PAHs - polycyclic aromatic hydrocarbons
SVOCs - semivolatile organic compounds
PCBs - polychlorinated biphenyls
Total PCBs is calculated using detects only.

NYS AWQS - New York State Ambient Water Quality Standards and Guidance Values for GA groundwater
* indicates the value is a guidance value and not a standard

NE - not established
NA - not analyzed
ND - not detected; total concentration is listed as ND because no compounds were detected in the group

Bolding indicates a detected concentration
Shading and bolding indicates that the detected concentration is above the NYS AWQS objective it was compared to

Validation Qualifiers:

J - estimated value
U - indicates not detected at or above the reporting limit shown.
UJ - not detected at or above the reporting limit shown and the reporting limit is estimated
R - rejected

Table 2
66 N. Clinton Injection Line - Groundwater Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Screen Interval (feet):** **Sample Date:**	NYS AWQS	OU2MW-48S (3-13) 6/29/2009	OU2MW-48I (25-30) 6/29/2009	OU2MW-48I2 (45-50) 6/29/2009	OU2MW-48D (65-70) 6/29/2009	OU2MW-49S (3-13) 6/29/2009	OU2MW-49I (25-30) 6/29/2009
BTEX (ug/L)							
Benzene	1	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	5	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	5	**3 J**	10 U	10 U	10 U	10 U	10 U
Xylene, m,p-	5	**4 J**	10 U	10 U	10 U	10 U	10 U
Xylene, o-	5	**1 J**	10 U	10 U	10 U	10 U	10 U
Total BTEX	**NE**	**8**	0	0	0	0	0
Other VOCs (ug/L)							
Acetaldehyde	8*	10 U	10 U	10 U	10 UJ	10 UJ	10 U
Acetone	50*	10 U	10 U	10 U	10 U	10 U	10 U
Allyl chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Butadiene, 1,3-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Butanone, 2-	50*	10 U	10 U	10 U	10 U	**2 J**	10 U
Carbon disulfide	60*	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorotoluene	5	10 U	10 U	10 U	10 U	10 U	10 U
Cryofluorane	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Cyclohexane	NE	**4 J**	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dibromoethane, 1,2-	0.0006	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,1-	5	10 U	10 U	10 U	**2 J**	10 U	10 U
Dichloroethane, 1,2-	0.6	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, 1,1-	0.07	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, cis-1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropane, 1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, cis-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, trans-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dioxane, 1,4-	NE	R	R	R	R	R	R
Ethanol	NE	R	R	R	R	R	R
Heptane, n-	NE	10 U	10 U	10 U	10 UJ	10 UJ	10 U
Hexachlorobutadiene	0.5	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Hexane, n-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Hexanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Isopropyl benzene	5	**5 J**	10 U	10 U	10 U	10 U	10 U
Methyl tert-butyl ether	10*	10 U	10 U	**1 J**	10 U	10 U	10 U
Methyl-2-pentanone, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	**4 J**	10 U	10 U	10 U	10 U	10 U
Propanol, 2-	NE	R	R	R	R	R	R
Propylbenzene, n-	5	**6**	10 U	10 U	10 U	10 U	10 U
Styrene	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane, 1,1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane,1,1,2,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	50*	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,2-dichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U

Table 2
66 N. Clinton Injection Line - Groundwater Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: Screen Interval (feet): Sample Date:	NYS AWQS	OU2MW-48S (3-13) 6/29/2009	OU2MW-48I (25-30) 6/29/2009	OU2MW-48I2 (45-50) 6/29/2009	OU2MW-48D (65-70) 6/29/2009	OU2MW-49S (3-13) 6/29/2009	OU2MW-49I (25-30) 6/29/2009
Trichlorobenzene, 1,2,4-	5	10 UJ	10 UJ	10 UJ	10 U	10 U	10 UJ
Trichloroethane, 1,1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	**13**	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene, 1,2,4-	5	**18**	10 U	10 U	10 U	10 U	10 U
Trimethylpentane, 2,2,4-	NE	10 U	10 U	**5**	10 UJ	10 UJ	10 U
Vinyl acetate	NE	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	NE	10 U	10 U	10 U	10 U	10 U	10 U
Total Other VOCs	**NE**	**50**	0	**6**	**2**	**2**	0
Non-carcinogenic PAHs (ug/L)							
Acenaphthene	20*	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	10 U	10 U	10 U	10 U
Phenanthrene	50*	**3 J**	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Total Non-carcinogenic PAHs	NE	**3**	0	0	0	0	0
Carcinogenic PAHs (ug/L)							
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Total Carcinogenic PAHs	NE	0	0	0	0	0	0
Total PAHs	NE	**3**	0	0	0	0	0
Other SVOCs (ug/L)							
Bis(2-chloroethoxy)methane	5	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	1	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	10 U	10 U	10 U	10 U	10 U	10 U
Bis(chloroisopropyl)ether	5	10 U	10 U	10 U	10 U	10 U	10 U
Bromophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chloro-3-methylphenol, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chloroaniline, 4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloronaphthalene, 2-	10*	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzidine, 3,3-	5	20 U	20 U	20 U	20 U	20 U	20 U
Dichlorophenol, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphenol, 2,4-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	50	10 U	10 U	10 U	10 U	10 U	10 U
Dinitro-2-methylphenol, 4,6-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrophenol, 2,4-	10	25 U	25 U	25 U	25 U	25 U	25 U

Table 2
66 N. Clinton Injection Line - Groundwater Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Screen Interval (feet):** **Sample Date:**	NYS AWQS	OU2MW-48S (3-13) 6/29/2009	OU2MW-48I (25-30) 6/29/2009	OU2MW-48I2 (45-50) 6/29/2009	OU2MW-48D (65-70) 6/29/2009	OU2MW-49S (3-13) 6/29/2009	OU2MW-49I (25-30) 6/29/2009
Dinitrotoluene, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dinitrotoluene, 2,6-	5	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	50*	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 4-	1	10 U	10 U	10 U	10 U	10 U	10 U
Nitroaniline, 2-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 3-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 4-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitrobenzene	0.4	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 4-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Nitrosodi-n-propylamine, N-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Nitrosodiphenylamine, N-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	25 U	25 U	25 U	25 U	25 U	25 U
Phenol	1	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorophenol, 2,4,5-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Trichlorophenol, 2,4,6-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Total Other SVOCs	NE	0	0	0	0	0	0
Total Metals (ug/L)							
Aluminum	NE	53.7 UJ	59.4 UJ	58.0 UJ	**772**	118 UJ	67.4 UJ
Antimony	3	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
Arsenic	25	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U
Barium	1000	**14.2 J**	**18.2 J**	**20.7 J**	**28.4 J**	**10.5 J**	**18.3 J**
Beryllium	3*	0.28 UJ	0.53 UJ	0.37 UJ	0.85 UJ	0.81 UJ	0.40 UJ
Cadmium	5	0.23 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.23 UJ	0.23 UJ
Calcium	NE	**39000**	**17500**	**18900**	**8950**	**31300**	**18600**
Chromium	50	**1.0 J**	**1.0 J**	**4.7 J**	**5.4 J**	**5.9 J**	**0.94 J**
Cobalt	NE	**2.9 J**	1.2 U	**1.5 J**	**1.9 J**	1.2 U	1.2 U
Copper	200	1.2 UJ	1.2 UJ	1.2 UJ	**1.5 J**	1.2 UJ	1.2 UJ
Iron	300	**1920**	**55.8 J**	**68.6 J**	**1770**	**1610**	48.4 UJ
Lead	25	1.5 U	1.5 U	**1.8 J**	**1.8 J**	**22.2**	1.5 U
Magnesium	35000*	**3990 J**	**3470 J**	**4350 J**	**4800 J**	**3900 J**	**4120 J**
Manganese	300	**221**	**413**	**10800**	**438**	**39.5**	**2220**
Mercury	0.7	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Nickel	100	1.4 U	1.4 U	1.4 U	**4.4 J**	1.4 U	1.4 U
Potassium	NE	**2430 J**	**2380 J**	**3170 J**	**1980 J**	**2850 J**	**3280 J**
Selenium	10	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U
Silver	50	0.60 U	0.60 U	2.2 UJ	1.3 UJ	0.71 UJ	0.86 UJ
Sodium	20000	**4200 J**	**24900**	**42400**	**20600**	**7200**	**34100**
Thallium	0.5*	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U
Vanadium	NE	0.97 U	0.97 U	0.97 U	**1.7 J**	**1.6 J**	0.97 U
Zinc	2000*	**29.0**	**12.0 J**	**2.0 J**	**43.2**	**69.0**	**17.2 J**
Other (ug/L)							
Nitrogen, Ammonia	2000	100 U	**130**	**130**	100 U	100 U	**650**
Nitrogen, Nitrate	10000	**580**	**1950**	**950**	**1750**	**1590**	**1530**
Nitrogen, Nitrite	1000	100 U	100 U	100 U	100 U	100 U	100 U
Nitrogen, Total	NE	**1020**	**2510**	**1450**	**2000**	**2160**	**2910**
Nitrogen, Total Kjeldahl	NE	**440**	**560**	**500**	**250**	**570**	**1380**
Standard Plate Count (cfu/ml)	NE	**560 J**	**270 J**	**430 J**	**3900 J**	**280 J**	**400 J**
Sulfate	250000	**8710**	**15900**	**15800**	**22800**	**22300**	**17600**
Sulfide	50*	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Total Phosphorous	NE	50 U	50 U	50 U	50 U	**320**	50 U

Table 2
66 N. Clinton Injection Line - Groundwater Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Screen Interval (feet): / Sample Date:	NYS AWQS	OU2MW-49I2 (45-50) 6/29/2009	OU2MW-49D (63-68) 6/29/2009	OU2 OZMW-22S 5-15 ft 6/10/2009	OU2 OZMW-22I 20-30 ft 6/10/2009	OU2 OZMW-22I2 35-45 ft 6/10/2009	OU2 OZMW-22D 55-65 ft 6/10/2009
BTEX (ug/L)							
Benzene	1	10 U	10 U	**17**	10 U	10 U	10 U
Toluene	5	10 U	10 U	**88**	10 U	10 U	10 U
Ethylbenzene	5	10 U	10 U	**3100**	10 U	10 U	10 U
Xylene, m,p-	5	10 U	10 U	**1200**	**6**	10 U	10 U
Xylene, o-	5	10 U	10 U	**1200**	**37**	10 U	10 U
Total BTEX	**NE**	0	0	**5605**	**43**	ND	ND
Other VOCs (ug/L)							
Acetaldehyde	8*	10 UJ	10 U	10 U	10 U	10 U	10 U
Acetone	50*	10 U	10 U	10 U	10 U	10 U	10 UJ
Allyl chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Butadiene, 1,3-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Butanone, 2-	50*	**2 J**	10 U	10 UJ	10 UJ	10 UJ	10 UJ
Carbon disulfide	60*	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorotoluene	5	10 U	10 U	10 U	10 U	10 U	10 U
Cryofluorane	NE	10 UJ	10 UJ	10 U	10 U	10 U	10 U
Cyclohexane	NE	10 U	10 U	**5 J**	10 UJ	10 UJ	10 U
Dibromochloromethane	50*	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Dibromoethane, 1,2-	0.0006	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	5	10 U	10 U	10 UJ	10 UJ	10 UJ	10 UJ
Dichloroethane, 1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,2-	0.6	10 U	10 U	10 UJ	10 UJ	10 UJ	10 UJ
Dichloroethene, 1,1-	0.07	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, cis-1,2-	5	10 U	10 U	**1 J**	10 U	10 U	10 U
Dichloropropane, 1,2-	1	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Dichloropropene, cis-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, trans-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dioxane, 1,4-	NE	R	R	R	R	R	R
Ethanol	NE	R	R	R	R	R	R
Heptane, n-	NE	10 UJ	10 U	10 UJ	10 UJ	10 UJ	10 U
Hexachlorobutadiene	0.5	10 UJ	10 UJ	10 U	10 U	10 U	10 U
Hexane, n-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U
Hexanone, 2-	50*	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Isopropyl benzene	5	10 U	10 U	**280**	**3 J**	10 U	10 U
Methyl tert-butyl ether	10*	**6**	10 U	10 U	10 U	**5 J**	**21 J**
Methyl-2-pentanone, 4-	NE	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Methylene chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	**2000**	**47**	10 U	10 U
Propanol, 2-	NE	R	R	R	R	R	R
Propylbenzene, n-	5	10 U	10 U	**100**	10 U	10 U	10 U
Styrene	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane, 1,1,1,2-	5	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Tetrachloroethane,1,1,2,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	50*	10 U	10 U	10 UJ	10 UJ	10 UJ	10 UJ
Trans-1,2-dichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U

Table 2
66 N. Clinton Injection Line - Groundwater Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Screen Interval (feet):** **Sample Date:**	NYS AWQS	OU2MW-49I2 (45-50) 6/29/2009	OU2MW-49D (63-68) 6/29/2009	OU2 OZMW-22S 5-15 ft 6/10/2009	OU2 OZMW-22I 20-30 ft 6/10/2009	OU2 OZMW-22I2 35-45 ft 6/10/2009	OU2 OZMW-22D 55-65 ft 6/10/2009
Trichlorobenzene, 1,2,4-	5	10 U	10 UJ	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	5	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	10 U	10 U	**490**	10 U	10 U	10 U
Trimethylbenzene, 1,2,4-	5	10 U	10 U	**1000**	**4 J**	10 U	10 U
Trimethylpentane, 2,2,4-	NE	**9 J**	10 U	10 UJ	10 UJ	10 UJ	10 U
Vinyl acetate	NE	10 U	10 U	10 U	10 U	10 U	10 UJ
Vinyl chloride	NE	10 U	10 U	10 U	10 U	10 U	10 U
Total Other VOCs	**NE**	**17**	0				
Non-carcinogenic PAHs (ug/L)							
Acenaphthene	20*	10 U	10 U	**26**	10 U	10 U	10 U
Acenaphthylene	NE	10 U	10 U	**4 J**	10 U	10 U	10 U
Anthracene	50*	10 U	10 U	**2 J**	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	**1 J**	10 U	10 U	10 U
Fluorene	50*	10 U	10 U	**14**	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	10 U	10 U	**66**	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	**850**	10 U	10 U	10 U
Phenanthrene	50*	10 U	10 U	**7**	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	**1 J**	10 U	10 U	10 U
Total Non-carcinogenic PAHs	NE	0	0	**971**	ND	ND	ND
Carcinogenic PAHs (ug/L)							
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Total Carcinogenic PAHs	NE	0	0	ND	ND	ND	ND
Total PAHs	NE	0	0	**971**	ND	ND	ND
Other SVOCs (ug/L)							
Bis(2-chloroethoxy)methane	5	10 U	10 U	NA	NA	NA	NA
Bis(2-chloroethyl)ether	1	10 U	10 U	NA	NA	NA	NA
Bis(2-ethylhexyl)phthalate	5	10 U	**3 J**	NA	NA	NA	NA
Bis(chloroisopropyl)ether	5	10 U	10 U	NA	NA	NA	NA
Bromophenyl phenyl ether, 4-	NE	10 U	10 U	NA	NA	NA	NA
Butyl benzyl phthalate	50*	10 U	10 U	NA	NA	NA	NA
Carbazole	NE	10 U	10 U	NA	NA	NA	NA
Chloro-3-methylphenol, 4-	NE	10 U	10 U	NA	NA	NA	NA
Chloroaniline, 4-	5	10 U	10 U	NA	NA	NA	NA
Chloronaphthalene, 2-	10*	10 U	10 U	NA	NA	NA	NA
Chlorophenol, 2-	NE	10 U	10 U	NA	NA	NA	NA
Chlorophenyl phenyl ether, 4-	NE	10 U	10 U	NA	NA	NA	NA
Dibenzofuran	NE	10 U	10 U	NA	NA	NA	NA
Dichlorobenzene, 1,2-	3	10 U	10 U	NA	NA	NA	NA
Dichlorobenzene, 1,3-	3	10 U	10 U	NA	NA	NA	NA
Dichlorobenzene, 1,4-	3	10 U	10 U	NA	NA	NA	NA
Dichlorobenzidine, 3,3-	5	20 U	20 U	NA	NA	NA	NA
Dichlorophenol, 2,4-	5	10 U	10 U	NA	NA	NA	NA
Diethyl phthalate	50*	10 U	10 U	NA	NA	NA	NA
Dimethyl phthalate	50*	10 U	10 U	NA	NA	NA	NA
Dimethylphenol, 2,4-	50*	10 U	10 U	NA	NA	NA	NA
Di-n-butyl phthalate	50	10 U	10 U	NA	NA	NA	NA
Dinitro-2-methylphenol, 4,6-	NE	25 U	25 U	NA	NA	NA	NA
Dinitrophenol, 2,4-	10	25 U	25 U	NA	NA	NA	NA

Table 2
66 N. Clinton Injection Line - Groundwater Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Screen Interval (feet): / Sample Date:	NYS AWQS	OU2MW-49I2 (45-50) 6/29/2009	OU2MW-49D (63-68) 6/29/2009	OU2 OZMW-22S 5-15 ft 6/10/2009	OU2 OZMW-22I 20-30 ft 6/10/2009	OU2 OZMW-22I2 35-45 ft 6/10/2009	OU2 OZMW-22D 55-65 ft 6/10/2009
Dinitrotoluene, 2,4-	5	10 U	10 U	NA	NA	NA	NA
Dinitrotoluene, 2,6-	5	10 U	10 U	NA	NA	NA	NA
Di-n-octyl phthalate	50*	10 U	10 U	NA	NA	NA	NA
Hexachlorobenzene	0.04	10 U	10 U	NA	NA	NA	NA
Hexachlorobutadiene	0.5	10 U	10 U	NA	NA	NA	NA
Hexachlorocyclopentadiene	5	10 U	10 U	NA	NA	NA	NA
Hexachloroethane	5	10 U	10 U	NA	NA	NA	NA
Isophorone	50*	10 U	10 U	NA	NA	NA	NA
Methylphenol, 2-	1	10 U	10 U	NA	NA	NA	NA
Methylphenol, 4-	1	10 U	10 U	NA	NA	NA	NA
Nitroaniline, 2-	5	25 U	25 U	NA	NA	NA	NA
Nitroaniline, 3-	5	25 U	25 U	NA	NA	NA	NA
Nitroaniline, 4-	5	25 U	25 U	NA	NA	NA	NA
Nitrobenzene	0.4	10 U	10 U	NA	NA	NA	NA
Nitrophenol, 2-	NE	10 U	10 U	NA	NA	NA	NA
Nitrophenol, 4-	NE	25 U	25 U	NA	NA	NA	NA
Nitrosodi-n-propylamine, N-	NE	10 U	10 U	NA	NA	NA	NA
Nitrosodiphenylamine, N-	50*	10 U	10 U	NA	NA	NA	NA
Pentachlorophenol	1	25 U	25 U	NA	NA	NA	NA
Phenol	1	10 U	10 U	NA	NA	NA	NA
Trichlorobenzene, 1,2,4-	5	10 U	10 U	NA	NA	NA	NA
Trichlorophenol, 2,4,5-	NE	25 U	25 U	NA	NA	NA	NA
Trichlorophenol, 2,4,6-	NE	10 U	10 U	NA	NA	NA	NA
Total Other SVOCs	NE	0	0				
Total Metals (ug/L)							
Aluminum	NE	31.6 UJ	90.6 UJ	NA	NA	NA	NA
Antimony	3	2.7 U	2.7 U	NA	NA	NA	NA
Arsenic	25	**6.0 J**	2.8 U	NA	NA	NA	NA
Barium	1000	**23.2 J**	**5.2 J**	NA	NA	NA	NA
Beryllium	3*	0.42 UJ	0.32 UJ	NA	NA	NA	NA
Cadmium	5	0.23 UJ	0.23 UJ	NA	NA	NA	NA
Calcium	NE	**24000**	**3010 J**	NA	NA	NA	NA
Chromium	50	**0.58 J**	**1.2 J**	NA	NA	NA	NA
Cobalt	NE	**3.6 J**	1.2 U	NA	NA	NA	NA
Copper	200	1.2 UJ	1.2 UJ	NA	NA	NA	NA
Iron	300	27.1 UJ	**2640**	NA	NA	NA	NA
Lead	25	1.5 U	1.5 U	NA	NA	NA	NA
Magnesium	35000*	**5640**	**1160 J**	NA	NA	NA	NA
Manganese	300	**10000**	**42.6**	NA	NA	NA	NA
Mercury	0.7	0.10 U	0.10 U	NA	NA	NA	NA
Nickel	100	1.4 U	1.4 U	NA	NA	NA	NA
Potassium	NE	**4350 J**	**739 J**	NA	NA	NA	NA
Selenium	10	2.7 U	2.7 U	NA	NA	NA	NA
Silver	50	2.1 UJ	0.60 U	NA	NA	NA	NA
Sodium	20000	**41800**	**8070**	NA	NA	NA	NA
Thallium	0.5*	3.3 U	3.3 U	NA	NA	NA	NA
Vanadium	NE	0.97 U	0.97 U	NA	NA	NA	NA
Zinc	2000*	1.3 U	**18.8 J**	NA	NA	NA	NA
Other (ug/L)							
Nitrogen, Ammonia	2000	**160**	100 U	NA	NA	NA	NA
Nitrogen, Nitrate	10000	**220**	100 U	NA	NA	NA	NA
Nitrogen, Nitrite	1000	100 U	100 U	NA	NA	NA	NA
Nitrogen, Total	NE	**940**	**150**	NA	NA	NA	NA
Nitrogen, Total Kjeldahl	NE	**720**	**150**	NA	NA	NA	NA
Standard Plate Count (cfu/ml)	NE	**2600 J**	**880 J**	NA	NA	NA	NA
Sulfate	250000	**16400**	**14200**	NA	NA	NA	NA
Sulfide	50*	2000 U	2000 U	NA	NA	NA	NA
Total Phosphorous	NE	50 U	50 U	NA	NA	NA	NA

Table 2
66 N. Clinton Injection Line - Groundwater Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Notes:

ug/L - micrograms per liter or parts per billion (ppb)
BTEX - benzene, toluene, ethylbenzene, and xylenes
VOCs - volatile organic compounds
PAHs - polycyclic aromatic hydrocarbons
SVOCs - semivolatile organic compounds

NYS AWQS - New York State Ambient Water Quality Standards and Guidance Values for GA groundwater
* indicates the value is a guidance value and not a standard

NE- not established
ND - not detected; total concentration is listed as ND because no compounds were detected in the group

Bolding indicates a detected concentration
Shading and bolding indicates that the detected concentration is above the NYS AWQS objective it was compared to

Validation Qualifiers:

J - estimated value
U - indicates not detected at or above the reporting limit shown.
UJ - not detected at or above the reporting limit shown and the reporting limit is estimated
R - rejected

Table 3
Community Road Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	NYS AWQS	OU3GP-01 (10-14) 7/30/2009	OU3GP-01 (15-19) 7/30/2009	Duplicate of: OU3GP-01 (15-19) 7/30/2009	OU3GP-01 (20-24) 7/30/2009	OU3GP-01 (25-29) 7/30/2009	OU3GP-02 (10-14) 7/30/2009
BTEX (ug/L)							
Benzene	1	10 U	10 U	10 U	10 U	10 U	**33**
Toluene	5	10 U	10 U	10 U	10 U	10 U	**1 J**
Ethylbenzene	5	10 U	10 U	10 U	10 U	10 U	**91**
Xylene, m,p-	5	10 U	10 U	10 U	10 U	10 U	**2 J**
Xylene, o-	5	10 U	10 U	10 U	10 U	10 U	**13**
Total BTEX	NE	0	0	0	0	0	140
Other VOCs (ug/L)							
Acetaldehyde	8*	10 U	10 U	R	10 U	10 U	10 U
Acetone	50*	10 U	10 U	10 UJ	10 U	10 U	10 U
Allyl chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	5	10 U	10 U	10 UJ	10 U	10 U	10 U
Butadiene, 1,3-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Butanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	60*	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorotoluene	5	10 U	10 U	10 U	10 U	10 U	10 U
Cryofluorane	NE	10 U	10 U	10 UJ	10 U	10 U	10 U
Cyclohexane	NE	10 UJ	10 UJ	10 U	10 UJ	10 UJ	10 UJ
Dibromochloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dibromoethane, 1,2-	0.0006	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,2-	0.6	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, 1,1-	0.07	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, cis-1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropane, 1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, cis-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, trans-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dioxane, 1,4-	NE	R	R	R	R	R	R
Ethanol	NE	R	R	R	R	R	R
Heptane, n-	NE	10 UJ	10 UJ	10 U	10 UJ	10 UJ	10 UJ
Hexachlorobutadiene	0.5	10 U	10 U	10 UJ	10 U	10 U	10 U
Hexane, n-	NE	10 UJ	10 UJ	10 U	10 UJ	10 UJ	10 UJ
Hexanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Isopropyl benzene	5	10 U	10 U	10 U	10 U	10 U	**4 J**
Methyl tert-butyl ether	10*	10 U	10 U	10 U	10 U	10 U	10 U
Methyl-2-pentanone, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	10 U	10 U	10 U	**46**
Propanol, 2-	NE	R	R	R	R	R	R
Propylbenzene, n-	5	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane, 1,1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane,1,1,2,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	50*	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,2-dichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	10 UJ	10 UJ	10 U	10 UJ	10 UJ	10 UJ
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	**3 J**
Trimethylpentane, 2,2,4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl acetate	NE	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	2	10 U	10 U	10 U	10 U	10 U	10 U
Total Other VOCs	NE	0	0	0	0	0	53

Table 3
Community Road Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	NYS AWQS	OU3GP-01 (10-14) 7/30/2009	OU3GP-01 (15-19) 7/30/2009	Duplicate of: OU3GP-01 (15-19) 7/30/2009	OU3GP-01 (20-24) 7/30/2009	OU3GP-01 (25-29) 7/30/2009	OU3GP-02 (10-14) 7/30/2009
Non-carcinogenic PAHs (ug/L)							
Acenaphthene	20*	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	10 U	10 U	10 U	**28**
Phenanthrene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Total Non-Carcinogenic PAHs	NE	0	0	0	0	0	0
Carcinogenic PAHs (ug/L)							
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Total Carcinogenic PAHs	NE	0	0	0	0	0	0
Total PAHs	NE	0	0	0	0	0	0
Other SVOCs (ug/L)							
Bis(2-chloroethoxy)methane	5	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	1	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	**4 J**	**4 J**	**2 J**	**8**	**4 J**	10 U
Bis(chloroisopropyl)ether	5	10 U	10 U	10 U	10 U	10 U	10 U
Bromophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chloro-3-methylphenol, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chloroaniline, 4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloronaphthalene, 2-	10*	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzidine, 3,3-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorophenol, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphenol, 2,4-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	50	**1 J**	**2 J**	**2 J**	**2 J**	**2 J**	10 U
Dinitro-2-methylphenol, 4,6-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrophenol, 2,4-	10*	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrotoluene, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dinitrotoluene, 2,6-	5	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	10 UJ	10 UJ	10 U	10 UJ	10 UJ	10 UJ
Hexachloroethane	5	10 U	10 U	10 UJ	10 U	10 U	10 U
Isophorone	50*	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 4-	1	10 U	10 U	10 U	10 U	10 U	10 U
Nitroaniline, 2-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 3-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 4-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitrobenzene	0.4	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 4-	NE	25 UJ	25 UJ	25 UJ	25 UJ	25 UJ	25 UJ
Nitrosodi-n-propylamine, N-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Nitrosodiphenylamine, N-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	25 U	25 U	25 U	25 U	25 U	25 U
Phenol	1	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorophenol, 2,4,5-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Trichlorophenol, 2,4,6-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Total Other SVOCs	NE	5	6	4	10	6	0
Other (ug/l)							
Cyanide, Total	200	NA	NA	NA	NA	NA	NA
Free Cyanide	NE	NA	NA	NA	NA	NA	NA

Table 3
Community Road Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	NYS AWQS	OU3GP-02 (15-19) 7/30/2009	OU3GP-02 (20-24) 7/30/2009	OU3GP-02 (25-29) 7/30/2009	OU3GP-07 (10-14) 7/31/2009	OU3GP-07 (15-19) 7/31/2009	OU3GP-07 (20-24) 7/31/2009
BTEX (ug/L)							
Benzene	1	10 U	10 U	10 U	**20**	10 U	10 U
Toluene	5	10 U	10 U	10 U	**1700**	10 U	10 U
Ethylbenzene	5	10 U	**2 J**	**1 J**	**4100**	**1 J**	**2 J**
Xylene, m,p-	5	10 U	10 U	10 U	**3200**	**2 J**	**2 J**
Xylene, o-	5	10 U	10 U	10 U	**2000**	10 U	**1 J**
Total BTEX	NE	0	2	1	11020	3	5
Other VOCs (ug/L)							
Acetaldehyde	8*	10 U	10 U	10 U	10 U	R	R
Acetone	50*	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Allyl chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	50*	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	5	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Butadiene, 1,3-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Butanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	60*	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Chlorotoluene	5	10 U	10 U	10 U	10 U	10 U	10 U
Cryofluorane	NE	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Cyclohexane	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Dibromochloromethane	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dibromoethane, 1,2-	0.0006	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,2-	0.6	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, 1,1-	0.07	10 U	10 U	10 U	10 U	10 U	10 U
Dichloroethene, cis-1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropane, 1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, cis-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dichloropropene, trans-1,3	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dioxane, 1,4-	NE	R	R	R	R	R	R
Ethanol	NE	R	R	R	R	R	R
Heptane, n-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 UJ	10 UJ
Hexane, n-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Hexanone, 2-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Isopropyl benzene	5	10 U	10 U	10 U	**69**	10 U	10 U
Methyl tert-butyl ether	10*	10 U	10 U	10 U	10 U	10 U	10 U
Methyl-2-pentanone, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	5	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	10 U	**1000**	10 U	10 U
Propanol, 2-	NE	R	R	R	R	R	R
Propylbenzene, n-	5	10 U	10 U	10 U	**46**	10 U	10 U
Styrene	5	10 U	10 U	10 U	**650**	10 U	10 U
Tetrachloroethane, 1,1,1,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane,1,1,2,2-	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	50*	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,2-dichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 UJ	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,1-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,2-	1	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	10 U	10 U	10 U	**390**	10 U	10 U
Trimethylbenzene, 1,2,4-	5	10 U	10 U	10 U	**540**	10 U	10 U
Trimethylpentane, 2,2,4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl acetate	NE	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	2	10 U	10 U	10 U	10 U	10 U	10 U
Total Other VOCs	NE	0	0	0	2695	0	0

Table 3
Community Road Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	NYS AWQS	OU3GP-02 (15-19) 7/30/2009	OU3GP-02 (20-24) 7/30/2009	OU3GP-02 (25-29) 7/30/2009	OU3GP-07 (10-14) 7/31/2009	OU3GP-07 (15-19) 7/31/2009	OU3GP-07 (20-24) 7/31/2009
Non-carcinogenic PAHs (ug/L)							
Acenaphthene	20*	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	NE	10 U	10 U	10 U	**1 J**	10 U	10 U
Anthracene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	10 U	10 U	10 U	**28**	10 U	10 U
Naphthalene	10*	10 U	10 U	10 U	**710**	10 U	10 U
Phenanthrene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Total Non-Carcinogenic PAHs	NE	0	0	0	0	0	0
Carcinogenic PAHs (ug/L)							
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Total Carcinogenic PAHs	NE	0	0	0	0	0	0
Total PAHs	NE	0	0	0	0	0	0
Other SVOCs (ug/L)							
Bis(2-chloroethoxy)methane	5	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	1	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	**11**	**9**	**7**	10 U	10 U	**5**
Bis(chloroisopropyl)ether	5	10 U	10 U	10 U	10 U	10 U	10 U
Bromophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chloro-3-methylphenol, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chloroaniline, 4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Chloronaphthalene, 2-	10*	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Chlorophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	NE	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorobenzidine, 3,3-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dichlorophenol, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphenol, 2,4-	50*	10 U	10 U	10 U	**5**	10 U	10 U
Di-n-butyl phthalate	50	**2 J**	**2 J**	**3 J**	10 U	10 U	10 U
Dinitro-2-methylphenol, 4,6-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrophenol, 2,4-	10*	25 U	25 U	25 U	25 U	25 U	25 U
Dinitrotoluene, 2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Dinitrotoluene, 2,6-	5	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	50*	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Hexachloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	50*	10 U	10 U	10 U	10 U	10 U	10 U
Methylphenol, 2-	1	10 U	10 U	10 U	**2 J**	10 U	10 U
Methylphenol, 4-	1	10 U	10 U	10 U	**5**	10 U	10 U
Nitroaniline, 2-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 3-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 4-	5	25 U	25 U	25 U	25 U	25 U	25 U
Nitrobenzene	0.4	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 4-	NE	25 UJ	25 UJ	25 UJ	25 UJ	25 UJ	25 UJ
Nitrosodi-n-propylamine, N-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Nitrosodiphenylamine, N-	50*	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	25 U	25 U	25 U	25 U	25 U	25 U
Phenol	1	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorophenol, 2,4,5-	NE	25 U	25 U	25 U	25 U	25 U	25 U
Trichlorophenol, 2,4,6-	NE	10 U	10 U	10 U	10 U	10 U	10 U
Total Other SVOCs	NE	13	11	10	12	0	5
Other (ug/l)							
Cyanide, Total	200	NA	NA	NA	NA	NA	10 U
Free Cyanide	NE	NA	NA	NA	NA	NA	10 U

Table 3
Community Road Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	NYS AWQS	OU3GP-07 (25-29) 7/31/2009	OU3GP-08 (10-14) 8/3/2009	OU3GP-08 (15-19) 7/31/2009	OU3GP-08 (20-24) 7/31/2009	OU3GP-08 (25-29) 7/31/2009
BTEX (ug/L)						
Benzene	1	10 U	10 U	10 U	10 U	10 U
Toluene	5	10 U	10 U	**1 J**	**1 J**	**4 J**
Ethylbenzene	5	**2 J**	10 U	**15**	**14**	**40**
Xylene, m,p-	5	**1 J**	10 U	**12**	**12**	**25**
Xylene, o-	5	10 U	**1 J**	**7**	**7**	**17**
Total BTEX	NE	3	1	35	34	86
Other VOCs (ug/L)						
Acetaldehyde	8*	R	10 UJ	10 U	R	R
Acetone	50*	10 UJ	10 U	10 U	10 UJ	10 UJ
Allyl chloride	5	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	50*	10 U	10 U	10 U	10 U	10 U
Bromoform	50*	10 U	10 U	10 U	10 U	10 U
Bromomethane	5	10 UJ	10 U	10 U	10 UJ	10 UJ
Butadiene, 1,3-	NE	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Butanone, 2-	50*	10 U	10 U	10 U	10 U	10 U
Carbon disulfide	60*	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U	10 U
Chloromethane	5	10 U	10 U	10 U	10 U	10 U
Chlorotoluene	5	10 U	10 U	10 U	10 U	10 U
Cryofluorane	NE	10 UJ	10 UJ	10 U	10 UJ	10 UJ
Cyclohexane	NE	10 U	10 U	10 UJ	10 U	10 U
Dibromochloromethane	50*	10 U	10 U	10 U	10 U	10 U
Dibromoethane, 1,2-	0.0006	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U
Dichlorodifluoromethane	5	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,1-	5	10 U	10 U	10 U	10 U	10 U
Dichloroethane, 1,2-	0.6	10 U	10 U	10 U	10 U	10 U
Dichloroethene, 1,1-	0.07	10 U	10 U	10 U	10 U	10 U
Dichloroethene, cis-1,2-	5	10 U	10 U	10 U	10 U	10 U
Dichloropropane, 1,2-	1	10 U	10 U	10 U	10 U	10 U
Dichloropropene, cis-1,3	NE	10 U	10 U	10 U	10 U	10 U
Dichloropropene, trans-1,3	NE	10 U	10 U	10 U	10 U	10 U
Dioxane, 1,4-	NE	R	R	R	R	R
Ethanol	NE	R	R	R	R	R
Heptane, n-	NE	10 U	10 U	10 UJ	10 U	10 U
Hexachlorobutadiene	0.5	10 UJ	10 U	10 U	10 UJ	10 UJ
Hexane, n-	NE	10 U	10 U	10 UJ	10 U	10 U
Hexanone, 2-	50*	10 U	10 U	10 U	10 U	10 U
Isopropyl benzene	5	10 U	10 U	10 U	10 U	10 U
Methyl tert-butyl ether	10*	10 U	10 U	10 U	10 U	10 U
Methyl-2-pentanone, 4-	NE	10 U	10 U	10 U	10 U	10 U
Methylene chloride	5	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	**8**	**8**	**24**
Propanol, 2-	NE	R	R	R	R	R
Propylbenzene, n-	5	10 U	10 U	10 U	10 U	10 U
Styrene	5	10 U	10 U	**1 J**	**1 J**	**2 J**
Tetrachloroethane, 1,1,1,2-	5	10 U	10 U	10 U	10 U	10 U
Tetrachloroethane,1,1,2,2-	5	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	5	10 U	10 U	10 U	10 U	10 U
Tetrahydrofuran	50*	10 U	10 U	10 U	10 U	10 U
Trans-1,2-dichloroethene	5	10 U	10 U	10 U	10 U	10 U
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	10 U	10 U	10 UJ	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,1-	5	10 U	10 U	10 U	10 U	10 U
Trichloroethane, 1,1,2-	1	10 U	10 U	10 U	10 U	10 U
Trichloroethene	5	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane	5	10 U	10 U	10 U	10 U	10 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	10 U	10 U	**3 J**	**3 J**	**4 J**
Trimethylbenzene, 1,2,4-	5	10 U	10 U	**5**	**4 J**	**5**
Trimethylpentane, 2,2,4-	NE	10 U	10 U	10 U	10 U	10 U
Vinyl acetate	NE	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	2	10 U	10 U	10 U	10 U	10 U
Total Other VOCs	NE	0	0	17	16	35

Table 3
Community Road Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	NYS AWQS	OU3GP-07 (25-29) 7/31/2009	OU3GP-08 (10-14) 8/3/2009	OU3GP-08 (15-19) 7/31/2009	OU3GP-08 (20-24) 7/31/2009	OU3GP-08 (25-29) 7/31/2009
Non-carcinogenic PAHs (ug/L)						
Acenaphthene	20*	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	NE	10 U	10 U	10 U	10 U	10 U
Anthracene	50*	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	10 U	10 U
Fluorene	50*	10 U	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	10 U	10 U	**4 J**	**5**	**10**
Phenanthrene	50*	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U	10 U
Total Non-Carcinogenic PAHs	NE	0	0	0	0	0
Carcinogenic PAHs (ug/L)						
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	10 U	10 U
Total Carcinogenic PAHs	NE	0	0	0	0	0
Total PAHs	NE	0	0	0	0	0
Other SVOCs (ug/L)						
Bis(2-chloroethoxy)methane	5	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl)ether	1	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	**3 J**	**1 J**	10 U	**1 J**	**5**
Bis(chloroisopropyl)ether	5	10 U	10 U	10 U	10 U	10 U
Bromophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	50*	10 U	10 U	10 U	10 U	10 U
Carbazole	NE	10 U	10 U	10 U	10 U	10 U
Chloro-3-methylphenol, 4-	NE	10 U	10 U	10 U	10 U	10 U
Chloroaniline, 4-	5	10 U	10 U	10 U	10 U	10 U
Chloronaphthalene, 2-	10*	10 U	10 UJ	10 U	10 U	10 U
Chlorophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U
Chlorophenyl phenyl ether, 4-	NE	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	NE	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,2-	3	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,3-	3	10 U	10 U	10 U	10 U	10 U
Dichlorobenzene, 1,4-	3	10 U	10 U	10 U	10 U	10 U
Dichlorobenzidine, 3,3-	5	10 U	10 U	10 U	10 U	10 U
Dichlorophenol, 2,4-	5	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	50*	10 U	10 U	10 U	10 U	10 U
Dimethylphenol, 2,4-	50*	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	50	**2 J**	10 U	10 U	10 U	10 U
Dinitro-2-methylphenol, 4,6-	NE	25 U	25 U	25 U	25 U	25 U
Dinitrophenol, 2,4-	10*	25 U	25 U	25 U	25 U	25 U
Dinitrotoluene, 2,4-	5	10 U	10 U	10 U	10 U	10 U
Dinitrotoluene, 2,6-	5	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	50*	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.04	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Hexachloroethane	5	10 U	10 U	10 U	10 U	10 U
Isophorone	50*	10 U	10 U	10 U	10 U	10 U
Methylphenol, 2-	1	10 U	10 U	10 U	10 U	10 U
Methylphenol, 4-	1	10 U	10 U	10 U	10 U	10 U
Nitroaniline, 2-	5	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 3-	5	25 U	25 U	25 U	25 U	25 U
Nitroaniline, 4-	5	25 U	25 U	25 U	25 U	25 U
Nitrobenzene	0.4	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 2-	NE	10 U	10 U	10 U	10 U	10 U
Nitrophenol, 4-	NE	25 UJ	25 U	25 UJ	25 UJ	25 UJ
Nitrosodi-n-propylamine, N-	NE	10 U	10 U	10 U	10 U	10 U
Nitrosodiphenylamine, N-	50*	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	25 U	25 U	25 U	25 U	25 U
Phenol	1	10 U	10 U	10 U	10 U	10 U
Trichlorobenzene, 1,2,4-	5	10 U	10 U	10 U	10 U	10 U
Trichlorophenol, 2,4,5-	NE	25 U	25 U	25 U	25 U	25 U
Trichlorophenol, 2,4,6-	NE	10 U	10 U	10 U	10 U	10 U
Total Other SVOCs	NE	5	1	0	1	5
Other (ug/l)						
Cyanide, Total	200	NA	NA	NA	NA	NA
Free Cyanide	NE	NA	NA	NA	NA	NA

Table 3
Community Road Injection Line - Groundwater Probe Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Notes:

ug/L - micrograms per liter or parts per billion (ppb)
BTEX - benzene, toluene, ethylbenzene, and xylenes
VOCs - volatile organic compounds
PAHs - polycyclic aromatic hydrocarbons
SVOCs - semivolatile organic compounds

NYS AWQS - New York State Ambient Water Quality Standards and Guidance Values for GA groundwater
* indicates the value is a guidance value and not a standard

NE- not established
NA - not analyzed
ND - not detected; total concentration is listed as ND because no compounds were detected in the group

Bolding indicates a detected concentration
Shading and bolding indicates that the detected concentration is above the NYS AWQS objective it was compared to

Validation Qualifiers:

J - estimated value
U - indicates not detected at or above the reporting limit shown.
UJ - not detected at or above the reporting limit shown and the reporting limit is estimated
R - rejected

Table 4
Community Road Injection Line - Groundwater Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	NYS AWQS	BBMW-28I 10-20 ft 5/14/2009	BBMW-28S 2-12 ft 5/14/2009	BBMW-33 7-12 ft 6/3/2009	IO-10 6-16 ft 5/28/2009	MW-45W 2-10 ft 6/3/2009	MW-46WR 2-10 ft 5/11/2009	MW-64 19-24 ft 6/1/2009
BTEX (ug/L)								
Benzene	1	10 U	10 U	10 U	10 U	**3200**	**60**	10 U
Toluene	5	10 U	10 U	10 U	10 U	**6900**	**130**	10 U
Ethylbenzene	5	10 U	10 U	10 U	10 U	**2000**	**420**	10 U
Xylene, m,p-	5	NA	10 U	10 U	NA	NA	**420**	NA
Xylene, o-	5	NA	10 U	10 U	NA	NA	**480**	NA
Xylene, total	5	10 U	NA	NA	10 U	**3600**	NA	10 U
Total BTEX	NE	ND	ND	ND	ND	**15700**	**1510**	ND
Other VOCs (ug/L)								
Acetaldehyde	8*	NA	10 UJ	10 U	NA	NA	10 UJ	NA
Acetone	50*	NA	10 U	10 UJ	NA	NA	10 UJ	NA
Allyl chloride	5	NA	10 U	10 U	NA	NA	10 U	NA
Bromodichloromethane	50*	NA	10 U	10 U	NA	NA	10 U	NA
Bromoform	50*	NA	10 U	10 U	NA	NA	10 U	NA
Bromomethane	5	NA	10 U	10 U	NA	NA	10 U	NA
Butadiene, 1,3-	NE	NA	10 U	10 U	NA	NA	R	NA
Butanone, 2-	50*	NA	10 U	10 UJ	NA	NA	10 U	NA
Carbon disulfide	60*	NA	10 U	10 U	NA	NA	10 U	NA
Carbon tetrachloride	5	NA	10 U	10 U	NA	NA	10 U	NA
Chlorobenzene	5	NA	10 U	10 U	NA	NA	10 U	NA
Chloroethane	5	NA	10 U	10 U	NA	NA	10 U	NA
Chloroform	7	NA	10 U	10 U	NA	NA	10 U	NA
Chloromethane	5	NA	10 U	10 U	NA	NA	10 U	NA
Chlorotoluene	5	NA	10 U	10 U	NA	NA	10 U	NA
Cryofluorane	NE	NA	10 U	10 U	NA	NA	10 U	NA
Cyclohexane	NE	NA	10 U	10 U	NA	NA	10 U	NA
Decane, n-	NE	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	50*	NA	10 U	10 U	NA	NA	10 U	NA
Dibromoethane, 1,2-	0.0006	NA	10 U	10 U	NA	NA	10 U	NA
Dichlorobenzene, 1,2-	3	NA	10 U	10 U	NA	NA	10 U	NA
Dichlorobenzene, 1,3-	3	NA	10 U	10 U	NA	NA	10 U	NA
Dichlorobenzene, 1,4-	3	NA	10 U	10 U	NA	NA	10 U	NA
Dichlorodifluoromethane	5	NA	10 U	10 UJ	NA	NA	10 UJ	NA
Dichloroethane, 1,1-	5	NA	10 U	10 U	NA	NA	10 U	NA
Dichloroethane, 1,2-	0.6	NA	10 U	10 UJ	NA	NA	10 U	NA
Dichloroethene, 1,1-	0.07	NA	10 U	10 U	NA	NA	10 U	NA
Dichloroethene, cis-1,2-	5	NA	10 U	10 U	NA	NA	10 U	NA
Dichloropropane, 1,2-	1	NA	10 U	10 U	NA	NA	10 U	NA
Dichloropropene, cis-1,3	NE	NA	10 U	10 U	NA	NA	10 U	NA
Dichloropropene, trans-1,3	NE	NA	10 U	10 U	NA	NA	10 U	NA
Dioxane, 1,4-	NE	NA	R	R	NA	NA	R	NA
Dodecane, n-	NE	NA	NA	NA	NA	NA	NA	NA
Ethanol	NE	NA	R	R	NA	NA	R	NA
Heptane, n-	NE	NA	10 U	10 UJ	NA	NA	10 U	NA
Hexachlorobutadiene	0.5	NA	10 U	10 U	NA	NA	10 U	NA
Hexane, n-	NE	NA	10 U	10 UJ	NA	NA	10 U	NA
Hexanone, 2-	50*	NA	10 U	10 U	NA	NA	10 U	NA
Isopropyl benzene	5	NA	10 U	10 U	NA	NA	**10**	NA
Methyl tert-butyl ether	10*	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
Methyl-2-pentanone, 4-	NE	NA	10 U	10 U	NA	NA	10 U	NA

Table 4
Community Road Injection Line - Groundwater Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	BBMW-28I 10-20 ft 5/14/2009	BBMW-28S 2-12 ft 5/14/2009	BBMW-33 7-12 ft 6/3/2009	IO-10 6-16 ft 5/28/2009	MW-45W 2-10 ft 6/3/2009	MW-46WR 2-10 ft 5/11/2009	MW-64 19-24 ft 6/1/2009
Methylene chloride	5	NA	10 U	10 U	NA	NA	10 U	NA
Naphthalene	10*	NA	10 U	10 U	NA	NA	**100**	NA
Nonane	NE	NA	NA	NA	NA	NA	NA	NA
Octane, n-	NE	NA	NA	NA	NA	NA	NA	NA
Propanol, 2-	NE	NA	R	R	NA	NA	R	NA
Propylbenzene, n-	5	NA	10 U	10 U	NA	NA	**3 J**	NA
Styrene	5	NA	10 U	10 U	NA	NA	10 U	NA
Tetrachloroethane, 1,1,1,2-	5	NA	10 U	10 U	NA	NA	10 U	NA
Tetrachloroethane,1,1,2,2-	5	NA	10 U	10 U	NA	NA	10 U	NA
Tetrachloroethene	5	NA	10 U	10 U	NA	NA	10 UJ	NA
Tetrahydrofuran	50*	NA	10 U	10 UJ	NA	NA	10 U	NA
Trans-1,2-dichloroethene	5	NA	10 U	10 U	NA	NA	10 U	NA
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	NA	10 U	10 U	NA	NA	10 UJ	NA
Trichlorobenzene, 1,2,4-	5	NA	10 U	10 U	NA	NA	10 U	NA
Trichloroethane, 1,1,1-	5	NA	10 U	10 U	NA	NA	10 U	NA
Trichloroethane, 1,1,2-	1	NA	10 U	10 U	NA	NA	10 U	NA
Trichloroethene	5	NA	10 U	10 U	NA	NA	10 U	NA
Trichlorofluoromethane	5	NA	10 U	10 U	NA	NA	10 U	NA
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	NA	10 U	10 U	NA	NA	**85**	NA
Trimethylbenzene, 1,2,4-	5	NA	10 U	10 U	NA	NA	**69**	NA
Trimethylpentane, 2,2,4-	NE	NA	10 U	10 UJ	NA	NA	10 U	NA
Vinyl acetate	NE	NA	10 U	10 U	NA	NA	10 U	NA
Vinyl chloride	2	NA	10 U	10 U	NA	NA	10 U	NA
Non-carcin PAHs (ug/L)								
Acenaphthene	20*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	10 U	10 U	10 U	**3 J**
Fluorene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	10 U	10 U	10 U	10 U	**3 J**	10 U	10 U
Naphthalene	10*	10 U	10 U	10 U	10 U	**150**	**60**	10 U
Phenanthrene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U	10 U	10 U	**2 J**
Total Noncarcinogenic PAHs	NE	ND	ND	ND	ND	**153**	**60**	**5**
Carcinogenic PAHs (ug/L)								
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	10 U	10 U	10 U	**1 J**
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	**2 J**
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	**1 J**
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total Carcinogenic PAHs	NE	ND	ND	ND	ND	ND	ND	**4**
Total PAHs (ug/L)								
Total PAHs	NE	ND	ND	ND	ND	**153**	**60**	**9**

Table 4
Community Road Injection Line - Groundwater Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / **Sample Interval (feet):** / **Sample Date:**	NYS AWQS	MW-65 11-16 ft 5/20/2009	MW-70/70S 2-12 ft 5/12/2009	MW-73 2-12 ft 5/7/2009	MW-75 2-12 ft 5/28/2009	MW-76 2-12 ft 6/16/2009	MW-78 5-20 ft 5/13/2009	MW-79 5-20 ft 5/14/2009
BTEX (ug/L)								
Benzene	1	10 U	**19**	**9200**	**190**	10 U	**700**	**10**
Toluene	5	10 U	**42**	**29000**	**2700**	10 U	**260**	**54**
Ethylbenzene	5	10 U	**190**	**9400**	**1800**	10 U	**610**	**34**
Xylene, m,p-	5	NA	**210**	NA	NA	NA	NA	NA
Xylene, o-	5	NA	**160**	NA	NA	NA	NA	NA
Xylene, total	5	10 U	NA	**15000**	**2600**	10 U	**570**	**91**
Total BTEX	NE	ND	**621**	**62600**	**7290**	ND	**2140**	**189**
Other VOCs (ug/L)								
Acetaldehyde	8*	NA	10 UJ	NA	NA	NA	NA	NA
Acetone	50*	NA	10 U	NA	NA	NA	NA	NA
Allyl chloride	5	NA	10 U	NA	NA	NA	NA	NA
Bromodichloromethane	50*	NA	10 U	NA	NA	NA	NA	NA
Bromoform	50*	NA	10 U	NA	NA	NA	NA	NA
Bromomethane	5	NA	10 U	NA	NA	NA	NA	NA
Butadiene, 1,3-	NE	NA	R	NA	NA	NA	NA	NA
Butanone, 2-	50*	NA	10 U	NA	NA	NA	NA	NA
Carbon disulfide	60*	NA	10 U	NA	NA	NA	NA	NA
Carbon tetrachloride	5	NA	10 U	NA	NA	NA	NA	NA
Chlorobenzene	5	NA	10 U	NA	NA	NA	NA	NA
Chloroethane	5	NA	10 U	NA	NA	NA	NA	NA
Chloroform	7	NA	10 U	NA	NA	NA	NA	NA
Chloromethane	5	NA	10 U	NA	NA	NA	NA	NA
Chlorotoluene	5	NA	10 U	NA	NA	NA	NA	NA
Cryofluorane	NE	NA	10 U	NA	NA	NA	NA	NA
Cyclohexane	NE	NA	10 U	NA	NA	NA	NA	NA
Decane, n-	NE	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	50*	NA	10 U	NA	NA	NA	NA	NA
Dibromoethane, 1,2-	0.0006	NA	10 U	NA	NA	NA	NA	NA
Dichlorobenzene, 1,2-	3	NA	10 U	NA	NA	NA	NA	NA
Dichlorobenzene, 1,3-	3	NA	10 U	NA	NA	NA	NA	NA
Dichlorobenzene, 1,4-	3	NA	10 U	NA	NA	NA	NA	NA
Dichlorodifluoromethane	5	NA	10 UJ	NA	NA	NA	NA	NA
Dichloroethane, 1,1-	5	NA	10 U	NA	NA	NA	NA	NA
Dichloroethane, 1,2-	0.6	NA	10 U	NA	NA	NA	NA	NA
Dichloroethene, 1,1-	0.07	NA	10 U	NA	NA	NA	NA	NA
Dichloroethene, cis-1,2-	5	NA	10 U	NA	NA	NA	NA	NA
Dichloropropane, 1,2-	1	NA	10 U	NA	NA	NA	NA	NA
Dichloropropene, cis-1,3	NE	NA	10 U	NA	NA	NA	NA	NA
Dichloropropene, trans-1,3	NE	NA	10 U	NA	NA	NA	NA	NA
Dioxane, 1,4-	NE	NA	R	NA	NA	NA	NA	NA
Dodecane, n-	NE	NA	NA	NA	NA	NA	NA	NA
Ethanol	NE	NA	R	NA	NA	NA	NA	NA
Heptane, n-	NE	NA	10 U	NA	NA	NA	NA	NA
Hexachlorobutadiene	0.5	NA	10 U	NA	NA	NA	NA	NA
Hexane, n-	NE	NA	10 U	NA	NA	NA	NA	NA
Hexanone, 2-	50*	NA	10 U	NA	NA	NA	NA	NA
Isopropyl benzene	5	NA	10 U	NA	NA	NA	NA	NA
Methyl tert-butyl ether	10*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl-2-pentanone, 4-	NE	NA	10 U	NA	NA	NA	NA	NA

Table 4
Community Road Injection Line - Groundwater Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	NYS AWQS	MW-65 11-16 ft 5/20/2009	MW-70/70S 2-12 ft 5/12/2009	MW-73 2-12 ft 5/7/2009	MW-75 2-12 ft 5/28/2009	MW-76 2-12 ft 6/16/2009	MW-78 5-20 ft 5/13/2009	MW-79 5-20 ft 5/14/2009
Methylene chloride	5	NA	10 U	NA	NA	NA	NA	NA
Naphthalene	10*	NA	**12**	NA	NA	NA	NA	NA
Nonane	NE	NA	NA	NA	NA	NA	NA	NA
Octane, n-	NE	NA	NA	NA	NA	NA	NA	NA
Propanol, 2-	NE	NA	R	NA	NA	NA	NA	NA
Propylbenzene, n-	5	NA	10 U	NA	NA	NA	NA	NA
Styrene	5	NA	10 U	NA	NA	NA	NA	NA
Tetrachloroethane, 1,1,1,2-	5	NA	10 U	NA	NA	NA	NA	NA
Tetrachloroethane,1,1,2,2-	5	NA	10 U	NA	NA	NA	NA	NA
Tetrachloroethene	5	NA	10 U	NA	NA	NA	NA	NA
Tetrahydrofuran	50*	NA	10 U	NA	NA	NA	NA	NA
Trans-1,2-dichloroethene	5	NA	10 U	NA	NA	NA	NA	NA
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	NA	10 U	NA	NA	NA	NA	NA
Trichlorobenzene, 1,2,4-	5	NA	10 U	NA	NA	NA	NA	NA
Trichloroethane, 1,1,1-	5	NA	10 U	NA	NA	NA	NA	NA
Trichloroethane, 1,1,2-	1	NA	10 U	NA	NA	NA	NA	NA
Trichloroethene	5	NA	10 U	NA	NA	NA	NA	NA
Trichlorofluoromethane	5	NA	10 U	NA	NA	NA	NA	NA
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	NA	**11**	NA	NA	NA	NA	NA
Trimethylbenzene, 1,2,4-	5	NA	**10**	NA	NA	NA	NA	NA
Trimethylpentane, 2,2,4-	NE	NA	10 U	NA	NA	NA	NA	NA
Vinyl acetate	NE	NA	10 U	NA	NA	NA	NA	NA
Vinyl chloride	2	NA	10 U	NA	NA	NA	NA	NA
Non-carcin PAHs (ug/L)								
Acenaphthene	20*	10 U	10 U	**3 J**	10 U	10 U	10 U	10 U
Acenaphthylene	NE	10 U	10 U	**3 J**	10 U	10 U	10 U	10 U
Anthracene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	50*	10 U	10 U	**2 J**	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	10 U	10 U	**100**	**5 J**	10 U	**11**	10 U
Naphthalene	10*	10 U	**8**	**1200**	**96**	10 U	**180**	10 U
Phenanthrene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total Noncarcinogenic PAHs	NE	ND	**8**	**1308**	**101**	ND	**191**	ND
Carcinogenic PAHs (ug/L)								
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
Total Carcinogenic PAHs	NE	ND	ND	ND	ND	ND	ND	ND
Total PAHs (ug/L)								
Total PAHs	NE	ND	**8**	**1308**	**101**	ND	**191**	ND

Table 4
Community Road Injection Line - Groundwater Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: / Sample Interval (feet): / Sample Date:	NYS AWQS	MW-80 5-20 ft 5/15/2009	MW-81 5-20 ft 6/2/2009	MW-82 5-20 ft 5/20/2009	MW-83 5-20 ft 6/16/2009	SV-02 2-12 ft 6/3/2009	SV-03 2-12 ft 6/10/2009
BTEX (ug/L)							
Benzene	1	**1800**	**2 J**	10 U	10 U	10 U	10 U
Toluene	5	**16000**	**43**	**85**	10 U	10 U	10 U
Ethylbenzene	5	**7400**	**47**	**48**	10 U	10 U	**10**
Xylene, m,p-	5	NA	NA	NA	NA	10 U	NA
Xylene, o-	5	NA	NA	NA	NA	**1 J**	NA
Xylene, total	5	**9300**	**60**	**270**	10 U	NA	10 U
Total BTEX	NE	**34500**	**152**	**403**	ND	**1**	**10**
Other VOCs (ug/L)							
Acetaldehyde	8*	NA	NA	NA	NA	10 U	NA
Acetone	50*	NA	NA	NA	NA	10 UJ	NA
Allyl chloride	5	NA	NA	NA	NA	10 U	NA
Bromodichloromethane	50*	NA	NA	NA	NA	10 U	NA
Bromoform	50*	NA	NA	NA	NA	10 U	NA
Bromomethane	5	NA	NA	NA	NA	10 U	NA
Butadiene, 1,3-	NE	NA	NA	NA	NA	10 U	NA
Butanone, 2-	50*	NA	NA	NA	NA	10 UJ	NA
Carbon disulfide	60*	NA	NA	NA	NA	10 U	NA
Carbon tetrachloride	5	NA	NA	NA	NA	10 U	NA
Chlorobenzene	5	NA	NA	NA	NA	10 U	NA
Chloroethane	5	NA	NA	NA	NA	10 U	NA
Chloroform	7	NA	NA	NA	NA	10 U	NA
Chloromethane	5	NA	NA	NA	NA	10 U	NA
Chlorotoluene	5	NA	NA	NA	NA	10 U	NA
Cryofluorane	NE	NA	NA	NA	NA	10 U	NA
Cyclohexane	NE	NA	NA	NA	NA	10 U	NA
Decane, n-	NE	NA	NA	NA	NA	NA	NA
Dibromochloromethane	50*	NA	NA	NA	NA	10 U	NA
Dibromoethane, 1,2-	0.0006	NA	NA	NA	NA	10 U	NA
Dichlorobenzene, 1,2-	3	NA	NA	NA	NA	10 U	NA
Dichlorobenzene, 1,3-	3	NA	NA	NA	NA	10 U	NA
Dichlorobenzene, 1,4-	3	NA	NA	NA	NA	10 U	NA
Dichlorodifluoromethane	5	NA	NA	NA	NA	10 UJ	NA
Dichloroethane, 1,1-	5	NA	NA	NA	NA	10 U	NA
Dichloroethane, 1,2-	0.6	NA	NA	NA	NA	10 UJ	NA
Dichloroethene, 1,1-	0.07	NA	NA	NA	NA	10 U	NA
Dichloroethene, cis-1,2-	5	NA	NA	NA	NA	10 U	NA
Dichloropropane, 1,2-	1	NA	NA	NA	NA	10 U	NA
Dichloropropene, cis-1,3	NE	NA	NA	NA	NA	10 U	NA
Dichloropropene, trans-1,3	NE	NA	NA	NA	NA	10 U	NA
Dioxane, 1,4-	NE	NA	NA	NA	NA	R	NA
Dodecane, n-	NE	NA	NA	NA	NA	NA	NA
Ethanol	NE	NA	NA	NA	NA	R	NA
Heptane, n-	NE	NA	NA	NA	NA	10 UJ	NA
Hexachlorobutadiene	0.5	NA	NA	NA	NA	10 U	NA
Hexane, n-	NE	NA	NA	NA	NA	10 UJ	NA
Hexanone, 2-	50*	NA	NA	NA	NA	10 U	NA
Isopropyl benzene	5	NA	NA	NA	NA	10 U	NA
Methyl tert-butyl ether	10*	10 U	10 U	10 U	10 U	10 UJ	**2 J**
Methyl-2-pentanone, 4-	NE	NA	NA	NA	NA	10 U	NA

Table 4
Community Road Injection Line - Groundwater Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name: **Sample Interval (feet):** **Sample Date:**	NYS AWQS	MW-80 5-20 ft 5/15/2009	MW-81 5-20 ft 6/2/2009	MW-82 5-20 ft 5/20/2009	MW-83 5-20 ft 6/16/2009	SV-02 2-12 ft 6/3/2009	SV-03 2-12 ft 6/10/2009
Methylene chloride	5	NA	NA	NA	NA	10 U	NA
Naphthalene	10*	NA	NA	NA	NA	10 U	NA
Nonane	NE	NA	NA	NA	NA	NA	NA
Octane, n-	NE	NA	NA	NA	NA	NA	NA
Propanol, 2-	NE	NA	NA	NA	NA	R	NA
Propylbenzene, n-	5	NA	NA	NA	NA	10 U	NA
Styrene	5	NA	NA	NA	NA	10 U	NA
Tetrachloroethane, 1,1,1,2-	5	NA	NA	NA	NA	10 U	NA
Tetrachloroethane,1,1,2,2-	5	NA	NA	NA	NA	10 U	NA
Tetrachloroethene	5	NA	NA	NA	NA	10 U	NA
Tetrahydrofuran	50*	NA	NA	NA	NA	10 UJ	NA
Trans-1,2-dichloroethene	5	NA	NA	NA	NA	10 U	NA
Trichloro-1,2,2-trifluoroethane, 1,1,2-	5	NA	NA	NA	NA	10 U	NA
Trichlorobenzene, 1,2,4-	5	NA	NA	NA	NA	10 U	NA
Trichloroethane, 1,1,1-	5	NA	NA	NA	NA	10 U	NA
Trichloroethane, 1,1,2-	1	NA	NA	NA	NA	10 U	NA
Trichloroethene	5	NA	NA	NA	NA	10 U	NA
Trichlorofluoromethane	5	NA	NA	NA	NA	10 U	NA
Trimethylbenzene 1,3,5-/P-ethyltoluene	NE	NA	NA	NA	NA	10 U	NA
Trimethylbenzene, 1,2,4-	5	NA	NA	NA	NA	10 U	NA
Trimethylpentane, 2,2,4-	NE	NA	NA	NA	NA	10 UJ	NA
Vinyl acetate	NE	NA	NA	NA	NA	10 U	NA
Vinyl chloride	2	NA	NA	NA	NA	10 U	NA
Non-carcin PAHs (ug/L)							
Acenaphthene	20*	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	NE	**2 J**	10 U	10 U	10 U	10 U	10 U
Anthracene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[g,h,i]perylene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Methylnaphthalene, 2-	NE	**40**	10 U	10 U	10 U	10 U	10 U
Naphthalene	10*	**520**	10 U	10 U	10 U	10 U	10 U
Phenanthrene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50*	10 U	10 U	10 U	10 U	10 U	10 U
Total Noncarcinogenic PAHs	NE	**562**	ND	ND	ND	ND	ND
Carcinogenic PAHs (ug/L)							
Benz[a]anthracene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	ND	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[b]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[k]fluoranthene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Dibenz[a,h]anthracene	NE	10 U	10 U	10 U	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	0.002*	10 U	10 U	10 U	10 U	10 U	10 U
Total Carcinogenic PAHs	NE	ND	ND	ND	ND	ND	ND
Total PAHs (ug/L)							
Total PAHs	NE	**562**	ND	ND	ND	ND	ND

Table 4
Community Road Injection Line - Groundwater Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name:	OU3MW-01S	OU3MW-02S	OU3MW-02I
Screened Interval:	3-13 ft	3-13 ft	15-20 ft
Sample Date:	9/17/2009	9/17/2009	9/17/2009
BTEX (ug/L)			
Benzene	10 U	10 U	10 U
Toluene	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U
Xylene, m,p-	10 U	10 U	10 U
Xylene, o-	10 U	10 U	10 U
Total BTEX	ND	ND	ND
Other VOCs (ug/L)			
Acetaldehyde	10 U	10 U	10 U
Acetone	10 UJ	10 UJ	10 UJ
Bromodichloromethane	10 U	10 U	10 U
Bromomethane	10 UJ	10 UJ	10 UJ
Butanone, 2-	10 UJ	10 UJ	10 UJ
Carbon disulfide	10 U	10 U	10 U
Chlorobenzene	**2 J**	10 U	10 U
Chloroethane	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U
Chloromethane	10 UJ	10 UJ	10 UJ
Cyclohexane	10 UJ	10 UJ	10 UJ
Dibromochloromethane	10 U	10 U	10 U
Dichlorobenzene, 1,2-	10 U	10 U	10 U
Dichlorobenzene, 1,4-	10 U	10 U	10 U
Dichlorodifluoromethane	10 UJ	10 UJ	10 UJ
Dichloroethane, 1,1-	10 U	10 U	10 U
Dichloroethane, 1,2-	10 U	10 U	10 U
Dichloroethene, 1,1-	10 UJ	10 UJ	10 UJ
Dichloroethene, cis-1,2-	10 U	10 U	10 U
Dichloropropane, 1,2-	10 U	10 U	10 U
Dioxane, 1,4-	R	R	R
Ethanol	R	R	R
Hexachlorobutadiene	10 UJ	10 UJ	10 UJ
Hexane, n-	10 U	10 U	10 U
Isopropyl benzene	10 UJ	10 UJ	10 UJ
Methyl tert-butyl ether	10 UJ	10 UJ	10 UJ
Methylene chloride	10 UJ	10 UJ	10 UJ
Naphthalene	10 U	10 U	10 U
Propanol, 2-	R	R	R
Propylbenzene, n-	10 UJ	10 UJ	10 UJ
Styrene	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U
Tetrahydrofuran	10 U	10 U	10 U
Trichloroethane, 1,1,1-	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U
Trimethylbenzene 1,3,5-/P-ethyltoluene	10 U	10 U	10 U
Trimethylbenzene, 1,2,4-	10 UJ	10 UJ	10 UJ
Trimethylpentane, 2,2,4-	10 UJ	10 UJ	10 UJ
Non-carcinogenic PAHs (ug/L)			
Acenaphthene	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U
Benzo[g,h,i]perylene	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U

Table 4
Community Road Injection Line - Groundwater Monitoring Well Analytical Results
Bay Shore/Brightwaters Former MGP Site
Bay Shore, New York

Sample Name:	OU3MW-01S	OU3MW-02S	OU3MW-02I
Screened Interval:	3-13 ft	3-13 ft	15-20 ft
Sample Date:	9/17/2009	9/17/2009	9/17/2009
Fluorene	10 U	10 U	10 U
Methylnaphthalene, 2-	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U
Phenanthrene	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U
Carcinogenic PAHs (ug/L)			
Benz[a]anthracene	10 U	10 U	10 U
Benzo[a]pyrene	10 U	10 U	10 U
Benzo[b]fluoranthene	10 U	10 U	10 U
Benzo[k]fluoranthene	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U
Dibenz[a,h]anthracene	10 U	10 U	10 U
Indeno[1,2,3-cd]pyrene	10 U	10 U	10 U
Total PAHs (ug/L)			
Total PAHs	ND	ND	ND
Total Metals (ug/L)			
Aluminum	**1380**	**951**	17.7 U
Antimony	**2.8 J**	2.1 U	2.1 U
Arsenic	2.3 UJ	2.3 UJ	2.3 UJ
Barium	**19.5 J**	**23.0 J**	**17.8 J**
Beryllium	**0.75 J**	**0.49 J**	0.26 U
Cadmium	0.34 UJ	0.34 UJ	0.34 UJ
Calcium	**25800**	**17700**	**13200**
Chromium	**4.4 J**	**2.6 J**	**0.53 J**
Cobalt	**1.2 J**	**2.8**	1.2 U
Copper	**1.9 J**	**2.6 J**	**1.4 J**
Iron	**3410**	**337**	**61.8 J**
Lead	**2.4 J**	1.8 U	1.8 U
Magnesium	**5200**	**5140**	**3910 J**
Manganese	**213**	**28.9**	**256**
Nickel	**1.7 J**	**10.8 J**	1.4 U
Potassium	**2630 J**	**2820 J**	**1900 J**
Selenium	2.5 U	2.5 U	2.5 U
Sodium	**75700 J**	**46400 J**	**91600 J**
Vanadium	**3.8 J**	1.4 U	1.4 U
Zinc	**10.0 J**	**16.6 J**	**9.5 J**
Other			
Nitrogen, Ammonia (mg/L)	**0.37**	0.1 U	**0.17**
Nitrogen, Nitrate (mg/L)	0.1 U	**0.50**	0.1 U
Nitrogen, Total (mg/L)	**1.20**	**0.66**	**0.16**
Nitrogen, Total Kjeldahl (mg/L)	**1.20**	**0.16**	**0.16**
Standard Plate Count (cfu/mL)	**960**	**1200**	**300**
Sulfate (mg/L)	**5.91**	**35.2**	**18.5**
Sulfide (mg/L)	2 U	2 U	2 U
Total Phosphorous (mg/L)	**0.15**	0.05 U	0.05 U

Notes:

ug/L - micrograms per liter or parts per billion (ppb)
BTEX - benzene, toluene, ethylbenzene, and xylenes
VOCs - volatile organic compounds
PAHs - polycyclic aromatic hydrocarbons
SVOCs - semivolatile organic compounds

NYS AWQS - New York State Ambient Water Quality Standards and Guidance Values for GA groundwater
* indicates the value is a guidance value and not a standard

NE- not established
ND - not detected; total concentration is listed as ND because no compounds were detected in the group

Bolding indicates a detected concentration
Shading and bolding indicates that the detected concentration is above the NYS AWQS objective it was compared to

Validation Qualifiers:

J - estimated value
U - indicates not detected at or above the reporting limit shown.
UJ - not detected at or above the reporting limit shown and the reporting limit is estimated
R - rejected

Table 5
Average Compound Mass Loading
66 N. Clinton/Community Road Injection Lines
Operable Unit No. 1 and Operable Unit No. 3
Bay Shore/Brightwaters Former MGP Site

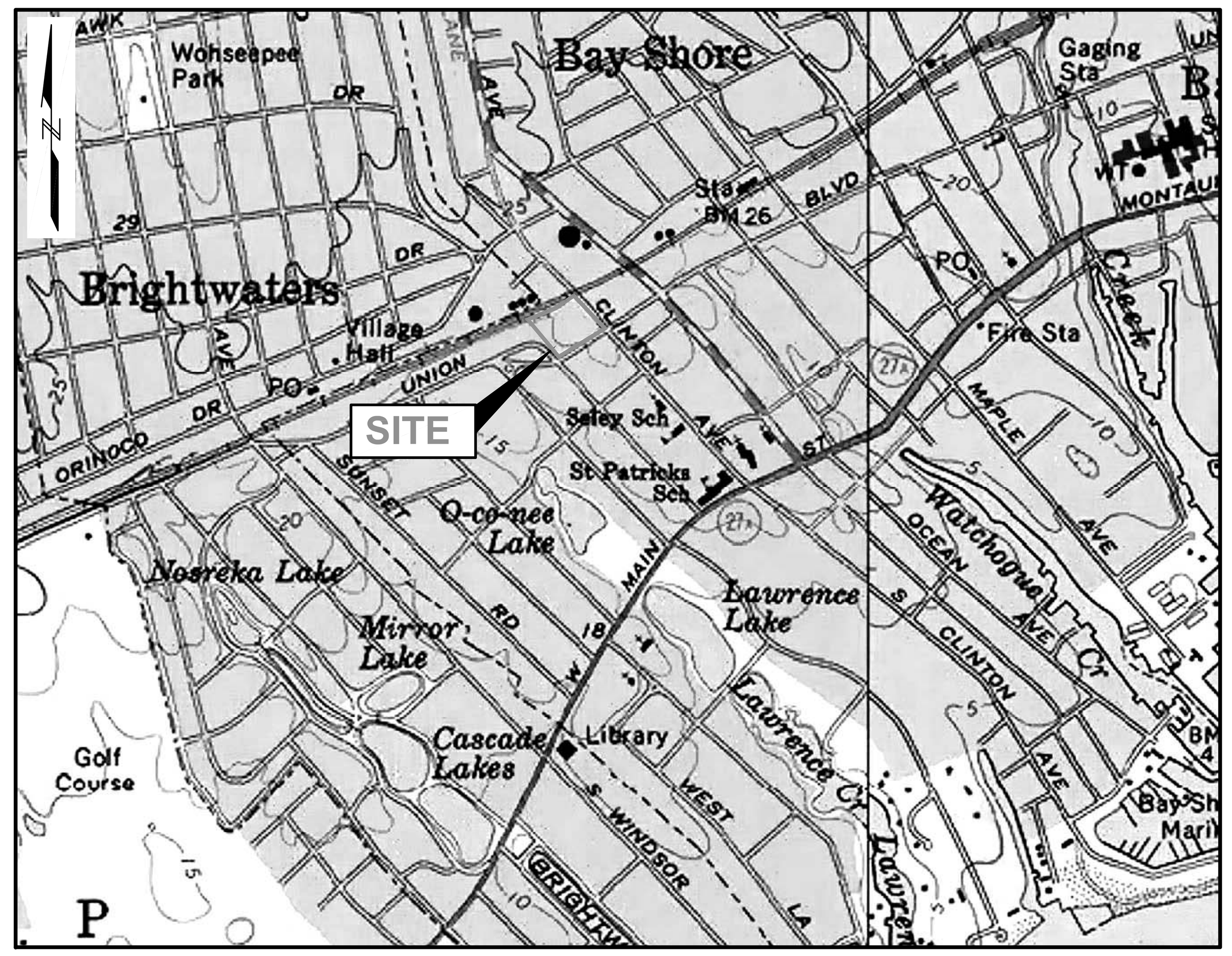
Sample Depth Interval (feet below ground surface)	Average Total Contaminant Concentration Loading (mg/L)	Average Total Carbon Concentration Loading (mg/L)	Average Total Carbon Mass Loading (lbs/day)*	Average Total Metals Available for Oxygen Consumption (mg/L)	Percent of Total Metals Consuming Oxygen (%)	Average Total Metals Concentration Loading (mg/L)	Average Total Metals Mass Loading (lbs/day)*	Total Compound Mass Loading (lbs/day)
Operable Unit No. 1 - 66 N. Clinton Injection Line								
7 to 11 or 6 to 10	1.28	1.20	0.04	109	50	55	1.82	1.86
16 to 20	0.91	0.86	0.03	65	50	33	1.09	1.12
25 to 30	0.01	0.01	0.00	56	50	28	0.93	0.93
36 to 40	0.00	0.00	0.00	74	50	37	1.23	1.23
45 to 50	0.01	0.01	0.00	83	50	41	1.38	1.38
56 to 60	0.02	0.01	0.00	69	50	35	1.15	1.15
63 to 70	0.00	0.00	0.00	28	50	14	0.46	0.46
Operable Unit No. 3 - Community Road Injection Line								
Sample Depth Interval (feet below ground surface)	Average Total Contaminant Concentration Loading (mg/L)	Average Total Carbon Concentration Loading (mg/L)	Average Total Carbon Mass Loading (lbs/day)*	Average Total Metals Available for Oxygen Consumption (mg/L)	Percent of Total Metals Consuming Oxygen (%)	Average Total Metals Concentration Loading (mg/L)	Average Total Metals Mass Loading (lbs/day)*	Total Compound Mass Loading (lbs/day)
12 or 3 to 13 or 6 t	6.90	6.48	0.49	114	50	57	4.29	4.78
5 to 20	2.94	2.76	0.21	111	50	55	4.16	4.37
19 to 24	0.02	0.02	0.00	113	50	56	4.23	4.23
25 to 30	0.04	0.04	0.00	113	50	56	4.23	4.23

* - Calculated by (concentration in mg/L) x (plume flow rate in Mgal/day) x (unit conversion factor of 8.34)
Where the plume flow rate is estimated at 0.004 Mgal/day for 66 N. Clinton Injection Line and 0.009 for Community Road Injection Line
Total Metals at 56-60 foot interval for 66 N. Clinton Injection Line is based on average from other intervals.
Total Metals at 19-30 foot intervals for Community Road Injection Line is based on average from other intervals.

Figures

OXYGEN INJECTION SYSTEM DESIGN SCHEMATICS
SUMMERS LUMBER/KING BEAR INJECTION LINE

OPERABLE UNIT NO. 1
BAY SHORE/BRIGHTWATERS FORMER MANUFACTURED GAS PLANT SITE
BAY SHORE, NEW YORK



SITE LOCATION

SCALE: 1" = 1000'

PREPARED FOR:

nationalgrid

175 EAST OLD COUNTRY ROAD
HICKSVILLE, NEW YORK 11801

GEI Consultants

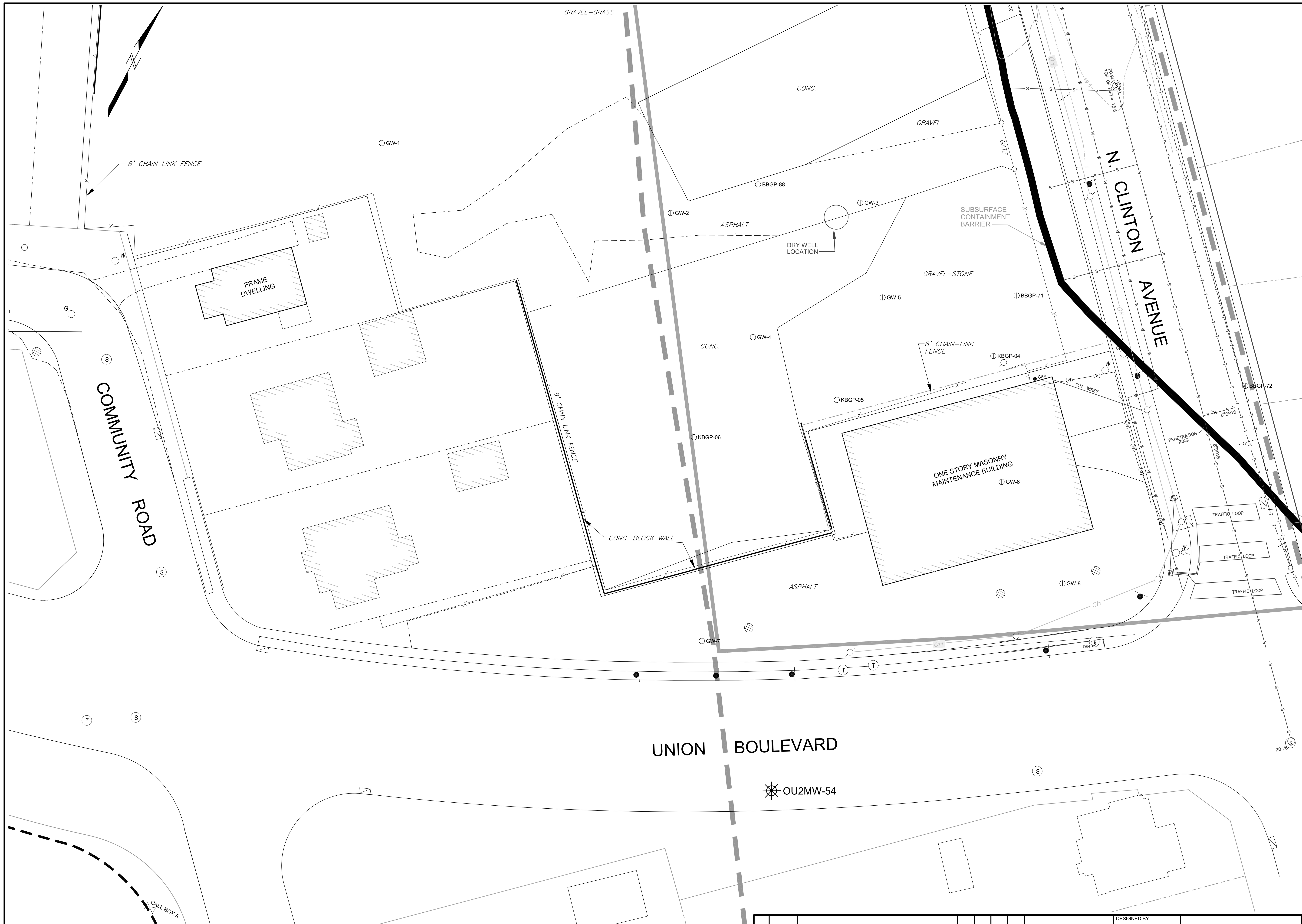
110 WALT WHITMAN ROAD, SUITE 204
HUNTINGTON STATION, NY 11746
631-760-9300, FAX 631-760-9301
www.geiconsultants.com

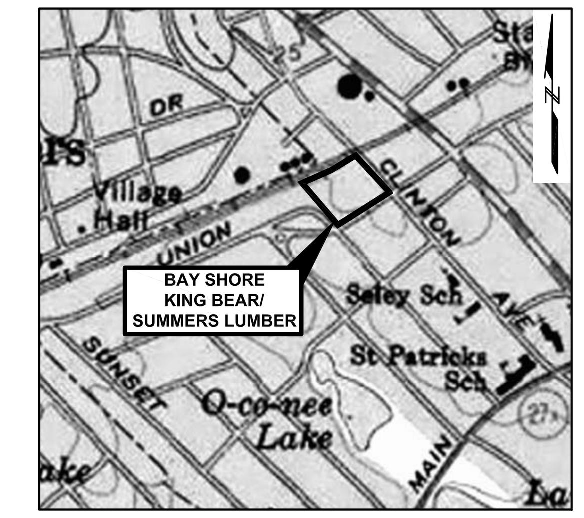
PROJECT NUMBER: 093180-1-1109

NOVEMBER 2009

SCHEDULE OF DRAWINGS

FOR CONSTRUCTION





SITE LOCATION

SCALE: 1" = 1000'

LEGEND

OU2MW-48S OU2MW-48I OU2MW-48I2 OU2MW-48D	EXISTING MONITORING WELL CLUSTER LOCATION S=SHALLOW I=INTERMEDIATE I2= INTERMEDIATE TWO D=DEEP
GW-6	GROUNDWATER PROBE LOCATION
	CATCH BASIN
	INLET
WM	WATER METER
WV	WATER VALVE
	SANITARY MANHOLE
	LIGHT
	UTILITY POLE/GUY POLE
	GUY WIRE
GV	GAS VALVE
	CURB
—X—	FENCE
—D—	STORM DRAIN
—W—	WATER MAIN
—S—	SANITARY SEWER
—G—	UNDERGROUND GAS
—E—	UNDERGROUND ELECTRIC
—T—	UNDERGROUND TELEPHONE
—OH—	OVERHEAD WIRES
—CTV—	UNDERGROUND CABLE TELEVISION
	OU-2 EXTENT FROM 2004 RI BASED ON >100 ug/L TOTAL BTEX OR >100 ug/L TOTAL PAHs DETECTED IN GROUNDWATER

0 20 40

SCALE, FEET

SOURCES:

1. MAP TITLED "BAY SHORE/BRIGHTWATERS, FORMER MGP SITE FINAL REMEDIAL INVESTIGATION, BAY SHORE, NEW YORK, OFF-SITE SAMPLE LOCATION MAP" DATED: SEPT. 2002 BY DVIRKA AND BARTILUCCI.
2. FIGURE 2, GROUNDWATER MONITORING WELL AND SURFACE WATER GAUGING STATION LOCATION MAP, BAY SHORE/BRIGHTWATERS FORMER MGP SITE, SCALE: 1"=200', DATED JANUARY 2004, PREPARED BY VANASSE HANGEN BRUSTLIN, INC., MIDDLETOWN, CONNECTICUT.
3. DRAWING C-1, OFF-SITE SAMPLE LOCATION MAP, BAY SHORE/BRIGHTWATERS FINAL REMEDIAL INVESTIGATION, SCALE: 1"=200', DATED OCTOBER 15, 2003, PREPARED BY VANASSE HANGEN BRUSTLIN, INC., MIDDLETOWN, CONNECTICUT.
4. PROPERTY BOUNDARY LOCATIONS WERE DETERMINED BY OTHERS USING AERIAL PHOTOGRAPHS AND TAX MAPS. PROPERTY BOUNDARIES ARE APPROXIMATE AND MONITORING WELLS LOCATED NEAR OR AT PROPERTY BOUNDARIES DEPICTED ON THE MAP ARE WITHIN THE ROAD RIGHT-OF-WAY.
5. WELL SURVEY CONDUCTED IN NOVEMBER 2007 BY NELSON & POPE, 572 WALT WHITMAN ROAD, MELVILLE, N.Y.

FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	DES	DR	CH	APP

DESIGNED BY MJL
DRAWN BY SCG
CHECKED BY MJO
APPROVED BY MJL
DATE 11/17/09

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OXYGEN INJECTION SYSTEM DESIGN SCHEMATICS
SUMMERS LUMBER/KING BEAR - OPERABLE UNIT NO. 1
BAYSHORE/BRIGHTWATERS FORMER MANUFACTURED GAS PLANT SITE
BAY SHORE, NEW YORK

GEI Consultants
110 WALT WHITMAN ROAD
SUITE 204
HUNTINGTON STATION, NY 11746
631-760-9300, FAX 631-760-9301
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EXISTING CONDITIONS

FIG. NO. 1

GEI PROJECT 093180-1-1109

SHEET NO. 1 of 8

ISSUE A

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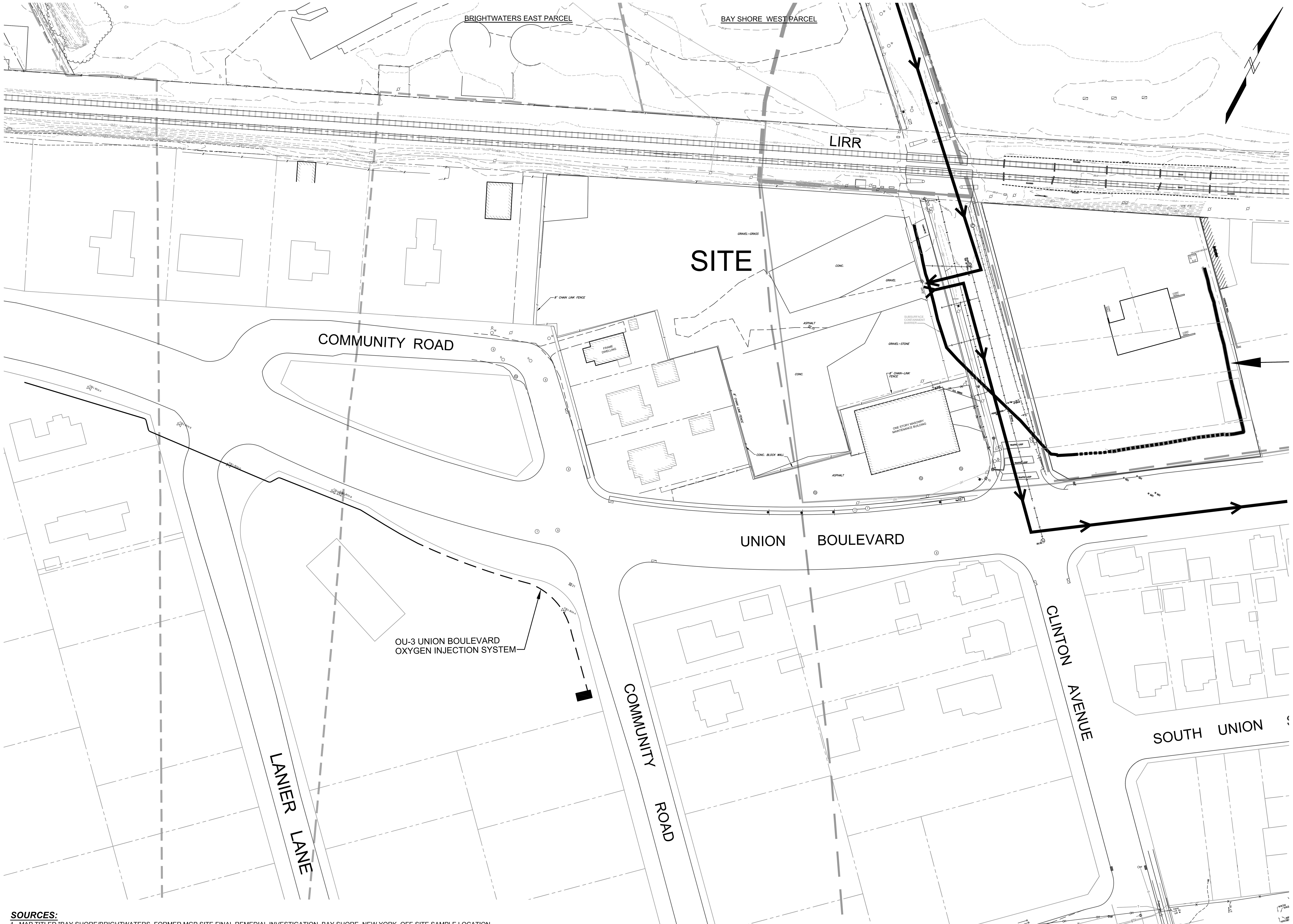

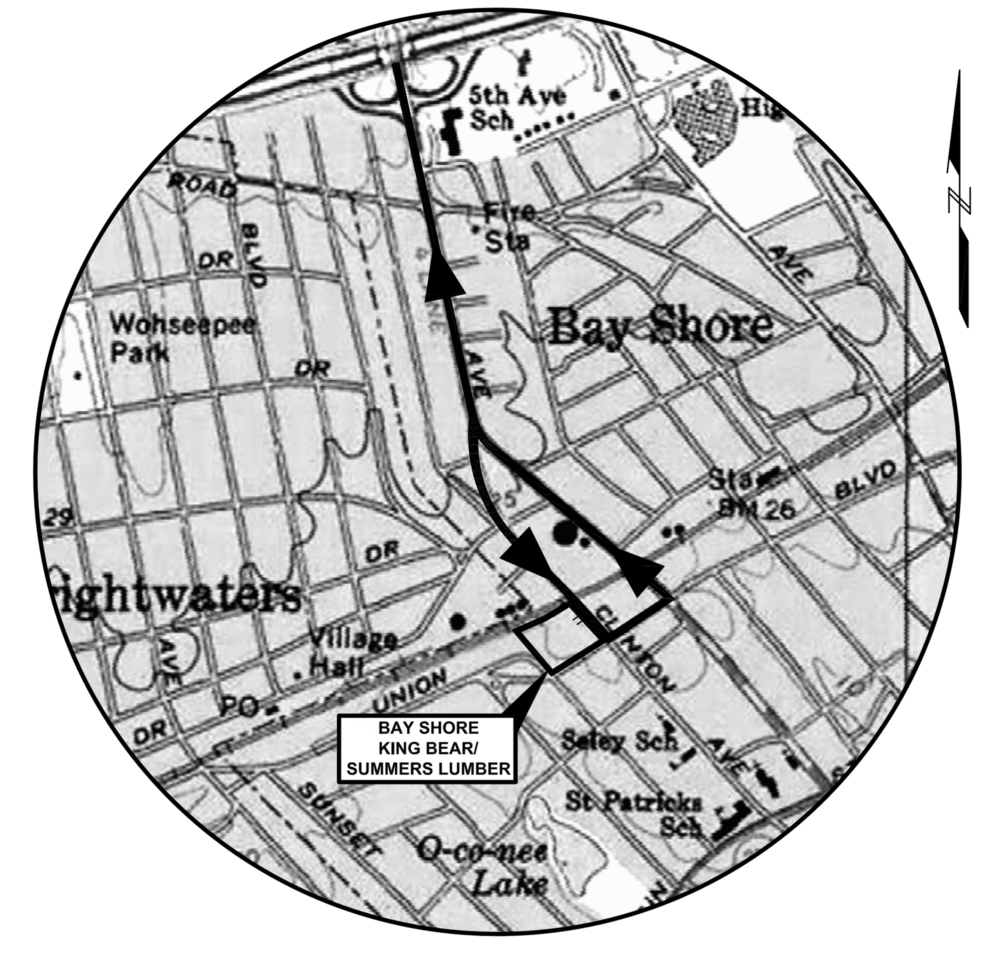

TRUCK ROUTE AND INDEX MAP

SCALE: 1"=600'

0 600 1200
SCALE, FEET

LEGEND

OU2MW-48S OU2MW-48I OU2MW-48I2 OU2MW-48D	EXISTING MONITORING WELL CLUSTER LOCATION S=SHALLOW I=INTERMEDIATE I2= INTERMEDIATE TWO D=DEEP
GW-6	GROUNDWATER PROBE LOCATION
	CATCH BASIN
	INLET
WM	WATER METER
WV	WATER VALVE
S	SANITARY MANHOLE
	LIGHT
	UTILITY POLE/GUY POLE
	GUY WIRE
GV	GAS VALVE
	CURB
X	FENCE
D	STORM DRAIN
W	WATER MAIN
S	SANITARY SEWER
G	UNDERGROUND GAS
E	UNDERGROUND ELECTRIC
T	UNDERGROUND TELEPHONE
OH	OVERHEAD WIRES
CTV	UNDERGROUND CABLE TELEVISION
	DIRECTION OF TRAFFIC FLOW
	OU-2 EXTENT FROM 2004 RI BASED ON >100 ug/L TOTAL BTEX OR >100 ug/L TOTAL PAHs DETECTED IN GROUNDWATER
	OU-3 EXTENT FROM 2004 RI BASED ON >100 ug/L TOTAL BTEX OR >100 ug/L TOTAL PAHs DETECTED IN GROUNDWATER

SOURCES:

1. MAP TITLED "BAY SHORE/BRIGHTWATERS, FORMER MGP SITE FINAL REMEDIAL INVESTIGATION, BAY SHORE, NEW YORK, OFF-SITE SAMPLE LOCATION MAP" DATED: SEPT. 2002 BY DVIRKA AND BARTILUCCI.
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5. WELL SURVEY CONDUCTED IN NOVEMBER 2007 BY NELSON & POPE, 572 WALT WHITMAN ROAD, MELVILLE, N.Y.

0 50 100
SCALE, FEET

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APPROVED BY	MJL
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631-760-9300, FAX 631-760-9301
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INDEX MAP WITH TRAFFIC ROUTE		FIG. NO. 2
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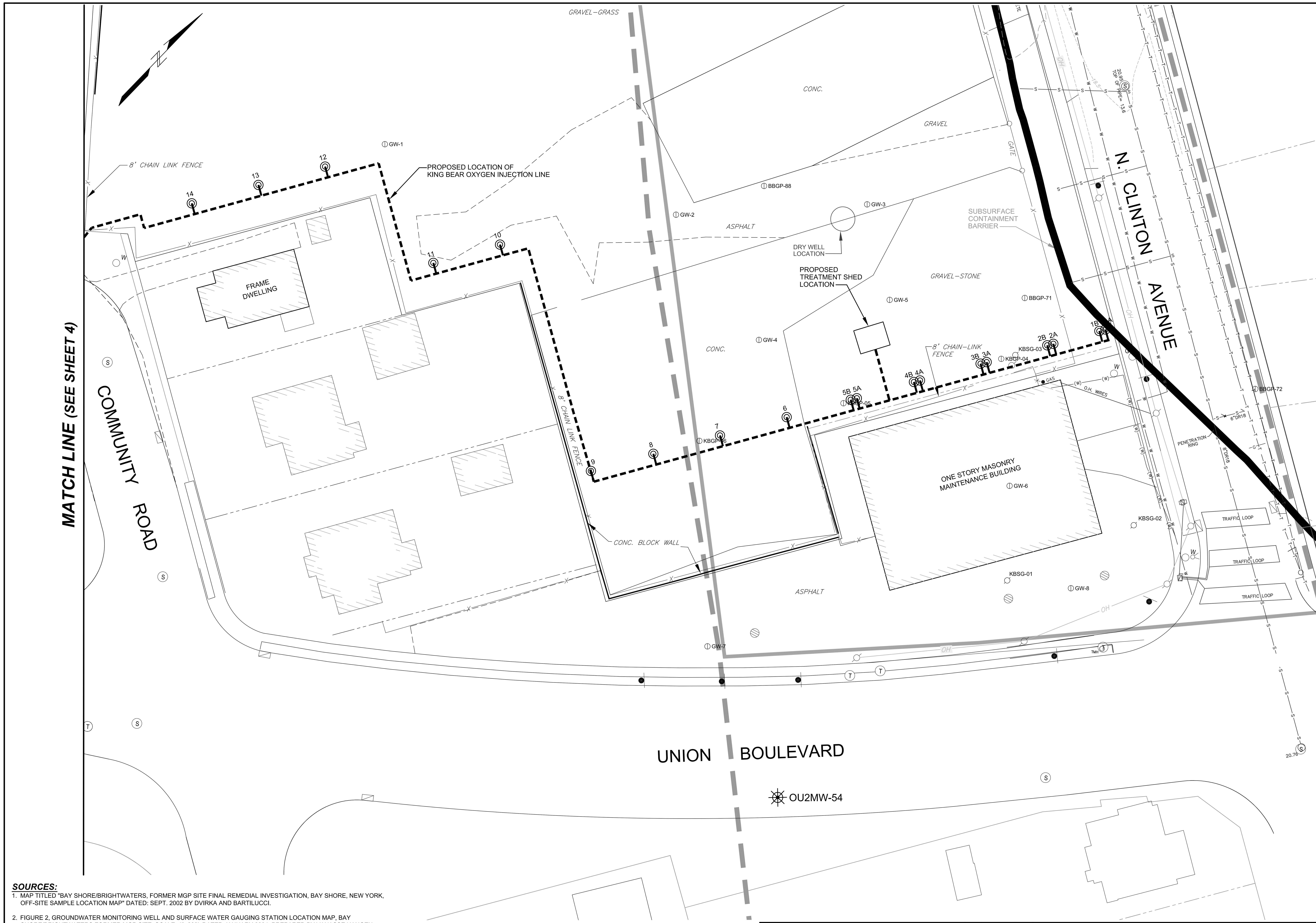

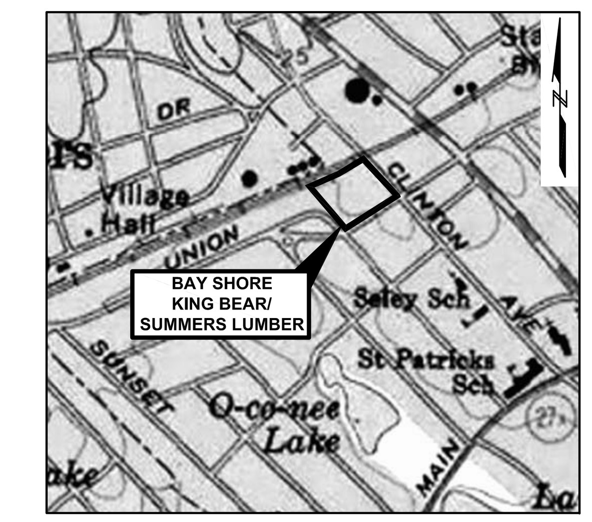

SITE LOCATION
SCALE: 1" = 1000'

LEGEND

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GW-6	GROUNDWATER PROBE LOCATION
KBSG-01	PERMANENT SOIL VAPOR SAMPLING LOCATION
	OU-2 EXTENT FROM 2004 RI BASED ON >100 ug/L TOTAL BTEX OR >100 ug/L TOTAL PAHs DETECTED IN GROUNDWATER
	INJECTION POINT LOCATION
	CATCH BASIN
	INLET
WM	WATER METER
WV	WATER VALVE
	SANITARY MANHOLE
	LIGHT
	UTILITY POLE/GUY POLE
	GUY WIRE
GV	GAS VALVE
	CURB
X	FENCE
D	STORM DRAIN
W	WATER MAIN
S	SANITARY SEWER
G	UNDERGROUND GAS
E	UNDERGROUND ELECTRIC
T	UNDERGROUND TELEPHONE
OH	OVERHEAD WIRES
CTV	UNDERGROUND CABLE TELEVISION
OU2MW-54	PROPOSED MONITORING WELL LOCATION

SOURCES:

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DESIGNED BY
DRAWN BY: NELSON & POPE, ENGINEERS & SURVEYORS
CHECKED BY
APPROVED BY: MJL
DATE: 11/17/09

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PROPOSED SYSTEM LOCATION
SUMMERS LUMBER/KING BEAR LINE

GEI PROJECT	SHEET NO.	FIG. NO.	ISSUE
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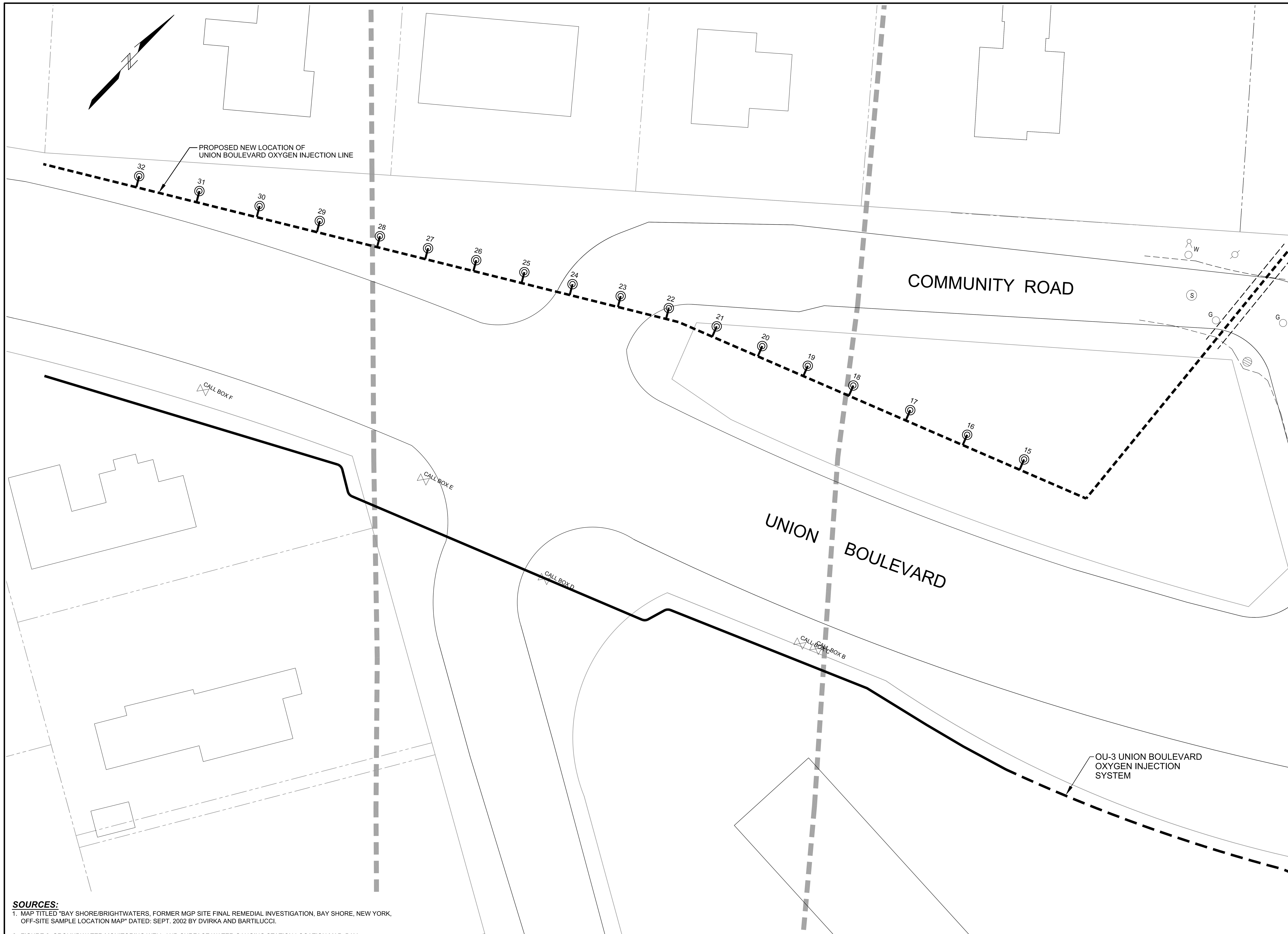

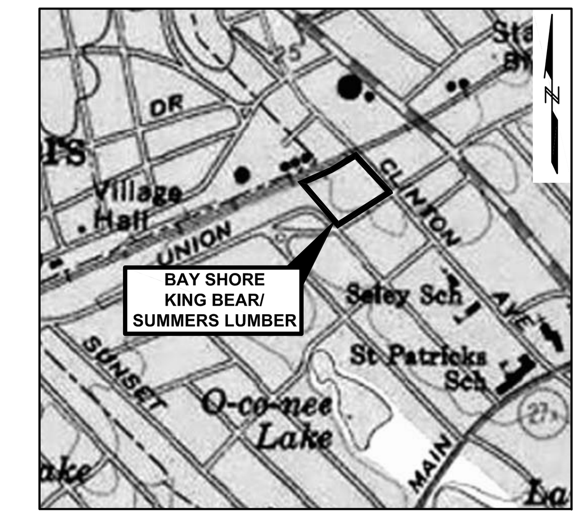

SITE LOCATION
SCALE: 1" = 1000'

LEGEND

OU2MW-48S OU2MW-48I OU2MW-48I2 OU2MW-48D	EXISTING MONITORING WELL CLUSTER LOCATION S=SHALLOW I=INTERMEDIATE I2= INTERMEDIATE TWO D=DEEP
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	OU-3 EXTENT FROM 2004 RI BASED ON >100 ug/L TOTAL BTEX OR >100 ug/L TOTAL PAHs DETECTED IN GROUNDWATER
	INJECTION POINT LOCATION
	CATCH BASIN
	INLET
WM	WATER METER
WV	WATER VALVE
	SANITARY MANHOLE
	LIGHT
	UTILITY POLE/GUY POLE
	GUY WIRE
GV	GAS VALVE
	CURB
X	FENCE
D	STORM DRAIN
W	WATER MAIN
S	SANITARY SEWER
G	UNDERGROUND GAS
E	UNDERGROUND ELECTRIC
T	UNDERGROUND TELEPHONE
OH	OVERHEAD WIRES
CTV	UNDERGROUND CABLE TELEVISION

0 30 60
SCALE, FEET

SOURCES:

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DRAWN BY NELSON & POPE, ENGINEERS & SURVEYORS
CHECKED BY
APPROVED BY MJL
DATE 11/17/09

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PROPOSED SYSTEM LOCATION
UNION BOULEVARD LINE

FIG. NO. 4

GEI PROJECT 093180-1-1109

SHEET NO. 4 of 8

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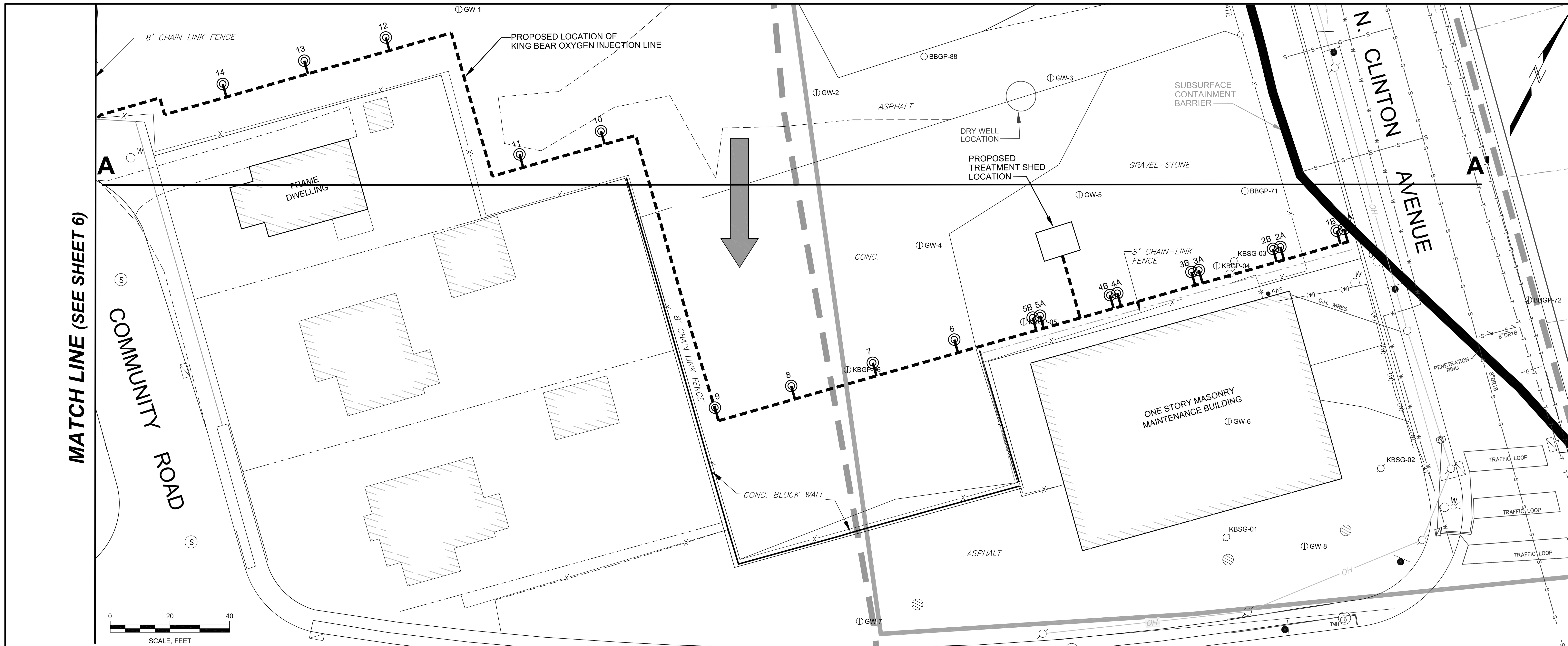
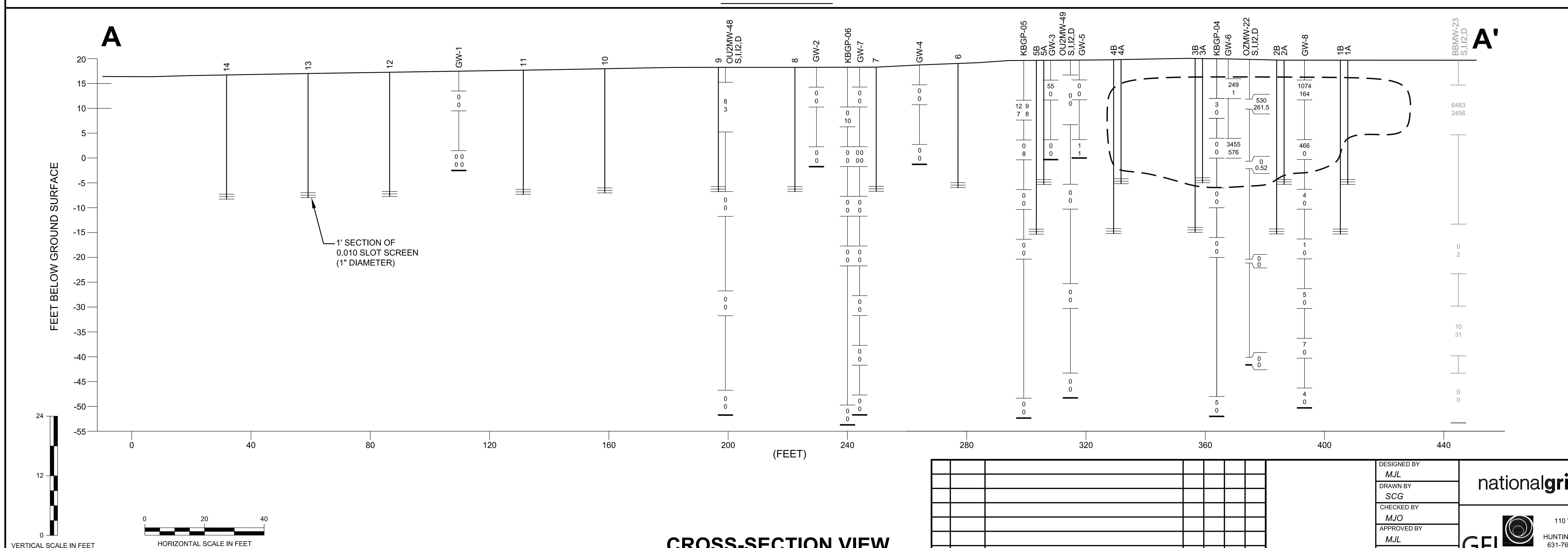
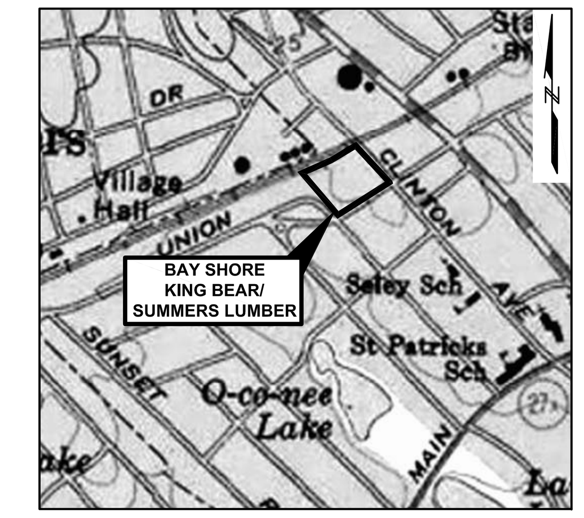


PLAN VIEW



CROSS-SECTION VIEW



SITE LOCATION

SCALE: 1" = 1000'

LEGEND

- GROUNDWATER PROBE LOCATION
- KBSG-01 — PERMANENT SOIL VAPOR SAMPLING LOCATION
- OU2MW-48S, OU2MW-48I, OU2MW-48I2, OU2MW-48D — EXISTING MONITORING WELL CLUSTER LOCATION: S=SHALLOW, I=INTERMEDIATE, I2= INTERMEDIATE TWO, D=DEEP
- GW-5 — EXISTING OR PROPOSED MONITORING WELL OR MONITORING POINT ID
- EXISTING OR PROPOSED MONITORING WELL OR MONITORING POINT LOCATION
- SAMPLE INTERVAL 1.5 — TOTAL BTEX ug/L
- 1.5 — TOTAL PAH ug/L
- END OF BORING/WELL
- TOTAL BTEX AND PAHs > 100 ug/L
- BTEX — BENZENE, TOLUENE, ETHYLBENZENE AND XYLENE
- PAHs — POLYCYCLIC AROMATIC HYDROCARBONS
- ug/L — MICROGRAMS PER LITER
- 14 — INJECTION POINT ID
- INJECTION POINT LOCATION
- 0.010 SLOT SCREEN (1" DIAMETER)
- CATCH BASIN
- INLET
- WATER METER
- WATER VALVE
- SANITARY MANHOLE
- LIGHT
- UTILITY POLE/GUY POLE
- GUY WIRE
- GAS VALVE
- CURB
- FENCE
- D — STORM DRAIN
- W — WATER MAIN
- S — SANITARY SEWER
- G — UNDERGROUND GAS
- E — UNDERGROUND ELECTRIC
- T — UNDERGROUND TELEPHONE
- OH — OVERHEAD WIRES
- CTV — UNDERGROUND CABLE TELEVISION

NOTES:

1. GROUNDWATER PROBE DATA COLLECTED QUARTER 4, 2007 AND QUARTER 1, 2008 BY GEI CONSULTANTS, INC.
2. MONITORING WELL DATA COLLECTED QUARTER 2, 2008 BY GEI CONSULTANTS, INC.
3. BBMW-23 CLUSTER IS DOWNGRADIENT OF PROPOSED TREATMENT LINE AND IS SHOWN FOR ILLUSTRATION PURPOSES ONLY.

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DESIGNED BY	MJL
DRAWN BY	SCG
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631-760-9300, FAX 631-760-9301
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INJECTION POINT LAYOUT AND SCHEMATIC FOR SUMMERS LUMBER/KING BEAR LINE

FIG. NO.	GEI PROJECT	SHEET NO.	ISSUE
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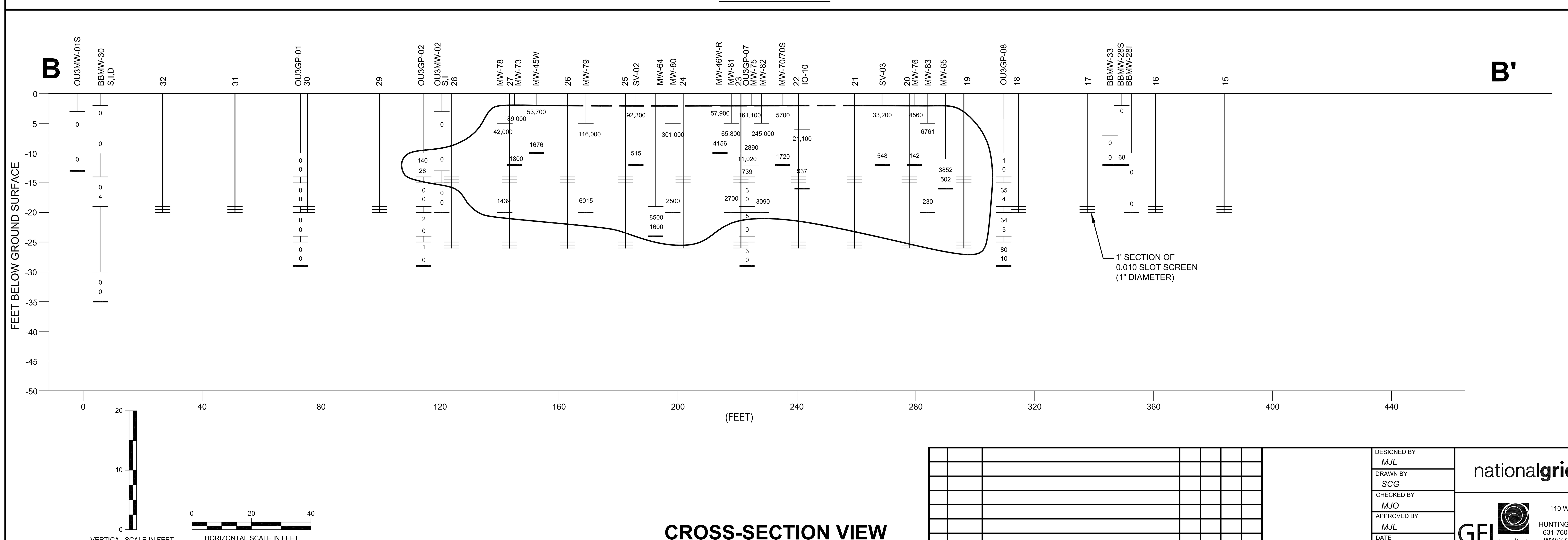
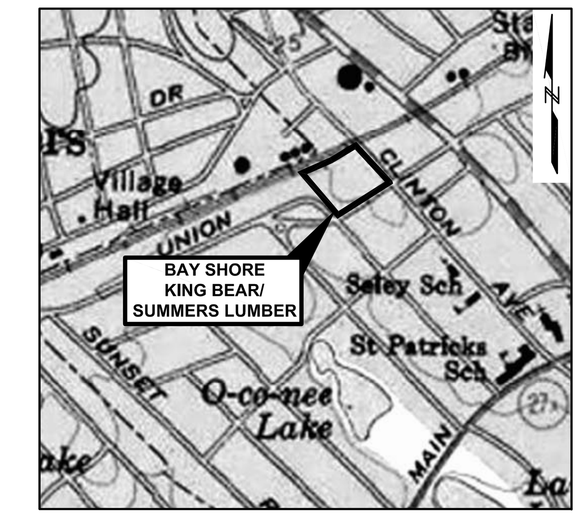
PLAN VIEW



CROSS-SECTION VIEW



SITE LOCATION
SCALE: 1" = 1000'

LEGEND

GROUNDWATER PROBE LOCATION

KBSG-01 — PERMANENT SOIL VAPOR SAMPLING LOCATION

OU2MW-48S, OU2MW-48I, OU2MW-48I2, OU2MW-48D — EXISTING MONITORING WELL CLUSTER LOCATION: S=SHALLOW, I=INTERMEDIATE, I2= INTERMEDIATE TWO, D=DEEP

WM — WATER METER

WV — WATER VALVE

S — SANITARY MANHOLE

UTILITY POLE/GUY POLE

GW-5 — EXISTING OR PROPOSED MONITORING WELL OR MONITORING POINT ID

EXISTING OR PROPOSED MONITORING WELL OR MONITORING POINT LOCATION

SAMPLE INTERVAL — 1.5 TOTAL BTEX ug/L; 1.5 TOTAL PAH ug/L

WATER LEVEL

END OF BORING/WELL

TOTAL BTEX AND PAHs ≥ 100 ug/L

BTEX — BENZENE, TOLUENE, ETHYLBENZENE AND XYLENE

PAHs — POLYCYCLIC AROMATIC HYDROCARBONS

ug/L — MICROGRAMS PER LITER

14 — INJECTION POINT ID

INJECTION POINT LOCATION

0.010 SLOT SCREEN (1" DIAMETER)

NOTES:

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2. MONITORING WELL DATA COLLECTED QUARTER 2, 2008 BY GEI CONSULTANTS, INC.

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BAY SHORE, NEW YORK

INJECTION POINT LAYOUT AND SCHEMATIC FOR OU-3 UNION BOULEVARD LINE

FIG. NO. 6

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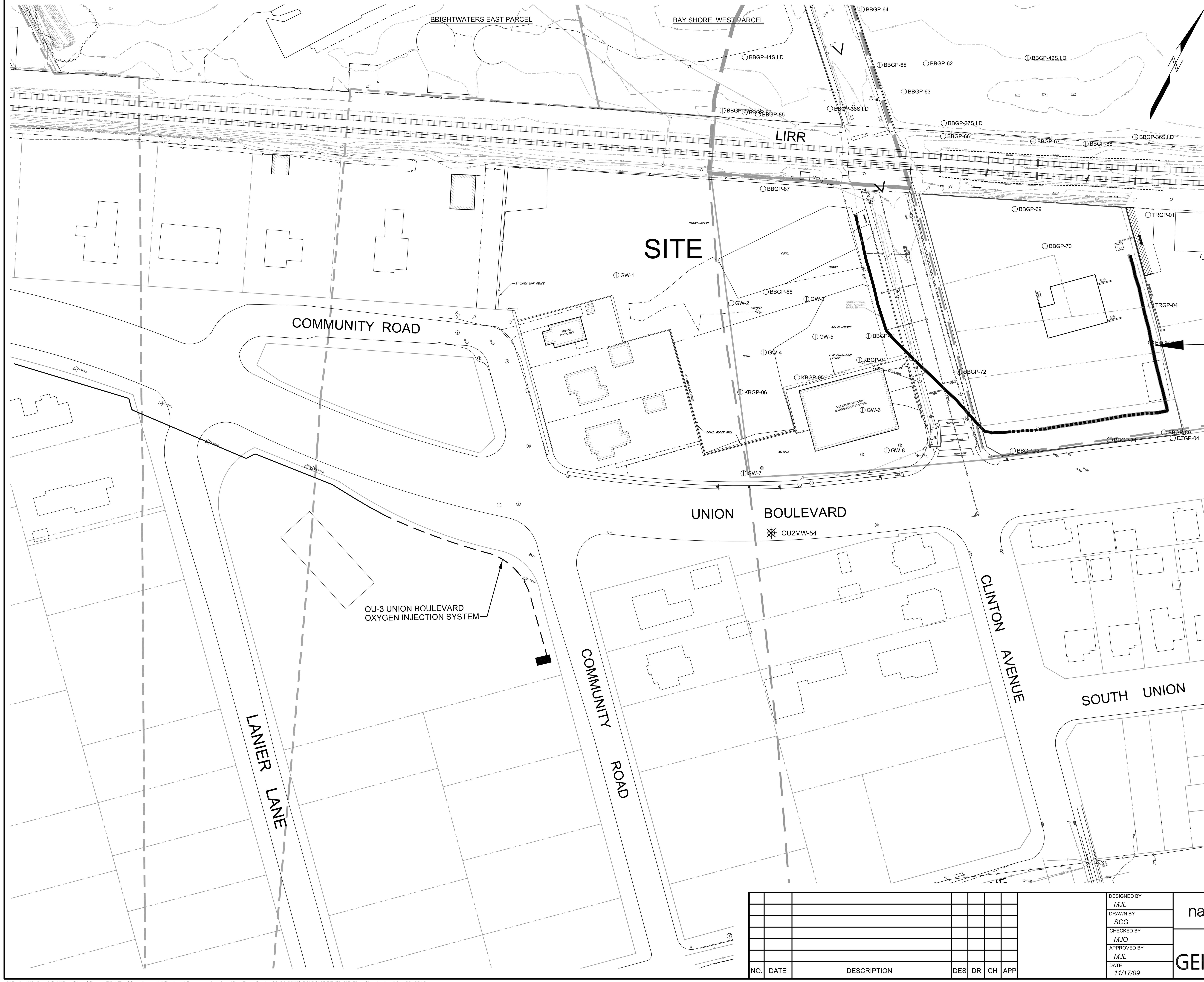

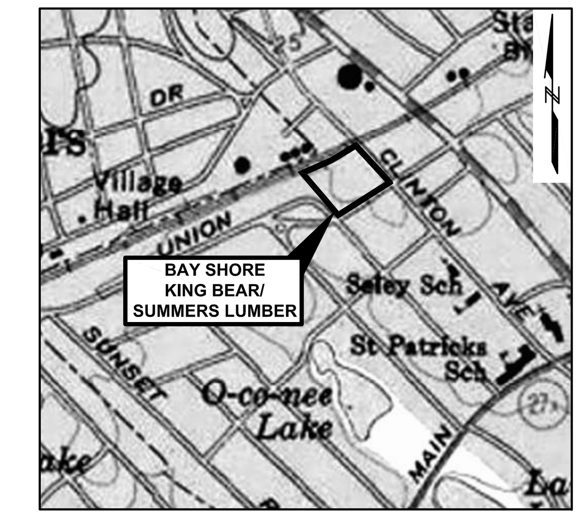

SITE LOCATION
SCALE: 1" = 1000'

LEGEND

OU2MW-48S OU2MW-48I OU2MW-48I2 OU2MW-48D	EXISTING MONITORING WELL CLUSTER LOCATION S=SHALLOW I=INTERMEDIATE I2= INTERMEDIATE TWO D=DEEP
OU2GP-71	GROUNDWATER PROBE LOCATION
KBSG-01	PERMANENT SOIL VAPOR SAMPLING LOCATION
	OU-2 EXTENT FROM 2004 RI BASED ON >100 ug/L TOTAL BTEX OR >100 ug/L TOTAL PAHs DETECTED IN GROUNDWATER
	OU-3 EXTENT FROM 2004 RI BASED ON >100 ug/L TOTAL BTEX OR >100 ug/L TOTAL PAHs DETECTED IN GROUNDWATER
OU2MW-54	PROPOSED MONITORING WELL LOCATION

SOURCES:

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PROPOSED MONITORING PLAN

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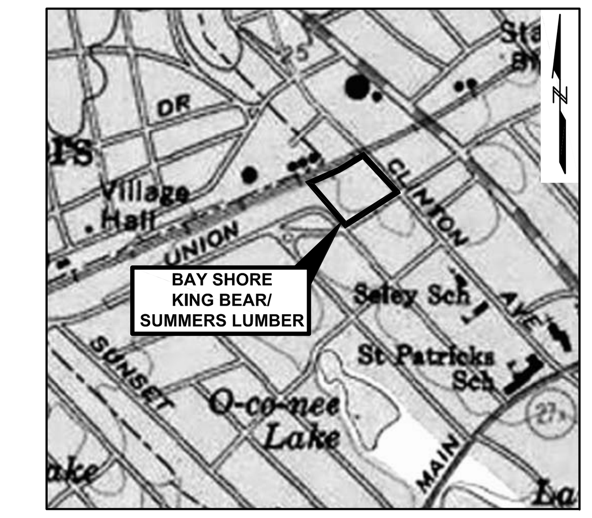
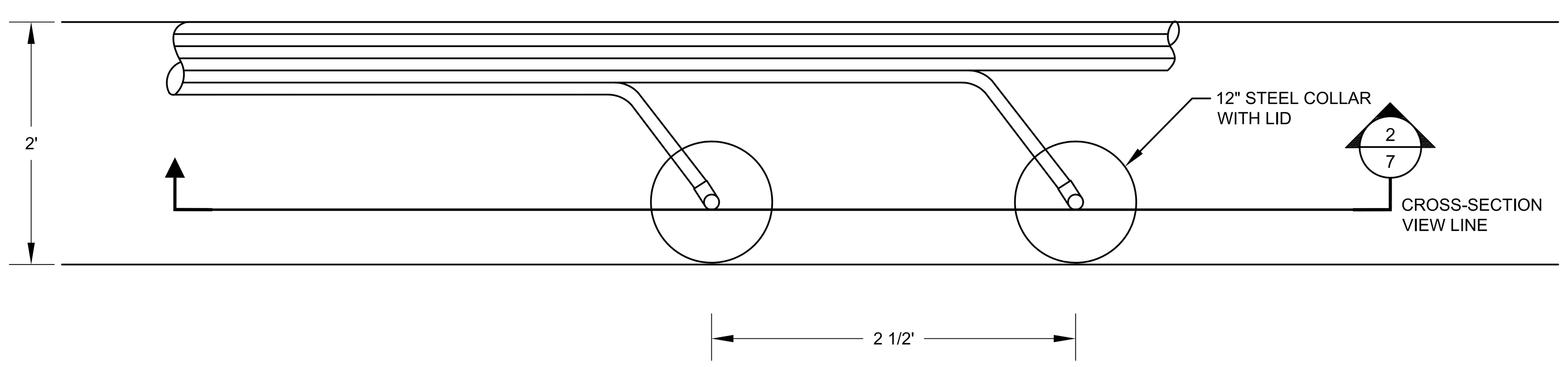
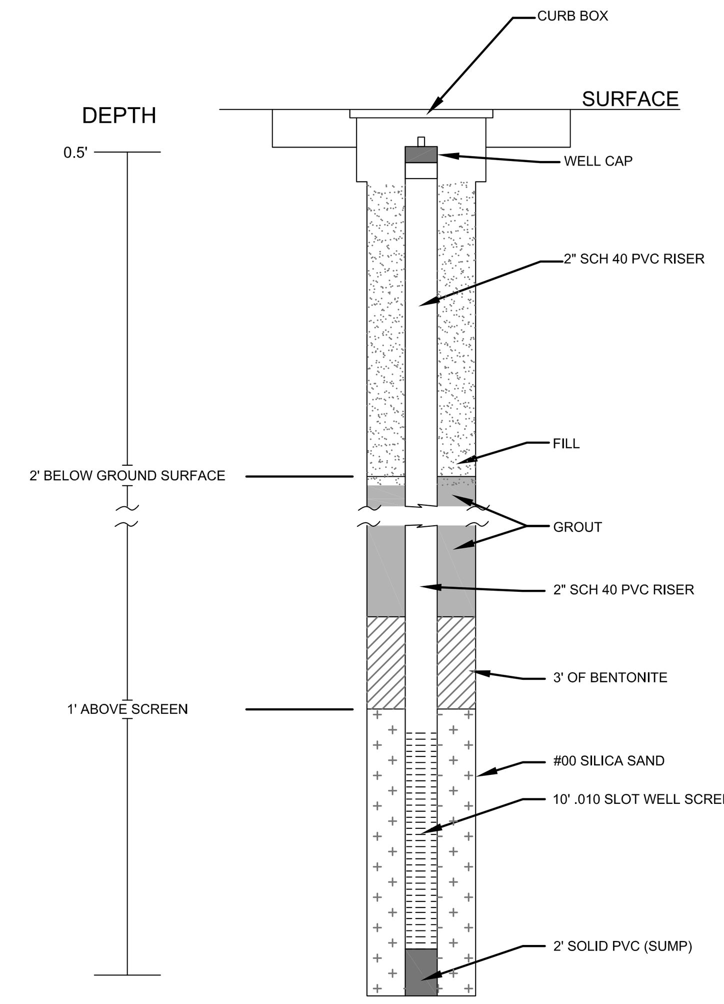


SITE LOCATION

SCALE: 1" = 1000'

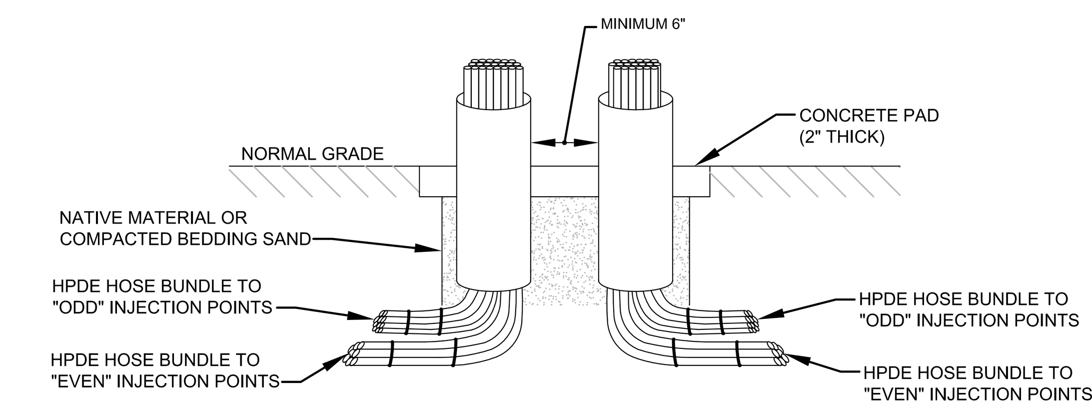


1 | 3 8 TYPICAL TRENCH PLAN VIEW



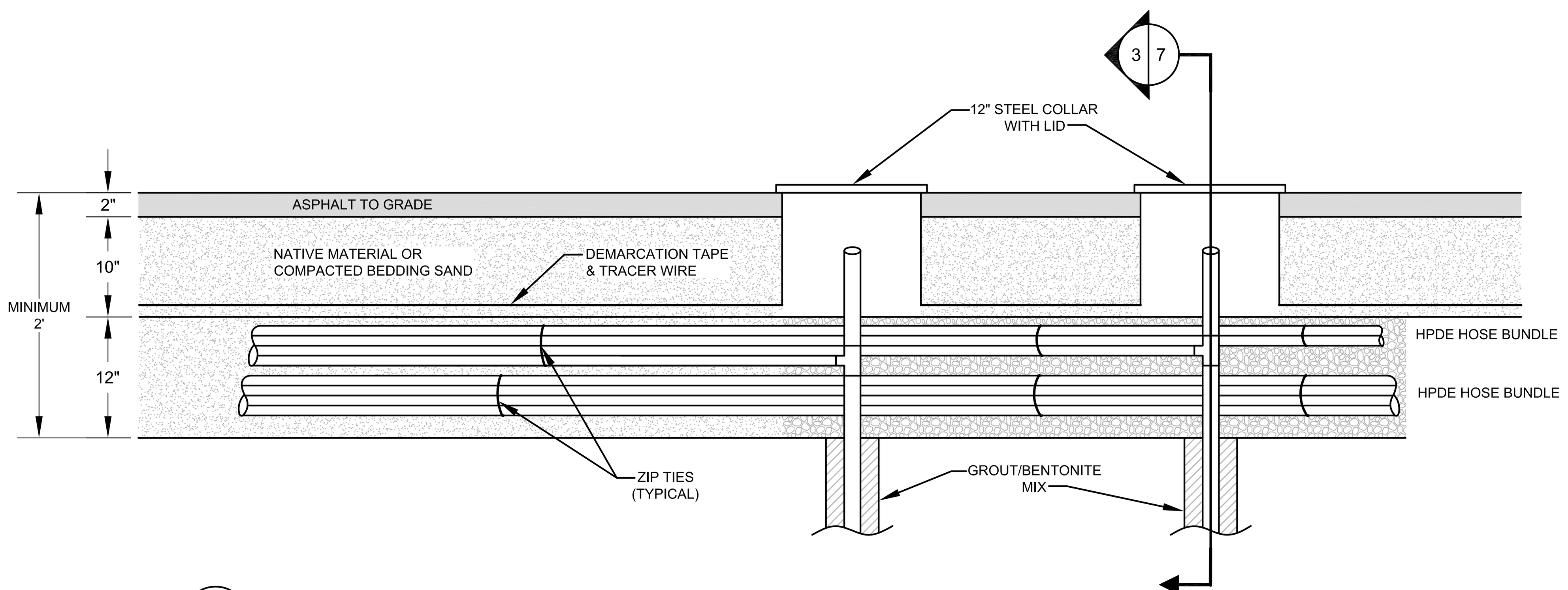
TYPICAL MONITORING WELL DETAIL

NOT TO SCALE

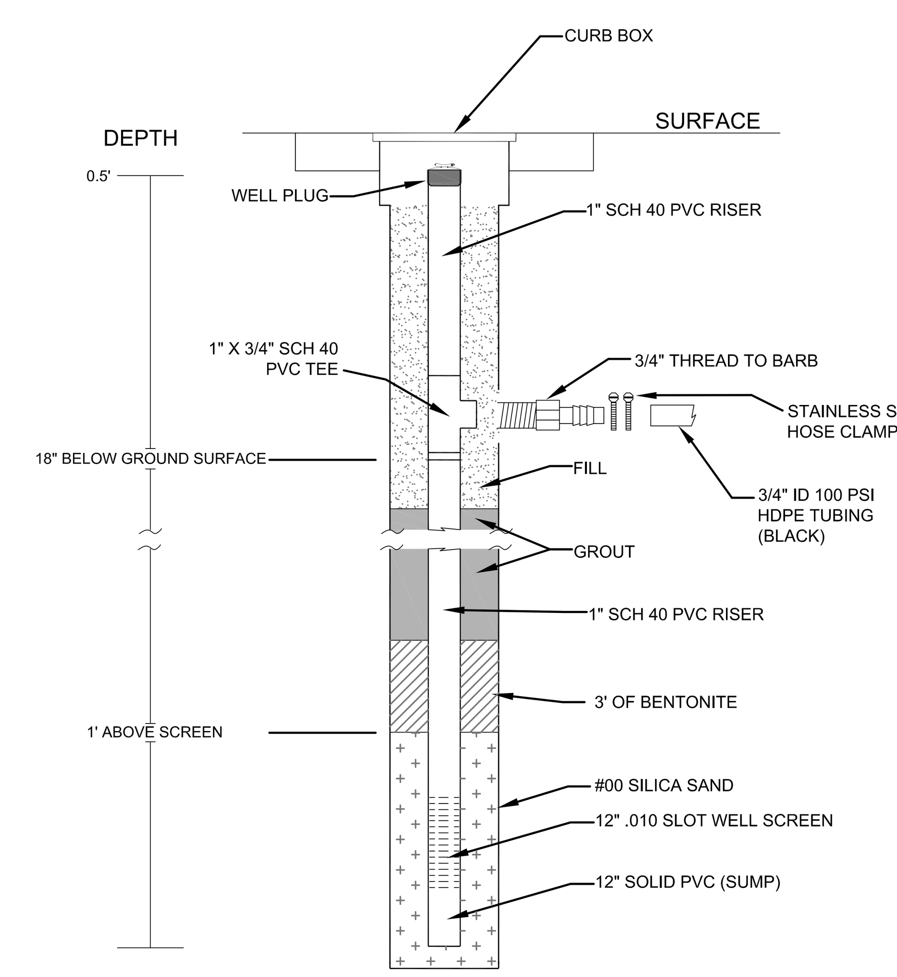


STUB-UP SCHEMATIC

NOT TO SCALE

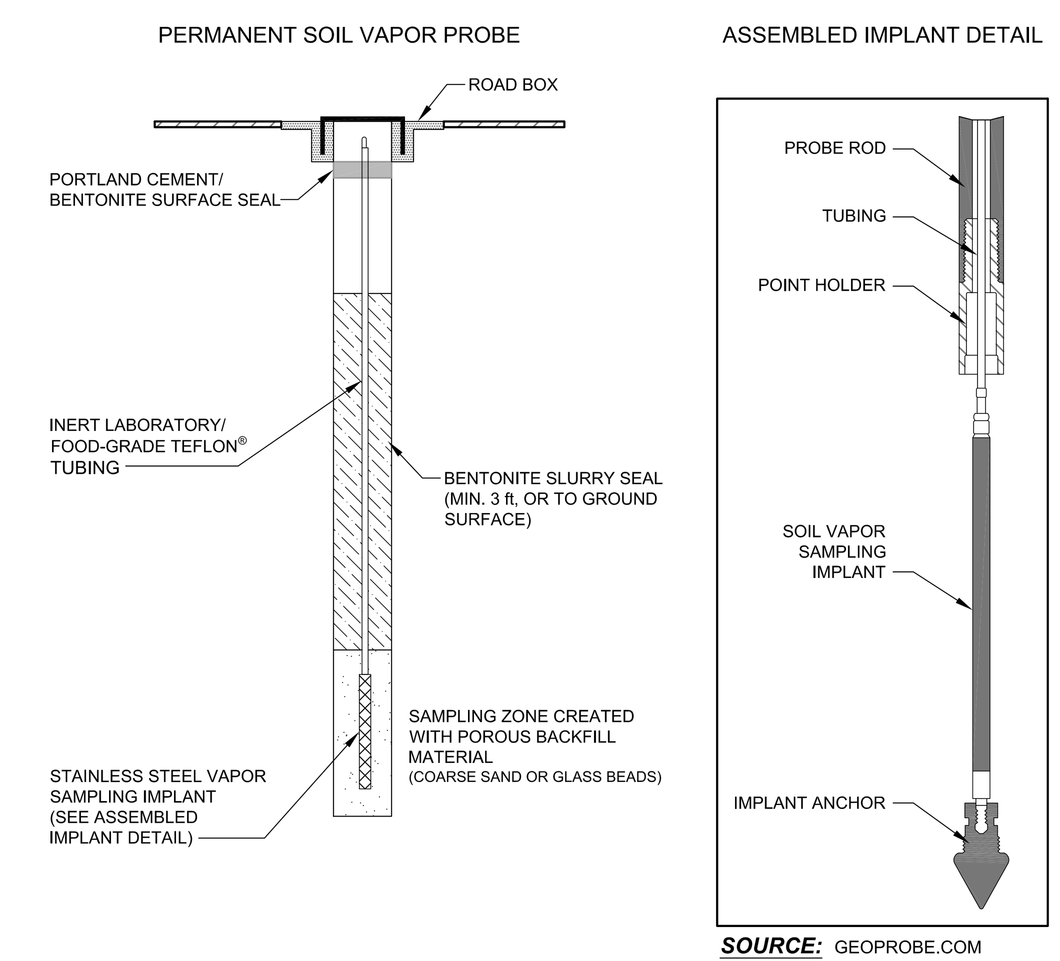


2 | 8 TYPICAL TRENCH CROSS SECTION (NE TO SW)



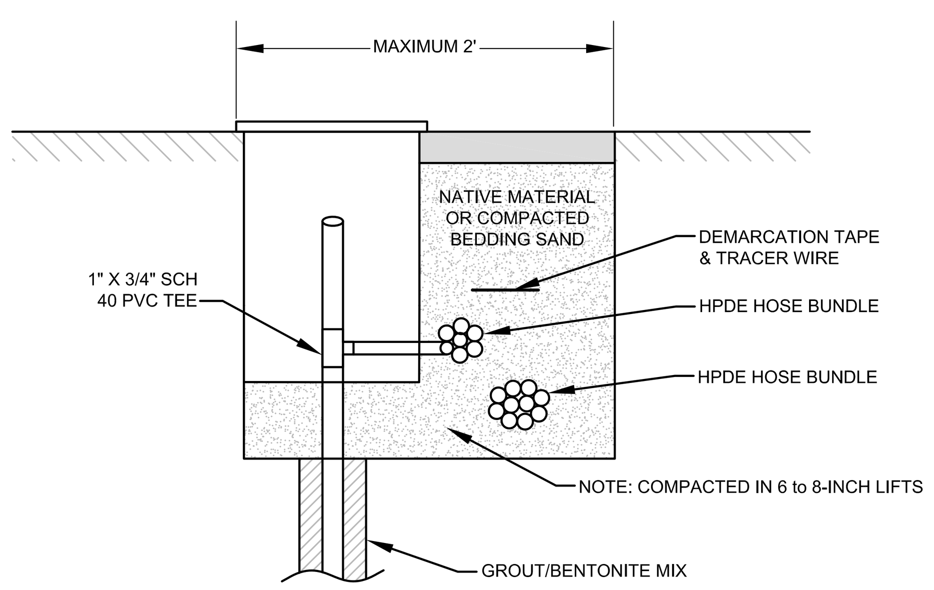
TYPICAL INJECTION WELL CONSTRUCTION DIAGRAM

NOT TO SCALE



PERMANENT SOIL VAPOR POINT INSTALLATION

NOT TO SCALE



3 | 8 TYPICAL TRENCH DETAIL

NOTES:

1. SCALE: 1" = 10' EXCEPT PIPE/HOSE SIZE.
2. CONNECTION TO INJECTION POINT SHOULD BE MADE WITH SCH 40 PVC TEE AT A MINIMUM OF 18" BELOW GROUND SURFACE.
3. NATIVE MATERIAL OR BEDDING SAND WILL BE COMPACTED IN 6-INCH LIFTS.
4. EACH HDPE HOSE LINE WILL BE LABELED ACCORDING TO IT'S RESPECTIVE INJECTION POINT EVERY TWENTY FEET.

FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	DES	DR	CH	APP

DESIGNED BY MJL
DRAWN BY SCG
CHECKED BY MJO
APPROVED BY MJL
DATE 11/17/09

nationalgrid

OXYGEN INJECTION SYSTEM DESIGN SCHEMATICS
SUMMERS LUMBER/KING BEAR - OPERABLE UNIT NO. 1
BAYSHORE/BRIGHTWATERS FORMER MANUFACTURED GAS PLANT SITE
BAY SHORE, NEW YORK

GEI Consultants
110 WALT WHITMAN ROAD
SUITE 204
HUNTINGTON STATION, NY 11746
631-760-9300, FAX 631-760-9301
WWW.GEICONSULTANTS.COM

TRENCH AND INJECTION POINT DETAILS

FIG. NO. 8

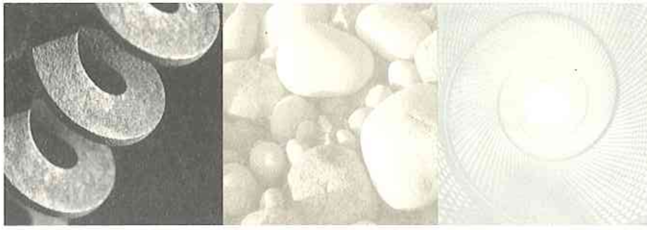
GEI PROJECT 093180-1-1109

SHEET NO. 8 of 8

ISSUE A

Appendix E

Community Air Monitoring Plan



GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological

Community Air Monitoring Program Work Plan
Former King Bear/Summer's Lumber Properties

Bay Shore/Brightwaters Former MGP Site

Town of Islip
Suffolk County, New York
NYSDEC Consent Index No. D1-0001-98-11

Submitted to:
National Grid, Inc.
175 East Old Country Road
Hicksville, NY 11801

Submitted by:
GEI Consultants, Inc.
455 Winding Brook Dr., Suite 201
Glastonbury, NY 06033
860-368-5300

February 2010
093180-1-1104

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Figures

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Executive Summary

This Community Air Monitoring Program (CAMP) Work Plan has been developed to provide procedures for measuring, documenting, and responding to potential airborne contaminants during excavation activities associated with the former Summer's Lumber and King Bear properties at Operable Unit No. 1 (OU-1) of the Bay Shore/Brightwaters former Manufactured Gas Plant (MGP) Site. The procedures in this CAMP focus on air monitoring techniques and contingency measures designed to mitigate potential airborne contaminants. This CAMP Work Plan is based on the CAMP guidelines established by the New York State Department of Health (NYSDOH) in the New York State Department of Environmental Conservation (NYSDEC) *Draft DER-10 Technical Guidance for Site Investigation and Remediation* (DER-10) (December 2002). Site activities related to excavation activities are expected to take place following completion of Phase I of the LIRR IRM planned for October 2009 through March 2010.

The CAMP provides Air Monitoring Procedures, Alert Limits, Action Limits, and Contingency Measures, if Action Limits are approached. An Alert Limit is a contaminant concentration that triggers contingent measures. An Alert Limit serves as a screening tool to trigger contingent measures if necessary, to assist in minimizing off-site transport of contaminants during remedial activities. An Action Limit is a contaminant concentration that triggers work stoppage and implementation of contingent measures to mitigate potential airborne contaminants prior to resuming work activities.

During times of excavation activity and potential related ground intrusive activities, perimeter air monitoring will be conducted using a combination of fixed-station, moveable tripod-mounted, and "walk-around" air monitoring equipment (as appropriate). Monitoring will be performed for total volatile organic compounds (VOC), dust, and odors along the Site perimeter. The Contingency Plan defines Alert Limits, Action Limits, and specific contingency measures to be implemented. The response actions, potentially including work stoppage and work area controls by various methods, are intended to prevent or significantly reduce the migration of airborne contaminants from the Site.

GEI will implement the CAMP and will report any exceedance of Alert and Action Limits to the excavation contractor, National Grid, and NYSDEC. The excavation contractor will be responsible for enacting contingency measures to respond to the exceedance of Alert and Action Limits as they may occur. GEI will provide data summary reports to the excavation contractor, National Grid, and NYSDEC each week during excavation activity.

1. Introduction

The New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP), as presented in New York State Department of Environmental Conservation's (NYSDEC) document *Draft DER-10 Technical Guidance for Site Investigation and Remediation*, recommends that real-time monitoring for total volatile organic compounds (TVOC) and particulates (i.e. dust) be conducted at the downwind perimeter of each designated work area during ground intrusive activities at contaminated sites. As such, this work plan describes the proposed air monitoring means and methods that will be implemented during excavation activities associated with the former Summer's Lumber and King Bear properties at Operable Unit No. 1 (OU-1) of the Bay Shore/Brightwaters former manufactured gas plant (MGP) site. A site location map is shown in Figure 1.

The purpose of the Air Monitoring Plan is to provide early detection in the field of potential short-term emissions. The Plan will be conducted in accordance with the generic NYSDOH CAMP.

The objectives of the CAMP are as follows:

- Provide an early warning system to alert the excavation contractor, NYSDEC, and National Grid that concentrations of TVOCs or dust in ambient air are approaching Action Limits due to Site activities.
- Provide potential contingency measures to be enacted by the excavation contractor and related contractors that are designed to reduce the off-site migration of contaminants if established Action Limits are approached or exceeded.
- Determine whether construction controls are effective in reducing ambient air concentrations to below Action Limits and make appropriate and necessary adjustments.
- Develop a permanent record that includes a database of perimeter air monitoring results, equipment maintenance, calibration records, and other pertinent information.

1.1 Roles and Responsibilities

GEI will implement the monitoring and reporting components of this CAMP under contract with National Grid. The excavation contractor is responsible for the selection and implementation of appropriate contingency measures that will mitigate the off-site migration of contaminants in response to Action Limits being approached or exceeded. The remainder of this section specifies the roles and responsibilities of each entity relative to the CAMP. A communication flowchart is shown on Figure 6 with each entity and lines of communication for the Community Air Monitoring Program.

1.1.1 GEI Consultants, Inc. (GEI)

The scope of GEI's activities will be limited to CAMP monitoring and reporting used for the CAMP. GEI is responsible for the Health and Safety of their employees. GEI's CAMP roles and responsibilities are as follows:

- GEI will monitor and record TVOC and dust at various locations around the site as described in the following sections of this CAMP Work Plan.
- On a daily basis, GEI will communicate to the following entities whether TVOCs or dust exceeded Alert Limits or Action Limits specified in subsection 2.1, and suggest corrective actions required to address the situation. GEI will convey the CAMP results to the entities listed below and inform them if the Alert or Action Limits have been exceeded. GEI will direct contractors at the site to take action if warranted. .

  Excavation contractor
  TBD

  - **New York State Dept. of Environmental Conservation**
    Mr. Amen Omorogbe – Project Manager
    (518) 402-9662
    MGP Remedial Section, Division of Environmental Remediation
    Bureau of Western Remedial Action, 11th Floor
    625 Broadway
    Albany, New York 12233-7017

  - **National Grid**
    Mr. William Ryan – Project Manager
    Mobile: (516) 790-7660
    Office: (516) 545-2586
    175 East Old Country Road
    Hicksville, NY 11801
- GEI will provide, maintain, and operate the equipment utilized to implement the CAMP.
- GEI will provide data summary reports to National Grid and NYSDEC each week during excavation activity. The reports will identify any potential Alert or Action Limit exceedances and will include data summary reports for all TVOC and dust data collected.

1.1.2 Excavation contractor

The excavation contractor is the lead contractor responsible for site activities pertaining to the excavation activity. The excavation contractor will be responsible for taking contingent actions in conjunction with National Grid in response to Alert and/or Action Limit exceedances. The excavation contractor is responsible for the Health and Safety of their employees.

1.1.3 National Grid

National Grid has the responsibility to provide mitigation services related to the release of MGP-related vapors in excess of CAMP Alert and/or Action Limits. National Grid is also ultimately responsible for the remediation of the Site under an approved work plan with NYSDEC.

1.1.4 New York State Department of Environmental Protection

NYSDEC is responsible for the environmental regulatory enforcement for all activities conducted at the site including compliance with this CAMP, stormwater runoff mitigation (erosion and sediment control), and all environmental and remediation regulations, policies, and guidance applicable to the site. NYSDEC may provide on-site oversight personnel for the work being conducted.

2. Sampling and Analytical Procedures

This section of the CAMP presents a detailed description of the air monitoring sampling and analytical procedures, including data management that will be used during ground intrusive site activities. The intent of the real-time monitoring program is to provide early detection in the field of short-term emissions and off-site migration of site-related TVOCs and dust.

Real-time sampling methods will be utilized to determine ambient air concentrations during the project. Monitoring for TVOC and respirable particulate matter (PM-10) will occur at up to six locations. Wind direction will be monitored under all monitoring approaches. A meteorological station will be established if a centralized data logger system is implemented. Supplemental walk-around perimeter monitoring for TVOC and PM-10, will occur along the perimeter of the project site on an as-needed basis. In the event of an exceedance of an Alert Limit or Action Limit for TVOC or PM-10, GEI will compare upwind to downwind to determine if site activity is causing the Alert Limit or Action Limit. The air monitoring procedures and equipment are detailed below.

2.1 Alert Limit and Action Limit

An Alert Limit is a contaminant concentration that when exceeded triggers contingent measures. For example, if high concentrations of dust are detected on the Site, contingent measures such as the use of spraying water may be required to reduce the concentrations to below Action Limits. An Action Limit is a contaminant concentration that when exceeded requires a work stoppage and implementation of contingent measures to mitigate that condition prior to resuming work activities.

The following target compounds and corresponding Alert Limits and Action Limits were developed in accordance with the NYSDOH Generic CAMP.

Target Compounds	Alert Limit
TVOCs (15-minute average concentration)	3.7 ppm greater than background*
Respirable Particulate Matter (PM-10)	100 $\mu g/m^3$ greater than background*

Target Compounds	Action Limit (**)
TVOCs (15-minute average concentration)	5.0 ppm greater than background*
TVOCs (1-minute concentration)	25 ppm greater than background*
Respirable Particulate Matter (PM-10)	150 $\mu g/m^3$ greater than background*

ppm - parts per million
$\mu g/m^3$ - micrograms per meter cubed
TVOCs – total Volatile Organic Compounds
* Background is defined as the current upwind fifteen-minute average concentration.
** Action Limit Exceedance Requires Work Stoppage and Mitigation of the condition causing the Exceedance

2.2 Air Monitoring Procedures

Monitoring for TVOC and respirable particulate matter (PM-10) will occur at up to four locations using real-time sampling equipment. Readings will be checked manually on a predetermined periodic basis or transmitted to a centralized data logger system station once per minute. Monitoring will be conducted during working hours during construction activity along the Site perimeter. Supplemental "walk-around" perimeter monitoring for TVOC and PM-10, and odor will occur along the perimeter of the project site on an as-needed basis. Each approach is detailed below.

2.2.1 Periodic Monitoring Procedures

Real-time air monitoring for TVOCs and suspended particulates will be conducted upwind and downwind of the work area along the Site perimeter during working hours. Instruments will be positioned along the Site perimeter to monitor the air based on a particular day's ground intrusive activities at up to four locations. Real-time monitors will continuously gather data during periods of excavation activity during working hours. The equipment will be manually read on a predetermined periodic cycle during the work activity. Wind direction will be determined by using a wind sock or flagging placed on a pole at the Site.

Each air monitoring station would include the following:

1. Station Tripod and enclosure
2. An organic vapor analyzer
3. A particulate monitor

Figure 3A shows an example of a typical tripod mounted air monitoring station.

Each monitoring station will continuously measure and record TVOCs and PM-10. All TVOC and PM-10 will be stored in dataloggers located within each monitoring station. Data from each piece of equipment will be downloaded daily at the completion of excavation/construction activities and stored on a central computer system. The location of each station, the work zone, and the wind direction will be noted daily. At each monitoring station location, the 15-minute average value of TVOC and PM-10 will be recorded. The 15-minute average value of TVOC and PM-10 data from the upwind and downwind station will be compared and resultant downwind concentration will be calculated and recorded.

It is anticipated that tripod mounted stations will be used during the oxygen injection system installation, ISCO injection well installations, and ISCO injection, as needed.

2.2.2 Central Station Monitoring Procedures

Real-time air monitoring for TVOCs and suspended particulates may be conducted upwind and downwind of the work area along the Site perimeter. Instruments will be positioned to monitor around the active work zone based on a particular day's activities at up to four locations adjacent to the work area. Real-time monitors will continuously gather data during periods of excavation activity during working hours. The air monitoring system consists of up to four air monitoring stations, one meteorological tower, and one central computer system. The central computer system will be located in the project trailer or similar work area.

Each real-time air monitoring station contains the following:

1. Station enclosure
2. An organic vapor analyzer or PhotoVac Voyager gas chromatograph (GC)
3. A particulate monitor
4. A radio telemetry device

Each monitoring station is housed in a weather-tight NEMA-4 type enclosure. Each monitoring station will continuously measure and record TVOCs and PM-10 at a rate of one sample per minute. Each portable particulate meter will be equipped with a PM-10 impactor to monitor particulate matter less than 10 microns (PM-10). Figure 3B shows an example of a typical fixed air monitoring station.

In addition to the air monitoring stations, a Campbell Scientific, Inc. Met Data1 meteorological monitoring system, or equivalent, will be established onsite. The meteorological system will continuously monitor temperature, relative humidity, wind speed, and wind direction. Fifteen-minute average values for each meteorological parameter will be stored in the meteorological system and downloaded once per week. Wind direction and wind speed will be displayed on the central computer in real-time to determine upwind and downwind stations for assessing Action and Alert Limits.

All TVOC, PM-10, and meteorological data will be stored in dataloggers located within each monitoring station. Stored analytical data along with system performance data from each station will be sent in real-time, via radio telemetry, to the Site central computer system for monitoring and analysis.

It is anticipated that fixed stations will be used during the excavation portion of the Phase IV Remediation.

2.2.3 Supplemental and Perimeter Walk-around Monitoring

Supplemental walk-around perimeter monitoring for TVOC and PM-10 will occur along the perimeter of the project site on an as-needed basis. Specific site conditions that may trigger walk-around perimeter monitoring include:

- Visible dust
- Detection of TVOCs and/or PM-10 at an air monitoring station at concentrations exceeding an Alert Limit or Action Limit
- Direction by the construction manager or NYSDEC

Fifteen-minute average TVOC and PM-10 readings will be collected continuously at a downwind location between the work area and the nearest receptors.

When a triggering condition is observed during ground intrusive activity, the supplemental downwind perimeter monitoring will occur continuously until the conditions that triggered the monitoring have subsided. TVOC concentrations will be monitored and recorded using an organic vapor analyzer. PM-10 will be measured and recorded using a portable aerosol monitor equipped with a PM-10 impactor. At each monitoring point, the 15-minute average value of TVOC and PM-10, sample time, and sample location will be collected and recorded. Additional temporary monitoring points may be established due to changing site or meteorological conditions.

2.2.4 Equipment Calibration

Equipment calibration will be performed according to manufacturer's instructions. Each organic vapor analyzer will be calibrated once daily using a certified standard isobutylene gas. Particulate monitors for PM-10 will be zeroed daily. Other hand-held portable equipment will be calibrated before each use, or a minimum of once per week when not in use.

2.3 Data Management Procedures

This section of the Plan discusses the data management procedures that will be used during the remedy. Data may be generated from a variety of sources, including real-time fixed station analytical monitoring, supplemental walk-around monitoring, tripod-mounted monitoring stations, and meteorological monitoring. These data must be reduced, evaluated, verified, and presented to related parties in a timely manner to facilitate decision-making. The data management process for each source of data is discussed below.

Analytical data generated at each fixed-station are sent to the central computer system via radio telemetry or will be manually downloaded daily. The monitoring data will also be downloaded to the project database for data evaluation. The following daily charts or tables will be prepared:

- Instantaneous and averaged TVOC concentrations compared to the TVOC Action Limit
- Instantaneous and averaged PM-10 concentrations compared to the PM-10 Action Limit
- Supplemental Perimeter Walk-Around PM-10 concentrations compared to the Action Limit (if any)
- Supplemental Perimeter Walk-Around TVOC concentrations compared to the TVOC Action Limit (if any)
- Air monitoring station locations

The following weekly charts or tables will be prepared:

- Meteorological conditions
- Maximum 15-minute average concentrations of TVOC and PM-10
- Upwind and downwind comparison of Alert and Action Limits reached during the week
- Summary of site activities
- Air monitoring station locations

GEI will review all real-time data in a timely manner following collection and transmit the final summary report to National Grid.

3. Alert Response

The purpose of this section is to identify the procedures to be followed in response to elevated levels of target compounds measured during ground intrusive activities. Response actions will be enacted by the excavation contractor and National Grid contractors. GEI will report any occurrences where an Alert or Action Limit is exceeded, which would require response measures to be enacted. In general, a tiered approach to site conditions with corresponding response actions will be implemented during the air monitoring program. The three tiers of site conditions are defined as follows.

- **Site Condition 1.** Normal or ambient air-conditions where all target concentrations are less than the Alert Limit.
- **Site Condition 2.** Concentration of at least one target is equal to or greater than Alert Limit, but less than the Action Limit.
- **Site Condition 3.** Concentration of at least one target is equal to or greater than the Action Limit.

The response plan will rely on real-time data generated from the fixed-station monitoring, portable equipment monitoring, and meteorological monitoring. These data sources will be evaluated together in order to make appropriate decisions concerning site conditions and potential control measures.

An explanation of the notification system, specific conditions, and response actions for TVOCs and PM-10 are presented below.

3.1 Total Volatile Organic Compounds

TVOC concentrations in air will be measured and recorded by station monitors. Figure 4 presents the TVOC decision diagram that will be used to determine the appropriate site condition based on contaminant concentrations. Alert Level site conditions will be in effect when the TVOC concentration is less than the Alert Limit (3.7 ppm).

Under an Alert Level 1 site condition, each organic vapor analyzer located at the monitoring stations will collect and analyze a TVOC sample at a frequency of one sample per minute.

A preliminary Alert Level 2 site condition will occur if the TVOC concentration measured at a station is greater than or equal to the Alert Limit (3.7 ppm) but less than the Action Limit (5.0 ppm). The excavation contractor and National Grid (or designated construction manager), and NYSDEC, will be notified by GEI of elevated measurements and a possible Alert Level 2 site condition.

At this time, the upwind and downwind concentrations will be compared to determine if the preliminary Alert Level 2 site condition is due to site activities. If downwind TVOC concentrations are greater than upwind concentrations, then it will be assumed that the preliminary site condition is due to site activities.

If the above condition is true, then an Alert Level 2 site condition will be verified. Under a verified Alert Level 2 site condition, a contingency meeting attended by GEI, the excavation contractor, and National Grid (or designated construction manager), and NYSDEC, will be held. The excavation contractor and National Grid (or designee) and NYSDEC will determine appropriate response actions. This meeting will be held within 60 minutes of the Alert Level 2 site condition verification. Possible Alert Level 2 response actions are listed in Table 1. The site will remain in Alert Level 2 as long as the TVOC concentration is between 3.7 ppm (Alert Limit) and 5.0 ppm (Action Limit), based on 15-minute averages.

If average TVOC concentrations increase to greater than the Action Limit of 5.0 ppm, then the site will enter into an Action Limit site condition. An Action Limit site condition will remain in effect if one of the following conditions is true.

- The average TVOC concentration, measured over a 15-minute period, is greater than or equal to 5.0 ppm (Action Limit)
- The instantaneous TVOC concentrations are greater than 25 ppm.

Under an Action Limit site condition, all construction activities will be halted. A meeting attended by GEI, the excavation contractor and National Grid (or designated construction manager), and NYSDEC, will be held within 60 minutes of the Action Limit notification. The excavation contractor and National Grid (or designee), and NYSDEC will determine appropriate response actions. Possible Action Limit corrective measures/actions are listed in Table 1. After appropriate corrective measures/actions are taken, work activities may resume provided that the TVOC concentration at the Site perimeter is no more than 5.0 ppm above background for the 15-minute average.

If average TVOC concentrations fall below the Action Limit, then the site will be returned to an Alert Level 2 site condition, at which time work activities may resume. The Alert Level 2 site condition will remain in effect as long as the following condition is true.

- The 15-minute average concentration for TVOCs is greater than 3.7 ppm (Alert Limit) and less than 5.0 ppm (Action Limit).

The site will return to Alert Level 1 site condition if the following condition is true.

- The 15-minute average concentrations for TVOCs at each of the monitoring stations are less than 3.7 ppm (Alert Limit).

Specific TVOC target concentrations for Alert Level 1, Alert Level 2, and Action Level site conditions are summarized in Table 2.

3.2 Respirable Particulate Matter

PM-10 concentration in air will be measured and recorded by the station monitors and may be temporarily suspended during periods of rain. Figure 5 presents the PM-10 decision diagram. Alert Level 1 site condition will be in effect when the downwind 15-minute average PM-10 concentration is greater than 100 $\mu g/m^3$ above the current average upwind conditions (Alert Limit). A preliminary Alert Level 2 site condition will occur if the PM-10 concentration at a station is greater than 100 $\mu g/m^3$. At this time, Harvic and National Grid (or designee), and NYSDEC will be notified by GEI of elevated measurements and a possible Alert Level 2 site condition. Under a preliminary Alert Level 2 site condition, upwind and downwind PM-10 concentrations will be compared to determine if the preliminary Alert Level 2 site condition is due to site activities. If downwind PM-10 concentrations are 100 ug/m^3greater than upwind concentrations (Alert Limit), then it will be assumed that the preliminary Alert Level 2 site condition is due to site activities.

If elevated PM-10 concentrations are found to be related to site activities, then PM-10 measurements will be collected over a 15-minute period and averaged. If the 15-minute average PM-10 concentration is equal to or greater than 100 $\mu g/m^3$ above the upwind PM-10 (alert limit), then the Alert Level 2 site condition will be verified. The Alert Limit 2 site condition will remain in effect as long as the average PM-10 concentration is greater than or equal to 100 $\mu g/m^3$ above upwind conditions (Alert Limit), and less than or equal to 150 $\mu g/m^3$(Action Limit). Under a verified Alert Level 2 site condition, dust suppression techniques must be implemented by the excavation contractor and/or National Grid contractors. At this point, routine monitoring continues and 15-minute averages continue to be evaluated. Work may continue with dust suppression techniques provided that downwind PM-10 levels do not exceed 150 ug/m^3 above the upwind level (Action Limit) and provided that no visible dust is migrating offsite from the work area. A contingency meeting attended by GEI, the excavation contractor, National Grid (or designee), and NYSDEC will be held within 60 minutes of the verified Alert Level 2 site condition if the condition is not mitigated by dust suppression techniques. Possible response actions for dust control are listed in Table 1.

An Action Limit site condition will go into effect if the average 15-minute PM-10 concentration exceeds 150 $\mu g/m^3$ above the current average upwind concentration (Action Limit). Under an Action Limit site condition, work must be stopped and a meeting attended by GEI, the excavation contractor, National Grid (or designee), and NYSDEC will be held within 60 minutes of the Action Limit notification. The excavation contractor, National Grid and NYSDEC will determine appropriate response actions. Possible Action Limit response actions for PM-10 are listed in Table 1. Work may resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 concentration to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

Specific PM-10 target concentrations for Alert Level 1, Alert Level 2, and Action Level site conditions are summarized in Table 2.

3.3 Visible Dust

In addition to measured PM-10 levels, the CAMP requires monitoring of visible dust conditions. If visible airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 levels do not exceed 150 $\mu g/m^3$ above the upwind level and provided that no visible dust is migrating from the work area.

4. Reporting

GEI will prepare and submit bi-weekly reports to the excavation contractor, NYSDEC, and National Grid summarizing the CAMP monitoring data. Each report will consist of a letter-style report and charts/tables summarizing the following:

- Maximum 15-minute average concentrations of TVOC, and PM-10
- Upwind and downwind comparison of Alert and Action Limits reached during the bi-weekly period
- Summary of site activities
- Air monitoring station locations
- Meteorological conditions

Tables

Table 1
Levels and Response Actions
Community Air Monitoring Program Work Plan
Bay Shore/Brightwaters Former MGP Site
Operable Unit 1
Former King Bear/Summer's Lumber Properties
Phase IV Remedial Design Report

Site Condition	Response Action
Alert Level 1	▪ Normal Site Operations – No Response Action Required
Alert Level 2	▪ Establish trend of data and determine if evaluation/wait period is warranted ▪ Temporarily stop work ▪ Temporarily relocate work to an area with potentially lower emission levels ▪ Apply water to area of activity or haul roads to minimize dust levels ▪ Reschedule work activities ▪ Cover all or part of the excavation area ▪ Apply VOC emission suppressant foam over open excavation areas ▪ Slow the pace of construction activities ▪ Change construction process or equipment that minimize air emissions ▪ Install a perimeter barrier fence
Action Level	▪ Encapsulate construction area and treat air exhaust ▪ Perform work during cold weather ▪ Cease construction activities ▪ Re-evaluate air monitoring work plan

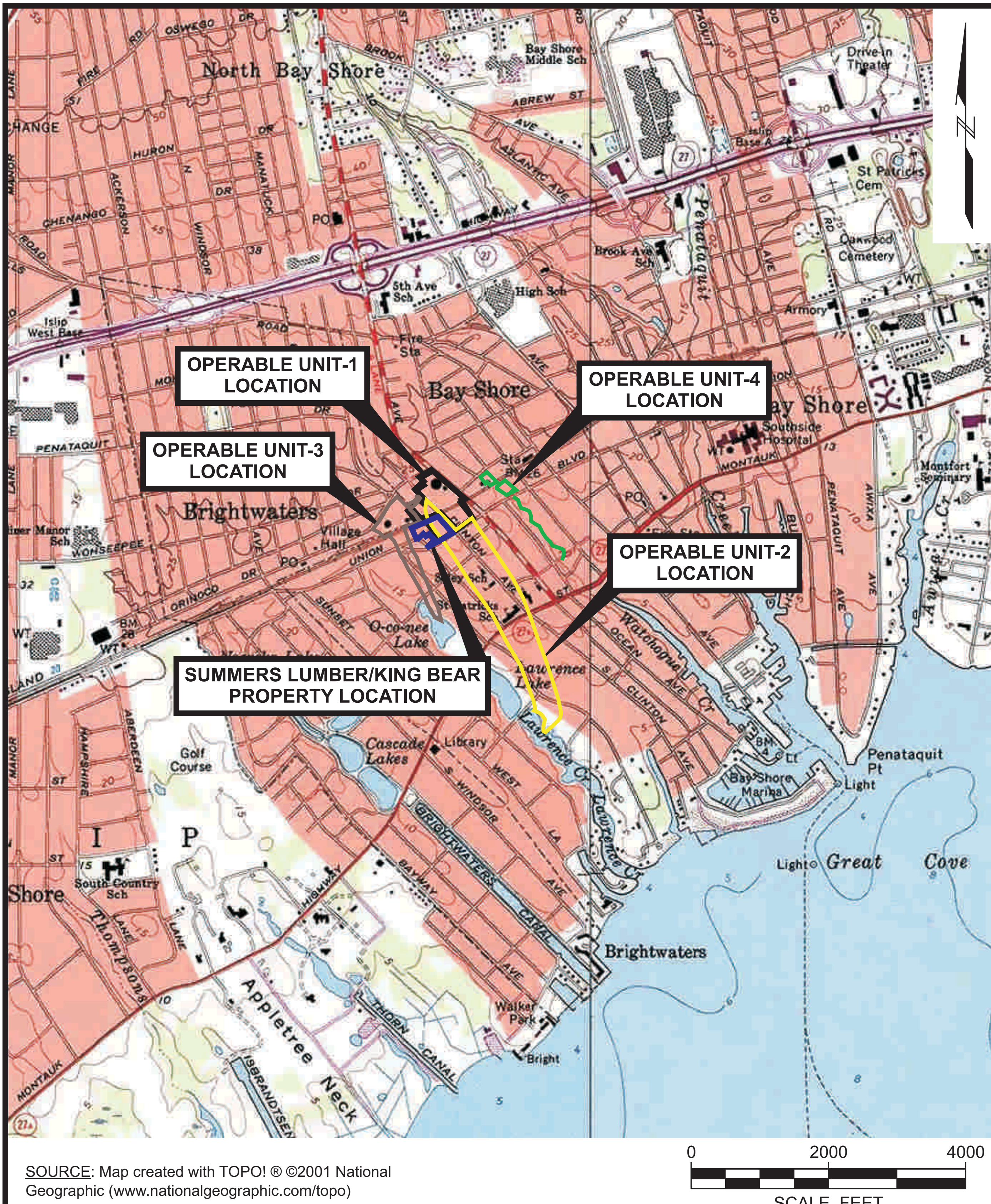
Notes:
The bulleted response actions specified under each site condition can be implemented in any order that is most appropriate under the existing site conditions.

Table 2
Target Concentrations for Site Conditions
Community Air Monitoring Program Work Plan
Bay Shore/Brightwaters Former MGP Site
Operable Unit 1
Former King Bear/Summer's Lumber Properties
Phase IV Remedial Design Report

Target	Alert Limit	Action Limit	Site Condition: Alert Level 1	Site Condition: Preliminary Alert Level 2	Site Condition: Alert Level 2	Site Condition: Action Level
Total VOC by GC (ppmv)	3.7	5.0	[C]<3.7	[C]>=3.7	NM	NM
Total VOC by PID (ppmv)	3.7	5.0	[C]<3.7	3.7<=[C]<=5.0	3.7<=[C_{avg}]<=5.0	[C_{avg}]>5.0
PM-10 (ug/m^3)	100	150 greater than upwind	[C]<100	100<=[C]<=150	100<=[C_{avg}]<=150	[C_{avg}]>150

Notes:
VOC = Volatile Organic Compound
PID = Photoionization Detector
GC = Gas Chromatograph
PM-10 = Respirable Particulate Matter
ppmv = parts per million volume
ug/m^3 = micrograms per cubic meter
[C] = Concentration of target collected from a discrete sample.
[C_{avg}] = 15-minute average concentration of target
NM = Target is not measured during this site condition.

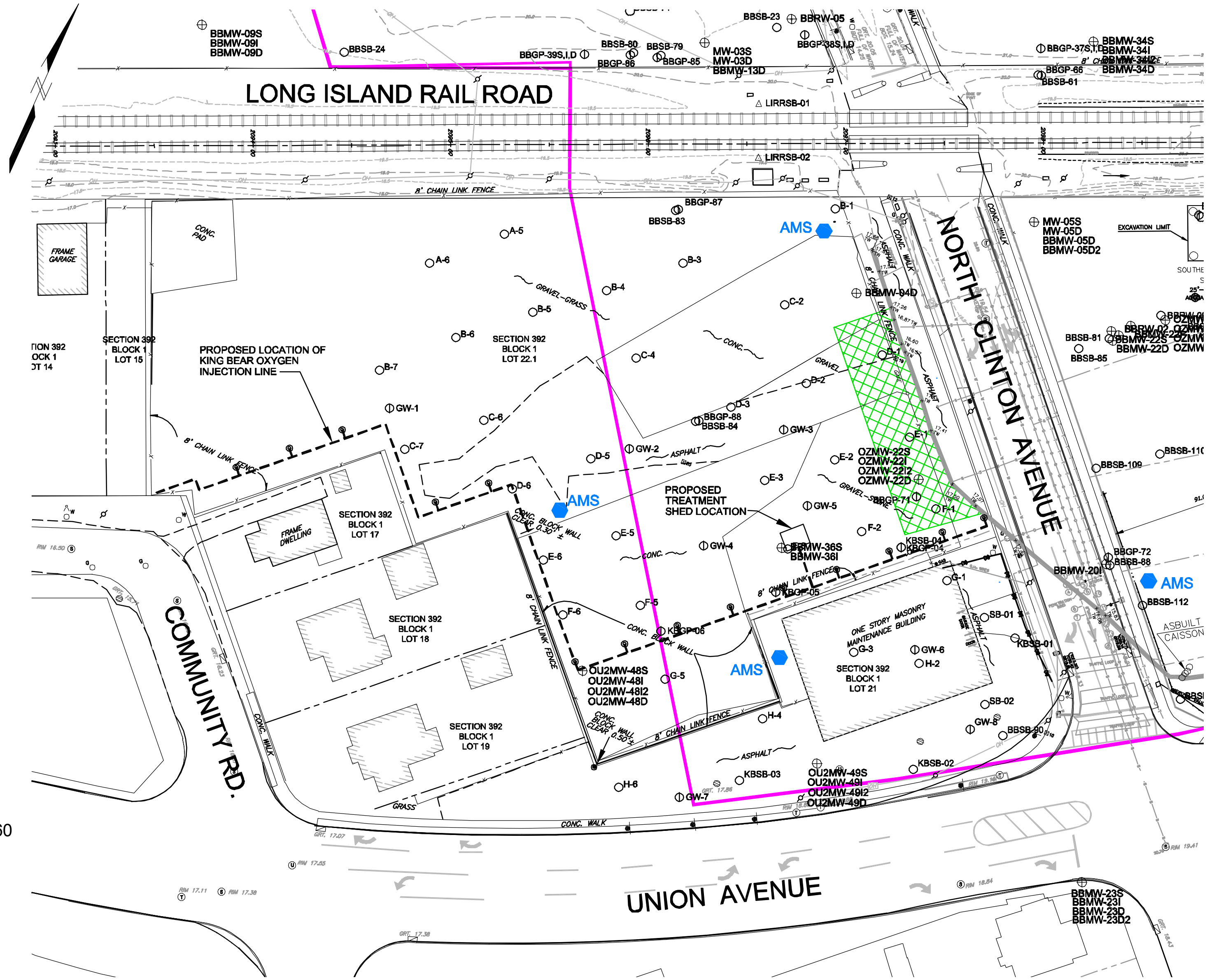
Figures



SOURCE: Map created with TOPO! ® ©2001 National Geographic (www.nationalgeographic.com/topo)

SUMMERS LUMBER/KING BEAR PHASE IV REMEDIAL DESIGN REPORT BAY SHORE/BRIGHTWATERS FORMER MGP SITE BAY SHORE, NEW YORK	GEI Consultants	**SITE LOCATION MAP**
nationalgrid	Project 093180-1-1107	February 2010 Figure 1

NATIONAL GRID\BAY SHORE\OU-1\SUMMERS LUMBER\IRM\BAY SHORE-OU-1 LOCATION.CDR



LEGEND:

	CURRENT STRUCTURE
	FENCE LINE
	SUBSURFACE CONTAINMENT WALL
	OPERABLE UNIT 1 BOUNDARY
OU2MW-48 S,I,I2,D	MONITORING WELL LOCATION (S=SHALLOW, I,I2=INTERMEDIATE, D=DEEP)
GW-1	GEOPROBE LOCATION
KB/SB-03	SOIL BORING LOCATION/
	APPROXIMATE LIMITS OF PROPOSED EXCAVATION/ ISCO INJECTION IRM
AMS	APPROXIMATE LOCATION OF AIR MONITORING STATION

0 80 160

SCALE, FEET

SOURCE:

1. PLAN BASED ON MAP PREPARED BY KS ENGINEERS, P.C., 24 COMMERCE STREET, NEWARK, N.J. 07102, TITLED *BOUNDARY AND TOPOGRAPHIC SURVEY, PORTION OF SEC. 392, BLOCK 1 SUFFOLK COUNTY, NEW YORK,* SCALE 1"=30', DATED 7/09/09.

SUMMERS LUMBER/KING BEAR
PHASE IV REMEDIAL DESIGN REPORT
BAY SHORE/BRIGHTWATERS FORMER MGP SITE
BAY SHORE, NEW YORK

nationalgrid

PROJECT 093180-1-1107

GEI Consultants
110 WALT WHITMAN ROAD
SUITE 204
HUNTINGTON STATION, NY 11746

SITE PLAN AND AIR MONITORING STATION LOCATIONS

February 2010 Figure 2

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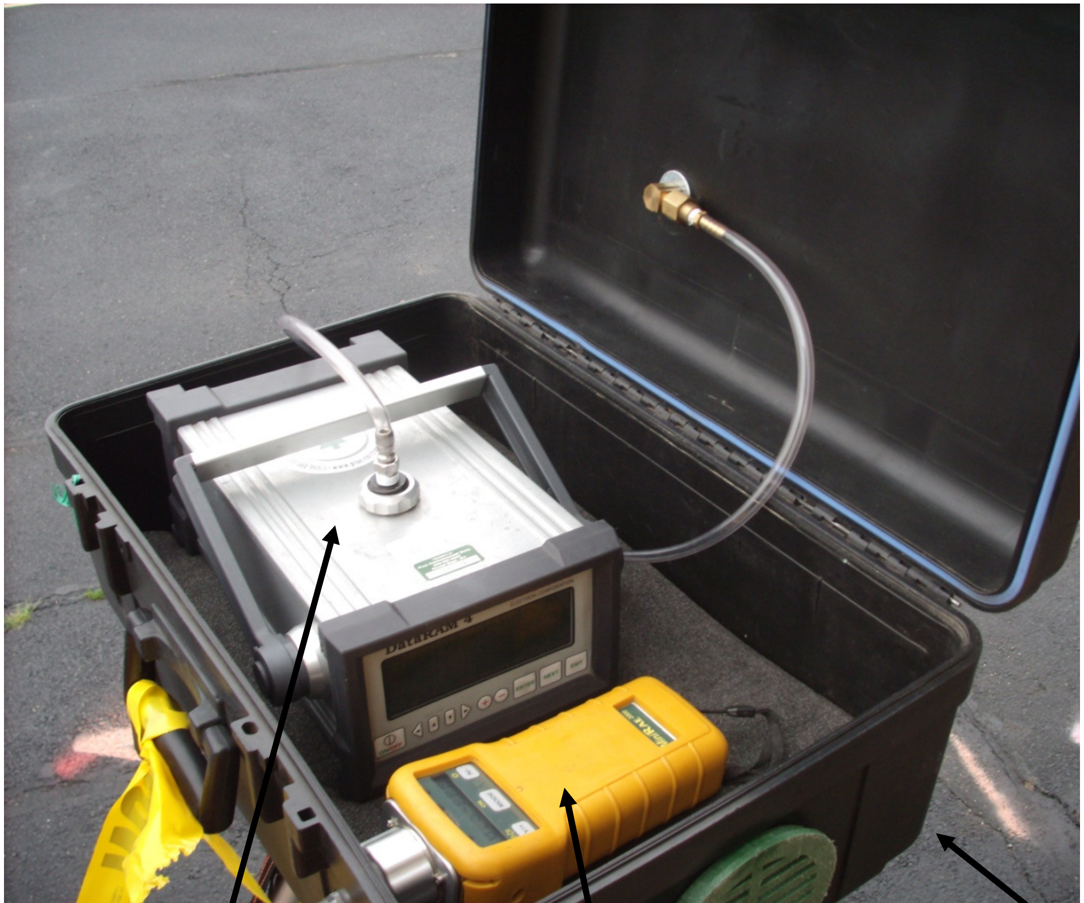


Particulate Meter

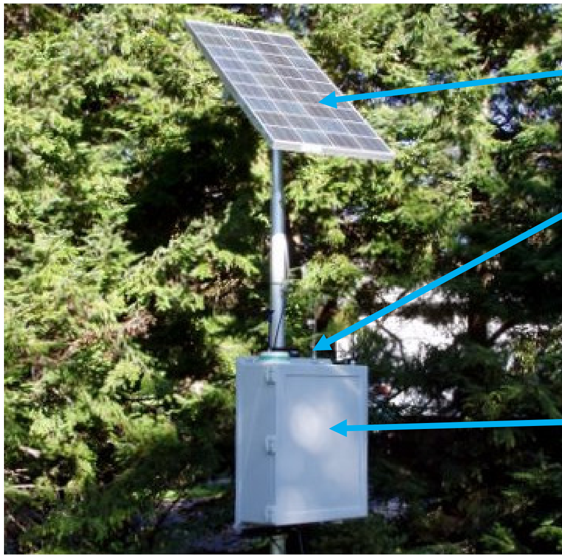
Organic Vapor Analyzer

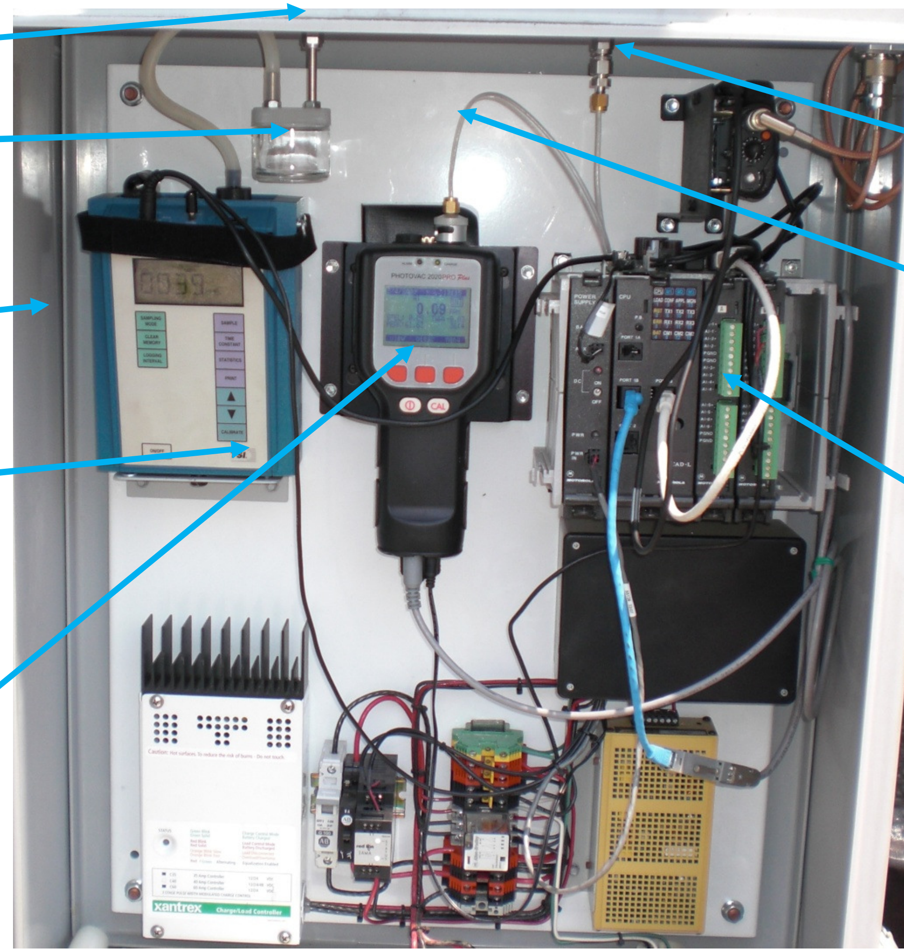
Station Enclosure

Note: Figure depicts an Air Monitoring System from Pine Environmental as an example and may not be representative of the actual system or components that will be employed at the Site

SUMMERS LUMBER/KING BEAR PHASE IV REMEDIAL DESIGN REPORT BAY SHORE/BRIGHTWATERS FORMER MGP SITE BAY SHORE, NEW YORK	GEI Consultants	**EXAMPLE TRIPOD MOUNTED STATION INTERNAL COMPONENTS**
nationalgrid	Project 093180-1-1107	February 2010 Figure 3A

I:\Project\National Grid\Bay Shore\OU-1\Summers Lumber-King Bear\IRM\Drawings for 11-5-09\CAMP\Bay Shore OU-1 SLKB CAMP Fig 3-6.ppt



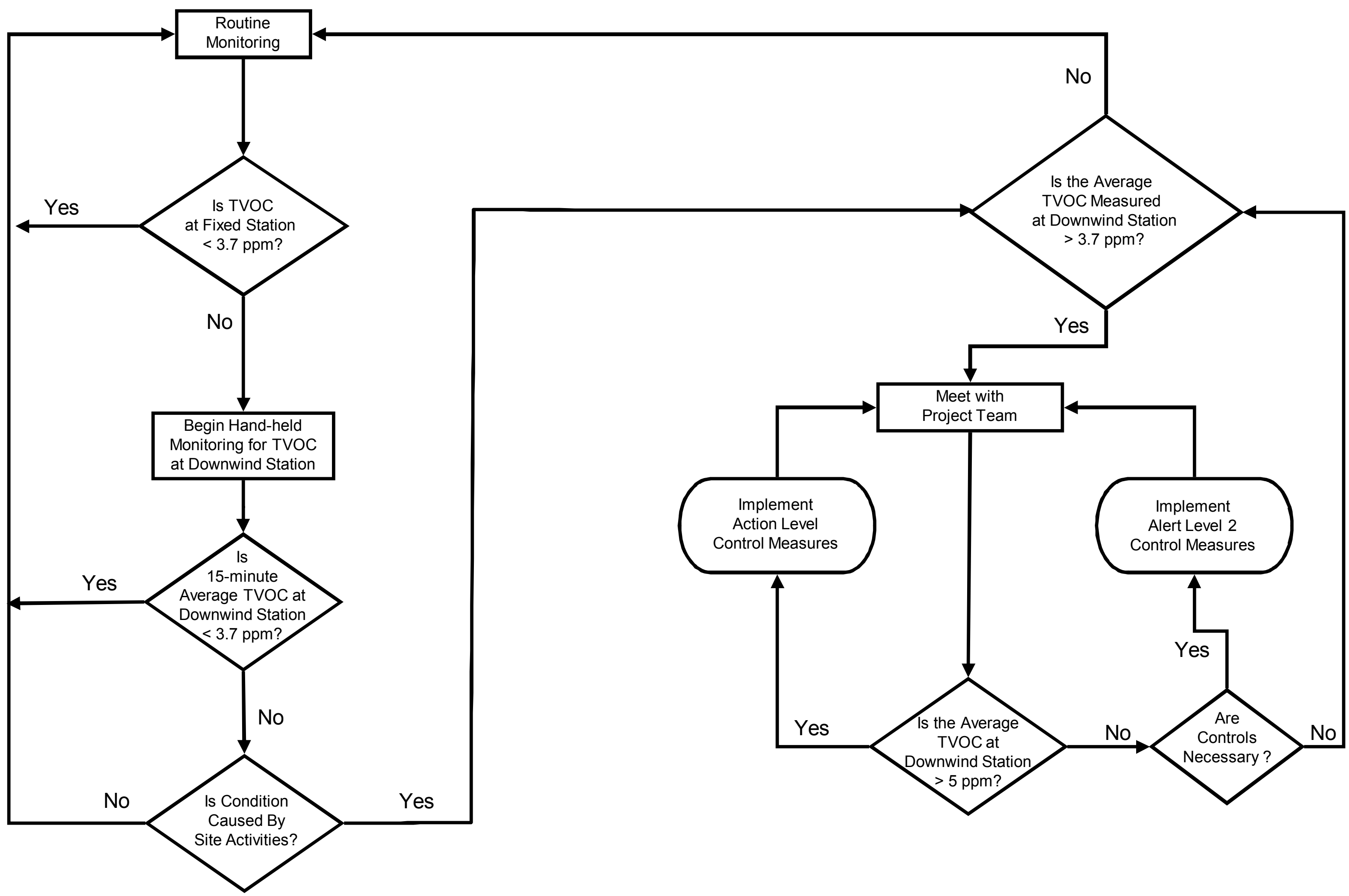


1. Station enclosure
2. Organic Vapor Monitor (OVM)
3. OVM sample inlet
4. OVM sample inlet tubing
5. Dusttrak™ Aerosol Monitor portable real-time aerosol monitor
6. Dusttrak™ sample inlet with PM-10 impactor
7. DataRAM sample tubing with in-line condensor
9. Data communications device
10. Solar Panel

Note: Figure depicts an Air Monitoring System from Pine Environmental as an example and may not be representative of the actual system or components that will be employed at the Site

SUMMERS LUMBER/KING BEAR PHASE IV REMEDIAL DESIGN REPORT BAY SHORE/BRIGHTWATERS FORMER MGP SITE BAY SHORE, NEW YORK	GEI Consultants	EXAMPLE FIXED STATION INTERNAL COMPONENTS
nationalgrid	Project 093180-1-1107	February 2010 Figure 3B

I:\Project\National Grid\Bay Shore\OU-1\Summers Lumber-King Bear\IRM\Drawings for 11-5-09\CAMP\Bay Shore OU-1 SLKB CAMP Fig 3-6.ppt



TVOC – Total Volatile Organic Compound

ppm – parts per million

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PHASE IV REMEDIAL DESIGN REPORT
BAY SHORE/BRIGHTWATERS FORMER MGP SITE
BAY SHORE, NEW YORK

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TVOC DECISION DIAGRAM

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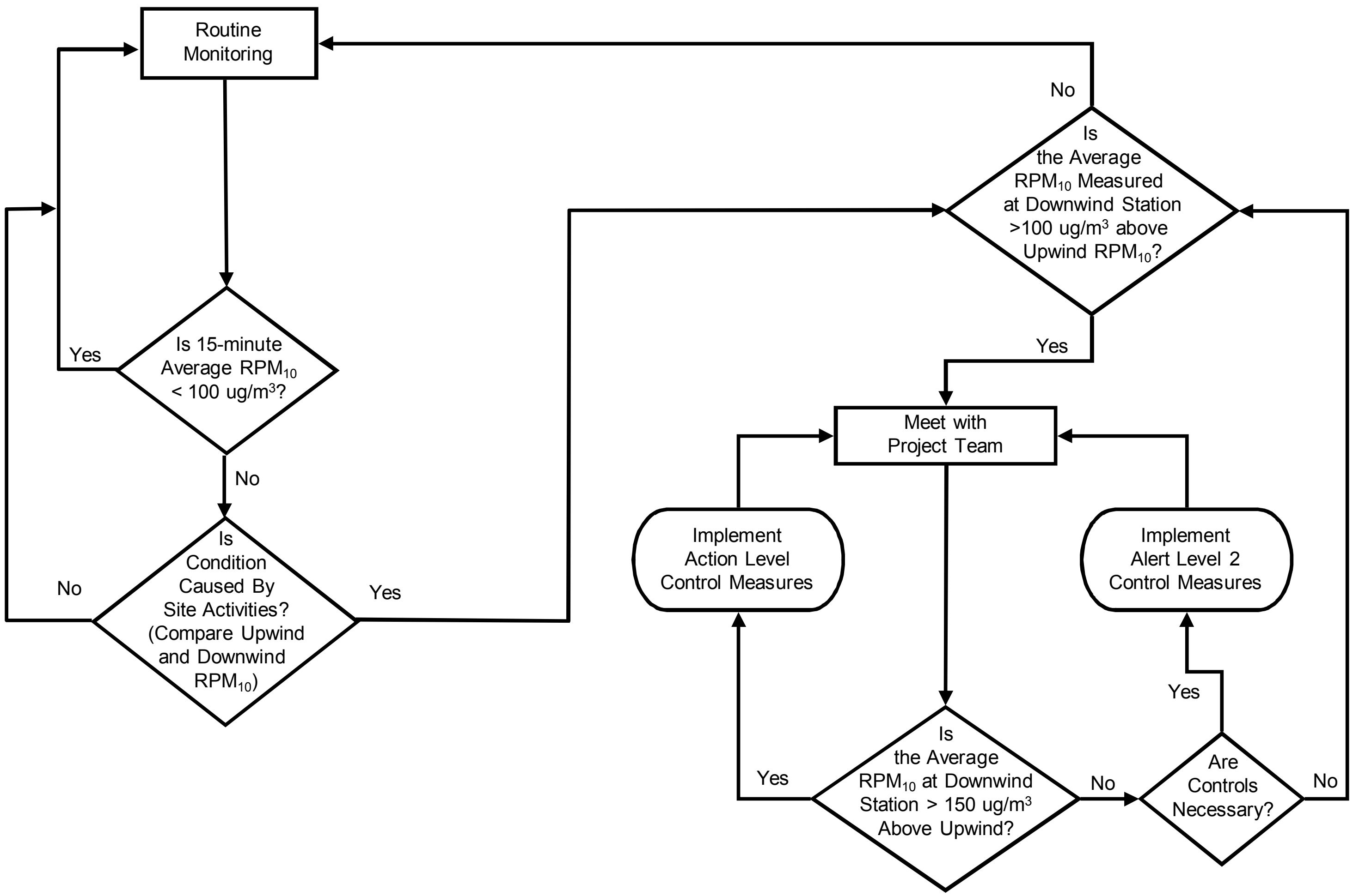

RPM_{10} – Respirable Particulate Matter

ug/m^3 – micrograms per cubic meter

SUMMERS LUMBER/KING BEAR
PHASE IV REMEDIAL DESIGN REPORT
BAY SHORE/BRIGHTWATERS FORMER MGP SITE
BAY SHORE, NEW YORK

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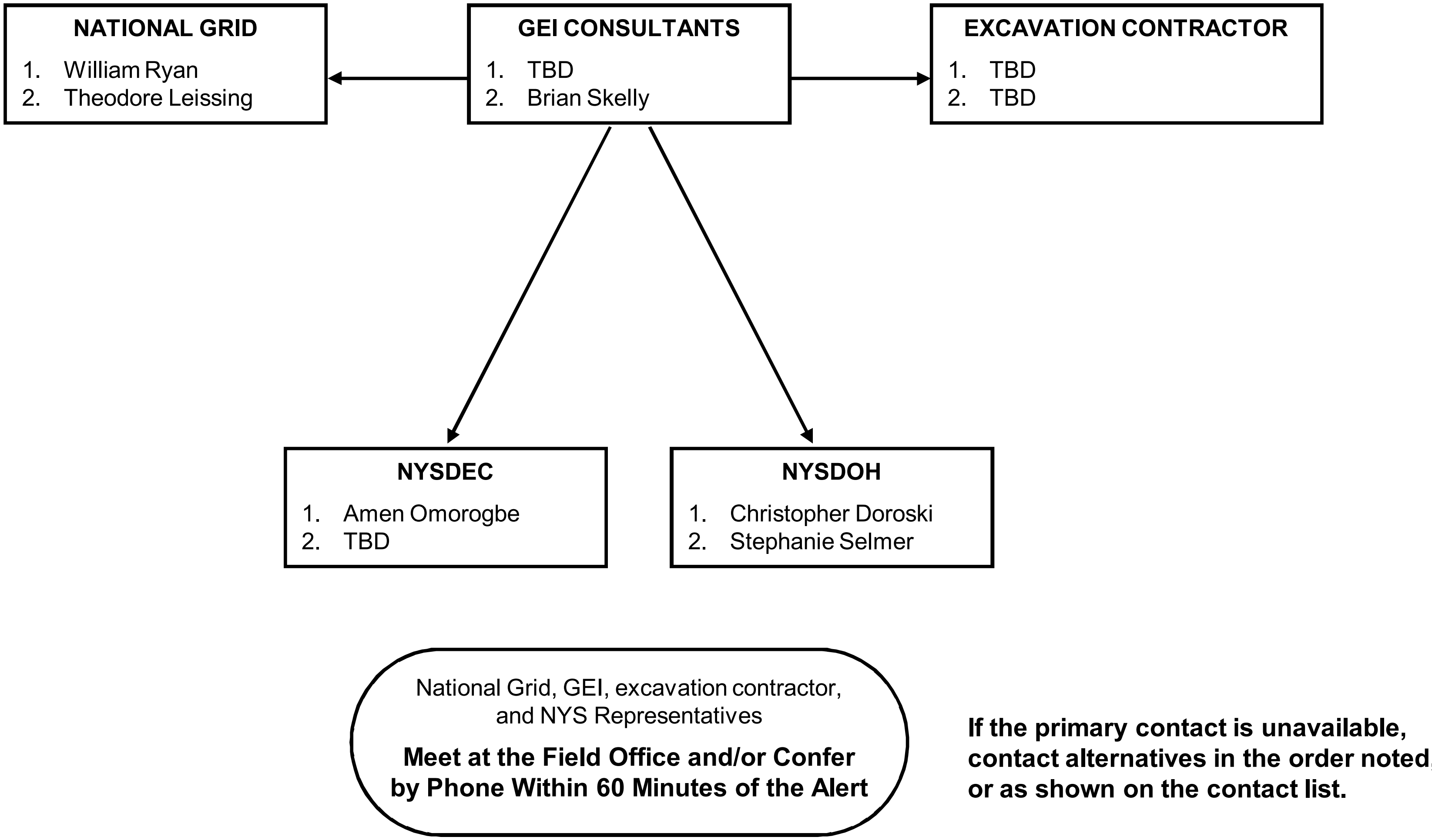
RESPIRABLE PARTICULATE MATTER DECISION DIAGRAM

Project 093180-1-1107 | February 2010 | Figure 5

I:\Project\National Grid\Bay Shore\OU-1\Summers Lumber-King Bear\IRM\Drawings for 11-5-09\CAMP\Bay Shore OU-1 SLKB CAMP Fig 3-6.ppt



TBD – To Be Determined

SUMMERS LUMBER/KING BEAR
PHASE IV REMEDIAL DESIGN REPORT
BAY SHORE/BRIGHTWATERS FORMER MGP SITE
BAY SHORE, NEW YORK

nationalgrid

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COMMUNICATION FLOWCHART

Project 093180-1-1107 | February 2010 | Figure 6

I:\Project\National Grid\Bay Shore\OU-1\Summers Lumber-King Bear\IRM\Drawings for 11-5-09\CAMP\Bay Shore OU-1 SLKB CAMP Fig 3-6.ppt

Appendix F

Health and Safety Plan (electronic only)

HEALTH AND SAFETY PLAN (HASP)

Site(s):	**NATIONAL GRID CORPORATION BAY SHORE FORMER MANUFACTURED GAS PLANT (MGP) SITE AND ASSOCIATED OFF-SITE AREAS**
Location:	**BAY SHORE, NEW YORK**
Date Prepared:	**MARCH 2004**
Revision 1:	**SEPTEMBER 8, 2008**
Revision 2:	**DECEMBER 7, 2009**
Project Description:	**Construction, Excavation, Trenching, Soil, Soil Vapor, Indoor/Outdoor Air and Groundwater Sampling**

Waste types:	Impacted Soils, Soil Vapor and Groundwater
Characteristics:	Volatile, Toxic
Unusual Site Features:	None
Status:	Industrial (Off-site areas are residential)
Background Review:	Site Investigations have been performed
Overall Hazard:	Low

NATIONAL GRID CORPORATION, NATIONAL GRID CORPORATION CONTRACTORS AND SUBCONTRACTORS DO NOT GUARANTEE THE HEALTH OR SAFETY OF ANY PERSON ENTERING THIS SITE. DUE TO THE NATURE OF THIS SITE AND THE ACTIVITY OCCURRING THEREON, IT IS NOT POSSIBLE TO DISCOVER, EVALUATE, AND PROVIDE PROTECTION FOR ALL POSSIBLE HAZARDS THAT MAY BE ENCOUNTERED. STRICT ADHERENCE TO THE HEALTH AND SAFETY GUIDELINES SET FORTH HEREIN WILL REDUCE, BUT NOT ELIMINATE, THE POTENTIAL FOR INJURY AT THIS SITE. THE HEALTH AND SAFETY GUIDANCE IN THIS PLAN WAS PREPARED TO SERVE AS AN EXAMPLE TO POTENTIAL CONTRACTORS AND SUBCONTRACTORS THAT MAY WORK AT THIS SITE AND SHOULD NOT BE USED ON ANY SPECIFIC PROJECT WITHOUT PRIOR RESEARCH AND EVALUATION BY TRAINED HEALTH AND SAFETY SPECIALISTS.

CONTRACTOR APPROVALS

By their signature, the undersigned hereby certify that this HASP has been reviewed and approved for use at the National Grid Corporation, Bay Shore, New York site.

PROJECT MANAGER (PM)	DATE
SITE SAFETY OFFICER (SSO)	DATE
CORPORATE HEALTH AND SAFETY OFFICER (CHSO)	DATE

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1.0 INTRODUCTION

1.1 Purpose

This Health and Safety Plan (HASP) addresses the health and safety practices that will be employed by workers participating in investigation and remediation activities at the site that are under the direction of **GEI Consultants, Inc. (GEI)**. This work will be performed at the National Grid Corporation (National Grid) Former Manufactured Gas Plant (MGP) Bay Shore, NY site (Site). The HASP takes into account the specific hazards inherent to the Site, and presents procedures to be followed by **GEI**, **Contractors and Subcontractors**, and all site visitors in order to avoid and if necessary, protect against health and/or safety hazards. Activities performed under this HASP will comply with applicable parts of OSHA Regulations, primarily 29 CFR Parts 1910 and 1926 and attached National Grid policies and procedures. A copy this HASP will be maintained on-site for the duration of work.

All workers who may participate in activities at the Site that are under the direction of **GEI** are required to comply with the provisions specified in this HASP. All site visitors who enter designated work zones must also comply with this HASP. Refusal or failure to comply with the HASP or violation of any safety procedures by field personnel and/or subcontractors performing work covered by this HASP may result in immediate removal from the site following consultation with **National Grid**.

1.2 Scope

This HASP has been developed to address the health and safety concerns during site investigation and remedial actions at the Site that are under the direction of **GEI**. Although the HASP addresses all activities listed below, work at the individual locations may include all, or only some of these tasks.

The HASP addresses the following activities:

<u>Mobilization/Demobilization</u>

- Mobilization/Demobilization of Equipment and Supplies
- Establishment of Site Security, Work Zones and Staging Areas

<u>Pre Construction, Excavation, and Trenching Activities</u>

- Locate All Utilities to and from the Site
- Locate All Active Utility Lines on Site

<u>Construction Activities</u>

- Utility Connections (Water, Sewer, Electrical)
- Excavation and Trenching (see Excavation and Trenching Activities)

<u>Excavation and Trenching Activities</u>

- Excavate Overburden Material
- Stockpile and Segregate Overburden Material
- Confined Space Entry/Trench Box Use

- Dewater Excavation
- Trenching
- Break Lines
- Cut, Fill and Cap Lines
- Backfill Excavation
- Site Restoration

Other Remediation Activities
- Installation of Injection Wells
- Injection of Chemical Oxidants
- Operation and Maintenance Tasks

Soil, Soil Vapor, Indoor/Outdoor Air and Groundwater Sampling Activities
- Soil Borings and Soil Sampling
- Soil Vapor Point Installation and Sampling
- Indoor/Outdoor Air Sampling
- Monitoring Well Installation, Development, and Sampling

1.3 Application

The HASP applies to all personnel involved in the above tasks that are under the direction of **GEI**, who wish to gain access to active work areas, including but not limited to:

- National Grid representatives, contractors, and subcontractors performing tasks under the direction of the **GEI;**
- Federal, State or local representatives;
- **GEI** Employees; and
- **GEI** Subcontractors.

2.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

This section includes the project organization and structure, and establishes the specific chain-of-command for responsibilities and communications. The organizational structure shall be reviewed and updated as necessary to reflect the current status of project operations.

2.1 National Grid

National Grid may review and comment on the content of the HASP. GEI is responsible for resolving issues identified by National Grid, to National Grid's satisfaction.

National Grid project-specific contact information is included in Appendix A.

2.2 GEI Consultants, Inc.

GEI provides general health and safety for its employees. GEI also conducts perimeter air monitoring, and work zone monitoring for Consultant's employees. The Consultant will observe daily operations by the contractor. The contractor is the primary point of contact with National Grid and regulatory agencies for health and safety related matters. Consultant health-and-safety roles for this project include:

- Project Manager
- Site Safety Officer
- Corporate Health and Safety Officer

2.2.1 Project Manager (PM)

The Project Manager is Errol Kitt (overall PM), Matthew O'Neil, Kathleen Slimon, or Albert Jaroszewski, based on project tasks. The PM responsibilities include the following:

- Ensures implementation of this program;
- Conducts periodic inspections;
- Participates in incident investigations;
- Ensures the HASP has all of the required approvals before any site work is conducted;
- Ensures that the Site Manager is informed of project changes which require modifications of the site safety plan; and
- Has overall project responsibility for Project Health and Safety.

2.2.2 Site Manager (SM)

The Site Manager is Jeffrey Parillo, John Schafer, Christopher Berotti, Theresa Landgraff, or Christopher Morris, based on project tasks. The SM responsibilities include the following:

- Ensures that the HASP is implemented and that all health and safety activities identified in site safety plans are conducted and/or implemented;
- Ensures that field work is scheduled with adequate personnel and equipment resources to complete the job safely and enforce site health and safety rules;

- Ensures that adequate communication between field crews and emergency response personnel is maintained;
- Ensures that field site personnel are adequately trained and qualified to work at the site and that proper personal protective equipment is utilized by field teams;
- Investigate and report all accidents/incidents to the PM and the CHSO;
- Conducts and documents daily safety briefings;
- Stop work if necessary;
- Acts as the primary point of contact with National Grid for site related activities and coordination with non-project related site operations;
- Identifies operational changes which require modifications to health and safety procedures and site safety plans, and ensures that the procedure modifications are implemented and documented through changes to the HASP, with CHSO approval;
- Direct and coordinate health and safety monitoring activities;
- Determines upgrades or downgrades of personal protective equipment (PPE) based on site conditions and/or real-time monitoring results with CHSO approval;
- Ensures that monitoring instruments are calibrated; and
- Reports to the CHSO to provide summaries of field operations and progress.

2.2.3 Corporate Health and Safety Officer (CHSO)

The CHSO is a qualified health and safety professional with experience in hazardous waste site remediation activities. The CHSO is Dr. Robin DeHate. The CHSO responsibilities include the following:

- Provides for the development and approval of the HASP;
- Serves as the primary contact to review health and safety matters that may arise;
- Approves revised or new safety protocols for field operations;
- Coordinates revisions of this HASP with field personnel;
- Coordinates upgrading or downgrading of personal protective equipment with the SM; and
- Leads the investigation of all accidents/incidents;

2.2.4 Site Supervisor

The Site Supervisor is Jeffrey Parillo, John Schafer, Christopher Berotti, Theresa Landgraff, or Christopher Morris, based on project tasks. The Site Supervisor responsibilities include the following:

- Provide for the necessary training of field crews in accordance with OSHA regulations and provides proof of training to the SM prior to entering the site;
- Conduct routine safety inspections of their work areas;
- Conduct incident investigations and together with the SM, prepares appropriate reports;
- Enforces health and safety rules and compliance with the HASP; and

- Plans field work using appropriate safe procedures and equipment.

2.2.5 Site Personnel

The Site Personnel responsibilities include the following:

- Report any unsafe or potentially hazardous conditions to the SM;
- Maintain knowledge of the information, instructions and emergency response actions contained in the HASP;
- Comply with rules, regulations and procedures as set forth in this HASP and any revisions;
- Prevent admittance to work sites by unauthorized personnel; and
- Inspect all tools and equipment, including PPE, prior to use.

2.3 Contractor

The Contractor is responsible for the health and safety of Contractor and Subcontractor employees, and conducts work zone monitoring for Contractor and Subcontractor workers. The Contractor is required to prepare a project and site-specific HASP for the safety of their employees working on the Site. Contractor is responsible for all work detailed in the Contractor HASP. Contractor project-specific contact information is included in Appendix A

3.0 SITE HISTORY AND PROJECT DESCRIPTION

3.1 Location

The National Grid Bay Shore Site is located in Suffolk County, Long Island, within the State of New York. See the Site-Specific Information provided in Appendix A for the Site Location Map.

3.2 Background and Site Description

The Bay Shore MGP opened as a gas plant in 1889 under the ownership of the Mutual Gas and Light Company. The Suffolk Gas and Electric Light Company owned and operated the site from 1889 to 1917. In 1918, the Long Island Lighting Company (LILCO) became the legal owner. Gas manufacturing occurred at the site between 1889 and approximately 1973. The plant was demolished in the mid-1970s. In 1918, LILCO began operating a carbureted water gas MGP. Later in the life of the plant, it was converted to an oil-gas MGP. Manufacturing operations were conducted on the Bay Shore Property, while the Brightwaters Yard was used to support gas manufacturing and distribution operations. Further description of the site history can be found in the Final Remedial Investigation Report for the Bay Shore/Brightwaters Former MGP Site (January 2003).

In an effort to manage the remediation of the Bay Shore/Brightwaters former MGP site, the site has been divided into four operable units (OUs), including:

- **Operable Unit 1** - Bay Shore Site, Bay Shore West Parcel and Adjacent Off-site Areas north of Union Boulevard.
- **Operable Unit 2** - Bay Shore Site Groundwater Plume.
- **Operable Unit 3** - Brightwaters Yard and Groundwater Plume.
- **Operable Unit 4** - Watchogue Creek/Crum’s Brook.

The geographic boundaries of each operable unit are shown on Figures provided in Appendix A. Work covered by this HASP may be performed within or near any of these operable units.

4.0 POTENTIAL HAZARDS AT THE SITE

This section presents an assessment of the chemical, biological, and physical hazards that may be encountered during the tasks specified under HASP Section 1.2. A Hazard Communication Program is included in Appendix B. The Hazard Communication Program describes procedures for: 1) determining chemical hazards, 2) providing training on chemical hazards, 3) and transmitting chemical hazard information. Appendix M, Activity Hazard Analysis, presents risk-ranked potential hazards at the site and controls for hazard mitigation.

4.1 Properties of Chemical Contamination

The characteristics of compounds at the Site are discussed below for information purposes. Adherence to the safety and health guidelines in this HASP should reduce the potential for exposure to the compounds discussed below. Extensive analytical testing has been done within each Site OU and known chemical hazards within each OU are different so personnel should familiarize themselves with the know hazards of each area. Table 4-1 presents chemical data regarding exposure and monitoring for the chemical types listed below.

4.1.1 Volatile Organic Compounds (VOCs)

Volatile organic compounds (VOCs), such as benzene, toluene, ethyl benzene, and xylene (BTEX) are present at low concentrations within soil. In some cases, the chemical components may be present in non-aqueous phase liquids (NAPL) such as fuels, oils, or tar within subsurface soils planned for excavation. These compounds generally have a depressant effect on the central nervous system (CNS), may cause chronic liver and kidney damage, and some are suspected human carcinogens. Benzene is a known human carcinogen. Acute exposure may include headache, dizziness, nausea, and skin and eye irritation. The primary route of exposure to VOCs is through inhalation and therefore air monitoring and respiratory protection is the primary control against exposure to VOCs. Air monitoring will be completed as specified in Section 8.0 to minimize airborne exposures. Exposure through direct contact is possible and will be minimized through the use of PPE as prescribed in Section 6.0.

4.1.2 Coal Tar and Oil Products

Coal tar and petroleum products contain semi-volatile organic compounds (SVOCs). SVOCs consist of a mixture of acenaphthene, acenaphthylene, anthracene, benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, benzo(e)pyrene, benzo(g,h,i)perylene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2-methyl naphthalene, naphthalene, phenanthrene, phenols, pyrene.

Coal tar products, petroleum products, and other SVOCs are present or potentially present within impacted subsurface soil and potentially as NAPL. Petroleum products may also be present in the soil.

Coal tar products such as those listed above may cause contact dermatitis. Direct contact can be irritating to the skin and produce itching, burning, swelling and redness. Direct contact or exposure to the vapors may be irritating to the eyes. Conjunctivitis may result from prolonged exposure. Coal tar is considered to be very toxic, if ingested. High levels of exposure to coal tar, though not anticipated during work activities conducted during this project, may increase the risk of cancer including lung, kidney, and skin cancer. Naphthalene is also an eye and skin irritant and can cause nausea, headache, fever, anemia, liver damage, vomiting convulsions, and coma. Poisoning may occur by ingestion of large doses, inhalation, or skin absorption.

The major route of exposure of SVOCs during work activities to be conducted at this Site is through direct contact. Exposure is most likely when handling soil samples. Exposure through direct contact is possible and will be minimized through the use of PPE as prescribed in Section 6.0. Inhalation of SVOCs may occur when the soil is disturbed causing respirable and nuisance dust particles to become airborne or through the volatilization of naphthalene. Air monitoring will be completed as specified in Section 8.0 to minimize airborne exposures.

4.1.3 Heavy Metals

The Site potentially contains elevated levels of lead and arsenic. The primary routes of this exposure for these compounds are inhalation and ingestion. Exposure to lead may cause acute symptoms such as eye irritation, weakness, weight loss, abdominal pain, and anemia. Chronic exposure to lead may result in kidney disease, effects to the reproductive system, blood forming organs, and CNS. Acute exposure to arsenic may cause dermatitis, GI disturbances and respiratory irritation. Chronic exposure to arsenic has resulted in lung cancer in humans.

4.1.4 Asbestos-Containing Materials

There is no record indicating that asbestos or asbestos containing materials (ACM) have been disposed of, detected, or observed onsite. ACM can be present in the form of demolition debris, ACM pipe insulation, and asbestos cement pipe. Chronic exposure to asbestos may cause asbestosis and mesothelioma. The primary route of exposure for asbestos is inhalation during the disturbance and/or removal of asbestos from the pipe insulation and cement pipes.

Asbestos is strictly regulated under OSHA 29 CFR 1910.1001/1926.1101. Employees that may be potentially exposed to ACM must participate in a medical surveillance program, have specific training in the hazards and controls of exposure to asbestos and wear respirators with high-efficiency particulate air (HEPA) filters. All work must be conducted in demarcated regulated areas to minimize the amount of people within the exposure area. Employers must conduct air sampling and provide signs and labels regarding the presence of asbestos.

4.1.5 Polychlorinated Biphenyls

There is no record indicating that polychlorinated biphenyls (PCBs) have been disposed of, detected, or observed onsite. The potential exists for PCBs to be encountered in subsurface soil because of the industrial and commercial operations in the area. PCBs have historically been used from a number of sources including, but not limited to: electrical systems, hydraulic oils, lubricants, cutting oils, printer's ink, and asphalt. Exposure to PCBs can occur through unbroken skin without immediate pain or irritation. Acute affects of PCB exposure can include eye, skin, nose, and throat irritation. Chronic effects of PCB exposure can include skin swelling and redness, gastro-intestinal disturbances, and neurological effects such as headache, dizziness, nervousness, and numbness of extremities. PCBs are suspected human carcinogens that can cause liver cancer. PCBs can accumulate in fatty tissues and result in health effects after the initial exposure has occurred. The primary route of exposure for PCBs is inhalation, dermal contact, and ingestion.

4.1.6 Cyanide

Cyanide compounds are common by-products of manufactured gas production. Analysis of soils from the Site did not indicate elevated levels of cyanides.

4.1.7 Hydrogen Sulfide

Hydrogen sulfide is a by-product of manufactured gas production and is also associated with the breakdown of sewage by bacteria. Exposure to lower concentrations can result in eye irritation, a sore throat and cough, shortness of breath, and fluid in the lungs. These symptoms usually go away in a few weeks. Long-term, low-level exposure may result in fatigue, loss of appetite, headaches, irritability, poor memory, and dizziness. The primary route of exposure is through inhalation, and therefore engineering controls and respiratory protection are the primary controls against exposure to hydrogen sulfide. Breathing very high levels (>800 ppm) of hydrogen sulfide can cause death within just a few breaths. However, these concentrations are not anticipated at this site; and therefore, hydrogen sulfide is not included in the air monitoring program for this project.

4.1.8 Pesticides

The potential for pesticides to be encountered in subsurface soil is unlikely because of the industrial and commercial operations in the area.

4.1.9 Ozone

Ozone may be potentially found in soil vapor points, vents and ambient air within the vicinity of the ozone injection system building on OU-1 South. Ozone is a respiratory irritant, and exposure at or above 0.10 ppm can result in irritation of the eyes and mucous membranes, pulmonary edema and chronic respiratory disease.

4.1.10 Evaluation of Organic Vapor Exposure

Air monitoring reduces the risk of overexposure by indicating when action levels have been exceeded and when PPE must be upgraded or changed. Action levels for volatile organic compounds and associated contingency plans for the work zone are discussed in Section 8.0.

Exposure to organic vapors shall be evaluated and/or controlled by:

- Monitoring air concentrations for organic vapors in the breathing zone with a photoionization detector (PID).
- When possible, engineering control measures will be utilized to suppress the volatile organic vapors. Engineering methods can include utilizing a fan to promote air

circulation, utilizing volatile suppressant foam, providing artificial ground cover, or covering up the impacted material with a tarp to mitigate volatile odors.
- When volatile suppression engineering controls are not effective and organic vapor meters indicate concentrations above the action levels, then appropriate respiratory protection (i.e., air purifying respirator with organic vapor cartridge) will be employed.

4.1.11 Evaluation of Respirable Dust Inhalation

Inhalation of respirable dust containing metals, crystalline silica, asbestos, and SVOCs is possible when surrounding ground cover is disturbed by heavy equipment, conducting demolition work, or using power tools on surfaces that contain these materials. Contaminated particulate matter (soil, pavement, lead paint, insulation, etc.) becomes suspended in air due to a combination of factors including lack of vegetative cover and/or dry or dusty conditions. Air monitoring reduces the risk of overexposure to respirable dust inhalation by indicating when action levels have been exceeded and when PPE must be upgraded or changed. Action levels for respirable dust and associated contingency plans for the work zone and perimeter of the Site are discussed in Section 8.0.

Control of respirable dust shall be conducted at this Site as follows:

- When possible, dust control measures will be utilized to suppress the dust. These methods include wetting down the area, providing artificial ground cover, or covering up the material with a tarp.
- When dust suppression is not possible and respirable dust meters indicate concentrations above the action levels, a HEPA Filter must be used to prevent against inhalation of contaminated dusts.

4.1.12 Evaluation of Skin Contact and Absorption

Skin contact by contaminants may be controlled by use of proper hygiene practices, PPE, and good housekeeping procedures. The proper PPE (e.g., gloves and safety glasses) as described in Section 6.0 will be worn for all activities where contact with potential contaminated media or materials are expected.

4.1.13 Other Chemical Hazards

Chemicals not identified in this HASP may be used during site activities. Prior to the initiation of any on-site tasks, each Contractor, SubContractor, or Consultant shall provide Material Safety Data Sheets (MSDSs) to the SSO for each of the chemicals to be used. The MSDS's will be maintained at the Site by the SSO and all site workers and visitors who may potentially be exposed to the chemicals will be made aware of these hazards and the location of the on-site MSDS's during a hazard briefing session by the SSO.

Table 4-1
Chemical Data

Compound	CAS #	ACGIH TLV	OSHA PEL	Route of Exposure	Symptoms of Exposure	Target Organs	Physical Data
Benzene	71-43-2	0.5 ppm (skin)	1 ppm TWA 5 ppm STEL	Inhalation Skin Absorption Ingestion Skin Contact	Irrit eyes, skin, nose, resp system, nausea; potential carcinogen	Eyes, skin, CNS, bone marrow, blood	FP: 12^{o} F IP: 9.24 eV LEL: 1.2% UEL: 7.8% VP: 75 mm
Ethylbenzene	100-41-4	100 ppm	100 ppm	Inhalation Ingestion Skin Contact	Eye, skin, mucous membrane irritation; headache; dermatitis, narcosis; coma	Eyes, skin, respiratory system, CNS	FP: 55^{o} F IP: 8.76 eV LEL: 0.8% UEL: 6.7% VP: 7 mm
Toluene	108-88-3	50 ppm	200 ppm	Inhalation Skin Absorption Ingestion Skin Contact	Eye, nose irritation; fatigue, weakness, confusion, euphoria, dizziness, headache; dilated pupils, lacrimation; nervousness, muscle fatigue, insomnia, tingling in limbs; dermatitis	Eyes, skin, resp system, CNS, liver, kidneys	FP: 40^{o} F IP: 8.82 eV LEL: 1.1% UEL: 7.1% VP: 21 mm
Xylene	1330-20-7	100 ppm	100 ppm	Inhalation Skin Absorption Ingestion Skin Contact	Eye, skin, nose, throat irritation; dizziness, excitement, drowsiness; incoordination, staggering gait; corneal damage; appetite loss, nausea, vomiting, abdominal pain; dermatitis	Eyes, skin, resp system	FP: 90^{o} F IP: 8.56 eV LEL: 0.9% UEL: 6.7% VP: 9 mm
Arsenic	7440-38-2	0.01 mg/m^3	0.01 mg/m^3	Inhalation Skin Absorption Ingestion Skin Contact	Ulceration of nasal septum, derm, GI disturbances, peripheral neuropathy, resp. irrt, hyperpigmentation of skin, potential carcinogen	Liver, kidneys, skin, lungs, lymphatic system	Metal: Silver-gray or tin-white, brittle, odorless solid FP: NA IP: NA LEL: NA UEL: NA VP: 0 mm
Asbestos	1332-21-4	0.1 f/cc	0.1 f/cc	Inhalation Ingestion Skin Contact	Asbestosis (chronic exposure); mesothelioma, breathing difficulty, interstital fibrosis' restricted pulmonary function, finger clubbing; irritate eyes	Respiratory system, eyes	White, greenish, blue, or gray-green fibrous solids FP: NA IP: NA LEL: NA UEL NA VP: 0 mm
Lead	7439-92-1	0.050 mg/m^3	0.05 mg/m^3	Inhalation Ingestion Skin Contact	Weak, lass, insomnia; facial pallor; pal eye, anor, low-weight, malnutrition; constipation,	Eyes, GI tract, CNS, kidneys, blood, gingival	A heavy, ductile, soft, gray solid. FP: NA IP: NA

Table 4-1
Chemical Data

Compound	CAS #	ACGIH TLV	OSHA PEL	Route of Exposure	Symptoms of Exposure	Target Organs	Physical Data
					abdominal pain, colic; anemia; gingival lead line; tremor; para wrist, ankles; irrit. eyes	tissue	LEL: NA UEL: NA VP: 0 mm
Naphthalene	91-20-3	15 ppm STEL 10 ppm TWA	10 ppm (50 mg/m^3) TWA	inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, headache, confusion, excitement, malaise (vague feeling of discomfort), nausea, vomiting, abdominal pain, irritation bladder, profuse sweating, jaundice, hematuria (blood in the urine), renal shutdown; dermatitis, optical neuritis, corneal damage	Eyes, skin, blood, liver, kidneys, central nervous system	FP: 174º F IP: 8.12 eV, LEL: 0.8% UEL:6.7%, VP: 0.08 mm Colorless to brown solid with an odor of mothballs.
Ozone	1008-15-6	0.10 ppm TWA	0.10 (0.20 mg/m^3) TWA	Inhalation, skin and/or eye contact.	Eye, mucous membrane irritation, headache, fatigue, dizziness, drowsiness, anorexia, nausea, vomiting, cough, sore throat; shortness of breath, pulmonary edema, chronic respiratory disease, conjunctivitis, eye, skin burns; frostbite (on contact with liquid), rapid heart rate, low blood pressure	Eyes, respiratory system.	FP: -315º F IP: 12.52 eV LEL: NA UEL: NA VP: >1 atm. Colorless to blue gas with a very pungeant odor.
PAH's as Coal tar pitch Volatiles (CTPV)	65996-93-2	0.2 mg/m3	0.2 mg/m3	Inhalation Skin contact Ingestion	Irritant to eyes, swelling, acne contact dermatitis, chronic bronchitis	Respiratory system, CNS, liver, kidneys, skin, bladder, carc	Black or dark brown amorphous residue.
PCBs	11097-69-1	0.5 mg/m^3 (Skin)	0.5 mg/m^3 (Skin)	Inhalation Skin Absorption Ingestion Skin Contact	Irritate eyes; chloracne; liver damage;	Skin, eyes, liver, reproductive system	Colorless liquid or solid with a mild, hydro-carbon odor VP = 0.00006 mm
Hydrogen cyanide	74-90-8	4.7 ppm (5 mg/m^3) STEL [skin]	10 ppm (11 mg/m^3) [skin]	Inhalation Ingestion Absorption Skin/Eye Contact	Asphyxia; weakness, headache, confusion; nausea, vomiting; increased rate and depth of respiration or respiration slow and gasping; thyroid, blood	CNS, CVS, thyroid, blood	Colorless or pale-blue liquid or gas (above 78°F) with a bitter, almond-like odor.

Table 4-1
Chemical Data

Compound	CAS #	ACGIH TLV	OSHA PEL	Route of Exposure	Symptoms of Exposure	Target Organs	Physical Data
					changes		VP: 630 mmHg IP: 13.60 eV
Hydrogen sulfide	7783-06-4	10 ppm TWA, 15 ppm STEL	20 ppm C, 50 ppm [10-min. Maximum peak]	Inhalation Skin/Eye Contact	Irritation eyes, respiratory system; apnea, coma, convulsions; conjunctivitis, eye pain, lacrimation (discharge of tears), photophobia (abnormal visual intolerance to light), corneal vesiculation; dizziness, headache, fatigue, irritability, insomnia; gastrointestinal disturbance; liquid: frostbite	Eyes, respiratory system, CNS	Colorless gas with a strong odor of rotten eggs. VP: 17.6 atm IP: 10.46 eV

Abbreviations	
C = ceiling limit, not to be exceeded	LEL = Lower explosive limit
CNS = Central Nervous System	mm = millimeter
CVS = Cardiovascular System	ppm = parts per million
eV = electron volt	Skin = significant route of exposure
FP = Flash point	STEL = Short-term exposure limit (15 minutes)
IP = Ionization Potential	TWA = Time-weighted average (8 hours)
GI = Gastro-intestinal	UEL = Upper explosive limit
	VP = vapor pressure approximately 68° F in mm Hg (mercury)

4.2 Biological Hazards

During the course of the project, there is a potential for workers to come into contact with biological hazards such as animals, insects and plants. Workers will be instructed in hazard recognition, health hazards, and control measures during site-specific training.

4.2.1 Animals

During the conduct of site operations, wild animals such as stray dogs or cats, raccoons, and mice may be encountered. Workers shall use discretion and avoid all contact with wild animals. If these animals present a problem, efforts will be made to remove these animals from the site by contacting a licensed animal control technician.

4.2.2 Insects

Insects, including bees, wasps, hornets, and spiders, may be present at the Site making the chance of a bite possible. Some individuals may have a severe allergic reaction to an insect bite or sting that can result in a life threatening condition; any individuals who have been bitten or stung by an insect should notify the SM. The following is a list of preventive measures:

- Apply insect repellent prior to performing any field work and as often as needed throughout the work shift.
- Wear proper protective clothing (work boots, socks and light colored pants).
- When walking in wooded areas, avoid contact with bushes, tall grass, or brush as much as possible.
- Field personnel who may have insect allergies shall have bee sting allergy medication on site and should provide this information to the SM prior to commencing work.

4.2.2.1 Lyme Disease

Lyme disease is caused by infection from a deer tick that carries a spirochete. During the painless tick bite, the spirochete may be transmitted into the bloodstream that could lead to the worker contracting Lyme disease.

Lyme disease may cause a variety of medical conditions including arthritis, which can be treated successfully if the symptoms are recognized early and medical attention is received. Treatment with antibodies has been successful in preventing more serious symptoms from developing. Early signs may include a flu-like illness, an expanding skin rash and joint pain. If left untreated, Lyme disease can cause serious nerve or heart problems as well as a disabling type of arthritis.

Symptoms can include a stiff neck, chills, fever, sore throat, headache, fatigue and joint pain. This flu-like illness is out of season, commonly happening between May and October when ticks are most active. A large expanding skin rash usually develops around the area of the bite. More than one rash may occur. The rash may feel hot to the touch and may be painful. Rashes vary in size, shape, and color, but often look like a red ring with a clear center. The outer edges expand in size. It's easy to miss the rash and the connection between the rash and a tick bite. The rash develops from three days to as long as a month after the tick bite. Almost one third of those with Lyme disease never get the rash.

Joint or muscle pain may be an early sign of Lyme disease. These aches and pains may be easy to confuse with the pain that comes with other types of arthritis. However, unlike many other types of arthritis, this pain seems to move or travel from joint to joint.

Lyme disease can affect the nervous system. Symptoms include stiff neck, severe headache, and fatigue usually linked to meningitis. Symptoms may also include pain and drooping of the muscles on the face, called Bell's Palsy. Lyme disease may also mimic symptoms of multiple sclerosis or other types of paralysis.

The disease can also cause serious but reversible heart problems, such as irregular heartbeat. Finally, Lyme disease can result in a disabling, chronic type of arthritis that most often affects the knees. Treatment is more difficult and less successful in later stages. Often, the effects of Lyme disease may be confused with other medical problems.

It is recommended that personnel check themselves when in areas that could harbor deer ticks, wear light color clothing and visually check themselves and their buddy when coming from wooded or vegetated areas. If a tick is found biting an individual, the SM should be contacted immediately. The tick can be removed by pulling gently at the head with tweezers. The affected area should then be disinfected with an antiseptic wipe. The employee will be offered the option for medical treatment by a physician, which typically involves prophylactic antibiotics. If personnel feel sick or have signs similar to those above, they should notify the SM immediately.

4.2.3 Plants

The potential for contact with poisonous plants exists when performing field work in undeveloped and wooded areas. Poison ivy, sumac, and oak may be present on site. Poison ivy can be found as vines on tree trunks or as upright bushes. Poison ivy consists of three leaflets with notched edges. Two leaflets form a pair on opposite sides of the stalk, and the third leaflet stands by itself at the tip. Poison ivy is red in the early spring and turns shiny green later in the spring. Poison sumac can be present in the form of a flat-topped shrub or tree. It has fern-like leaves, which are velvety dark green on top and pale underneath. The branches of immature trees have a velvety "down." Poison sumac has white, "hairy" berry clusters. Poison oak can be present as a sparingly branched shrub. Poison oak is similar to poison ivy in that it has the same leaflet configuration, however, the leaves have slightly deeper notches. Prophylactic application of Tecnu may prevent the occurrence of exposure symptoms. Post exposure over the counter products are available and should be identified at the local pharmacist. Susceptible individuals should be identified by the SM.

Contact with poison ivy, sumac, or oak may lead to a skin rash, characterized by reddened, itchy, blistering skin which needs first aid treatment. If you believe you have contacted one of these plants, immediately wash skin thoroughly with soap and water, taking care not to touch your face or other body parts.

4.3 Physical Hazards

4.3.1 High Loss Potential Physical Hazards

Activities to be conducted at the site may involve operations that have the potential for a serious injury to occur, to include the following:

- Lockout/Tagout
- Heavy Equipment Operation
- Excavation and Trenching
- Confined Space Entry
- Line Breaking
- Work within a Temporary Structure

4.3.1.1 Lockout-Tagout

Site personnel will assume that all electrical equipment at surface, subsurface, and overhead locations is energized, until the equipment has been designated as de-energized by a NGRID representative. If the equipment cannot de-energized, work will stop and the SSO will consult with the PM and CHSO. The Contractor will notify National Grid prior to working adjacent to this equipment, and will verify that the equipment is energized or de-energized in the vicinity of the excavation location. The Control of Hazardous Energy Program "Lock Out/Tag Out" is included in Appendix H.

All power lines, which have been indicated by National Grid to be de-energized must be locked out, such that the lines cannot be energized when personnel are working near them. The lines shall not be unlocked and re-energized until the Contractor notifies National Grid that they have completed work in the area and that all personnel are clear of the area. National Grid representatives will thoroughly familiarize Contractor personnel with site-specific lockout/tagout procedures during the site orientation. The lockout procedures must be equivalent in effectiveness to those found in Appendix H.

If power lines cannot be de-energized, the SSO will consult with the local utility provider safety personnel to determine the safe working distance from the energized line. Work tasks will only commence after determination that a safe working distance can be maintained and all personnel working in the area have been informed of the limitation.

4.3.1.2 Heavy Equipment Operation

Heavy equipment will be operated under the following conditions:

- The operation of heavy equipment will be limited to authorized personnel specifically trained in its operation. Subcontractor site supervisors must provide this information to the SSO.
- Equipment shall be inspected daily to ensure that there are no exposed belts, fans, etc.
- When not in use, hydraulic and pneumatic components shall be left in down or “dead” position.
- Roll-over protection shall be provided on hilly terrain.
- Maintain all emergency shut-offs in sound working condition.
- The operator will use the safety devices provided with the equipment, including seat belts. Backup warning indicators and horns will be operable at all times.
- While in operation, all personnel not directly required in the area will keep a safe distance from

the equipment.
- Personnel directly involved in activity will avoid moving in the path of operating equipment or any portion thereof. Areas blinded from the operator's vision will be avoided. Spotters will be used when personnel may be in areas where the operator's view is obstructed.
- Additional riders will not be allowed on equipment unless it is specifically designed for that purpose.

4.3.1.3 Excavation and Trenching

The safety requirements for each excavation must be determined by a competent person who is capable of identifying existing and predictable hazards and work conditions that are unsanitary, hazardous, or dangerous to employees. The competent person must also have the authorization to take prompt corrective measures to eliminate unsatisfactory conditions.

The following are general requirements for work activities in and around excavations:

- Prior to initiation of any excavation activity (or ground intrusive activity, such as drilling), the location of underground installations will be determined. The New York State one-call center will be contacted by the Contractor / Subcontractor a minimum of 72 hours prior to excavation activities. It may also be necessary to temporarily support underground utilities during excavation. When excavations approach the estimated location of underground installations, the exact location of the underground installations shall be determined by means that are safe to workers, i.e., hand dig, test pits, etc.
- All excavations will be inspected daily by the competent person prior to commencement of work activities. Evidence of cave-ins, slides, sloughing, or surface cracks or excavations will be cause for work to cease until necessary precautions are taken to safeguard employees.
- Excavated and other materials or equipment that could fall or roll into the excavation shall be placed at least 5 feet from the edge of the excavation.
- Vehicular traffic and heavy equipment shall remain at least four feet from the face of the excavation.
- All excavation operations will cease immediately during hazardous weather conditions such as high winds, heavy rain, lightning and heavy snow.

4.3.1.4 Excavation Entry Safety

Personnel entering a trench or excavation that is greater than 4 feet deep shall implement the following procedures:

- The sides of all excavations in which personnel will be exposed to the danger of moving ground or potential cave-in will be adequately sloped, shored or contained within a trench box, or similar support structure designed and sealed by a professional engineer.
- The air in the excavation will be tested for oxygen deficiency, explosivity, organic vapors, carbon monoxide and hydrogen sulfide. The bottom, middle, top and corners of the excavation will be tested prior to entry and continuously during excavation entry.
- Ramps or ladders will be used to provide access and sufficient egress to the excavation. Ladders must be supplied for every 25 feet of lateral travel. Ladders must be securely anchored at the top or bottom and must extend at least 3 feet above the ground surface. A competent person is required to design ramps (those used exclusively for employee access/egress). Such ramps are constructed of wood, steel or earth. Structural ramps, used for vehicle/equipment access (steel or

wood) must be designed by a competent person qualified in structural design. Vehicle ramps built of earth are not considered "structural ramps".

- Employees shall not work in excavations where there is an accumulation of water or in excavations where water is accumulating unless adequate precautions have been taken to protect employees against the hazard s posed by water accumulation.
- Emergency rescue equipment such as breathing apparatus, a safety harness and line, or a basket stretcher shall be readily available where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation.

4.3.1.5 Working Within a Temporary Enclosure

Any work conducted within a temporary enclosure shall employ work zone and ambient monitoring in accordance with the Air Monitoring Plan and Section 8.0 of this HASP. If internal combustion engine equipment is used within the temporary enclosure, engineering controls or additional air monitoring parameters will need to be evaluated. If monitoring indicates the enclosure atmosphere meets the definition of a Permit Required Confined Space (PRCS), then the procedures of Appendix I will apply in accordance with OSHA 1910.146 and 1910.134.

4.3.2 Line Breaking

During line breaking activities, the potential exists for exposure to suspect asbestos containing materials (ACM). If suspect ACM is encountered, work will stop and will not resume until asbestos trained personnel have been upgraded to the proper PPE, and water is available to keep the work area and the suspect ACM wetted. All workers are to have completed asbestos awareness training prior to working with suspect ACM. The project management team (National Grid Project Manager, Consultant Project Manager, and Contractor Project Manager and CHSO) is to be notified if suspect ACM is encountered.

4.3.3 Fire and Explosion

When conducting excavating activities, the opportunity of encountering fire and explosion hazards exists from contamination in the soil and the possibility of free product in the underground pipelines. This will be especially hazardous when pipelines are sawed or broken to grout the ends. Additionally, the use of a diesel engine on excavating equipment could present the possibility of encountering fire and explosion hazards

4.3.4 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, poor judgment and unauthorized procedural changes. The procedures to be followed are found in Appendix C, the Cold Stress Program.

4.3.5 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. A heat stress prevention program will be implemented when ambient temperatures exceed 70ºF for personnel wearing impermeable clothing. The procedures to be followed are found in Appendix D, the Heat Stress Program.

4.3.6 Noise

Noise is a potential hazard associated with the operation of heavy equipment, power tools, pumps and generators. Site workers who will perform suspected high noise tasks and operations for short durations (less than 1-hour) shall wear earplugs. If deemed necessary by the SSO, the CHSO will be consulted on the need for additional hearing protection and the need to monitor sound levels for site activities. Other workers who do not need to be in proximity of the noise should distance themselves from the equipment generating the noise.

4.3.7 Hand and Power Tools

In order to complete the various tasks for the project, personnel will utilize hand and power tools. The use of hand and power tools can present a variety of hazards, including physical harm from being struck by flying objects, being cut or struck by the tool, fire, and electrocution. Work gloves, safety glasses, and hard hats will be worn by the operating personnel at all times when utilizing hand and power tools and Ground Fault Indicator (GFI)-equipped circuits will be used for all power tools.

4.3.8 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 surfaces that are wet from rain or ice. Excavation at the sites will cause uneven footing in the trenches and around the spoil piles. Contractors shall employ good work practice and housekeeping procedures to minimize the potential for slip, trip, and fall hazards.

4.3.9 Manual Lifting

Manual lifting of heavy objects such as sections of pipe may be required. Failure to follow proper lifting technique can result in back injuries and strains. Site workers should use power equipment to lift heavy loads whenever possible and should evaluate loads before trying to lift them (i.e. they should be able to easily tip the load and then return it to its original position). Carrying heavy loads with a buddy and proper lifting techniques include: 1) make sure footing is solid, 2) make back straight with no curving or slouching, 3) center body over feet, 4) grasp the object firmly and as close to your body as possible, 5) lift with legs, and 6) turn with your feet, don't twist. In addition, hand digging may present lifting/ergonomic hazards.

4.3.10 Steam, Heat, Splashing

Exposure to steam/heat/splashing hazards can occur during steam cleaning activities. Exposure to steam/heat/splashing can result in scalding/burns, eye injury, and puncture wounds. Proper PPE will be worn during all steam cleaning activities including rain gear or tyvek, hardhat equipped with splashguard, and water resistant gloves and boots.

4.3.11 Projectile Objects and Overhead Dangers

Work conditions on the site may produce conditions under which normally stable objects become a projectile. High pressure gas cylinders can become a projectile if the neck of the cylinder is broken. High pressure gas cylinders will be stored in a designated locked cage with the cylinder cap on at all times. During transport, the cylinder caps will remain in place and the cylinder will be secured and compliant with OSHA and DOT regulations (29 CFR 1926.350 and 49 CFR 177.840, respectively).

Overhead dangers, including but not limited to falling debris and equipment, can occur while operating large drill rigs and cranes. Site workers will be instructed to maintain a minimum distance from large overhead operations and to maintain proper communication with heavy equipment operators and their handlers should work necessitate their presence beyond the minimum safety distance. Proper PPE will be worn at all times during these types of activities including steel-toed boots, safety vests and hard hats.

4.4 Hazard Analysis

This section includes an AHA to assess and control potential site hazards for each general project task.

WORK TASK	POTENTIAL HAZARDS	CONTROLS
ACTIVITY: Mobilization		
Reconnaissance	Truck traffic	Be familiar with expected traffic routes. Wear reflective safety vest.
Mobilization/ demobilization of equipment and supplies. Establishment of site security, work zones and staging area	Noise hazards, heavy equipment hazards.	Wear reflective safety vest, and hearing protection near heavy equipment.

WORK TASK	POTENTIAL HAZARDS	CONTROLS
Activity: Excavation, Test Pitting, Backfilling, Grading		
Observation of excavation, test pitting, backfilling, grading	Utilities	Notify Dig Safe and confirm utility locations with Property Owner prior to breaking ground.
	Adverse weather	Monitor weather daily. Discontinue work as necessary based on lightning, limited visibility, impaired mobility, etc.
	Cold stress/heat stress	Acclimatization, work/rest regimes, drinking warm/cold fluids
.	Slip, trip, fall	Maintain safe and orderly work areas. Unloading areas should be on even terrain. Identify and repair potential tripping hazards.
	Motor Vehicle Hazards	Safe driving practices, use of a spotter.
	Noise	Distancing from noise, hearing protection
	Biological Hazards	Proper clothes, body inspections, insect repellant
	Heavy equipment / Proximity to Heavy equipment	Distancing, safe work practices, inspections, wear hearing protection and steel-toed boots
	Excavation Hazards	Sloping/shoring practices, distancing personnel from excavation, hard hat
	Tool Use	Use proper guarding, inspections, wear safety glasses with side shields, hearing protection
	Exposure to hazardous chemicals	Wear protective coveralls (e.g., Tyvek®) (if needed) with shoe covers, nitrile gloves, and safety glasses when handling samples. Dispose of gloves after sampling. Personal protective equipment will be decontaminated and disposed of in general accordance with Section 10 of this HASP.
	Contact with equipment, especially moving parts. Overhead hazard (rods).	Stay alert and maintain suitable clearance from moving and overhead equipment. Do not wear loose clothing, jewelry, or equipment, which could get caught by moving equipment. Inspect equipment daily. Train all personnel on use of emergency shutoff switches.
	Weather related equipment hazards (slippage in rain, lightning).	Cease operations prior to and during electrical storms. Cease operations if equipment cannot be operated safely under wet conditions.
	Exposure to vapors and dust from contaminated soil.	Use work zone air monitoring equipment including PID and multiple gas meter (that monitors % oxygen, lower explosive limit, and hydrogen cyanide), and dust monitor to monitor the work zone as specified in Section 8.0 of the HASP. If air monitoring action levels are exceeded, then engineering controls will be implemented. If excursions of the action levels persist, then upgrade to half or full face respirator with HEPA/organic vapor cartridge as indicated in Section 6.0 of the HASP.
	Exposure to contaminated soil	Wear protective clothing with shoe covers, nitrile gloves, safety glasses, face shield when handling samples. Dispose of gloves after sampling. If exposed to soil, wash the exposed skin immediately with anti-bacterial wipes/gel and wash with soap and water. Personal protective equipment will be decontaminated and disposed of in general accordance with Section 10.

ACTIVITY: SUBSURFACE BORING/ WELL INSTALLATION AND SAMPLE COLLECTION		
Subsurface Boring/ Monitoring Well Installation and Sample Collection	Heavy Equipment / Proximity to Heavy Equipment	Distancing, safe work practices, inspections, wear hearing protection.
	Adverse Weather	Monitor weather daily. Discontinue work as necessary based on lightning, limited visibility, impaired mobility, etc.
	Heat/Cold Stress	Acclimatization, work/rest regimes, drinking warm/cold fluids.
	Slip/Trip/Fall	Maintain safe and orderly work areas. Unloading areas should be on even terrain. Identify and repair potential tripping hazards.
	Noise	Distancing form noise, hearing protection
	Traffic Hazards	Use traffic cones, signage, and traffic safety vests in accordance with New York City Traffic Regulations. Use a traffic spotter.
	Tool Use	Use proper guarding, inspections, wear safety glasses with side shields, hearing protection.
	Contaminant Contact	Wear protective coveralls (e.g., Tyvek®) (if needed) with shoe covers, nitrile gloves, and safety glasses when handling samples. Dispose of gloves after sampling. Personal protective equipment will be decontaminated and disposed of in general accordance with Section 10 of this HASP.
	Exposure to vapors from contaminated soils	Use work zone air monitoring equipment including photoionization detector and multiple gas meter (that monitors % oxygen, lower explosive limit, hydrogen sulfide and hydrogen cyanide), and dust monitor to monitor the workzone as specified in Section 8.0 of the HASP. If air monitoring action levels are exceeded, then engineering controls will be implemented. If excursions of the action levels persist, then upgrade to full face respirator with HEPA/organic vapor cartridge as indicated in Section 6.0 of the HASP. Community air monitoring of the area immediately surrounding the work zone will be completed in accordance with the RI Work Plan and Appendix K of this HASP.
COMMUNITY AIR MONITORING		
WORK TASK	**POTENTIAL HAZARDS**	**CONTROLS**
Mobilization/Demobilization	Adverse weather	Monitor weather daily. Discontinue work as necessary based on lightning, limited visibility, impaired mobility, etc. Take cover indoors or in vehicle. Listen to local forecasts for warnings about specific weather hazards, such as tornados, hurricanes, and flash floods

	Persons struck by equipment	High visibility/reflective clothing. Use caution when crossing the street. Use caution when working around equipment.
	Cold stress/heat stress	Acclimatization, work/rest regimes, drinking warm/cold fluids
	Physical injuries or strain	Training, PPE
	Slip, trip, fall	Maintain safe and orderly work areas. Unloading areas should be on even terrain. Identify and repair potential tripping hazards.
	Cuts/Abrasions	Use Proper Lifting Techniques, request help when lifting.
	Electrical Contact	Use GFCI circuits and breakers/ Good house keeping
	Traffic	High visibility/reflective clothing, Use caution when crossing the street
	Biological Hazards	Proper clothes, body inspections, insect repellant
	Potential Exposure to on-site contaminants	Training, PPE such as (protective coveralls (e.g., Tyvek®) (if needed) with shoe covers, nitrile gloves, and safety glasses when handling samples. Personal protective equipment will be decontaminated and disposed of in general accordance with Section 10 of this HASP.
	Potential Exposure to decontamination supplies	Training, PPE
	Noise	Training, PPE

5.0 TRAINING

5.1 General Health and Safety Training

In accordance with 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). Proof of training shall be submitted to the SSO prior to the start of field activities.

5.2 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 29 CFR 1910.120 requirements and related company programs and procedures. Proof of current 8-hour refresher training shall be submitted to the SSO prior to the start of field activities.

5.3 Supervisor Training

Personnel acting in a supervisory capacity shall have received 8 hours of instruction in addition to the initial 40 hours training.

5.4 Site Safety Officer (SSO)

The SSO shall have completed the following training and work experience prior to the commencement of site activities:

- 40-Hour Hazardous Materials training course

Training specific to work activities (i.e., excavation and trenching activities, lock out/tag out, etc.)

5.5 Site-Specific Training

Prior to commencement of field activities, the SSO will ensure all field personnel 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. Personnel that have not received site-specific training will not be allowed on-site.

5.6 On-Site Safety Briefings

Project personnel and visitors will be given health and safety briefings daily by the SSO to assist site personnel in safely conducting work activities. 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.

5.7 First Aid and CPR

The SSO will identify individuals certified in first aid and CPR, or identify individuals for such training in order to ensure that emergency medical treatment is available during field activities. The training will be consistent with the requirements of the American Red Cross Association and will include training on blood borne pathogens.

5.8 Hazard Communication

Hazard communication training will be provided in accordance with the requirements contained in the Hazard Communication Program in Appendix B.

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 the selection rationale for each activity can be found under Section 4.0 and Appendix F - Personal Protective Equipment (PPE): Selection and Use. For the purposes of PPE selection, the CHSO and SM (if they have completed the 8-hour OSHA Site Supervisor Training) are considered competent persons. The signatures on the front of the HASP constitute certification of the hazard assessment. For activities not covered by Table 6-1, the SM will conduct the hazard assessment and select the PPE using the information provided in Appendix F. PPE selection will be made in consultation with the CHSO.

Modifications for initial PPE selection may also be made by the SM in consultation with the CHSO using the same form. A written justification for major downgrades will be provided to the CHSO for approval on a field change request form.

Table 6-1 describes the anticipated task-specific PPE.

6.1 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 Nit Sur - Nitrile Surgical	BODY PROTECTION Cot Cov = Cotton Coveralls Poly = Polyethylene coated tyvek coveralls Saran = Saranex coated tyvek coveralls Tyvek = Uncoated paper tyvek coveralls WC = Work clothes	RESPIRATORY PROTECTION Level D = No respiratory protection required Level C = Full face air purifying respirator with approved cartridges Level B = Full face air supplied respirator with escape bottle

TABLE 6-1

PERSONAL PROTECTIVE EQUIPMENT SELECTION

TASK	HEAD	EYE/FACE	FEET	HANDS	BODY	HEARING	RESPIRATOR
Mobilization/Demobilization							
Mobilization/ demobilization of equipment and supplies	HH	SG	STB	LWG as needed	WC	EP as needed	Level D
Establishment of site security, work zones and staging area	HH	SG	STB	LWG as needed	WC	EP as needed	Level D
Pre Construction, Excavation, and Trenching Activities							
Locate all utilities to and from the site	HH	SG	STB	LWG as needed	WC	EP as needed	Level D
Locate all active utility lines on site	HH	SG	STB	LWG as needed	WC	EP as needed	Level D
Construction Activities							
Utility Connections	HH	SG	STB	LWG as needed	WC	EP as needed	Level D
Excavation and Trenching Activities							
Excavate overburden material	HH	SG, APR as needed	STB, OB	Nit Sur, LWG	WC, tyvek or Poly as needed	EP as needed	Level D initially, Level C as needed
Segregate overburden material	HH	SG, APR as needed	STB, OB	Nit Sur, LWG	WC, tyvek or Poly as needed	EP as needed	Level D initially, Level C as needed
Confined space entry/ trench box use	HH	SG, APR as needed	STB, OB	Nit Sur, LWG	WC, tyvek or Poly as needed	EP as needed	Level D initially, Level C as needed
Dewater excavation	HH	SG, APR as needed	STB, OB	Nit Sur, LWG	WC, tyvek or Poly as needed	EP as needed	Level D initially, Level C as needed
Break lines	HH	SG, APR as	STB, OB	Nit Sur, LWG	WC,	EP as needed	Level D initially,

TASK	HEAD	EYE/FACE	FEET	HANDS	BODY	HEARING	RESPIRATOR
		needed			tyvek or Poly as needed		Level C as needed
Cut, fill and cap lines	HH	SG, APR as needed	STB, OB	Nit Sur, LWG	WC, tyvek or Poly as needed	EP as needed	Level D initially, Level C as needed
Backfill excavation	HH	SG	STB, OB	LWG as needed	WC, tyvek or Poly as needed	EP as needed	Level D
Trenching	HH	SG	STB STB + OB for entry	LWG Nit + Sur for entry	WC WC + Tyvek for entry	EP or EM Note: EM may not be worn over hardhat liner	As required based upon real-time monitoring results as compared to action levels in Table 7-1.
Site Restoration	HH	SG	STB	LWG as needed	WC	EP as needed	Level D
Heavy equipment decontamination	HH	SG, PFS	STB, OB	Sur, Nit	WC, Poly	EP as needed	Level D
<u>Other Remediation Activities</u>							
Installation of Injection Wells	HH	SG	STB	Nit Sur, LWG	WC	EP as needed	Level D
Injection of Chemical Oxidants	HH	SG	STB	Nit Sur, LWG, need for additional gloves will be evaluated	WC	EP as needed	Level D
Operation and Maintenance Task	HH	SG	STB	Nit Sur, LWG	WC	EP as needed	Level D
<u>Soil and Groundwater Sampling Activities</u>							
Soil Borings and Soil Sampling	HH	SG	STB	Nit Sur, LWG	WC	EP as needed	Level D
Monitoring Well Installation, Development, and Sampling	HH	SG	STB	Nit Sur, LWG	WC	EP as needed	Level D

6.2 OSHA Requirements for Personal Protective Equipment

All personal protective equipment used during the course of this field investigation must meet the following OSHA standards:

Type of Protection	Regulation	Source
Eye and Face	29 CFR 1910.133	ANSI Z87.1-1968
Respiratory	29 CFR 1910.134	ANSI Z88.1-1980
Head	29 CFR 1910.135	ANSI Z89.1-1969
Foot	29 CFR 1910.136	ANSI Z41.1-1967

ANSI = American National Standards Institute

Any on-site personnel who have the potential to don a respirator must have a valid fit test certification and documentation of medical clearance. The CHSO will maintain such information on file for **GEI** personnel. The SM will obtain such information from the subcontractor's site supervisor prior to the initiation of any such work. Both the respirator and cartridges specified for use in Level C protection must be fit-tested prior to use in accordance with OSHA regulations (29 CFR 1910.1025; 29 CFR 1910.134). Air purifying respirators cannot be worn under the following conditions:

- Oxygen deficiency;
- IDLH concentrations; and
- If contaminant levels exceed designated use concentrations.

7.0 MEDICAL SURVEILLANCE

All 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) and, where applicable, expanded health standards.

7.1 Medical Surveillance Requirements

A physician's medical release for work will be confirmed by the SSO before a worker can enter the exclusion zone. The examination will be taken annually at a minimum and upon termination of hazardous waste site work if the last examination was not taken within the previous six months. Additional medical testing may be required by the CHSO in consultation with the SSO if an over-exposure or accident occurs, if an employee exhibits symptoms of exposure, or if other site conditions warrant further medical surveillance.

8.0 MONITORING

8.1 Monitoring Requirements

Environmental Health and Safety Monitoring will be performed by appropriate project staff in accordance with this section.

8.1.1 On-site Monitoring

The following monitoring instruments will be available for use during field operation, as necessary:

- Photoionization Detector (PID), Photovac Microtip with 10.6 eV lamp or equivalent; or
- Flame Ionization Detector (FID), Foxboro OVA model 128 or equivalent; and
- Dust Meter, MIE Miniram model PDM-3 or equivalent; and
- Combustible Gas Indicator (CGI)/Oxygen (O2) / H2S / HCN meter, MSA model 361 or equivalent; and
- Sound Level Meter if deemed necessary by the SM and CHSO, type to be appropriate to the activities performed.

All air monitoring equipment will be calibrated and maintained in accordance with manufacturer's requirements and the Monitoring Instruments: Use, Care, and Calibration program included in Appendix G.

Organic vapor concentrations shall be measured using the PID and/or FID during excavating and other intrusive activities. During intrusive operations, organic vapor concentrations shall be measured continuously; during other activities, readings shall be taken at least once every hour. Organic vapor concentrations shall be measured upwind of the work site(s) to determine background concentrations at least twice a day, (once in the morning and once in the afternoon). The SM will interpret monitoring results using professional judgment.

A dust meter shall be used to measure airborne particulate matter during intrusive activities. Monitoring will be continuous and readings will be averaged over a 15-minute period for comparison with the action levels. Monitoring personnel will make a best effort to collect dust monitoring data from downwind of the intrusive activity. If off-site sources are considered to be the source of the measured dust, upwind readings will also be collected.

A CGI/O2 meter shall be used to monitor for combustible gases and oxygen content in the trenches and surrounding areas and elsewhere as necessary. The CGI will also be equipped with a hydrogen sulfide sensor and hydrogen cyanide sensor. H2S monitoring will be completed every fifteen minutes, or if a sulfur odor is present, monitoring will be continuous. HCN monitoring will be completed every fifteen minutes, or if an almond odor is detected, monitoring will be continuous.

All trenches will be monitored before entry at the beginning of each shift.

Guidelines have been established by the National Institute for Occupational Safety and Health (NIOSH) concerning the action levels for work in a potentially explosive environment. These guidelines are as follows: 10% LEL- Limit all activities to those which do not generate sparks, 20% LEL- Cease all activities in order to allow time for the combustible gases to vent.

TABLE 7-1

REAL TIME AIR MONITORING ACTION LEVELS

Air Monitoring Instrument	Monitoring Location	Action Level	Site Action
PID/FID	Breathing Zone	1.0 ppm	Use detector tube for benzene or Znose™ to verify if concentration is benzene.
PID/FID	Breathing Zone	0 – 10 ppm	If benzene is not detected, no respiratory protection is required
		10 – 250 ppm	Stop work, withdrawal from work area, institute engineering controls, if levels persist Upgrade to Level C
		> 250 ppm	Stop work, withdraw from work area; notify SSO & CHSO
Oxygen meter	Breathing Zone	< 20.7%	Stop work; withdraw from work area; ventilate area, notify SSO & CHSO.
		> 21.1%	Stop work; withdraw from work area; notify SSO & CHSO.
H2S meter	Breathing Zone	<5 ppm	No respiratory protection is required
		>5 ppm	Stop work, cover excavation, withdraw from work area, institute engineering controls, notify SSO & CHSO
HCN meter	Breathing Zone	<1.0 ppm	Run CMS Drager tube, continue monitoring with real time meter, continue work if CMS Drager Tube Reading is less than 2ppm.
		1.0< HCN Conc<2.0 ppm	Run CMS Drager tube and confirm concentration is less than 2.0 ppm, notify SSO and CHSO. Run CMS 33ndrew33 tube for sulfur dioxide, hydrogen sulfide, and phosphine chip potential interferences. Continue to monitor with real time meter.
		>2.0 ppm	Stop work, and move (with continuous HCN monitoring meter) at least 25 ppm upwind of the excavation until continuous meter reads less than 1 ppm, Notify SSO & CHSO Run CMS Drager hydrogen cyanide chip and re-evaluate activity, continue monitoring with a real time meter, resume work if concentrations read less than 1.0 ppm.

Air Monitoring Instrument	Monitoring Location	Action Level	Site Action
CGI	Excavation/ Work Zone	< 10 % LEL	Investigate possible causes, allow excavation to ventilate; use caution during procedures.
		> 10% LEL	Stop work; allow excavation, borehole to ventilate to < 10% LEL; if ventilation does not result in a decrease to < 10% LEL, withdraw from work area; notify SSO & CHSO.
Particulate Meter	Excavation/ Work Zone	0.150 ug/m^3	Implement work practices to reduce/minimize airborne dust generation, e.g., spray/misting of soil with water
Air Monitoring Instrument	**Monitoring Location**	**Action Level**	**Site Action**
PID/FID	Breathing Zone	1 ppm	Use detector tube for benzene or z-nose to verify
PID/FID	Breathing Zone	0 - 10 ppm	No respiratory protection is required
		10 - 250 ppm	Level C, stop work, withdraw from work
		> 250 ppm	Stop work, withdraw from work area; notify CHSO
Oxygen meter	Breathing Zone	< 19.5%	Stop work; withdraw from work area; notify CHSO.
		> 22%	Stop work; withdraw from work area; notify CHSO.
H2S meter	Breathing Zone	<5 ppm	No respiratory protection is required
		>5 ppm	Stop work, cover excavation, notify CHSO
HCN meter	Breathing Zone	<2.5 ppm	No respiratory protection is required
		>2.5 ppm	Stop work, cover excavation, notify CHSO
CGI	Excavation	< 10 % LEL	Investigate possible causes, allow excavation to ventilate; use caution during procedures.
		> 10% LEL	Stop work; allow excavation, borehole to ventilate to < 10% LEL; if ventilation does not result in a decrease to < 10% LEL, withdraw from work area; notify CHSO.
Dust Meter	Excavation	> 1.5 mg/m^3	Implement work practices to reduce/minimize airborne dust generation, e.g., spray/misting of soil with water
		> 2.5 mg/m^3	Upgrade to Level C PPE

8.2 Community Air Monitoring Plan

This community air monitoring plan has been designed to conform with the guidelines presented by the New York State Department of Health in Appendix 1A of the Draft New York State Department of Conservation DER-10 Technical Guidance for Site Investigation and Remediation. Real-time air monitoring for volatile compounds at the perimeter of the exclusion zone will be conducted. If particulates become a concern at the site, possibly as a result of excavating activities or wind erosion of soils, this community plan will be modified accordingly. Contaminants on-site are not anticipated to pose a problem as particulates because of the anticipated high moisture content of the soil during field activities. The following procedures will be implemented during field activities as appropriate:

- Volatile organic compounds will be monitored at the downwind perimeter of the exclusion zone on a continuous basis. If 15-minute average total organic vapor levels exceed 5 ppm (or 5 ppm above background as determined at an upwind location), excavating activities will be temporarily halted and monitoring continued until total organic vapor levels drop below the action level. If the organic vapor level is above 25 ppm at the perimeter of the exclusion area, activities must be shut down. Monitoring will continue and the CHSO will be consulted regarding a proper course of action. All 15-minute average readings must be recorded and be available for regulatory personnel to review.

- Particulates will become a concern if visible dust emissions occur from site investigation activities or wind erosion or if intrusive activities are performed. When particulates become a concern, the following protocol will be followed. PM10 particulate levels will be continuously monitored downwind at the perimeter of the exclusion zone with a portable real-time PM10 particulate monitor that will have an alarm set at 100 ug/m3. If downwind particulate levels integrated over a period of 15 minutes exceed 100 ug/m3, then particulate levels upwind of the exclusion zone will be measured. If the downwind particulate level is more than 100 ug/m3 greater than the upwind particulate level, dust suppression techniques (e.g. spraying water, covering exposed soils with poly sheeting) will be employed. If after implementation of dust suppression techniques, the downwind PM10 particulate level exceeds the upwind PM10 particulate level by greater than 150 ug/m3, activities will be halted and the CHSO will be consulted. All readings will be recorded and be available for regulatory personnel to review. These action levels can be modified if particulates are better characterized and identified.

8.2.1 Vapor Emission Response Plan

If the ambient air concentration of organic vapors exceeds 5 ppm above background levels at the perimeter of the exclusion zone, excavating activities will cease and monitoring continued. If the organic vapor level decreases below 5 ppm (above background), excavating activities may resume. If the organic vapor levels are greater than 5 ppm, but less than 5 ppm over background at the perimeter of the work area, activities may resume provided:

- The organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest residence or commercial structure, whichever is less, is below 5 ppm over background, and

- More frequent intervals of monitoring, as directed by the SM in consultation with the CHSO, are conducted.

If the organic vapor level is above 5 ppm over background at the perimeter of the exclusion zone, work activities will halt and odor control contingencies will be implemented. Exposed soils will be covered with poly sheeting or a biodegradable, surfactant-based foam concentrate, will then be sprayed onto the excavated soils to control the fugitive vapors. When work shutdown occurs, downwind air monitoring will be implemented to ensure that vapor emissions do not impact the nearest residential or commercial structure.

If organic vapor levels greater than 5 ppm over background are identified 200 feet downwind from the exclusion zone, or half the distance to the nearest residential or commercial property line, whichever is less, all work must cease. Following cessation of work activities and implementation of odor control contingencies, if organic vapor levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the exclusion zone, then air quality must be monitored within 20 feet of the perimeter of the nearest residential/commercial structure (the “20 foot zone”).

If organic vapor levels approach 5 ppm above background within the “20 foot zone” for a period of more than 30 minutes, or organic vapor levels greater than 10 ppm above background for any time period occur within the “20 foot zone”, then the following steps will be taken:

- Frequent air monitoring will be conducted at 30-minute intervals within the 20-foot zone. If two successive readings below action levels are measured, air monitoring within the 20 foot zone may be halted and the perimeter reduced back to the exclusion zone perimeter, or as determined by the SM.

8.3 Data Quality Assurance

8.3.1 Calibration

Instrument calibration shall be documented and included in a dedicated safety and health logbook or on separate calibration pages. All instruments shall be calibrated before each shift. Calibration checks may be used during the day to confirm instrument accuracy. Duplicate readings may be taken to confirm individual instrument response.

8.3.2 Operations

All instruments shall be operated in accordance with the manufacturer's specifications. Manufacturers' literature, including an operations manual for each piece of monitoring equipment will be maintained on-site by the SM for reference.

8.4 Noise Monitoring

Work areas or tasks that pose an exposure risk greater than 85 dBA will require hearing protection. If there is a reasonable possibility that workers may be exposed to an 8-hour time-weighted average exceeding 85 dBA, noise monitoring will be conducted.

9.0 ZONES, PROTECTION, AND COMMUNICATION

9.1 Site Control

Site zones are intended to control the potential spread of contamination and to assure that only authorized individuals are permitted into potentially hazardous areas. A three-zone approach will be utilized. 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 for each task requiring such delineation (i.e. construction, excavation, trenching in impacted areas of the site). Maps will be available at the Site and used during initial site-specific training.

This project is being conducted under the requirements of 29 CFR 1910.120, and any personnel working in an area where the potential for exposure to site contaminants exists, will only be allowed access after proper training and medical documentation as required by National Grid. These records are maintained by the CHSO, and copies are provided to the SM prior to mobilization for project activities.

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 sanitary facilities and 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 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 Exclusion Zone 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 exclusion zone. This zone will be clearly delineated by cones, tapes or other means. The SM 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 SM allowing adequate space for the activity to be completed, field members and emergency equipment.

9.2 Contamination Control

9.2.1 Personnel Decontamination Station

Personnel hygiene, coupled with diligent decontamination, will significantly reduce the potential for exposure.

9.2.2 Minimization of Contact With Contaminants

During completion of all site activities, personnel should attempt to minimize the degree of contact with contaminated materials. This involves a conscientious effort to keep "clean" during site activities. All personnel should minimize kneeling, splash generation, and other physical contact with contamination. This may ultimately minimize the degree of decontamination required and the generation of waste materials from site operations.

Field procedures will be developed to control over spray and runoff and to ensure that unprotected personnel working nearby are not affected.

9.2.3 Personnel Decontamination Sequence

Consideration will be given to prevailing wind directions so that the decontamination line, the support zone, and contamination reduction zone exit is upwind from the exclusion zone and the first station of the decontamination line. Decontamination will be performed by removing all PPE used in EZ and placing in drums/trash cans at CRZ. Baby wipes shall be available for wiping hands and face.

9.2.4 Emergency Decontamination

If circumstances dictate that contaminated clothing cannot be readily removed, then remove gross contamination, wrap injured personnel with clean garments/blankets to avoid contaminating other personnel or transporting equipment.

If the injured person can be moved, he/she will be moved to the exclusion zone boundary and decontaminated by site personnel as described above before emergency responders handle the victim. If the person cannot be moved because of the extent of the injury (a back or neck injury) provisions shall be made to ensure that emergency response personnel will be able to respond to victim without being exposed to potentially hazardous atmospheric conditions. If the potential for inhalation hazards exist, such as with open excavation, this area will be covered with poly to eliminate any potential inhalation hazards. All emergency personnel are to be immediately informed of the injured person's condition, potential contaminants, and provided with all pertinent chemical data.

9.2.5 Hand Held Equipment Decontamination

Hand held equipment includes all monitoring instruments, samples, hand tools, and notebooks. The hand held equipment is dropped at the first decontamination station to be decontaminated by one of the decontamination team members. These items must be decontaminated or discarded as waste prior to removal from the exclusion zone.

To aid in decontamination, monitoring instruments can be sealed in plastic bags or wrapped in polyethylene. This will also protect the instruments against contaminants. The instruments will be wiped clean using wipes or paper towels if contamination is visually evident.

Decontamination procedures for sampling equipment, hand tools, etc., shall include the use of steam cleaning or a detergent wash, as appropriate for the site conditions.

9.2.6 Heavy Equipment Decontamination

Decontamination of chemically contaminated heavy equipment will be accomplished using high -pressure steam or dry decon with brushes and shovels. Decontamination shall take place on a decontamination pad and all liquids used in the decontamination procedure will be collected. Vehicles or equipment brought into an exclusion zone will be treated as contaminated, and will be decontaminated prior to removal. All liquids used in the decontamination procedure will be collected, stored and disposed of in accordance with federal, state and local regulations. Personnel performing this task will wear the proper PPE as prescribed in Table 6-1.

9.3 Communications

The following communications equipment shall be specified as appropriate:

- Telephones - A cellular telephone will be located in the SZ for communication with emergency support services/facilities and the home office. Personnel in the EZ can carry cellular telephones for communication as well if Level D PPE has been determined to be appropriate.
- Hand Signals - Hand signals shall be used by field teams along with the buddy system. They shall be known by the entire field team 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 area immediately, no debate
Hands on top of head	Need assistance
Thumbs up	Okay, I’m all right, I understand.
Thumbs down	No, negative.

10.0 DECONTAMINATION

PPE help prevent the wearer from becoming contaminated or inhaling contaminants, and good work practices help reduce contamination on protective clothing, instruments, and equipment. Even with these safeguards, contamination may occur. Harmful materials can be transferred to clean areas, exposing unprotected personnel. To prevent such occurrences, the following contamination reduction and decontamination procedures have been developed.

10.1 Minimization of Contact with Contaminants

During completion of all site activities, personnel should attempt to minimize the degree of contact with contaminated materials. This involves a conscientious effort to keep "clean" during site activities. All personnel should minimize kneeling, splash generation, and other physical contact with contamination. This may ultimately minimize the degree of decontamination required and the generation of waste materials from site operations.

10.2 Personnel Decontamination

Personnel hygiene, coupled with diligent decontamination, will significantly reduce the potential for exposure. Consideration will be given to prevailing wind directions so that the decontamination line, the support zone, and contamination reduction zone exit is upwind from the exclusion zone and the first station of the decontamination line. Decontamination will be performed by removing all PPE used in EZ and placing in drums/trash cans at CRZ. Disinfecting hand wipes shall be available for wiping hands and face. For Level D Decontamination, personnel should wash and rinse gloves, and wash and rinse hands and face with potable water. For Level C-decontamination, personnel should wash and rinse gloves and over-boots, remove boot covers, remove outer gloves, remove Poly-coated suit, wash inner gloves, remove respirator, rinse inner gloves, remove inner gloves and wash and rinse hands and face.

10.3 Emergency Decontamination

If circumstances dictate that contaminated clothing cannot be readily removed, then remove gross contamination; wrap injured personnel with clean garments/blankets to avoid contaminating other personnel or transporting equipment. If the injured person can be moved, he/she will be moved to the exclusion zone boundary and decontaminated by site personnel as described above before emergency responders handle the victim. If the person cannot be moved because of the extent of the injury (a back or neck injury) provisions shall be made to ensure that emergency response personnel will be able to respond to victim without being exposed to potentially hazardous atmospheric conditions. The only time an injured person should be removed is if the worker's life is threatened to a greater degree than if he/she is left in the spot where the accident occurred. If emergency response personnel have to enter hazardous conditions to respond to victim this should communicated when the emergency call is made and responders can come prepared in appropriate PPE. If the potential for inhalation hazards exist, such as with an open excavation, this area will be covered with plastic sheeting, or similar controls, to eliminate any potential inhalation hazards. All emergency personnel are to be immediately informed of the injured person's condition, potential contaminants, and provided with all pertinent chemical data.

10.4 Hand Held Equipment Decontamination

Hand held equipment includes all monitoring instruments, samples, hand tools, and notebooks. The hand held equipment is dropped at the first decontamination station to be decontaminated by one of the decontamination team members. These items must be decontaminated or discarded as waste prior to removal from the exclusion zone.

To aid in decontamination, monitoring instruments can be sealed in plastic bags or wrapped in polyethylene. This will also protect the instruments against contaminants. The instruments will be wiped clean using wipes or paper towels if contamination is visually evident.

Decontamination procedures for sampling equipment, hand tools, etc., shall include the use of steam cleaning or a detergent wash, as appropriate for the site conditions.

10.5 Heavy Equipment Decontamination

Decontamination of chemically contaminated heavy equipment will be accomplished using high –pressure steam or dry decontaminated with brushes and shovels. Decontamination shall take place on a decontamination pad and all liquids used in the decontamination procedure will be collected. Vehicles or equipment brought into an exclusion zone will be treated as contaminated, and will be decontaminated prior to removal. All liquids used in the decontamination procedure will be collected, stored and disposed of in accordance with federal, state and local regulations. Personnel performing this task will wear the proper PPE as prescribed in Table 6-1.

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 shall be collected and bagged for appropriate disposal as non-hazardous solid waste. The waste management procedures as specified in the Field Sampling Plan and the applicable work plan for activities being performed, shall be complied with.

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 are essential. Specific elements of emergency support procedures which are addressed in the following subsections include communications, local emergency support units, preparation for medical emergencies, first aid for injuries incurred on-site, record keeping, and emergency site evacuation procedures.

12.1 Pre-emergency Planning

Before the field activities begin, the local emergency response personnel may be notified by National Grid of the schedule for field activities and about the materials that are thought to exist on the site so that they will be able to respond quickly and effectively in the event of a fire, explosion, or other emergency.

In order to be able to deal with any emergency that might occur during remedial activities at the Site, emergency telephone numbers will be readily available in the SSO vehicle or construction office. These telephone numbers are presented in Appendix A. Hospital route maps will also be readily available in the SSO vehicle and/or Construction Office, and are also located in Appendix A.

12.2 Roles and Responsibilities

12.2.1 Corporate Health and Safety Officer (CHSO)

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

12.2.2 Site Safety Officer (SSO)

The SSO 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 SSO is required to immediately notify the Consultant and National Grid Project Managers, and CHSO of any fatalities or injuries requiring more than basic first aid treatment. The CHSO will notify OSHA within the required time frame if a reportable incident has occurred. The CHSO will be notified of all OSHA recordable injuries, fires, spills, releases or equipment damage in excess of $500 within 24 hours.

The SSO also serves as the Emergency Coordinator. In the event of an emergency, the Emergency Coordinator, with National Grid representatives, shall make contact with Local Emergency Response personnel. In these contacts, the Emergency Coordinator will inform response personnel about the nature of work on the Site, the type of contaminants and associated health or safety effects, and the nature of the emergency, particularly if it is related to exposure to contaminants.

The Emergency Coordinator shall review this plan and verify emergency phone numbers, identify hospital routes, and shall ensure the appropriate emergency equipment is available and in working order prior to beginning work on Site.

The Emergency Coordinator shall implement the Emergency Response Plan whenever conditions at the Site warrant such action.

12.2.3 Site Personnel

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

12.3 Evacuation Routes and Procedures

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 at the work area, including but not limited to fire, explosion or significant release of toxic gas into the atmosphere, immediate evacuation of all personnel is necessary due to an immediate or impending danger. All heavy equipment will be shut down and all personnel will evacuate the work areas and assemble at a pre-determined location.

12.4 Contingency Plans

12.4.1 Fire Prevention and Protection

In the event of a fire or explosion, procedures will include immediately evacuating the work area. The Emergency Coordinator will immediately notify the 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).

Fires will be prevented by adhering to the following precautions:

- 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
- Monthly inspections of all fire extinguishers.

The SSO is responsible for the maintenance of fire prevention and/or control equipment. The SSO is responsible for the control of fuel source hazards.

11.4.2 Overt Chemical Exposure

The following are standard procedures to treat chemical exposures. Other, specific procedures detailed on the Material Safety Data Sheet will be followed as necessary. If first aid or emergency medical treatment is necessary the Emergency Coordinator will contact the appropriate emergency facilities.

SKIN AND EYE CONTACT:	Use copious amounts of soap and water. Wash/rinse affected areas thoroughly, 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. Transport to hospital or local medical provider.
INHALATION:	Move to fresh air. Decontaminate. 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.

11.4.3 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 SSO 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 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.

11.4.4 Adverse Weather Conditions

In the event of adverse weather conditions, the SSO 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
- Other major incidents

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

11.4.5 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, absorbent materials such as sand, sawdust or commercial sorbents should be placed directly on the substance to contain the spill and aid recovery. Any acid or caustic 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 50-100 feet around the spill area should be established depending on the size and type of the spill.

The Emergency Coordinator should take the following steps:

1. Determine the nature, identity and amounts of major spill components
2. Make sure all unnecessary persons are removed from the spill area
3. Notify appropriate response teams and authorities
4. Use proper PPE in consultation with the SSO and information provided on the MSDS for the spilled material
5. 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.)
6. If possible, try to stop the leak with appropriate material
7. Remove all surrounding materials that can react or compound with the spill
8. Notify the National Grid Project Manager.

12.5 Emergency Contact Information

<u>**Medical Emergencies**</u>	
Emergency Medical Services	
Emergency	911
All other communications (Ambulance)	(631) 224-1414
Nearest Emergency Room (Southside Hospital)	(631) 968-3000
<u>**Fire and Rescue Emergencies**</u>	
Emergency	911
All other communications (Fire)	(631) 665-4227
<u>**Police Emergencies**</u>	
Bay Shore Police Department	
Emergency	911
All other communications	311
Switchboard	(631) 854-8300
<u>**Utility Emergencies**</u>	
Electric (Long Island Power Authority)	(800) 490-0075
Natural Gas (National Grid)	(718) 643-4050
National Grid Site Contacts	
William Ryan	(516) 545-2586 (office) (516) 790-1660 (cell)
Underground Utilities (New York One Call Center)	(800) 272-4480
<u>**Spill Incident**</u>	
New York State Department of Environmental Conservation	(800)-457-7362
National Response Center	(800) 424-8802
<u>**National Information Centers**</u>	
Chemtrec	(800) 424-9300
Poison Control Center	(800) 222-1222

12.6 Emergency Equipment

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

- Industrial first aid kit
- Portable eye washes
- Fire extinguishers (one per vehicle and heavy equipment)
- Absorbent material
- Bloodborne pathogen kit

12.7 Postings

The following information shall be posted or be readily visible and available at conspicuous locations throughout the site:

- Emergency telephone numbers
- Hospital Route Map

12.8 Restoration and Salvage

After an emergency, prompt restoration of utilities, fire protection equipment, medical supplies and other equipment will reduce the possibility of further losses. Some of the items that may need to be addressed are:

- Refilling fire extinguishers;
- Refilling medical supplies;
- Recharging eyewashes and/or showers
- Replenishing spill control supplies
- Replacing used air horns

13.0 LOGS, REPORTS, AND RECORD KEEPING

The following is a summary of required health and safety logs, reports, and record keeping.

13.1 Medical and Training Records

Copies or verification of training (40 hour, 8 hour, supervisor, and site-specific training) and medical clearance for hazardous waste site work and respirator use will be maintained by the CHSO and copies provided to the SM prior to the initiation of work on-site.

13.2 On-Site Log

A log of personnel on-site each day will be kept by the SM in a field logbook.

13.3 Exposure Records

All personal monitoring results, laboratory reports, calculations and air sampling data sheets will be maintained by the SM during site work. At the end of the project they may be maintained in employee files if deemed necessary by the CHSO.

13.4 Accident/Incident Reports

The incident reporting and investigation during site work will follow the Incident Reporting Program in Appendix J.

13.5 OSHA Form 300

An OSHA Form 300 will be kept on-site by the SM. All recordable injuries or illnesses will be recorded on this form. The incident report form referenced in Section 12.11 meets the requirements of the OSHA Form 101(supplemental record) and must be maintained with the OSHA Form 300 for all recordable injuries or illnesses.

13.6 Hazard Communication Program/MSDS

Material Safety Data Sheets (MSDSs) will be obtained for applicable substances and included in the site hazard communication file. The hazard communication program will be maintained onsite in accordance with 29 CFR 1910.1200 and the Hazard Communication Program in Appendix B.

13.7 Work Permits

All work permits, including confined space entry, hot work, lockout/tagout, and line breaking permits will be maintained in the project files. Copies of the work permits shall also be provided to the SM, and the Project-Specific National Grid Corporation Dedicated Contact.

14.0 FIELD PERSONNEL REVIEW

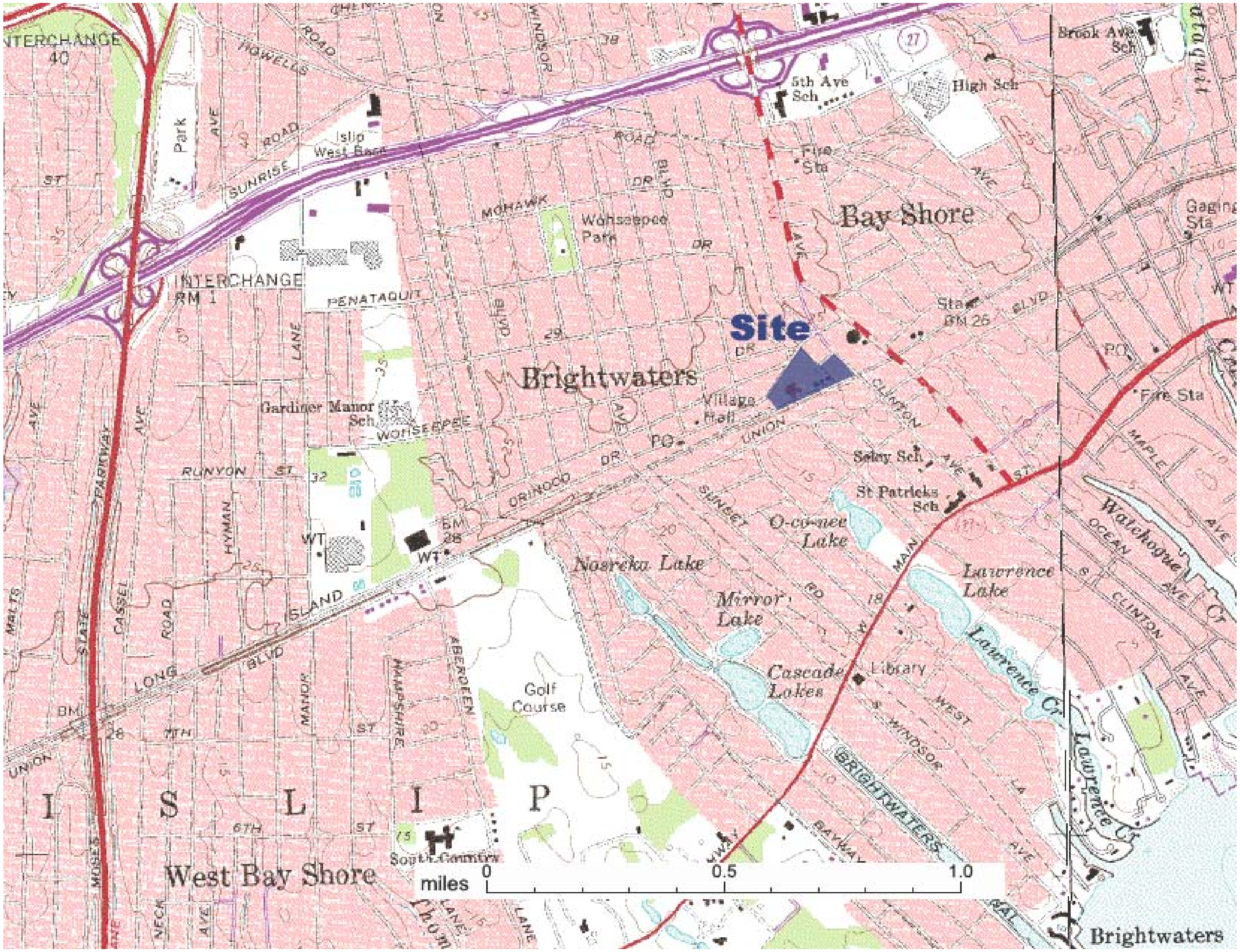
This form serves as documentation that field personnel have read, or have been informed of, and understand the provisions of this HASP for the Bay Shore Site. It is maintained on-site by the SM as a project record. Each field team member shall sign this section after training in the contents of this HASP has been completed. Site workers must sign this form 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 have also completed site-specific training for the work detailed in the project Work Plan. I will comply with the provisions contained therein.

NAME (PRINT AND SIGN)	DATE

APPENDIX A

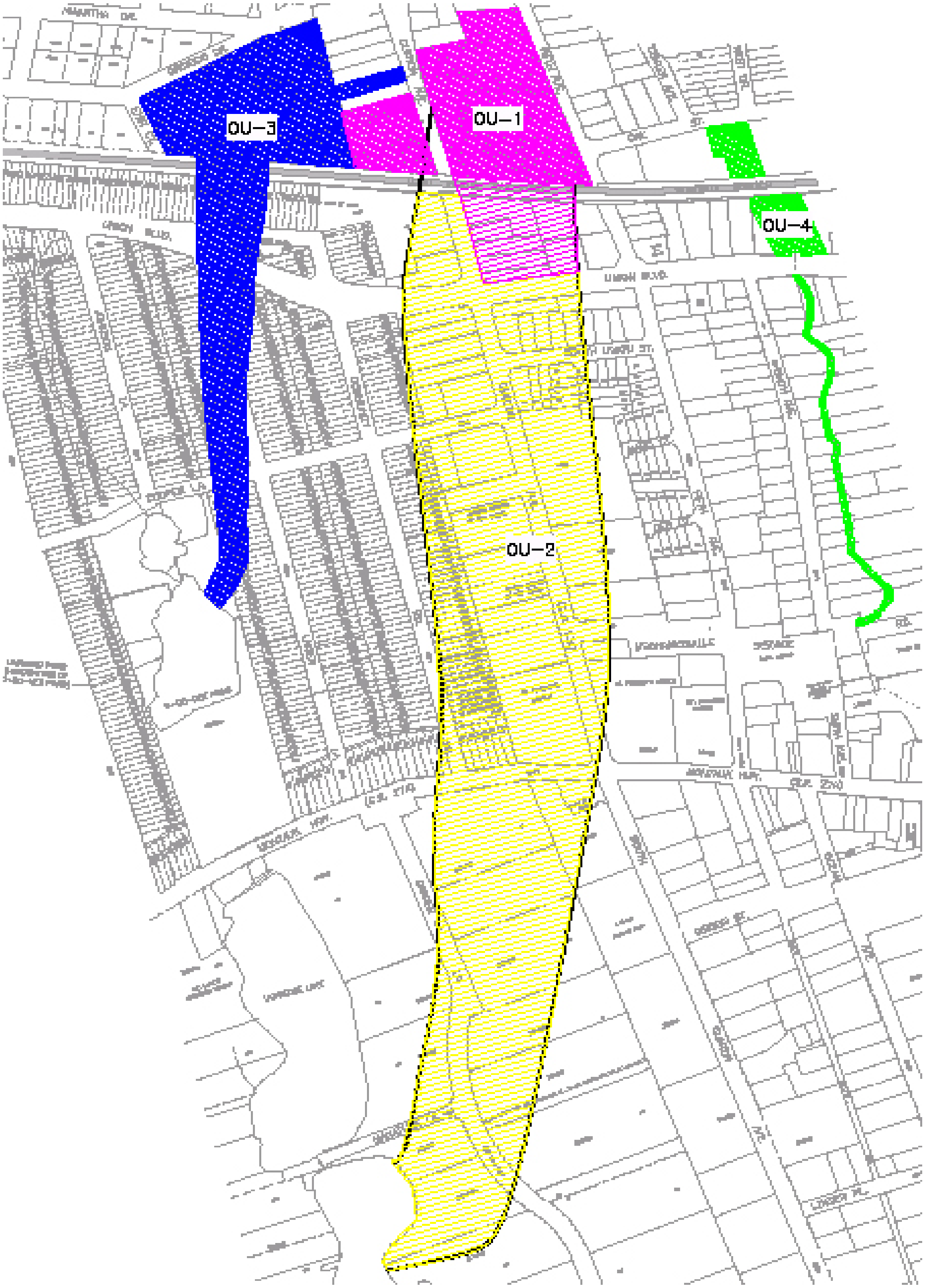
SITE SPECIFIC INFORMATION



SITE LOCATION MAP

BayShore / Brightwaters Former Manufactured Gas Plant

Bay Shore, New York



Site Plan with Operable Units

BayShore / Brightwaters Former Manufactured Gas Plant

Bay Shore, New York

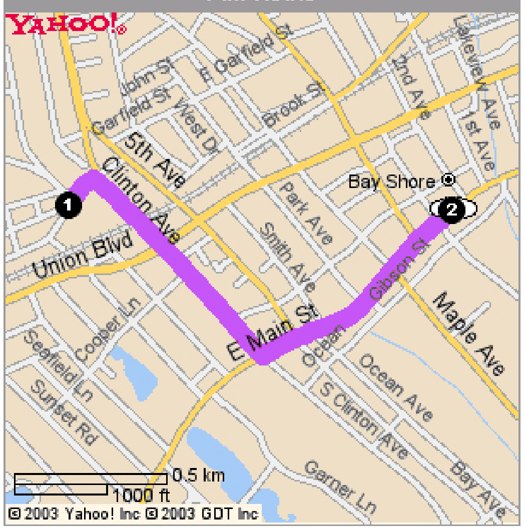
HOSPITAL MAP TO:
North Shore University Hospital - South Side
301 E. Main Street

BAY SHORE, NY 11706-8458

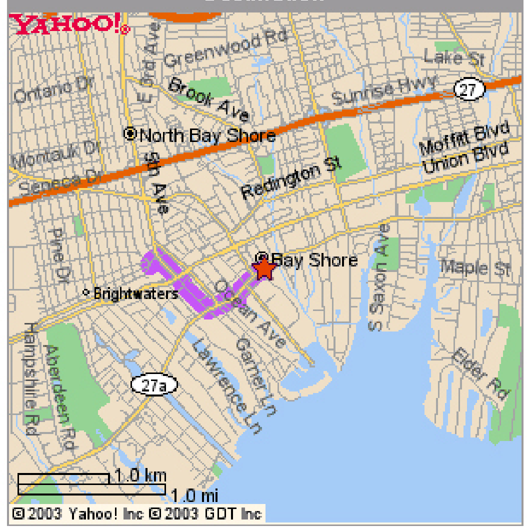
631-968-3000

Starting from:	1 orinoco drive, Bay Shore, NY 11706-7110		
Arriving at:	301 E. Main Street, Bay Shore, NY 11706-8408		
Distance:	1.1 miles	**Approximate Travel Time:**	1 mins

Full Route



Destination



	Directions	Miles	
1.	Start on **ORINCO DR/ORINOCO DR**	0.0	
2.	Continue on **ORINOCO DR**	0.0	
3.	Continue on **ACKERSON ST**	0.0	
4.	Turn Right on **RAMP**	0.1	
5.	Continue on **CLINTON AVE**	0.4	
6.	Turn Left on **E MAIN ST**	0.5	

Distance: 1.1 miles **Approximate Travel Time:** 1 mins

National Grid
Contact Information

Manager
William Ryan, Manager
Office: (516) 545-5286
Mobile: (516) 790-1660

GEI Consultants, Inc.
Project Team Contact Information

Overall Project Manager
Errol Kitt
Office: (631) 759-2964
Mobile: (631) 513-7191

Project Managers
Matthew O'Neil
Office: (860) 368-5406
Mobile: (860) 608-9725

Kathleen Slimon
Office: (860) 368-5348
Mobile: (860) 608-9721

Albert Jaroszewski
Office: (631) 759-2963
Mobile: (631) 481-5286

Site Managers
Jeffrey Parillo
Office: (860) 368-5374
Mobile: (631) 481-5949

John Schafer
Office: (631) 759-2969
Mobile: (516) 369-7377

Christopher Berotti
Office: (631) 759-2961
Mobile: (631) 481-5868

Theresa Landgraff
Office: (631) 759-2965
Mobile: (631) 356-2287

Christopher Morris
Office: (631) 759-2967
Mobile: (631) 484-9152

Emergency Contact Information

APPENDIX B

HAZARD COMMUNICATION PROGRAM

1.0 POLICY AND PURPOSE

It is the policy of the Consultant to furnish employees with a working environment safe from recognized hazards. This program is designed to provide the Consultant compliance with OSHA's Federal Hazard Communication Standard (29 CFR 1910.1200 and 1926.59).

The Consultant Hazard Communication (HAZCOM) Program has been compiled to provide guidelines for assisting this corporation in meeting the requirements of OSHA's Hazard Communication Standard. This program addresses the evaluation of potential Consultant workplace hazards and communication of pertinent hazard information to Consultant employees.

The **CONTRACTOR** must develop a HAZCOM for **CONTRACTOR** employees and **SUBCONTRACTORs**.

Although most **CONTRACTOR** field projects do not involve the use of hazardous substances, it is imperative that all hazardous materials be managed in accordance with this program. This applies to any usage of hazardous materials regardless of volume. The Contractor shall generate a list of chemicals that are anticipated to be used during work activities.

2.0 SCOPE

In accordance with 29 CFR 1910.1200 and 1926.59, this program applies to any potentially hazardous chemical which is known to be present in the workplace in such a manner that employees may potentially be exposed under normal conditions of use. This program also addresses chemicals that may be constituents of waste that may be encountered on a typical Consultant job site.

3.0 LOCATION OF WRITTEN PROGRAM

A complete original of this written program is located with the Consultant Corporate Health and Safety Officer (CHSO) and with each Consultant Office/Branch Manager.

4.0 RESPONSIBILITIES

Overall coordination and implementation of Consultant HAZCOM Program is the responsibility of the CHSO. Any questions, comments, or suggestions relating to Consultant HAZCOM Program should be directed to the CHSO.

The following subsections delineate the responsibilities of personnel as required for successful implementation of this program.

Corporate Health and Safety Officer (CHSO)

The CHSO shall:

- Develop and oversee implementation of the written HAZCOM Program
- At a minimum, determine that field personnel engaged in hazardous waste operations receive OSHA 40-hour Health and Safety Training, 24-hour supervised on-the-job training, 8-hour Supervisory Training, and annual 8-hour Retraining as required by OSHA (29 CFR 1910.120 and 29 CFR 1926.65)

Office/Branch Managers

The Office/Branch Managers shall:

- Determine that all new employees at their office/branch receive training in accordance with the HAZCOM Program within 30 days of hire or prior to performing field work (whichever is sooner)
- Maintain at the office/branch an inventory of Material Safety Data Sheets (MSDSs) as available for all hazardous materials with which employees have the potential of coming into contact while on the job
- Determine that MSDSs are made readily available for employee review upon request by the employee
- Determine that label and warning protocol for hazardous materials is complied with

Supervisors (Project Mangers and/or Field Team Leaders)

Supervisors shall:

- Develop and oversee completeness of site-specific HASPs for their projects
- Implement the hazard communication programs and HASPs for their projects
- Determine that field personnel are familiar with the HAZCOM Program regarding chemical use and potential chemical exposures in the field
- Determine that employees working on their project sites are familiar with site-specific HASPs and perform in compliance with the requirements of those HASPs.

Employee

It is the employee's responsibility to:

- Read the HAZCOM procedure within 30 days of employment by the Consultant or prior to performing field work for CONSULTANT (whichever is sooner)
- Gain familiarization with MSDSs of those hazardous materials which they use or may be exposed to
- Utilize information and measures as learned from the HAZCOM Program,

including associated training and professional experiences, to protect themselves from adverse exposure to hazardous materials

5.0 PROGRAM REQUIREMENTS

Material Safety Data Sheets (MSDSs) and Chemical List

Complete sets of MSDSs for chemicals specific to each office/branch are maintained by the Consultant Office/Branch Manager and made readily available for review upon request by any employee.

A list of chemicals potentially used/encountered by Consultant personnel at offices/branches involved in hazardous waste operations is provided in Table 11-1. Note that Table 11-1 is not necessarily complete.

MSDSs are available for the listed chemicals described below.

- MSDSs for chemicals that are typically used for decontamination and/or sample preservation are compiled. Supplies of these chemicals are generally kept in Consultant field equipment storerooms.
- MSDSs for chemicals and materials that may be encountered on typical Consultant job sites are compiled. These MSDSs are typically included in site-specific Health and Safety Plans. MSDSs should be reviewed prior to performing fieldwork on those sites.
- MSDSs for chemicals used for Photoionization detector (PID) soil gas instrument and standards are compiled. These chemicals are generally kept in small quantities to be used only by soil gas instrument technical personnel.

In addition, the consultant maintains an a comprehensive collection of MSDSs as printed by Genium Publishing Corporation and as obtained from manufacturers of products received at Consultants office are available for use by employees by request to the CHSS. This MSDS collection is updated periodically.

TABLE 11-1
CHEMICAL LIST

DECONTAMINATION AND/OR PRESERVATION CHEMICALS (Field/Storeroom Personnel)

Chemical	*Amount Stored	Location
Acetone	20 liters	Field Equipment Room Flammable Storage Cabinet
Acetonitrile	4 liters	Field Equipment Room Flammable Storage Cabinet
1-Butanol (n-Butyl Alcohol)	0.5 liter	Field Equipment Room Flammable Storage Cabinet
Hexane	20 liters	Field Equipment Room Flammable Storage Cabinet
Hydrochloric Acid	0.5 liter	Field Equipment Room Corrosive Storage Cabinet
Methanol	40 liters	Field Equipment Room Flammable Storage Cabinet
Nitric Acid	15 liters	Field Equipment Room Corrosive Storage Cabinet
Sodium Hydroxide	1 kg	Field Equipment Room Corrosive Storage Cabinet (separated from acids)
Sulfuric Acid	0.5 liter	Field Equipment Room Corrosive Storage Cabinet

CHEMICALS POTENTIALLY ENCOUNTERED ON TYPICAL JOB SITES

Chemical
Benzene
Coal Tar Creosote
Coal Tar Pitch
Cresol
Cyanide
1,1-Dichloroethylene
1,2-Dichloroethylene (both isomers)
Ethylbenzene
Gasoline
Naphtha (Coal Tar)
Naphthalene and related PAHs
Pentrachlorophenol
Perchloroethylene
Polychlorinated Biphenyls
Styrene
1,1,2,2-Tetrachloroethane
Tetraethyl Lead
Toluene
1,1,1-Trichloroethane (methyl chloroform)
Trichloroethylene
Xylene

**SOIL GAS STANDARD CHEMICALS (used by soil gas personnel only)

Chemical	*Amount Stored	Location
Stored for Occasional or Potential Future Use		
Benzene	10 grams	Field Equipment Room Refrigerator
1,1-Dichloroethylene	10 grams	Field Equipment Room Refrigerator

**SOIL GAS STANDARD CHEMICALS (used by soil gas personnel only)

Chemical	*Amount Stored	Location
Stored for Occasional or Potential Future Use		
1,2-Dichloroethylene (both isomers)	14 grams	Field Equipment Room Refrigerator
Ethylbenzene	10 grams	Field Equipment Room Refrigerator
Perchloroethylene	10 grams	Field Equipment Room Refrigerator
Toluene	10 grams	Field Equipment Room Refrigerator
Trichloroethylene	10 grams	Field Equipment Room Refrigerator
Xylenes (o, m, & p)	6 grams	Field Equipment Room Refrigerator
Bromodichloromethane	1 gram	Field Equipment Room Refrigerator
Bromoform	5 grams	Field Equipment Room Refrigerator
2-Chloroethyl vinyl ether	5 grams	Field Equipment Room Refrigerator
Dibromochloromethane	1 gram	Field Equipment Room Refrigerator
1,4-Dichlorobenzene	5 grams	Field Equipment Room Refrigerator
1,2-Dichloropropane	5 grams	Field Equipment Room Refrigerator
1,3-Dichloropropene	2 grams	Field Equipment Room Refrigerator
Styrene	2 grams	Field Equipment Room Refrigerator
1,1,2,2-Tetrachloroethane	2 grams	Field Equipment Room Refrigerator
1,1,1-Trichloroethane	2 grams	Field Equipment Room Refrigerator
1,1,2-Trichloroethane	5 grams	Field Equipment Room Refrigerator
Trichlorofluoromethane	5 grams	Field Equipment Room Refrigerator
1,2,4-Trimethylbenzene	2 grams	Field Equipment Room Refrigerator

* Amounts stored are based on typical field equipment room inventory (Colchester Office). Actual amounts may vary depending on facility location and project requirements.

** Soil gas standard chemicals are used for field testing/calibration of soil gas, field, analytical equipment.

LABELS AND WARNINGS

The Consultant labeling system for containers of hazardous materials is as follows:

- Containers are labeled, tagged, or marked in a legible fashion, with the identity of the hazardous materials contained therein.
- Containers are labeled, tagged, or marked in a legible fashion with the appropriate hazard warnings. This warning may be of any type of message, words, pictures or symbols that convey the hazards of the chemical.
- All required container labels, tags and/or markings are legible.
- Labels are affixed to the container itself (vs. lid). Note that lids may also be labeled, but not in lieu of container labeling.

The Consultant field equipment room maintenance technician is responsible that the Consultant labeling system is complied with at his/her office location. Project Managers and Field Team Leaders are responsible for determining that the Consultant labeling system is complied with for the field portion of their projects.

TRAINING

The Consultant Office/Branch Manager is responsible for determining that the HAZCOM Training Program is complied with by personnel employed at their office/branch.

The Consultant's HAZCOM Program training requirements are listed below:

- Newly hired employees who may use or be exposed to hazardous materials will be required to familiarize themselves with the HAZCOM Program, and with the MSDSs associated with their job function.
- Selected employees will be required to attend a HAZCOM Program classroom training session. Training shall provide information on:
    - The physical and health hazards of the chemicals in the work area
    - Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area
    - Measures employees can take to protect themselves from these hazards
    - The details of the HAZCOM Program, including an explanation of MSDSs and CONSULTANTs container labeling system

- As required to achieve compliance with OSHA 1910.120 and 1926.65, technical staff engaged in hazardous waste operations will be provided with OSHA 40-hour HAZWOPER safety training, 24 hours of on-the-job training, and annual 8-hour HAZWOPER refresher courses.

6.0 MULTI-EMPLOYER WORK PLACES

The Consultant is obligated to provide the identity of any hazardous materials/conditions to other employers sharing the same workplace whose employees may be exposed. Likewise, all employers sharing the same workplace with the Consultant shall be obligated to identify all hazardous materials/conditions to which employees may be exposed. The employer sharing space with the Consultant will be required by the Consultant Project Manager to:

- Determine that a mutual exchange of this information occurs, and that health and safety hazards are minimized
- Provide to project employees, as part of the subcontractor HASP, MSDSs of identified hazardous materials to which they may be exposed
- Conform in full to the requirements of 29 CFR 1910.1200 and 29 CFR 1926.59, applicable HASPs, and established work procedures

These obligations may be accomplished via the exchange of written HAZCOM Programs, project HASPs, or MSDSs as appropriate.

7.0 BIENNIAL REVIEW

This program will be formally reviewed by the Consultant CHSO and company management on a biennial basis or more frequently if the CHSO deems it necessary to promote personnel safety. The program will be revised as necessary for continuing compliance with the OSHA Federal Hazard Communication Standard.

APPENDIX C

COLD STRESS PROGRAM

1.0 PURPOSE & INTRODUCTION

The purpose of this document is to educate the employee about exposure to cold environments and the effects of hypothermia and other cold-related injuries. Through proper use of Personal Protective Equipment (PPE), engineering and administrative controls; and education, cold injury, both to the extremities and the body's core temperature, can be prevented.

2.0 SCOPE

This program is intended for use by employees engaged in work with the potential for exposure to cold environments. This program will be reviewed annually by the Health and Safety Division. Training will be provided annually to all those potentially affected, and will include this written program.

3.0 WORKING IN COLD ENVIRONMENTS

1. Metabolic Responses

The human body is designed to function best at a rectal temperature of 99-100F. The body maintains this temperature in two ways: by gaining heat from food and muscular work; or, by losing it through radiation and sweating. By constricting blood vessels of the skin and/or shivering, the body uses its first line of cold defense.

Temperature control of the body is better understood by dividing the body into two main parts: the shell; and, the core. The shell is comprised of the skin, capillaries, nerves, muscles and fat. Other internal organs such as the heart, lungs, brain and kidneys make up the core.

During exposure to cold, the skin is first affected. Blood in the peripheral capillaries is cooled, sending a signal to a portion of the brain called the hypothalamus. Regulating body temperature is one of the many basic body functions of the hypothalamus. Acting like a thermostat, adjustments are performed in order to maintain normal body temperatures. When a chill signal is received, two processes are begun by the hypothalamus: conserve heat already in the body; and, generate new heat.

Heat conservation is performed through constriction of the blood vessels in the skin (shell), thus reducing heat loss from the shell and acting as an insulator for the core. Sweat glands are also inhibited, thus preventing heat loss by evaporation.

Additional fuel for the body is provided in the form of glucose. Glucose causes the heart to beat faster, sending oxygen and glucose-rich blood to the tissue where needed. In an attempt to produce heat, the muscles rapidly contract. This process is better known as "shivering", and generates heat similarly to that created by strenuous activity, raising the body's metabolic rate.

During physical activity and fatigue, the body is more prone to heat loss. As exhaustion approaches, blood vessels can suddenly enlarge, resulting in rapid loss of heat. Exposure to extreme cold causes nerve pulses to be slowed, resulting in fumbling, sluggish and clumsy reactions.

4.0 COLD INJURIES

Cold injuries are classified into two categories: local; or, general. Local injuries include frostbite, frostnip, chilblain and trenchfoot. General injuries include hypothermia and blood vessel abnormalities (genetically or chemically induced). Major factors contributing to cold injury are exposure to humidity and high winds; contact with wetness or metal; inadequate clothing; age; and, general health. Allergies, vascular disease, excessive smoking and/or drinking, and certain drugs and medicines are physical conditions that can compound the effects of exposure to a cold environment.

1. <u>Hypothermia</u>

   Hypothermia is a condition of reduced body temperature. Most cases develop in air temperatures between 30-50°F, not taking wind-chill factor in consideration.

   Symptoms of hypothermia are uncontrolled shivering and the sensation of cold. The heartbeat slows and sometimes becomes irregular, weakening the pulse and changing blood pressure. Changes in the body chemistry cause severe shaking or rigid muscles; vague or slow slurred speech; memory lapses; incoherence; and, drowsiness. Cool skin, slow irregular breathing, low blood pressure, apparent exhaustion, and fatigue after rest can be seen before complete collapse.

   As the core temperature drops, the victim can become listless, confused, and make little or no effort to keep warm. Pain in the extremities can be the first warning of dangerous exposure to cold. Severe shivering must be taken as a sign of danger. At a core body temperature of about 85°F, serious problems develop due to significant drops in blood pressure, pulse rate and respiration. In some cases, the victim may die.

   Sedative drugs and alcohol increase the risk of hypothermia. Sedative drugs interfere with the transmission of impulses to the brain. Alcohol dilates blood vessels near the skin's surface, increasing heat loss and lowering body temperature.

   Table I provides information on the onset of hypothermia and metabolic responses at different body temperatures.

2. <u>Raynaud's Phenomenon</u>

   Raynaud's Phenomenon is the abnormal constriction of the blood vessels of the fingers on exposure to cold temperatures, resulting in blanching of the ends of the fingers. Numbness, itching, tingling or a burning sensation may occur during related attacks. The disease is also associated with the use of vibrating hand tools in a condition sometimes called White Finger Disease. Persistent cold sensitivity, ulceration and amputations can occur in severe cases.

3. <u>Acrocyanosis</u>

Acrocyanosis is caused by exposure to the cold and reduces the level of hemoglobin in the blood, resulting in a slightly blue, purple or gray coloring of the hands and/or feet.

4. Thromboangitis Obliterans

Thromboangitis obliterans is clotting of the arteries due to inflammation and fibrosis of connective tissue surrounding medium-sized arteries and veins. This is one of the many disabling diseases that can also result from tobacco use. Gangrene of the affected limb often requires amputation.

5. Frostbite

Frostbite is the freezing of the body tissues due to exposure to extremely low temperatures, resulting in damage to and loss of tissue. Frostbite occurs because of inadequate circulation and/or insulation, resulting in freezing of fluids around the cells of the body tissues. Most vulnerable parts of the body are the nose, cheeks, ears, fingers and toes.

Frostbite can affect outer layers of skin or can include the tissues beneath. Damage can be serious, with permanent loss of movement in the affected parts, scarring, necrotic tissue, and amputation are all possibilities. Skin and nails that slough off can grow back.

The freezing point of the skin is about 30F. As wind velocity increases, heat loss is greater and frostbite will set in more rapidly.

There are three (3) degrees of frostbite: first degree, freezing without blistering and peeling; second degree, freezing with blistering and peeling; and, third degree, freezing with death of skin tissues and possibly the deeper tissues.

The following are symptoms of frostbite:

a. Skin changes color to white or grayish-yellow, progresses to reddish-violet, and finally turns black as the tissue dies;

b. Pain may be felt at first, but subsides;

c. Blisters may appear;

d. Affected part is cold and numb.

The first symptom of frostbite is usually an uncomfortable sensation of coldness followed by numbness. Tingling, stinging, cramping and aching feelings will be experienced by the victim. Frostbite of the outer layer of the skin has a waxy or whitish look and is firm to the touch. Cases of deep frostbite cause severe injury. The tissues are cold, pale and solid. The victim is often unaware of the frostbite until someone else observes these symptoms. It is therefore important to use the "buddy system" when working in cold environments, so that any symptoms of overexposure can be noted.

Table II describes the cooling power of wind on exposed flesh. This information can be used as a guide for determining equivalent chill temperatures when the wind is present in cold environments.

6. <u>Trench Foot and Chilblains</u>

Trench foot is swelling of the foot caused by long, continuous exposure to cold without freezing, combined with persistent dampness or immersion in water. Edema (swelling), tingling, itching and severe pain occurs, followed by blistering, necrotic tissue and ulcerations. Chilblains have similar symptoms as trench foot, except that other areas of the body are affected.

7. <u>Frostnip</u>

Frostnip occurs when the face or extremities are exposed to a cold wind, causing the skin to turn white.

5.0 PREVENTION OF COLD STRESS

Cold Stress can be prevented through a combination of various factors: acclimation; water and salt displacement; medical screening, proper clothing selection; and, training and education. Through the use of engineering controls, work practices, work/rest schedules, environmental monitoring and consideration of the wind-chill temperature, the employee can be protected.

1. <u>Acclimation</u>

Acclimation can be achieved to some degree. Sufficient exposure to cold causes the body to undergo changes to increase comfort and reduce the risk of injury. But, these changes are minor and require repeated exposure to cold and uncomfortable temperatures to induce them.

2. <u>Dehydration</u>

The dryness of cold air causes the body to lose a significant amount of water through the skin and lungs. It is essential that caffeine-free, non-alcoholic beverages be available at the worksite for fluid replacement. Dehydration also increases the risk of injury due to cold and affects blood flow to the extremities.

3. <u>Diet</u>

A well-balanced diet is important for employees working in cold environments. Diets restricted only to certain foods may not provide the necessary elements for the body to withstand cold stress, leaving the worker vulnerable.

4. <u>Control Measures</u>

When the windchill factor results in an equivalent temperature of -26F, continuous exposure of the skin will not be permitted. Any worker exposed to temperatures of 36F or less who becomes immersed in water will be given dry clothing immediately and treated for hypothermia at the local hospital if any symptoms of hyperthermia are present. Notification of this incident will be provided to the Health and Safety Division immediately after sending the worker to the hospital.

5. Engineering Controls

The following are some ways that environmental controls can be used to reduce the effects of a cold environment:

a. General or spot heating should be used to increase temperature in certain areas in the workplace;

b. Warm air jets, radiant heaters or contact warm plates can be used to warm the worker's hands if fine work is to be performed with bare hands for 10 to 20 minutes or more;

c. Shield the work area if air velocity at the work site is increased by wind, draft or ventilating equipment;

d. Metal handles of tools and control bars should be covered with thermal insulating material at temperatures below 30F;

e. Unprotected metal chair seats will not be used in cold environments;

f. When appropriate and feasible, equipment and processes will be substituted, isolated, relocated, or redesigned;

g. Power tools, hoists, cranes or lifting aids will be used to reduce the metabolic workload;

h. Heated warming shelters will be made available for continuous work being performed in an equivalent temperature of 20F or below. Workers will be encouraged to use the shelters regularly.

6. Administrative Work Practice Controls

Work practices and guidelines can be designed and developed to reduce exposure to cold stress. Some of these may include:

a. Work-rest schedules to reduce the peak of cold stress;

b. Enforce scheduled breaks;

c. Enforce intake of caffeine-free, non-alcoholic beverages;

d. Schedule work that has potential exposure to cold stress for the warmest part of the day;

e. Move work to warmer areas, whenever possible;

f. Assign extra workers for high-demand tasks;

g. Provide relief workers for other workers needing breaks;

h. Teach basic principles of recognizing and preventing cold stress;

i. Use the buddy system for work at 10F or below, and keep within eyeshot;

j. Allow new employees to adjust to the conditions before they work full-time in cold environments;

k. Minimize sitting and standing in one place for long periods of time;

l. Include weight and bulkiness of clothing when estimating work performance requirements and weights to be lifted;

Table III provides a work/warm-up schedule for cold environments, with wind chill taken into account.

7. Special Considerations

Older workers and workers with circulatory problems should be extra careful in cold environments. Sufficient sleep and good nutrition are important preventive measures for maintenance tolerance to the cold. Double shifts and overtime work should be avoided when working in cold environments.

If any of the following symptoms are observed on site, the affected worker will immediately go to warm shelter:

- Onset of heavy shivering;
- Frostnip;
- Feeling of excessive fatigue;
- Drowsiness;
- Euphoria.

After entering the warm shelter, the outer layer of clothing should be removed. If the clothing is wet from sweat and perspiration, dry clothing should be provided. If this is not feasible, then the clothing should be loosened to allow sweat to evaporate.

Anyone working in cold environments and on prescribed medication should consult their physician concerning any possible side effects due to cold stress. Those individuals suffering from diseases and/or taking medication that interferes with normal body temperature regulation or reduces the tolerance to cold will not be allowed to work in temperatures of 30F or below.

6.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

In choosing PPE for cold environments, it is important to maintain airspace between the body and outer layer of clothing to retain body heat. The more air pockets, the better the insulation. The clothing should also allow for the evaporation of sweat if the skin is wet.

The most important parts of the body to protect are the feet, hands, head and face. Hands and feet become cooled most easily, because of their distance from the heart. Keeping the head covered is equally important. As much as 40% of body heat loss is through the head when it is exposed.

Ideal clothing for exposure to cold environments is made of cotton. Cotton picks up sweat off the body and brings it to the surface. Loosely fitted clothing also aids in sweat evaporation. Recommended clothing may include the following:

a. Polypropylene under shirt and shorts under thermal underwear (preferably two-piece);

b. Wool socks;

c. Wool or thermal pants, lapped over boot tops to keep out snow and water;

d. Suspenders (belts can constrict and reduce circulation);

e. Insulated work boots, preferably waterproof. Safety toe, if necessary;

f. Wool or cotton shirt;

g. Parka;

h. Knit cap/hard hat liner;

i. Wool mittens or gloves (depending on the dexterity required);

j. Face mask or scarf.

Dirty or greasy clothing loses much of its insulation value. Dirty clothing crushes air pockets, allowing air to escape more easily. Also, denim is not a good protective fabric. It is loosely woven and allows water to penetrate and wind to blow away body heat.

TABLE I
Progressive Clinical Presentation of Hypothermia*

Core Temperature Deg. C	Deg. F	Clinical Signs
37.6	99.6	"Normal" rectal temperature.
37	98.6	"Normal" oral temperature.
36	96.8	Metabolic rate increases in an attempt to compensate for heat loss.
35	95.0	Maximum shivering.
34	93.2	Victim conscious and responsive, with normal blood pressure.
33	91.4	Severe hypothermia below this temperature.
32	89.6	Consciousness clouded; blood pressure becomes difficult to obtain;
31	87.8	pupils dilated but react to light; shivering ceases.
30	86.0	Progressive loss of consciousness; muscular rigidity increases;
29	84.2	pulse and blood pressure difficult to obtain; respiratory rate decreases.
28	82.4	Ventricular fibrillation possible with myocardial irritability.
27	80.6	Voluntary motion ceases; pupils non-reactive to light; deep tendon and superficial reflexes absent.
26	78.8	Victim seldom conscious.
25	77.0	Ventricular fibrillation may occur spontaneously.
24	75.2	Pulmonary edema.
22	71.6	Maximum risk of ventricular fibrillation.
20	68.0	Cardiac standstill.
18	64.4	Lowest accidental hypothermia victim to recover.
17	62.6	Isoelectric electroencephalogram.
9	48.2	Lowest artificially cooled hypothermia patient to recover.

* Presentations approximately related to core temperature. Reprinted from the January 1982 issue of American Family Physician, published by the American Academy of Family Physicians.

TABLE II

Cooling Power of Wind on Exposed Flesh as Equivalent Temperature (under calm conditions)*

Estimated Wind Speed (mph)	**Actual Temperature Reading (Degrees Fahrenheit)**											
	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	16	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	-148
(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 Flesh may freeze within 30 seconds.				
	Trenchfoot and immersion foot may occur at any point on this chart.											

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

Note #1: Wind speeds greater than 40 mph have little additional effect.

Note #2: Trenchfoot and immersion foot may occur at any point on this chart

TABLE III

Threshold Limit Values Work/Warm-up Schedule for 4 Hour Shift (*)

Air Temp.-Sunny Sky		No Noticeable Wind		5 mph Wind		10 mph Wind		15 mph Wind		20 mph Wind	
˚C (approx)	**˚F (approx)**	**Max. Work Period**	**No. of Breaks**	**Max. Work PER IOD**	**No. of Breaks**	**Max. Work Period**	**No. of Breaks**	**Max. Work Period**	**No. of Breaks**	**Max. Work Period**	**No. of Breaks**
-26° to -28°	-15° to -19°	(Norm. Breaks) 1		(Norm.Breaks) 1		75 min.	2	55 min.	3	40 min.	4
-29° to -31°	-20° to -24°	(Norm. Breaks) 1		75 min	2	55 min.	3	40 min.	4	30 min.	5
-32° to -34°	-25° to -29°	75 min	2	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease	
-35° to -37°	-30° to -34°	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease			
-38° to -39°	-35° to -39°	40 min.	4	30 min.	5	Non-emergency work should cease					
-40° to -42°	-40° to -44°	30 min.	5	Non-emergency work should cease							
-43° & below	-45° & below	Non-emergency work should cease									

Notes for TABLE III:

1. Schedule applies to moderate to heavy work activity with warm-up breaks of 10 minutes in a warm location. For light to moderate work (limited physical motion), apply the schedule one step lower. For example, at -30F with no noticeable wind (step 4, a worker at a job with little physical movement should have a maximum work period of 40 minutes with 4 breaks in a 4 hour period.

2. The following is suggested as a guide for estimating wind velocity if accurate information is not available: 5 mph, light flag moves; 10 mph, light flag fully extended; 15 mph, raises newspaper sheet; 20 mph, blowing drifting snow.

3. If only the wind-chill cooling rate is available, a rough rule of thumb for applying it rather than the temperature and wind velocity factors given above would be: 1) special warm-up breaks should be initiated at a wind-chill cooling rate of about 17 W/m2; 2) all non-emergency work should have ceased at or before a wind-chill of 2250 W/m2. In general the warm-up schedule provided above slightly under-compensates for the wind at the warmer temperatures, assuming acclimatization and clothing appropriate for winter work. On the other hand, the chart over-compensates for the actual temperatures in the colder ranges, since windy conditions prevail at extremely low temperatures.

4. TLVs apply only for workers in dry clothing.

* Adapted from Occupational Health and Safety Division, Saskatchewan Department of Labour.

APPENDIX D

HEAT STRESS PROGRAM

1.0 INTRODUCTION

Heat stress is one of the most common (and potentially serious) illnesses at job sites. Although it is caused by a number of interacting factors, the wearing of PPE puts the worker at a much higher risk during warmer environmental conditions. The results of heat stress range from fatigue to serious illness or death. Through regular fluid replacement and other preventive measures, heat stress can be controlled, leading to increased efficiency and a higher level of safety on the job.

2.0 PURPOSE

To create an awareness among employees concerning the body's physiologic responses to heat; different types of heat stress that can affect the body; recognition of signs and symptoms; first aid treatment; and, preventive measures.

3.0 SOURCES OF HEAT

There are two sources of heat that are important to anyone working in a hot environment:

- Internally generated metabolic heat;
- Externally imposed environmental heat.

4.0 PHYSIOLOGIC RESPONSES TO HEAT

The human body maintains a fairly constant internal temperature, even though it is exposed to varying environmental temperatures. To keep internal body temperatures within safe limits, the body must get rid of its excess heat, primarily through varying the rate and amount of blood circulation through the skin and the release of fluid onto the skin by the sweat glands. These automatic responses usually occur when the temperature of the blood exceeds 98.6°F and are kept in balance and controlled by the brain. In this process of lowering internal body temperature, the heart begins to pump more blood, blood vessels expand to accommodate the increased flow, and the microscopic blood vessels (capillaries) which thread through the upper layers of the skin begin to fill with blood. The blood circulates closer to the surface of the skin, and the excess heat is lost to the cooler environment.

If the heat loss from increased blood circulation through the skin is not adequate, the brain continues to sense overheating and signals the sweat glands in the skin to release large quantities of sweat onto the skin surface. Evaporation of sweat cools the skin, eliminating large quantities of heat from the body.

As environmental temperatures approach normal skin temperature, cooling of the body becomes more difficult. If air temperature is as warm as or warmer than the skin, blood brought to the body surface cannot lose its heat. Under these conditions, the heart continues to pump blood to the body surface, the sweat gland pour liquids containing electrolytes onto the surface of the skin, and the evaporation of the sweat becomes the principal effective means of maintaining a constant body temperature. Sweating does not cool the body unless the moisture is removed from the skin by evaporation. In high humidity, the evaporation of sweat from the skin is decreased and the body's efforts to maintain an acceptable body temperature may be significantly impaired. These conditions adversely affect an individual's ability to work in the hot environment. With so much blood going to the external surface of the body, relatively less goes to the active muscles, the brain, and other internal organs; strength declines; and fatigue occurs sooner than it would otherwise. Alertness and mental capacity also may be affected. Workers who must perform delicate or detailed work may find their accuracy suffering, and others may find their comprehension and retention of information lowered.

When temperature differences exist between two or more bodies, heat can be transferred. Net heat transfer is always from the body (or object) of higher temperature to that of lower temperature and occurs by one or more of the following mechanisms:

> **Conduction**. The transfer of heat from one point to another within the body, or from one body to another when both bodies are in physical contact. Conduction can be a localized source of discomfort from direct physical contact with a hot or cold surface, it is normally not a significant factor to total heat stress.
>
> **Convection**. The transfer of heat from one place to another by moving gas or liquid. Natural convection results from differences in density caused by temperature differences. Thus warm air is less dense than cool air.
>
> **Radiation**. The process by which energy, electromagnetic (visible and infrared), is transmitted through space without the presence or movement of matter in or through this space.

5.0 PREDISPOSING FACTORS TO HEAT STRESS

Factors that may predispose an individual to heat stress vary according to the individual. These factors include:

- Lack of physical fitness;
- Lack of acclimatization;
- Age;
- Dehydration;
- Obesity;
- Drug/alcohol abuse;
- Infection;
- Sunburn;
- Diarrhea;
- Chronic disease.

Predisposing factors and an increased risk of excessive heat stress are both directly influenced by the type and amount of PPE worn. PPE adds weight and bulk, reduces the body's access to normal heat exchange mechanisms (evaporation, convection and radiation) and increases energy expenditure.

6.0 FORMS OF HEAT STRESS AND FIRST AID

(The following excerpts were taken from NIOSH Publication No. 86-112, Working in Hot Environments):

"Excessive exposure to a hot work environment can bring about a variety of heat-induced disorders. Among the most common are heat stroke, heat exhaustion, heat cramps, fainting and heat rash.

Heat Stroke

Heat Stroke is the most serious of health problems associated with working in hot environments. It occurs when the body's temperature regulatory system fails and sweating becomes inadequate. The body's only effective means of removing excess heat is compromised with little warning to the victim that a crisis stage has been reached.

A heat stroke victim's skin is hot, usually dry, red or spotted. Body temperature is usually 105°F or higher, and the victim is mentally confused, delirious perhaps in convulsions, or unconscious. Unless the victim receives quick and appropriate treatment, death can occur.

Individuals with signs or symptoms of heat stroke require immediate hospitalization. First aid should be immediately administered. This includes removing the victim to a cool area, thoroughly soaking the clothing with water, and vigorously fanning the body to increase cooling. Further treatment, at a medical facility, should be directed to the continuation of the cooling process and the monitoring of complications which often accompany heat stroke. Early recognition and treatment are the only means of preventing permanent brain damage or death.

Heat Exhaustion

Heat Exhaustion includes several clinical disorders having symptoms which may resemble the early symptoms of heat stroke. Heat exhaustion is caused by the loss of large amounts of fluid by sweating, sometimes with excessive loss of salt. A worker suffering from heat exhaustion still sweats but experiences weakness or fatigue, giddiness, nausea or headache. In more serious cases, the victim may vomit or lose consciousness. The skin is clammy and moist, the complexion is pale or flushed, and the body temperature is normal or only slightly elevated.

In most cases, treatment involves having the victim rest in a cool place and drink plenty of liquids. Victims with mild cases of heat exhaustion usually recover spontaneously with this treatment. Those with severe cases may require extended care for several days. There are no known permanent effects.

Heat Cramps

Heat cramps are painful spasms of the muscles that occur among those who sweat profusely in heat, drink large quantities of water, but do not adequately replace the body's salt loss. The drinking of large amounts of water tends to dilute the body's fluids, while the body continues to lose salt. Shortly after, the low salt level in the muscles causes painful cramps. The affected muscles may be part of the arms, legs, or abdomen; but tired muscles (those used in performing the work) are usually the ones most susceptible to cramps. Cramps may occur during or after work hours and may be relieved by taking salted liquids by mouth.

Fainting

Fainting occurs in workers not accustomed to hot environments and who stand erect and immobile in the heat.

With enlarged blood vessels in the skin and in the lower part of the body due to the body's attempts to control internal temperature, blood may pool there rather than return to the heart to be pumped to the brain. Upon lying down, the worker should soon recover. By moving around, and thereby preventing blood from pooling, the patient can prevent further fainting.

Heat Rash (Prickly Heat)

Heat rash, also known as prickly heat, is likely to occur in hot, humid environments where sweat is not as easily removed from the surface of the skin by evaporation and the skin remains wet most of the time. The sweat ducts become plugged, and a skin rash soon appears. When the rash is extensive or when it is complicated by infection, prickly heat can be very uncomfortable and may reduce a worker's performance. The worker can prevent this condition by resting in a cool place part of each day and by regularly bathing and drying the skin."

7.0 SELECTION OF PERSONAL PROTECTIVE EQUIPMENT (PPE)

During work periods where the increased risk of heat stress exists, each item's benefit will be carefully evaluated. Once the PPE is chosen, safe work durations/rest periods will be determined based on the following conditions:

- Anticipated work rate;
- Ambient temperature and humidity;
- Level of protection.

8.0 PREVENTION OF HEAT STRESS

Prevention of heat stress will be addressed in the following manner:

1. Adjustment of work schedules.

    a. Modify work/rest schedules.
    b. Enforce work slowdowns, as needed.
    c. Rotate personnel to minimize overstress or overexertion.
    d. When possible, work will be scheduled and performed during cooler hours.

1. Provide shelter or shaded areas to protect personnel during rest periods.

2. Maintain worker's body fluids at normal levels.

    a. Drink approximately 12 to 16 ounces of non-caffeinated liquid (preferably water, Gatorade or equivalent) prior to the start of work. Caffeinated fluids act to dehydrate the worker.

    b. Workers will be urged to drink a cup or two every 15 to 20 minutes, or at each break. A total of 1 to 1.5 gallons of water per individual per day are recommended for fluid replacement under heat stress conditions, but more may be required.

3. Encourage physical fitness among the workers.

    Gradually acclimatize workers on site to help build up an "immunity" to the conditions.

    - Heat acclimatization can usually be induced in 5 to 7 days of exposure at a hot job. For workers with previous experience with the job, acclimatization will include exposures of 50% for day 1, 60% for day 2, 80% for day 3, and 100% for the remaining additional days.

4. Provide cooling devices during prolonged work or severe heat exposure.

    a. Supply field showers or hose down areas.

    b. Supply personnel with cooling jackets, vests, and suits.

5. Train workers in recognition and treatment of heat stress.

6. Use of the buddy system that depends on the recognition of signs and symptoms of heat stress.

7. Identification of heat-intolerant individuals through medical screening.

APPENDIX E

PROCESS SAFETY MANAGEMENT

1.0 PROCESS SAFETY INTRODUCTION

The OSHA Process Safety Management (PSM) Standard applies to users of extremely hazardous substances and flammable substances that exceed certain thresholds. The regulation requires users of these substances to conduct a thorough comprehensive analysis of processes that use these hazardous materials. The EPA Risk Management Program regulations are closely related to the OSHA Standard. Many **CONTRACTOR** clients must comply with PSM/RMP and it is **CONTRACTOR**'s responsibility to meet the Client's requirements as a vendor to the client. The purpose of the OSHA PSM and EPA RMP regulations is to minimize the impact of catastrophic releases of extremely hazardous materials. These substances include toxic, reactive, flammable and explosive substances. **CONTRACTOR** employees are required to be properly trained and informed when working at sites regulated under the PSM/RMP rule.

2.0 PROCESS HAZARD ANALYSIS

Regulated facilities are required to conduct a Process Hazard Analysis of all regulated processes. All **CONTRACTOR** project managers are required to discuss the applicability of the Process Hazard Analysis to **CONTRACTOR**'s work. Copies of the Process Hazard Analysis (PHA) should be obtained if available prior to starting the work. The PHAs applicable to **CONTRACTOR**'s work will be identified and provided to **CONTRACTOR**'s affected employees. Each employee will be familiar with the hazards related to **CONTRACTOR**'s work and the proper response in the event of an emergency. This response could include evacuation, sheltering in place or the use of emergency escape equipment. The escape routes must be known before beginning work. **CONTRACTOR** staff should meet with the Client's Safety Department whenever possible to review safety issues associated with **CONTRACTOR**'s work.

3.0 TRAINING

All **CONTRACTOR** employees will receive site-specific training prior to working at a site regulated by the Process Safety Standard. Training will review the known potential fire, explosion, and toxic hazards present on site. Most clients provide this training as part of the site admissions process. Varying levels of training may be needed depending on the type of access and proximity to regulated processes. Only documented trained **CONTRACTOR** employees will be allowed to work at a site regulated by the Process Safety Standard. Records of the training will be maintained in each employee's personnel record.

4.0 SITE SPECIFIC EMERGENCY ACTION PLAN

4.1 Emergency Action Plan

Emergency Action Plans are required by all facilities. The plan will be reviewed by **CONTRACTOR** staff before beginning work on site. Exit routes, gathering locations and shelters in place will be reviewed relative to **CONTRACTOR**'s work. The review of the plan will be part of **CONTRACTOR**'s daily toolbox safety meeting.

4.2 Response Procedures

CONTRACTOR will be familiar with the alarms or other notification systems used by the client. CONTRACTOR will place all equipment in a neutral state, if possible, before leaving the work area during an emergency. **CONTRACTOR** employees should remain together and identify themselves to the response coordinator. Re-access to the work area will not take place until permission has been obtained and the emergency mitigated.

4.3 Material Safety Data Sheets

CONTRACTOR will maintain on-site a compilation of MSDSs for chemicals used by **CONTRACTOR**. **CONTRACTOR** will obtain from the client MSDSs for facility chemicals that could be encountered by **CONTRACTOR** employees during this work. **CONTRACTOR** will review **CONTRACTOR**'s work with the client including the chemical usage to determine if there will be significant impact with the client's processes.

4.4. Accidents/Incidents

Accidents and near-miss incidents will be investigated in accordance with client and **CONTRACTOR** Corporate Health and Safety requirements.

5.0 TRADE SECRETS

All **CONTRACTOR** employees have an obligation to keep client information confidential and are not allowed to discuss the client's processes with outside personnel. All communication with regulatory personnel or other observers of **CONTRACTOR**'s work is to be directed to the client unless written permission has been obtained from the client. The results of all data collected by **CONTRACTOR** is also considered confidential and must not be discussed without client permission.

6.0 SAFE WORK PRACTICES

CONTRACTOR's work is typically non-intrusive and should not interfere with the clients operation. Unique hazards associated with **CONTRACTOR**'s work should be identified and reviewed with the client. Special procedures that may need to be followed could include lockout/tagout, confined space entry, hot work, or other operational issues that may need to be addressed. **CONTRACTOR** will review **CONTRACTOR**'s work with the Client to determine if **CONTRACTOR**'s work will create unique hazards or interfere with the client's operation.

6.1 Hot-work and Lockout/tagout

CONTRACTOR will adhere to client's requirements for lockout/tagout procedures. Hot work permits may be necessary in certain situations and **CONTRACTOR** will discuss these permit conditions with the client before starting work.

APPENDIX F

PERSONAL PROTECTIVE EQUIPMENT (PPE) PROGRAM: SELECTION AND USE

1.0 PURPOSE

This program has been written to help the worker choose the correct Personal Protective Equipment (PPE) for the job. Familiarity with the different levels of protection (A, B, C and D) will help speed up the selection process. Careful selection and use of adequate PPE should protect the respiratory system, skin, eyes, face, hands, feet, head, body and hearing. **CONTRACTOR** employees may work at a variety of job sites and locations which may require different types of protective equipment. Client specific requirements will always be adhered to. **CONTRACTOR** will supply all PPE or reimburse the employee for the costs of PPE if the PPE is required as part of the project.

2.0 SCOPE

This program establishes criteria for the selection, use, donning and doffing, inspection, maintenance, storage, decontamination of PPE, and evaluation. This information is general, and specific PPE use should be included in the site-specific health and safety plan prepared for each project.

3.0 OSHA REQUIREMENTS (29 CFR 1910.120)

A written personal protective equipment program, which is part of the employer's safety and health program and also part of the site-specific health and safety plan shall be established. The PPE program shall address the elements listed below.

- PPE selection based upon site hazards;
- PPE use and limitations of the equipment;
- Work mission duration;
- PPE Maintenance and storage;
- PPE decontamination and disposal;
- PPE training and proper fitting;
- PPE donning and doffing procedures;
- PPE inspection procedures prior to, during and after use;
- Evaluation of the effectiveness of the PPE program; and
- Limitations during temperature extremes, heat stress, and other appropriate medical considerations.

OSHA Standard 29 CFR 1910.132 requires employers to assess the employer's workplace and determine if hazards are present that necessitate the use of personal protective equipment (PPE). This assessment must be certified in writing and documented.

Due to the variety of job sites and situations that **CONTRACTOR** personnel may be involved in, it is important that **CONTRACTOR** maintain a consistent approach in complying with health and safety procedures. The project manager and/or site supervisor are responsible for ensuring that all personnel wear the appropriate PPE. Failure to comply with these requirements may result in disciplinary action. Employee safety is a paramount concern for all **CONTRACTOR** managers and employees. We all must make every effort to protect ourselves and each other from harm. These procedures will now require the following:

1. Protective footwear must be worn by all field personnel working in the field. Footwear must at a minimum include steel toe and shank protection. **CONTRACTOR** will reimburse employees up to $90 for the purchase of protective footwear which must be dedicated for work. Protective footwear must meet ANSI Z41-1991. Additionally, chemical protective footwear may also be required if the potential for contaminated materials exists. This type of protection will be required on a site-specific basis.

2. Eye protection must be worn by all field personnel during all sampling activities, stack sampling, and inside manufacturing facilities. Eye protection must include side shields. Prescription lenses worn as eye protection and other protective eyewear must meet ANSI Z87.1-1989.

3. Hardhats are to be worn by all field personnel when in the field. New hardhats must meet ANSI Z89-1986.

4. Hand protection is to be worn on a site-specific basis. The hand protection must be selected based on the chemical hazards expected to be encountered. **CONTRACTOR** maintains a stock of a variety of gloves including:

   Best: Nitrile N-Dey
   PVC
   Latex
   Vinyl
   Solvex, Nitrile
   Leather Work Gloves

   These gloves are available from the Windsor office on a project specific basis.

   Additionally, nitrile coated Kevlar gloves or other types of puncture resistant gloves are to be worn by all personnel working with or cleaning glass impingers. Manufacturers that supply these gloves include Ansell Edmont, Jomac and Wells Lamont. Insulated electrical gloves with outer leather gloves is required when working around high-voltage systems.
   CONTRACTOR is responsible for supplying all personal protective equipment required for **CONTRACTOR**'s projects.

4.0 WORK MISSION DURATION

Before donning any PPE ensembles, workers will estimate their anticipated work duration. There are several limiting factors that affect the length of work time. These factors must be addressed:

- Air supply consumption
- Permeation and penetration of the Chemical Protective Clothing/ensemble;
- Ambient temperature; and
- Coolant supply (ice or chilled area to keep the worker's body temperature at a normal temperature).

5.0 LEVEL OF PROTECTION

The following section describes the different levels of protection (A through D). Each level is described in the following manner: the protection provided; when this particular level of protection should be used; recommended and optional equipment; and, any limiting criteria.

1. Level A

a. Protection provided:

- Level A provides the highest available level of respiratory, skin and eye protection.

b. Should be used when:

- The chemical substance has been identified and requires the highest level of protection for skin, eyes, and the respiratory system based on any of the following circumstances;

- Measured (or potential for) high concentration of atmospheric vapors, gases or particulates;

- Site operations and work functions involving a high potential for splash, immersion, or exposure to unexpected vapors, gases or particulates of materials that are harmful to skin or capable of being absorbed through intact skin;

- Substances with a high degree of hazard to the skin are known or suspected to be present, and skin contact is possible;

- The Operations must be conducted in confined, poorly ventilated areas until absence of conditions requiring Level A protection is determined.

c. Recommended equipment:

- Pressure-demand, full facepiece SCBA or pressure-demand supplied-air respirator with escape SCBA;

- Fully-encapsulating, chemical-resistant suit (pressure-tested immediately before use);

- Inner chemical-resistant suit;

- Inner chemical-resistant gloves;

- Chemical-resistant safety boots/shoes; and

- Two-way radio communications.

d. Optional equipment:

- Cooling unit;
- Coveralls;
- Long cotton underwear;
- Hard hat; and
- Disposable gloves and boot covers.

e. Limiting criteria:

- Fully encapsulating suit material must be compatible with the substances involved.

2. Level B

a. Protection provided:

- The same level of respiratory protection, but less skin protection than Level A.

b. Should be used when:

- The type and atmospheric concentration of substances have been identified and require a high level of respiratory protection, but less skin protection. This involves atmospheres with IDLH concentrations of specific substances that do not represent a severe skin hazard, or that do not meet the criteria for use of air purifying respirators;

- Atmospheres contain less than 19.5% oxygen; and

- Presence of incompletely identified vapors or gases indicated by direct-reading organic vapor detection instrument, but vapors and gases are not suspected of containing high levels of chemicals harmful to skin or capable of being absorbed through the intact skin.

c. Recommended equipment:

- Pressure-demand, full facepiece SCBA or pressure-demand supplied-air respirator with escape SCBA;

- Chemical-resistant clothing (overalls and long-sleeved jacket; hooded, one- or two-piece chemical splash suit; disposable chemical-resistant one-piece suit);

- Inner and outer chemical-resistant gloves;

- Chemical-resistant safety boots/shoes;

- Hard hat; and

- Two-way radio communications.

d. Optional equipment:

- Coveralls;
- Disposable boot covers;
- Face shield; and
- Long cotton underwear.

e. Limiting criteria:

- Use only when the vapors or gases present are not suspected of containing high concentrations of chemicals that are harmful to skin or capable of being absorbed through the intact skin.

- Use only when it is highly unlikely that the work being done will generate either high concentrations of vapors, gases or splashes of material that will affect the exposed skin.

3. Level C

a. Protection provided:

- Level C provides the same level of skin protection as Level B, but a lower level of respiratory protection.

b. Should be used when:

- The atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect any exposed skin;

- The types of air contaminants have been identified, concentrations measured, and a canister/ cartridge is available that can remove the contaminant; and

- All criteria for the use of air-purifying respirators are met.

c. Recommended equipment:

- Full facepiece or half facepiece air-purifying negative pressure respirator;
- Chemical-resistant clothing;
- Inner and outer chemical-resistant gloves;
- Chemical-resistant safety boots and shoes;
- Disposable boot covers;
- Hard hat; and
- Two-way radio communications.

d. Optional equipment:

- Coveralls;
- Face shield;
- Escape bottle; and
- Long cotton underwear.

e. Limiting criteria:

- Atmospheric concentration of chemicals must not exceed IDLH levels; and
- The atmosphere must contain at least 19.5% oxygen.

4. Level D

a. Protection provided:

- No respirator protection and minimal skin protection.

b. Should be used when:

- The atmosphere contains no known hazard; and

- Work functions preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.

c. Recommended equipment:

- Coveralls;
- Safety boots/shoes;

- Safety glasses or chemical splash goggles; and
- Hardhat.

d. Optional equipment:

- Gloves;
- Escape bottle; and
- Face shield.

e. Limiting criteria:

- This level should not be worn in the exclusion zone; and
- The atmosphere must contain at least 19.5% oxygen.

6.0 LEVEL OF PROTECTION UTILIZED BY CONTRACTOR PERSONNEL

Due to the nature of our work, it can be reasonably expected that personnel will not be performing any work that will require the use of Level A protection. **CONTRACTOR** will not directly undertake assignments and **CONTRACTOR** does not generally train or equip its personnel to handle circumstances involving Level A protection. If **CONTRACTOR** is working on a site and Level A is deemed necessary, the work will be subcontracted to a qualified firm. **CONTRACTOR** personnel should not directly undertake these tasks.

Sites where **CONTRACTOR** is working often require the use of Level C or D, with Level B equipment available on-site for emergency rescue. Any questions concerning the level of protection necessary to complete a certain task will be directed to the Health and Safety Assessment Division before setting up the job.

7.0 TYPES OF PPE OWNED AND UTILIZED BY CONTRACTOR

The following list contains all types of PPE owned by **CONTRACTOR** and their uses on the job, as they may apply to a specific site.

1. Respiratory Equipment:

a. SCBAs:

- Used for emergency rescue and exposures greater than maximum use concentration limits set for canister/cartridge type negative pressure respirators.

b. Supplied-air respirators:

- MSA Premaire system.

c. Negative pressure respirators:

- Half face and full face, used for exposure to certain types of acid gases, organic vapors and particulates not greater than the canister/cartridge maximum use concentration limit.

2. Chemical protective apparel suits:

   a. Polycoated Tyvek, Saranex, Chemrel and Tyvek (porous). Provide protection against certain liquid chemicals.

      - Tyvek provides protection against particulates only.

   b. Fire/flame retardant coveralls:

      - Provide protection against flash fires.

3. Insulated clothing (Provides protection against exposure to the cold:

   a. Chemical resistant gloves:

      - Provide protection for the hands against chemical splashes.

   b. Disposable boot covers:

      - Protect safety boots from contamination and feet from contact with chemicals.

4. Eye protection:

   a. Safety glasses and chemical splash goggles.

      - Safety glasses protect the eyes against large particles and projectiles.
      - Chemical splash goggles protect the eyes against vaporized chemicals, splashes, large particles, and projectiles.

   b. Vented goggles do not provide protection against vapors and are not adequate for splashes, as material may seep inside the goggles.

5. Hard hat:

      - Provides protection against blows to the head. When worn with a liner, provides protection against the cold.

6. Construction safety boots:

      - Steel-toe and shank construction boots with chemically resistant soles protect the feet from heavy and sharp objects, and contact with chemicals.

7. Safety harnesses and lifelines:

- Enable the individual to work in elevated areas or enter confined spaces to prevent falls and aid in rescue.

8. Hearing protection:

- Provides protection against physiological damage and psychological effects.

9. Canvas work gloves:

- Provide protection for the hands against abrasions and slivers.

8.0 SELECTION OF CHEMICALLY PROTECTIVE CLOTHING

1. Chemically-protective clothing (CPC) will be chosen in the following manner:

   a. Determine what chemicals are present on the site.

   b. CPC chosen must be resistant to permeation, degradation and penetration of the chemical(s).

      - Permeation - Process by which a chemical dissolves in and/or moves through a protective clothing material on a molecular level.

      - Degradation - The loss of or change in the fabric's chemical resistance or physical properties due to exposure to chemicals, use or ambient conditions (e.g., sunlight).

      - Penetration - The movement of chemicals through zippers, stitched seams or imperfections (e.g., pinholes) in CPC.

   c. Review manufacturer's permeation data to determine the performance characteristics of the material to the specific chemical. See Appendix A for "Permeation Guides".

   d. Select CPC that protects against the greatest range of chemicals on the site and has the longest breakthrough time.

   e. Discuss choice of CPC with the Health and Safety division prior to setting up the job.

9.0 DONNING AND DOFFING PROCEDURES

The following procedures will be used by **CONTRACTOR** employees for donning and doffing PPE at protection Levels B and C. Donning and doffing will be performed with the assistance of an individual(s) located in the Support Zone and Contamination Reduction Zone, respectively. This individual will help the worker tape up and adjust PPE for proper fit, as well as remove PPE after decontamination.

1. Donning PPE

    - Inspect the clothing and respirator before donning.
    - Unzip the suit.
    - Step into the legs of the suit, slipping the feet through the legs. Push arms through the sleeves.
    - Pull leg cuffs over the feet.
    - Put on chemical-resistant safety boots over the feet. Tape the leg cuff over the tops of the boots.
    - Pull over chemical-resistant boot covers and tape over the leg cuff.
    - If suit contains protective feet, wear chemical-resistant safety boots inside the suit with chemical-resistant boot covers over the suit and taped securely to the leg.
    - If wearing a SCBA, don the face piece and adjust it to be secure, but comfortable. Do not connect the breathing hose. Open valve on the air tank.
    - If wearing a negative pressure respirator, pull hood over the head and perform positive and negative pressure face piece seal test.
    - Pull on chemical protective inner gloves.
    - Pull on chemical protective outer gloves and tape securely to the sleeve of the suit.
    - Securely tape the suit to protect all exposed skin around the neck area, and if wearing a full face piece, tape around the edge of the hood-to-face piece junction.
    - Put on hardhat, if needed, and tape securely on top of head so that the hard hat does not slide off.

2. Doffing PPE

- Doffing of PPE will not take place until the individual has been properly decontaminated by a suitably attired assistant. Both the worker and assistant will make every effort to avoid any direct contact with the outside of the suit.

- If the individual is wearing a SCBA, the hose connection to the diaphragm will be disconnected, leaving the face piece on the wearer. The remainder of the unit will be removed and decontaminated before proceeding further.

- If the individual is wearing a half-face or full-face negative pressure respirator, she/he will be instructed to leave it on until the doffing procedure is complete.

NOTE: Decontamination is to be performed in accordance with the Site-Specific Health and Safety Plan for the site.

10.0 DECONTAMINATION OF PPE

Whenever possible, disposable PPE will be used on-site. Disposable PPE includes the following:

- Chemical protective suits;
- Gloves; and
- Chemical protective boot covers.

After decontaminating the worker, PPE is disposed of on-site in labeled disposal containers.

11.0 INSPECTION OF PPE

PPE will be inspected prior to, during and after each use according to the procedure outlined below.

1. Prior to use (Reusable and Disposable PPE):

   a. Through reviewing available literature, determine that the clothing material is correct for the task.

   b. Visually inspect for:

- Imperfect seams;
- Non-uniform coatings;
- Tears or holes; and
- Malfunctioning closures.

   c. Hold up to the light and check for pinholes (inflate gloves and check for leaks).

   d. Flex and check for:

      - Cracks; and
      - Shelf deterioration.

e. If previously used, check for:

- Discoloration;
- Swelling;
- Stiffness and cracking; and
- Holes and tears.

2. During use (Reusable and Disposable PPE), check for:

   a. Evidence of chemical attack.
   b. Discoloration, swelling, stiffening, softening and/or cracking.
   c. Tears.
   d. Punctures.
   e. Seam discontinuities.

   Note: Report any sense of breakthrough to the Health and Safety Assessment Division. Medical monitoring may be necessary to determine the extent of exposure.

3. After use (Reusable PPE), check for:

   a. Malfunctioning parts.
   b. Evidence of chemical attack.
   c. Punctures.
   d. Tears.
   e. Cracks.

12.0 MAINTENANCE AND STORAGE OF PPE

PPE, other than respiratory equipment, will be maintained and stored in accordance with the manufacturer's recommendations at a minimum to prevent damage due to exposure to dust, moisture, sunlight, chemicals, temperature extremes and sudden impact.

Employees are given Field Operations Equipment bags prior to working on any **CONTRACTOR** sites. PPE that is given to the individual solely for his/her use will be stored in this bag. Before and after each use, the PPE will be inspected to determine whether or not it is still "field worthy". Any PPE found to be defective will be reported to the Health and Safety Assessment Division and either discarded or repaired, as appropriate. Under no circumstances will defective PPE be used in the field.

8. The Health and Safety Assessment Division will periodically inspect PPE issued for individual use.

   a. Unless the equipment can be repaired, any PPE found to be defective will be removed from service and discarded immediately.

   b. Repairable PPE will be tagged, returned to the Facility Manager and sent out for repair.

13.0 EVALUATION OF PPE PROGRAM

CONTRACTOR's Personal Protection Equipment Program will be reviewed annually by the Health and Safety Assessment Division. Any program deficiencies that are identified by a **CONTRACTOR** employee will be reported to the Health and Safety Assessment Division, so that changes will be made immediately. All employees affected by the change(s) will be notified in writing.

Review of the PPE Program will include, but not be limited to, the following:

- Accident and illness experience on various job sites.
- Type and degree of exposure.
- Adequacy of equipment selection process.
- Degree of fulfillment of program objectives.
- Employee acceptance.
- Coordination with overall health and safety program elements.
- Recommendations for program improvements and modifications.
- Adequacy of program records.

APPENDIX G

MONITORING INSTRUMENTS: USE, CARE, AND CALIBRATION

1.0 INTRODUCTION

Prior to beginning any work at **CONTRACTOR** sites, a preliminary site evaluation must be conducted to identify the hazards or suspected hazards of the site. Through area and personal monitoring with direct-reading instruments and personal sampling pumps, hazardous conditions can be evaluated, and the proper level of protection chosen for the specific type of work activity. Monitoring equipment used by **CONTRACTOR** personnel includes the following: Oxygen/Combustible Gas Meters (CGM); Organic Vapor Analyzers (OVA); Photoionization Detectors (PID); Personal Sampling Pumps; and, Colorimetric Tubes. This program contains a description of each type of monitoring equipment; hazards for which it can be used to monitor; Applications; Care and Maintenance; Limitations; and, Calibration.

2.0 SCOPE

This program covers the use, application, care and maintenance, limitations and calibration of CGMs, OVAs, PIDs, Personal Sampling Pumps and Colorimetric Tubes used by **CONTRACTOR** employees in hazardous materials operations. **CONTRACTOR** employees engaged in activities involving hazardous materials includes the Hazardous Waste Division and the Air Division.

3.0 INSTRUMENTATION

1. Photoionization Detectors (PIDs)

    <u>Introduction</u>

    PIDs measure a variety of gases in many industrial, as well as hazardous material, operations. These analyzers employ the principle of photoionization, which is the absorption of ultraviolet light by molecules, for detection.

    The sensor consists of a sealed ultraviolet light. The energy ionizes many trace species (particularly organics) but does not ionize the major components of air, such as O_2, N_2, CO, CO_2, or H_2O. A chamber adjacent to the ultraviolet source contains a pair of electrodes. When a positive potential is applied to one electrode, the field created drives any ions, which are formed by absorption of the UV light, to the collector electrode, where the current (proportional to the concentration) is measured.

    To minimize absorption of various sample gases, the ion chamber is made up of an inert fluorocarbon material, located at the sampling point, and a rapid flow of sampling gas is maintained through the small ion chamber volume.

    The analyzer will operate either from a rechargeable battery for up to 10 hours, or continuously from the AC battery charger.

    The useful linear range of the instrument is from a fraction of a part per million to about 2,000 PPM.

Theory

CONTRACTOR utilizes the HNu meter as its PID. The HNu is a portable, non-specific vapor/gas detector. The HNu employs the principle of photoionization to detect a variety of chemical compounds, both organic and inorganic.

The HNu contains an ultraviolet light source within its sensor chamber. Ambient air is drawn into the chamber with the aid of a small fan (PI-101) or positive displacement pump (HW-101). If the ionization potential (IP) of any contaminant present in the ambient air is equal to or lower than the energy of the UV light source, ionization will take place, causing a deflection in the meter.

Response time for the HNu is approximately 90% at 3 seconds. The meter reading is expressed in parts per million (PPM) relative to the calibration gas. All readings must be stated as equivalent readings that depend on the calibration gas being used to calibrate the HNu. The calibration gas used is Isobutylene. Formerly, benzene was used as the calibration gas, but due to its hazard it is no longer used. Isobutylene, used as an equivalent in place of benzene, allows the instrument to provide results in benzene equivalents.

A list of IPs for various gases is provided in the latest edition of the NIOSH Pocket Guide to Chemical Hazards.

Basic Operation of the HNu

A sample of air is drawn through a chamber and an ultraviolet light causes certain contaminants present to be broken apart into positive and negative charged particles. These charged particles are passed between electrodes and converted into an electrical impulse displayed on the readout.

Checkout and Use Procedures

Attach the probe to the readout assembly. Be sure pins and "slot/key" are properly aligned. DO NOT FORCE CONNECTION INTO THE RECEPTACLE. Turn the connector clockwise until it snaps into place with a clicking noise, which will be both heard and felt.

Turn the function switch to "BATT". The needle should deflect to the right ("BATT CHK"). Listen for the humming of the fan or the pump. Look briefly into the probe and check to see if the lamp is on (look for a purple glow). Do not use the probe extension. Do not look into the lamp for more than a brief moment to see if the lamp is on. Prolonged exposure to the ultraviolet light rays of the lamp will cause eye damage.

Turn the function switch to "STANDBY". The fan will stay on, but the light will go out. Check the readout, which will read close to 0, and adjust the "ZERO" control knob. Check the "SPAN", which should be 9.8 for the 10.2 eV lamp. The lock should be on and should not be touched unless the unit is being calibrated.

Turn the function switch to "0-20". Check the unit with a magic marker, lighter (unlit), etc. to make sure it is working properly. Turn the function switch to 0-200, 0-2000 or 0-20 to sample, as necessary.

Field Applications/Limitations

a. The HNu will only detect organic materials with an ionization potential less than 10.2eV.

b. It is a non-specific detection device, but provides continuous information on airborne concentrations.

c. It will not respond equally to all contaminants, and does not detect methane.

d. High humidity will cause the instrument to give lower readings than the actual airborne concentration.

e. Transfer of the instrument from a cold to a warm environment may cause condensation to form on the UV light source window, causing erroneous results.

f. The readout may also be affected by electrical power lines or power transformers.

g. Total concentrations are relative to the calibration gas used (isobutylene). Therefore, true concentrations cannot be identified. And, while the instrument scale reads 0-2000 ppm, response is linear (to isobutylene) from 0-600 ppm.

h. Wind speeds of greater than 3 mph may affect the fan speed on the PI-101 and readings, depending on the position of the probe relative to wind direction.

Calibration Procedure

Calibration Checklist: HNu Meter (Probe and box); Span gas (HNu Manufactured); Regulator; Tygon tubing.

Cleaning and Calibration Checklist: Same materials as above; HNu cleaning compound; Fine screwdrivers, flat and Phillips head; Sonnicator; Drying/Toaster oven.

Inventory Items: Battery; Lamp; ION chamber; O-Rings; Screws.

a. Obtain calibration gas, Isobutylene at Span 9.8 with 10.2 eV, manufactured by HNu.

b. Connect the calibration gas to the end of the probe extension. Open the gas flow valve.

c. Turn the selection knob to the 0-200 range and observe the meter needle. The concentration should read the same as that listed on the cylinder. If not, the span should be adjusted until the meter reads accurately.

d. The above procedure can be used until the span reading is approximately 5. At this time, the meter needs to be cleaned and internally calibrated. See Step 5.

e. For cleaning and internal calibration:

- Disassemble the probe, carefully removing the lamp.
- Clean the lamp.
- Clean the ION chamber and probe extension.
- Remove the instrument from its housing to expose the calibration screw, located on the side of the instrument.
- Once the probe parts have cooled (assuming it has been used), assemble the probe and connect it to the instrument.
- Connect the calibration gas to the end of the probe extension and open the gas flow.
- Turn the selection knob to the 0-200 range and observe the needle. The concentration should read the same as the concentration listed on the cylinder. If not, then the calibration screw must be adjusted with a fine screwdriver.

<u>Maintenance and Calibration Records</u>

a. Protect the instrument from excessive abuse, such as moisture, shock, vibration, etc.

b. Maintenance and calibration records will be recorded in a logbook specific to the HNu meter.

<u>Troubleshooting</u>

Below are some points that should be considered if the instrument is not running appropriately:

a. Check the battery condition. Recharge it if necessary.

b. If unstable readings are obtained, a faulty probe cable or electrical connection could be the problem. To check this, hold the probe normally and flex the cable firmly. Watch the meter needle for fluctuations as the cable is flexed. Individual wires in the readout can be checked in a similar way.

c. Check the coaxial connector on the amplifier board in the probe for any separation.

d. Determine whether or not the meter is being used in close proximity to AC power lines or power transformers. This can cause the instrument to read erroneously. To check for this interference, zero the instrument in an electrically quiet area in the standby position, and then move the instrument into the area in question. If AC pick-up is a problem in the area, then the meter will indicate the magnitude of the problem.

e. No response on any setting may mean that the meter movement is broken. Tip the instrument from side-to-side. The needle should move freely and return to zero.

f. No response may mean that the electrical connection to the meter is broken. Check all wires leading to the meter and clean the contacts of the quick-disconnects.

g. No response may mean that the battery is completely dead. Disconnect the battery and check the voltage with a volt-ohm meter. Also check the 2-amp fuse.

h. If the meter responds in the BATT CHK mode, but reads zero or near zero for all other modes, the power supply may be defective.

- Replace the power supply.

- Check the input signal connection, which may be broken in the probe or readout.

- Check the input connector on the printed circuit board inside the probe. It should be firmly pressed down.

- Check the components on the backside of the circuit board. All connections should be solid and no wires should touch any other object.

- Check all wires in the readout for solid connections.

i. When the instrument responds appropriately in the "BATT CHK" and "STANDBY" positions, but not in the measuring mode, check to see that the light source is on.

j. If the instrument responds correctly in all settings, but the signal is lower than expected:

- Check the span setting.
- Clean the window of the light source.
- Check the fan for proper insertion.

k. If the instrument response is slow and/or not reproducible, either the fan is operating improperly (check the fan voltage), or the instrument needs to be recalibrated.

l. A low battery indication comes on if the battery charge is low. It will also come on if the ionization voltage is too high.

2. Organic Vapor Analyzer

Introduction

The OVA 128 is a sensitive instrument designed to measure trace quantities of organic materials in air. It is essentially a flame ionization detector such as that utilized in laboratory gas chromatographs and has similar analytical capabilities. The Flame Ionization Detector (FID) is an almost universal detector for organic compounds with the sensitivity to measure in parts per million range in the presence of atmospheric moisture, nitrogen oxides, carbon monoxide and carbon dioxide.

The instrument has broad application since it has a chemically resistant air sampling system and can be readily calibrated to measure almost all organic vapors. It has a single linearly scaled readout from 0 ppm to 10 ppm with a X1, X10, X100 range switch. This range expansion feature provides accurate readings across a wide concentration range with either the 10, 100, or 1000 ppm full-scale deflection. Designed for use as a portable survey instrument, it can also be readily adapted to fixed remote monitoring or mobile installations. It is ideal for the determination of many organic air pollutants and for monitoring the air in potentially contaminated areas.

The OVA 128 is certified by Factory Mutual Research Corporation for use in Class 1, Groups A, B, C and D Division 1 hazardous locations. Similar foreign certifications have been obtained, including BASEEFA. This requirement is especially significant in industries where volatile flammable petroleum or chemical products are manufactured or used and for instruments which are used in portable surveying or for analyzing concentrations of gases and vapors. Such instruments must not be capable, under normal or abnormal conditions, of causing ignition of hazardous mixtures in the air. In order to maintain the certified safety, it is important that the precautions outlined in this manual be practiced and that no modifications be made to these instruments.

Theory

The OVA 128 analyzer is designed to detect and measure hazardous organic vapors and gases found in most industries. It has broad application since it has a chemically resistant sampling system and can be calibrated to almost all organic vapors. It can provide accurate indication of gas concentration in one of three ranges: 0-10 ppm, 0-100 ppm, 0-1000 ppm. While designed as a lightweight portable instrument, it can be permanently installed to monitor a fixed point.

The instrument utilizes the principle of hydrogen flame ionization for detection and measurement of organic vapors. The instrument measures organic vapor concentration by producing a response to an unknown sample, which can be related to a gas of known composition to which the instrument has previously been calibrated. During normal survey mode operation, a continuous sample is drawn into the probe and transmitted to the detector chamber by an internal pumping system.

The sample stream is metered and passed through particle filters before reaching the detector chamber. Inside the detector chamber, the sample is exposed to a hydrogen flame which ionizes the organic vapors. When most organic vapors burn, they leave positively charged carbon-containing ions. An electric field drives the ions to a collecting electrode. As the positive ions are collected, a current corresponding to the collection rate is generated. This current is measured with a linear electrometer preamplifier which has an output signal proportional to the ionization current. A signal-conditioning amplifier is used to amplify the signal from the pre-amp and to condition it for subsequent meter or external recorder display. The display is an integral part of the probe/readout assembly and has 270-degree scale deflection.

In general, the hydrogen flame ionization detector is more sensitive for hydrocarbons than any other class of organic compounds. The response of the OVA varies from compound to compound, but gives repeatable results with all types of hydrocarbons, i.e. saturated hydrocarbons (alkanes), unsaturated hydrocarbons (alkenes and alkynes) and aromatic hydrocarbons.

Applications

a. Measurement of most toxic organic vapors present in industry for compliance with OSHA requirements.

b. Evaluation and monitoring applications in the air pollution field.

c. Source identification and measurement for fugitive emissions (leaks) as defined by the EPA.

d. Forensic science applications.

e. Controlling and monitoring atmospheres in manufacturing and packaging operations.

f. Leak detection related to volatile fuel handling equipment.

g. Monitoring the background level of organic vapors at hazardous waste sites.

h. Quality control procedures geared to leak checking, pressurized system checks, combustion efficiency checks, etc.

Limitations

a. The OVA will not detect any inorganic compounds.

b. The OVA will see methane, which is explosive, but relatively non-toxic in other than high concentrations. The user should determine if the contaminant involved is or is not methane.

c. DOT shipping regulations are strict for the OVA when shipping pressurized oxygen.

d. A relative humidity greater than 95% will cause inaccurate and unstable responses.

e. A temperature of less than 40 deg. F will cause poor and slow response.

f. Actual contaminant concentrations are measured relative to the calibration gas used. Therefore, specific contaminants and their quantities cannot be easily identified.

Battery Charging

a. Plug charging connector into mating connector on battery cover and insert AC plug into 115V AC wall outlet.

b. Move the battery charger switch to the ON position. The lamp above the switch button should illuminate.

c. Battery charge condition is indicated by the meter on the front panel of the charger; meter will deflect to the left when charging. When fully charged, the pointer will be in line with "CHARGED" marker above the scale.

d. Approximately 1 hour of charging time is required for each hour of operation. However, an overnight charge is highly recommended. The charger can be left on indefinitely without damaging the battery. When finished, move the battery charger switch to "OFF" and disconnect from the SIDE PACK ASSEMBLY.

Calibration

The OVA 128 is capable of responding to nearly all organic compounds. At the time of manufacture, the analyzer is calibrated to mixtures of methane in air.

The instrument is calibrated by using a mixture of a specific vapor in air, with a known concentration. After the instrument is in operation and the normal background is zeroed, draw a sample of the calibration gas into the instrument. The GAS SELECT knob on the panel is then used to set the readout meter indication to correspond to the concentration of the calibration gas mixture.

The instrument has now been calibrated to the vapor mixture being used. After this adjustment, the setting on the DIGIDIAL should be recorded for that particular organic vapor compound. This exercise can be performed for a variety of compounds, thereby generating a library which can be used for future reference without need for additional calibration standards.

To read a particular compound, the GAS SELECT control is turned to the predetermined setting for the compound. Calibration on any one range automatically calibrates the other 2 ranges.

Startup Procedure

a. Connect the Probe/Readout Assembly to the Sidepack Assembly by attaching the sample line first, then connect electronic jack to the side pack.

b. Select the desired sample probe (close area sampler or telescoping probe) and connect the probe handle. Before tightening the knurled nut, check that the probe accessory is firmly seated against the flat seals in the probe handle and in the tip of the telescoping probe.

c. Move the instrument/BATT switch to the test position. The meter needle should move to a point beyond the white line, indicating that the integral battery has more than four (4) hours of operating life before recharging is necessary.

d. Move the instrument/BATT switch to the "ON" position and allow a five (5) minute warm-up.

e. Move PUMP switch to "ON" position, then place instrument panel in vertical position and check SAMPLE FLOW RATE indication. The normal range is 1.5 - 2.5 units. If less, check filters.

f. Perform a leak test. (See "Sampling Fixtures")

g. Activate audible alarm:

- Use the CALIBRATE ADJUST knob to set the meter needle to the level desired for activating the audible alarm. If this alarm level is other than zero, the CALIBRATE SWITCH must be set to the appropriate range.

- Turn the VOLUME knob fully clockwise.

- Using the ALARM LEVEL ADJUST knob, turn the knob until the audible alarm is activated.

h. Move the CALIBRATION SWITCH to X1 and adjust the meter reading to zero using the CALIBRATE ADJUST (zero knob).

i. Open the Hydrogen TANK VALVE one or two turns and observe the reading on the HYDROGEN TANK PRESSURE INDICATOR. Approximately 150 psi of pressure is required for each hour of operation.

j. Open the HYDROGEN SUPPLY VALVE one or two turns and observe the reading on the HYDROGEN SUPPLY PRESSURE INDICATOR. The reading should be between 8 and 12 psi.

k. After approximately 10 seconds, depress the IGNITER BUTTON until the hydrogen flame lights. The meter needle will travel upscale and begin to read "TOTAL ORGANIC VAPORS".

CAUTION: Do not depress the igniter for more than 6 seconds. If the flame does not ignite, wait one minute and try again.

l. Calibrate instrument (see "Calibration").

m. The instrument is ready for use.

NOTE: If the ambient background organic vapors are "zeroed out" using the CALIBRATE ADJUST KNOB, the meter may move off scale in the negative direction when the OVA is moved to a location with lower background levels. If the OVA are to be used in the 0-10 ppm range, it should be "zeroed" in an area with very low background.

Shut Down Procedure

a. Close the HYDROGEN SUPPLY VALVE.

b. Close the HYDROGEN TANK VALVE.

c. Move the INSTR switch and PUMP switch to OFF.

d. Instrument is now in the shut down configuration.

Operation Procedure

Set the CALIBRATE switch to the desired range. Survey the areas of interest while observing the meter and/or listening for the audible alarm indicator. For ease of operation, carry the SIDE PACK ASSEMBLY positioned on the side opposite the hand which holds the PROBE/READOUT ASSEMBLY. For broad surveys outdoors, the pick-up fixture should be positioned several feet above ground level. When making quantitative readings or pinpointing, the pick-up fixture should be positioned at the point of interest.

When organic vapors are detected, the meter pointer will move upscale. If the audible alarm is utilized, it will sound when the set point is exceeded. The frequency of the alarm will increase as the detection level increases.

If a flameout occurs, check that the pump is running, then press the igniter button. Under normal conditions, flameout results from sampling a gas mixture that is above the Lower Explosion Limit (LEL) which causes the hydrogen flame to extinguish. If this is the case, re-ignition is all that is required to resume monitoring. Another possible cause for flameout is restriction of the sample flow line which would not allow sufficient air into the chamber to support combustion. The normal cause for such restriction is a clogged particle filter.

It should be noted that the chamber exhaust port is on the bottom of the case and blocking this port with the hand will cause fluctuations and/or flameout.

Maintenance and Troubleshooting

IMPORTANT NOTE: This section describes a routine maintenance procedures for troubleshooting instrument malfunctions. Maintenance personnel should be thoroughly familiar with instrument operation before performing maintenance. All written portions of this section must be thoroughly understood relating to safety of operation, servicing and maintenance. There should be no potential ignition sources in the area when filling, emptying or purging the hydrogen system and the instrument should be turned off.

Replacement parts that are specified by Foxboro must be used for repair. No modifications are permitted. Disassembly of the instrument must take place in a non-hazardous atmosphere only.

Primary Filter Cleaning

This filter is located behind the sample inlet connector (fitting assembly) on the SIDE PACK ASSEMBLY and is removed for cleaning by using a 7/16" thin screwdriver to unscrew the fitting assembly. The filter cup, "O" ring and loading spring will then come out. The porous stainless filter cup can be cleaned by blowing out. Reassemble in reverse order, ensuring that the "O" ring seal on the fitting assembly is intact.

Secondary Filter Cleaning

A particle filter is located in each pick-up fixture. One of these filters must be in the sample line whenever the instrument is in use. The OVA 128 uses a porous metal filter which can be replaced and cleaned.

Mixer/Burner Assembly Filter

A porous metal particle filter is incorporated in the Mixer/Burner Assembly, which screws into the Pre-Amp Assembly. This filter is used as the sample mixer and inlet flame arrestor in the chamber. The filter should not become contaminated under normal conditions but can be cleaned or the assembly replaced, if necessary.

Access to this filter or output surface does not require removing the instrument from the case. For access, remove the safety cover using a hex key wrench (supplied) then unscrew the exhaust port. The Filter Assembly can now be seen on the side of the chamber (Pre-Amp Assembly) and can be cleaned with a small wire brush.

Exhaust Flame Arrestor

A porous metal flame arrestor is located in the exhaust port of the detector chamber (Pre-Amp Assembly). It acts as a particle filter on the chamber output and restricts foreign matter from entering the chamber. This filter may be cleaned by removing the exhaust port. For access, see Mixer/Burner section above. Note that the filter is captive to the exhaust port.

Sampling Fixtures

Sampling fixtures should be periodically cleaned with an air hose and/or detergent solution to eliminate foreign particle matter.

The OVA is equipped with a flow gauge that provides a method to check for air leaks. Assemble the pick-up probe selected for use to the readout assembly and then position the side pack vertically so the flow gauge may be observed. Cover the end of the pick-up probe with your finger and observe that the ball in the flow gauge goes to the bottom, indicating no air flow (If the ball has a slight chatter while on the bottom, this is acceptable). Cover the center of the chamber exhaust port with your thumb and again observe the ball going to the bottom. Another simple check is to expose the pick-up probe to cigarette smoke or a light vapor (butane) and observe that the meter responds in approximately 2 seconds. It should be noted that the slow meter response might also indicate restriction in the air sampling.

Failure of the ball to go to the bottom when the inlet is blocked indicates a leak in the system between the probe and the pump inlet or the inlet check valve. To isolate the problem, remove the parts, one at a time, and again block off the air inlet. Remove the pick-up probes and cover the air inlet at the readout assembly. If the ball goes to the bottom, check that the "readout to probe" seal washer is in place and replace the probes, holding them back against this seal while tightening the nut. Recheck, and if leakage is still present, it is probably in the probe (pick-up fixture), which should be repaired or replaced.

If leakage is indicated as being past the readout handle when the connection to the sidepack is tight, disconnect the sample line at the fitting on the sidepack and cover this inlet with your finger. If the flow gauge ball goes to the bottom, the problem should be a leak in the umbilical cord/readout assembly, which should be investigated and repaired. There is also the possibility of a leaking check valve in the pump which would not show up on this test. If the leakage is not found in the umbilical cord, it is most likely in the pump check valve. If the ball does not go to the bottom following these corrective actions, contact the manufacturer for further instructions, and do not use the instrument.

Using Empirical Data

Relative response data can be used to estimate the concentration of a vapor without need to recalibrate the analyzer. With the instrument calibrated to methane, obtain the concentration reading for a calibration sample of the test vapor. The response factor (**R**) in percent for that vapor is:

$$\mathbf{R} = \frac{\text{Actual Conc.}}{\text{Measured Conc.}}$$

To determine the concentration of an unknown sample of that vapor, multiply the measured concentration by **R.** See the alphabetical list of compounds and Relative Response values in Appendix B.

3. Colorimetric Indicator Tubes

Colorimetric indicator tubes are used to measure concentrations of specific gases and vapors, both organic and inorganic. When used appropriately, an indicator tube specific to a certain compound will produce a stain in the tube. The length of the stain (or color change) is proportional to the compound's concentration. Minimal operator training and expertise is required to operate this type of sampling instrument.

Limitations

Colorimetric indicator tubes are cross-sensitive, meaning that other compounds may trigger a similar response, which will give the user a false reading. The user must take this fact into account when he/she dealing with a situation containing unknowns.

Other limitations include individual interpretation concerning the length of the stain, the limited accuracy of the tube, and use in high humidity. The greatest sources of error occur in different interpretations that are obtained between individuals as to how far the stain has gone on the tube, and the tubes limited accuracy. Users must remember that the tubes are **25% accurate**. A simple calculation will tell the user the range in which the correct reading could possibly occur.

With this in mind, any discoloration on the tube should alert the user as to the appropriate protection required for the site. High humidity also affects the readings. Use in humid environments tends to clog the filtering medium, not allowing the gases or vapors to be drawn properly through the tube.

Maintenance and Calibration

CONTRACTOR utilizes the Draeger Model 31 Bellows-type pump for colorimetric tube sampling. General maintenance for this type of instrument includes: avoiding rough handling which may cause channeling; performing a leakage test before sampling each day (including documentation); calibrating the unit at least quarterly; providing an inventory of tubes, with expiration dates; and, appropriate storing.

Rough handling of this instrument may cause erroneous results due to channeling (leakage). Therefore, the unit must be handled carefully and not be stored outside of its protective carrying case when not in use.

It may be necessary to clean the rubber bung (tube holder) if a large number of tubes have been taken with the pump. A mild soap and water solution can be used.

Leak Test

Before each day's use, the user will perform a leak test on the instrument. This is a simple test and includes the following:

a. Squeeze the bellows of the pump and insert an unopened detector tube, attempting to draw 100 ml of air.

b. After a few minutes, examine the bellows for any expansion. Document the findings in the Site Monitoring Log Book. If the pump does not pass the leak test, it will be removed from service immediately and returned to the Facility Manager, to be sent out for repair.

Calibration Test

At least quarterly, the instrument will be calibrated for proper volume measurement. Equipment needed for the calibration test is: 100 ml burette and ring stand; stopwatch; soap solution; detector tube with both ends broken off; and, tygon tubing.

The calibration test is performed as follows:

a. Break both ends of a colorimetric tube and connect it in-line with the pump.

b. Connect the instrument directly to a bubble burette, and create a bubble inside the burette by touching the bottom of the burette to the soap solution.

c. Squeeze the bellows to exhaust all the air out of the unit.

d. Release the bellows and wait 5 minutes for the full volume of air to be drawn into the bellows. The bubble should stop between the 95 and 105 cc marks. Errors of 5% are permissible; if the error is greater than 5%, return the pump to the Facility Manager, to be sent out for repair.

Inventory and Storage Requirements

To inventory the tubes, check the expiration date marked on the storage container. No tubes will be allowed for use past the manufacturer's expiration date. A listing of tubes that are readily available will be maintained by the Health and Safety Coordinator. This list will contain the name of the tube and the expiration date of those available. The list will be updated monthly and provided to the Facility Manager and each Field Division. All colorimetric tubes will be stored in the refrigerator in the Chemical Storage Area. Refrigeration helps to maintain shelf life. Any tubes that have been previously opened and inadvertently stored in the refrigerator will not be used in the field. Colorimetric tubes are not reusable, and any reuse will result in erroneous results.

4. Personal Monitoring Pumps

Personal monitoring involves the collection of an air sample by a sampling device worn by the worker. The sampling device is worn as close as possible to the breathing zone of the individual so that the data collected closely approximates the concentration inhaled. Personal monitoring pumps are used when it is necessary to monitor the workers' exposure to air contaminants.

Personal monitoring pumps can be classified into three basic categories:

a. Low-Flow Pumps (0.5 - 500 ml/min);

b. High-Flow Pumps (500 - 4500 ml/min);

c. Dual Range Pumps.

Low-flow pumps are used for gas and vapor sampling. For example, the common flow rate for organic vapors is 200 ml/min.

High-flow pumps are used for particulate sampling as well as gas and vapor sampling. A common flow rate for fumes or dust sampling (i.e. zinc fume or asbestos) is 2 L/min.

Limitations

The major disadvantage in personal monitoring is the lag time between sampling and obtaining analysis results, which may take weeks, days or months if a remote laboratory is used. If a situation requires an immediate decision concerning worker safety, this can be a serious problem. Therefore, personal monitoring is rarely used for site characterization. Its main purpose is to assure effectiveness of work practice and engineering controls.

A second disadvantage is that multiple exposures may require the use of a variety of sampling media. Unfortunately, workers cannot carry multiple sampling media because of the added strain. Also, it is not usually possible to draw air through different sampling media using a single, portable battery operated pump. Several days may be required to measure the exposure of a specific individual to the variety of chemicals on site. Alternatively, if workers are in teams, a different monitoring device can be assigned to each team member.

Calibration

The following procedure will be used for calibration with a primary calibration source for all personal monitoring pumps used by **CONTRACTOR**. It has been taken from OSHA Instruction CPL 2-2.20B, Appendix 1-C, Manual Bubble Meter Technique.

Electronic bubble meters are also used as primary calibration sources. These meters have a digital read-out and the ability to give a printed copy for documentation of the pump flow rate. **CONTRACTOR** uses a Spectrex Model BFM-4000 for this purpose.

NOTE:
When calibrating with a bubble meter (either manual or electronic), the use of adapters can cause moderate to severe pressure drop in the sampling train, which will affect the calibration result. If adapters are used for sampling, then they should be used when calibrating.

a. Connect the collection device, tubing, pump and calibration apparatus.

b. Conduct a visual inspection on all tygon tubing connections.

c. Wet the inside of a one-liter burette with a soap solution.

d. Turn on the pump and adjust the pump rotameter to the appropriate flow rate setting.

e. Momentarily submerge the opening of the burette in order to catch a film of soap.

f. Draw 2 or 3 bubbles up to the burette in order to insure that the bubbles will complete their run.

g. Visually capture a single bubble and time the bubble from 0 - 1000 ml for high flow pumps or 0 - 100 ml for low flow pumps.

h. The timing accuracy must be within 1 second of the time corresponding to the desired flow rate.

i. If the time is not within the range of accuracy, adjust the flow rate and repeat steps g and h until the correct flow rate is achieved.

j. While the pump is running, mark the pump or record on the air sampling worksheet the position of the center of the float in the pump rotameter as a reference.

k. Repeat bubble timing for 3 times. Calculate the average time given by these measurements.

l. Calculate the flow rate as follows:
(NOTE: 1L = 1000 ml)

$$\frac{\text{Measured Volume (L)}}{\text{Average Seconds}} \times \frac{\text{60 Seconds}}{\text{1 Min}} = \text{L/min}$$

For Example:

$$\frac{\text{1 L}}{\text{38 sec}} \times \frac{\text{60 Sec}}{\text{min}} = \text{1.6 L/min}$$ (round to m 2 digits)

Repeat the procedures for all pumps to be used for all calibrations involving the same sampling method.

Different contaminants have different sampling protocols, which may result in different calibration protocol. Contact the **CONTRACTOR** Certified Industrial Hygienist or Health and Safety Coordinator for chemical-specific calibration protocols.

Checklist for Using Personal Monitoring Pumps

a. Look at measurement method in NIOSH Pocket Guide to Chemical Hazards (Latest edition).

b. Calibrate with a primary calibration source, as described in the calibration procedures.

c. Record information of air sampling worksheet and calibration logbook.

d. Make sure battery is fully charged. Air pumps have NiCd battery, which creates a memory. Care needs to be used so as to not recharge a battery that has been used for only a few hours. Recharge a battery only if it has been used for at least 8 hours. There are chargers which will completely discharge a battery before recharging; or, the pumps can be left running until the battery is rundown completely and then recharged to eliminate this memory, also.

e. Check sample requirement sheet or NIOSH method to see the minimum time/volume for the sample. An 8-hour sample period would allow for the best measure, giving an 8-hour TWA exposure.

5. Combination Oxygen and Combustible Gas Meter

Combination meters measure the concentration of combustible gas or vapor present in an area, as well as the oxygen content. The concentration is reported as a percent, with 1% equal to 10,000 ppm. Although it is an easy instrument to operate, its effective use requires that the operator understand the operating principles and procedures behind the instrument. Certain atmospheres may cause erroneous readings or damage to the instrument. Typically, the instrument can be used as long as the battery lasts, or for the recommended interval between calibrations.

Maintenance

Maintenance of combination meters is fairly simple. Batteries must be recharged at the end of a continuous day's use. Occasionally, the rechargeable battery must be replaced. Most batteries last for approximately 2 years of continued use. Also, oxygen and combustible gas sensors will need to be replaced periodically. These sensors last approximately 6 months with continued use. Sensors that can no longer be calibrated within the manufacturers' acceptable range indicate the need for replacement.

If, after an attempted calibration, the instrument cannot be calibrated due to problems other than the need for battery or sensor replacement, the problem must be reported to the Facility Manager immediately, so that the instrument can be sent out for repair.

Detection Method

The instrument contains 2 analyzers: 1 for combustible gases and vapors; and 1 for oxygen content. The combustible gas analyzer contains a battery operated electrical circuit called a Wheatstone Bridge. Basically, the Wheatstone Bridge is a filament, usually made of platinum, that is exposed to the air in the instrument. When heated by a burning combustible gas or vapor, the increase in heat over the filament is measured as electrical resistance. Another part of the bridge contains similar filaments, but it has been sealed. They are heated in the same fashion, but not directly in the air stream. Thus, this filament is not capable of causing combustion of the gas or vapor, because it is sealed. The net effect of the change in resistance to the electrical current flow in the air stream is due only to the presence of a combustible gas. These changes in electrical current are registered as "percent LEL" (Lower Explosion Limit) on the instrument.

The oxygen analyzer senses oxygen concentration by a galvanic cell. The cell contains 1 gold and 1 lead electrode, and is encapsulated in inert plastic. Oxygen diffusing through the plastic initiates a redox reaction, which generates a small electrical current that is proportional to the oxygen partial pressure. The instrument contains a temperature-compensated electronic circuit that converts the electrical current to a proportional voltage. This voltage is displayed on the instrument as the concentration of oxygen.

Limitations

The combination meter contains some inherent limitations. Knowledge of these limitations will help the user make an educated decision regarding the accuracy of the instrument.

Accuracy of the instrument depends, in part, on the difference between the calibration and sampling temperatures. Differences in temperature may cause a lack of sensitivity in the instrument when brought from a warm to a cold environment.

Another aspect of sensitivity of the instrument is a function of the differences in the chemical and physical properties between the calibration gas (pentane) and the gas being sampled. The chemical and physical properties of the calibration gas are slightly different from those being sampled, so all gases being sampled are compared to the combustion of pentane. In order to get a true reading of the LEL, the gas that is present must also be used as the calibration gas.

The filament can be damaged by certain compounds such as silicones, halides, tetraethyl lead, and oxygen enriched atmospheres. Each manufacturer's instrument handbook should contain a listing of compounds that should not be sampled with this instrument, or serious damage could result.

Under oxygen deficient atmospheres, the oxygen analyzer must be read first. Otherwise, the CGM analyzer may not provide a valid reading and give the user a false sense of security.

APPENDIX H

CONTROL OF HAZARDOUS ENERGY PROGRAM "LOCKOUT/TAGOUT"

1.0 INTRODUCTION

The Lock Out/Tag Out Standard, 29 CFR 1910.147, is believed to prevent about 120 deaths and 60,000 injuries per year, according to OSHA officials. Although this standard is aimed at the industrial community, in environmental engineering applications, it is very important that employees understand and implement these procedures when working with and around energized equipment. Under this standard, **CONTRACTOR** is required to establish a program that utilizes procedures for locking out and/or tagging to isolate and disable the equipment to prevent accidental start-up or release of stored energy. **CONTRACTOR** employees will identify, locate and control these energy sources, as necessary.

2.0 PURPOSE

To establish procedures for locking out and/or tagging to isolate and disable equipment to prevent accidental startup or release of stored energy, and possible injury to employees.

3.0 SCOPE

This procedure applies to all field/facility operations that require all operative energy sources, including line breaking, in the work area to be shut down, locked out and tagged, so that **CONTRACTOR** employees may safely perform their job. Contractors and subcontractors performing work on **CONTRACTOR** projects will be required to comply with these requirements if their employer does not have a comparable lock out/tag out program already in place.

4.0 PROCEDURE

1. The authorized employee will evaluate the scope of work and all equipment, machines or industrial processes in the area that require the use of stored energy. Energized equipment that may cause a safety hazard will be shut down to eliminate the potential for injury.

2. Prior to beginning the work, the authorized employee will be sure that appropriate lock out/tag out equipment is available to isolate the energy source.

3. The authorized employee will ensure that all affected employees have been advised of the following topics:

    a. Scope of Work.

    b. Energy sources.

    c. Energy isolation devices.

    d. Lock out devices.

    e. Tags.

    f. Test procedures.

g. Authorized personnel. Those individuals charged with the responsibility for deenergizing and reenergizing energy sources).

4. The safety meeting will be documented and placed in the job folder for future reference. All employees will sign the Lockout Worksheet prior to starting the work. See Appendix A for a copy of the Lockout Worksheet.

5. All energized equipment will be shut down before **CONTRACTOR** personnel or its contractors/subcontractors begin work on site. Shut down will take place in the following manner:

   a. The authorized employee will inform the client's representative of the need to shut down the equipment.

   b. The authorized employee, with assistance from the client's representative, will locate all power sources on the process or equipment.

   c. All power sources will be shut down and verified as such by the authorized employee.

   d. When possible, a lockout device will be applied by both parties to isolate each source.

   e. Any necessary testing of equipment will be conducted to ensure that the process or equipment is free of energy.

   f. The authorized employee will attempt to operate the machine to be sure that it remains inoperative. All activation controls will be returned to the "off" position after testing.

   g. The authorized employee will apply a tag that bears the following warning, "DANGER - EQUIPMENT LOCKOUT" along with the authorized employee's name, the date, and the time of the lockout.

   h. The authorized employee will complete the Lockout Worksheet.

   i. Equipment may now be released for work by the authorized employee. No release will be given until all required inspections and testing are performed.

6. Residual energy, i.e. pneumatic/hydraulic power, spring compression, and residual electrical energy in transformers are examples of residual energy that, when unsuspected, may present a greater hazard to the employee. These sources of energy will be identified, located and controlled in the following manner:

   a. Residual electrical energy can be controlled through grounding.

   b. Pneumatic/hydraulic line pressure can be released, allowing the weight to come to a rest.

   c. Spring tensions can be relieved.

d. Product lines will be double blocked (panned) and bled to prevent product from being released.

e. A lockout device and tag will be applied and secured by the authorized employee for the duration of the job to prevent residual energy from reaccumulating and creating a hazard to employees.

f. The lockout/tagout will be documented by the authorized employee on the Lockout Worksheet.

7. After all work is completed, the authorized employee will perform the following:

   a. The authorized employee will inform everyone that the job is complete.

   b. The Lockout Worksheet will be reviewed by the authorized employee with all employees to make sure that all employees are accounted for before re-energizing the equipment.

   c. The authorized employee will be sure that all tools, debris or other material that could be placed into motion are removed before the equipment or process is re-energized. All employees will be instructed to stay clear of movable parts of the equipment or process.

   d. All residual energy controls will be removed by the authorized employee, as well as all energy isolation lockouts and tags.

   e. In the presence of the client's representative, energy will be restored to the equipment or process.

   f. All lockout equipment removal will be documented on the Lockout Worksheet by the authorized employee. The Lockout Sheet will be placed in the job file at the end of the shift.

8. All employees must be accounted for before re-energizing equipment. When employees that have worked on the job are absent from the final inspection before re-energizing the equipment, the authorized employee will initiate the following:

   a. The lockout sheet will be checked to account for all employees.

   b. The authorized employee will obtain a Lockout/Tagout Absent Employee form (See Appendix H).

   c. The authorized employee will appoint employees to look for the individual, paying special attention to high hazard areas where physical harm could result from the start-up of the equipment or process.

d. After a complete search of the equipment or process, and it has been determined by the authorized employee that the employee is not present, all outlying areas surrounding the site will be searched.

e. The area surrounding the site will be guarded to prevent the absent employee from inadvertently entering a hazardous situation.

f. The equipment or process will be cleared for re-energization only by the authorized employee once all of the above conditions are met.

g. A copy of the completed Absent Employee form will be posted conspicuously in the work area, and not removed until the employee has been located. The client's representative will be notified of the situation so that the absent employee does not endanger himself/herself by entering an energized process or equipment.

9. When appropriate, contractors and subcontractors working under **CONTRACTOR**'s direction will be informed of their responsibilities, under the Lockout/Tagout Standard, to provide protection against hazardous energy.

   a. When necessary within the scope of work, contractors and subcontractors without such a program, at the discretion of **CONTRACTOR**, will be disqualified from bidding on these projects.

   b. Contractors and subcontractors with such a program will submit their program to the Health and Safety Division for review. The contractor or subcontractor program must be comparable or more strict than **CONTRACTOR**'s program.

      - Programs found to be insufficient in some areas will be returned, with the requested changes to be made before the program is acceptable for implementation.

      - The copy of the program will be returned to the contractor or subcontractor, and will not be duplicated by **CONTRACTOR** or any of its employees.

10. All affected employees will be given training in these procedures prior to performing any lockout/tagout work. This training will be documented and maintained in the employees' training file with the Health and Safety Division.

11. This procedure will be reviewed annually by the Health and Safety Division to ensure that it is relevant to **CONTRACTOR** operations.

DEFINITIONS

Affected Employee: An employee whose job requires operation/use of equipment or machines on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed. All **CONTRACTOR** personnel or subcontractors working in these circumstances are "affected employees".

Authorized Employee: A person who locks out or implements a tagout system procedure on machines or equipment in connection with the servicing or maintenance on that machine or equipment. An authorized person and an affected employee may be the same person when the affected employee's duties also include performing a lock out or tag out on a machine or equipment.

Capable of being Locked Out: An energy isolating device will be considered to be capable of being locked out either if it designed with a hasp or other attachment or integral part to which, or through which, a lock can be affixed, or if it has a locking mechanism built into it. Other energy isolating devices will also be considered to be capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

Energized: Connected to an energy source or containing residual or stored energy.

Energy Isolating Device: A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: a manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a slide gate; a slip blind; a line valve; a block; and, any similar device used to block or isolate energy. The term does not include a push button, selector switch, and other control circuit type devices.

Energy Source: Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Lockout: The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout Device: A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment.

Tagout: The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout Device: A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

APPENDIX H

LOCKOUT WORKSHEET

LOCKOUT WORKSHEET

Job Location: ___________________ Project Manager: _______________________________________

Date: _______________________ Time: ____ a.m./p.m.

Description of Lockout to be Performed: ____

Energy Source(s): _

Pre-Work Safety Meeting Minutes: ____

Lockout Hardware Used: ____

Energy Restoration (Check each as you Progress): Time Completed

- ___ All personnel accounted for and in the clear. ____________________
- ___ Point(s) of operation free of tools and debris. ____________________
- ___ Points of operation restraints removed. ____________________
- ___ Lockout hardware removed. ____________________
- ___ Personnel clear of points of operation. ____________________
- ___ Energy restored. ____________________
- ___ Equipment operation verified, client's rep on site. ____________________
- ___ Lockout terminated. ____________________

Employees' Signatures: ____

APPENDIX H

LOCKOUT/TAGOUT ABSENT EMPLOYEE FORM

LOCKOUT/TAGOUT ABSENT EMPLOYEE FORM

NOTICE

Upon completion of work performed under lockout/tagout conditions, the following employee(s) listed below could not be located or accounted for:

____

____

____

All attempts have been made to locate this employee at the jobsite. It has been verified that this employee is not in the vicinity of the hazardous energy source and will not be affected by the startup of equipment which was under lockout conditions.

____________________________	________________________
Signature of Authorized Employee	Date

APPENDIX I

CONFINED SPACE/HOT WORK PERMITTING PROCEDURE

1.0 INTRODUCTION

Welding, cutting, brazing and other hot work operations are a necessary part of the industrial world, both in manufacturing and construction. Too often, the people who hire, use, or supervise the use of these processes don't understand the hazards behind them, which can result in loss of life, property, or both, by fire and explosion.

Any material that is combustible or flammable is susceptible to ignition by heat-producing activity. Common materials such as floors, partitions, roofs, wooden members, paper, textiles, plastics, chemicals, flammable liquids and gases, and grass or brush are very likely to become involved in fire during hot work operations if adequate precautions are not taken.

Hot work is any work that requires the use of tools/equipment that have the potential to produce temperatures which could reasonably be expected to ignite flammable/combustible material or atmospheres in the vicinity of the work area. These tools/equipment have the capability of producing sparks, open flames, heat, or an electrical arc during use. Hot work is not limited to just welding, cutting and brazing, but also grinding, sawing (metal to metal) and chipping operations.

Confined spaces are spaces that can be bodily entered but are not meant for human occupancy. Confined space hazards exist if the potential for hazardous or explosive atmospheres and/or oxygen deficient hazards exist. Other hazards that could exist include mechanical sources and falls. Two types of confined spaces exist: permit required and non-permit required.

2.0 PURPOSE

To provide **CONTRACTOR** employees, who oversee hot work performed and confined space entry on projects, with a standard permitting and safety procedure to prevent injury or loss of life and property. To be used as a reference in instances where hot work/confined space entry is performed and as a permit procedure in instances where one is not available.

3.0 SCOPE

This procedure will apply to all **CONTRACTOR** employees who oversee hot work on projects utilizing welding, cutting, brazing, grinding, chipping, portable heaters, and other potential heat-producing equipment for field/facility activities. This procedure is also to be followed for all confined space entry situations. This procedure will apply to all contractors or subcontractors working under **CONTRACTOR** that do not have an adequate Permitting Procedure in place with the company in which they are currently employed. All **CONTRACTOR** employees involved with confined space entry will be properly trained for the role and duties performed. Training will consist of hands-on training with **CONTRACTOR**'s confined space entry equipment including harnesses, retrieval equipment, air-line respirators and monitoring equipment. Certification that the training was satisfactorily complete will be provided and documentation maintained.

4.0 PROCEDURE

1. Hazard Identification

a. The Project Manager will identify all work that requires tools, equipment, or operations that may produce sparks or temperatures that are sufficient to ignite flammable/combustible materials or atmospheres.

b. The Project Manager will determine if a confined space entry is required and determine if the entry requires a permit. Any situation that has the potential to produce hazardous atmospheres or deplete oxygen will require a permit.

c. This information will be included in the Site Specific Health and Safety Plan to be reviewed with the Health and Safety Division prior to starting the project.

d. The Project Manager will determine if the work can be performed without the use of hot work, i.e. alternative method to reduce the hazard.

e. The Project Manager should consult the Health and Safety Division if the Project Manager has questions on hazard determination. The Project Manager will act as the Entry Supervisor.

f. The Safety Director will review entry with the Project Manager and review this program at least annually to make sure the Program is effective and enforced. Copies of completed permits will be retained for at least one year.

g. The permit program will be reviewed to determine if it is adequate for the projects conducted. Incident reports will be reviewed, employee issues raised and entries reviewed. The permit program will be evaluated to determine if all hazards were adequately identified and evaluated. Additional protective equipment will be purchased, if necessary, for future entries if the review process shows that all hazards were not properly controlled. This review will be part of annual confined space training.

2. Area Preparation

a. The following preparation for the work area will be made once it is determined that hot work is necessary:

- All flammable/combustible materials will be relocated at least 35 feet away from the work area.

- All combustible materials that cannot be reasonably removed from the area will be covered with a fire blanket.

- An appropriate fully charged fire extinguisher and/or charged fire hose will be available at the work area before, during and 1/2 hour after hot work procedures have ended.

- All safety equipment will be on-site and functional.

The confined space entry area will be appropriately marked and barricaded to prevent impact from external hazards and vehicles. Ground level entries will be ringed with a toe board to prevent objects from inadvertently being dropped into the space.

3. Pre-Work Safety Meeting

a. The Project Manager will assure that a pre-work safety meeting has been provided to the crew prior to any hot work/confined space entry being performed. Individuals involved with confined space entry will be identified as the authorized entrant(s), attendant and the entry supervisor. Additional individuals may be designated to conduct monitoring for multiple entries. This meeting will include, but not be limited to:

- Permitting conditions (environmental conditions, type of work to be performed). This would include reviewing the results of the initial monitoring of the test results, ventilation requirements, potential hazards and continuous testing procedures.

- Personnel authorized to sign-off on the permit. All personnel involved with the confined space entry must sign the permit and acknowledge the hazards expected to be encountered.

- Location of the permit. (Must be conspicuously posted.)

- Type of monitoring required. Employees involved with the entry may request additional monitoring or increasing monitoring frequency at any time.

- Designation of attendant and discussion of duties.

- Returning completed permit to Project Manager or client when work is complete and project has concluded.

b. During the pre-work safety meeting the authorized entrants will be identified and the entry procedure reviewed. The attendant will be specified and the monitoring and communication procedures reviewed. The entry will be reviewed with the designated entry supervisor before entry. The attendant will be responsible for conducting the air monitoring during the entry and providing results to the entrants and entry supervisor. The designated positions will be posted on the entry permit.

c. The entry supervisor will be responsible for meeting with the client prior to entry to identify if other contractors or client personnel will be working in close proximity to the confined space entry. The entry supervisor will coordinate entry activities in order to make sure the other work does not impact the entry or endanger entry personnel. The entry supervisor will attend scheduled project meetings with the client and other contractor representatives in order to properly coordinate the entry with other projects.

d Initial air-monitoring results will be reviewed with the entry supervisor and the authorized entrants prior to entry. Air-monitoring procedures and alarm levels will also be reviewed. Ventilation of the space will be initiated before entry and periodic monitoring conducted prior to entry to verify the ventilation is adequate. Monitoring will be performed throughout entry by the attendant and entrants will wear dosimeters with alarms to conduct monitoring during the entry.

e The Project Manager will meet with the client to arrange for adequate rescue services from the client, if available, or from outside rescue operations. The Project Manager will discuss rescue procedures with representatives of the rescue operation and allow the rescue team to examine the area, practice the rescue and decline to act as the rescue team if they feel they are not adequately staffed or equipped. The entry cannot be conducted until adequate rescue services are provided.

f The Project Manager will meet with the client to discuss other projects or contractors that could interfere with **CONTRACTOR**'s confined space work. **CONTRACTOR** will coordinate the entry to have minimal impact on other contractors in the area and to make sure **CONTRACTOR** personnel are not endangered by other contractors work.

4. Permit Completion

The Confined Space Work Permit (see Appendix A) will be completed by the Project Manager prior to beginning work each day. The permit will not be considered valid until all personnel involved with the entry have reviewed and signed the entry permit. The entry supervisor will review each permit at the completion of the entry to determine if monitoring and safety procedures are adequate for this project. The permit will be modified if appropriate. The permit will be conspicuously posted at the site of the work.

5. Attendant

A designated Attendant will be present to observe the hot work/confined space operation. The Attendant will maintain contact with personnel and conduct air monitoring. The Attendant will oversee safety retrieval systems and initiate the alarm if rescue is necessary. The Attendant will not perform entry rescue or enter the confined space unless relieved of duty by another authorized Attendant and is equipped with maximum respirator protection. The Attendant will monitor only one confined space entry at one time.

6. Entrant

Entrants will be identified on the permit and instructed on the purpose for the entry of the confined space. Entrants are responsible for adhering to the permit requirements and communicating with the Attendant. Once work tasks are completed the Entrant is responsible for removing equipment, sampling devices and exiting the confined space safely.

7. Atmospheric Monitoring

a. When cutting, grinding, heating or welding surfaces coated with epoxy finishes or paint, or when cutting certain metals with a welding torch, toxic fumes or vapors can be emitted in the process. In these instances, monitoring may be required under the OSHA Standard. Therefore, it is the responsibility of the Project Manager to notify the Health and Safety Coordinator of these coatings and have them sampled (if unknown) to determine what type of monitoring will be required.

b. Occasionally, a "liner" will be adhered to the inside of a metal duct or tank. When hot work will be performed on such material, the liner will be removed at least 4 inches to each side of the cut to prevent toxic vapors from being emitted, or fire from occurring.

c. After moving all flammable materials out of the work area, the area will be monitored with a Combustible Gas Meter immediately before hot work takes place. LEL readings at or above 5% will necessitate that the area be ventilated before hot work operations begin. **Hot work should not proceed if readings of five percent or below cannot be achieved.**

d. All area monitoring must be performed a minimum of once every 10 minutes when the hot work area is located in a low lying area down slope from a storage area containing flammable and/or combustible liquids.

e. Hot work performed in confined spaces requires that contaminant specific air monitoring be performed. Contact the Health and Safety Division to determine the type of air monitoring required for the contaminant.

f. Hot work performed on containers that previously contained flammable liquids (i.e. underground storage tanks) will not be performed until the Health and Safety Division has been contacted and has approved the work to be performed. **CONTRACTOR**'s Site Specific Health and Safety Plan for Flammable and Combustible Underground Storage Tank Removals contains detailed procedures for cleaning, inerting and cutting these types of containers.

g. Entrants and the attendant will continuously evaluate the permit-required space to determine if additional monitoring or more frequent monitoring is necessary. The permit may be revoked or modified accordingly. All entrants will leave the space if unsafe conditions are observed or measured. The permit will be invalidated and reviewed with the supervisor before re-entry is allowed. Additional monitoring will be performed at the request of employees or attendants.

8. Prohibitive Circumstances

a. Hot work will be prohibited if any of the following conditions exist:

- Oxygen levels greater than 21%.

- LEL greater than 5%.

- Organic vapor concentration greater than Permissible Exposure Limits depending on contaminant (ventilation may reduce this hazard).

- Confined space entry will not be permitted if oxygen levels are below 19.5% or if the LEL is >10%. Individual hazardous constituents will be monitored and appropriate levels of respiratory protection will be issued.

9. Conditions of Permit Validity

   a. A permit is not valid unless all necessary inspections and air monitoring (if required) have been performed and all required signatures appear on the permit.

   b. Work permits will be judged as valid for the following time durations:

      - Shift or significant change in personnel.

      - Duration of the hot work.

      - When atmospheric changes dictate ceasing the operation, abate the hazard and reinspect the work area before completing another permit.

   c. Permits are valid up to one day and new permits must be completed each day or whenever the permit conditions change.

   d. The local Fire Department or client emergency services will be contacted prior to entry into confined spaces. They will be notified of the reason for entry and be requested to be available for rescue and administrating first aid. If emergency rescue cannot be provided within three minutes **CONTRACTOR** will not conduct the entry. The permit program will be reviewed to determine if it is adequate for the projects conducted. Incident reports will be reviewed, employee issues raised and entries reviewed. The permit program will be evaluated to determine if all hazards were adequately identified and evaluated. Additional protective equipment will be purchased, if necessary, for future entries if the review process shows that all hazards were not properly controlled. This review will be part of annual confined space training.

   e. **CONTRACTOR** will coordinate the entry with client and/or other contractors present at the job site. Work will be evaluated to determine the impact by non-**CONTRACTOR** staff on the work being conducted.

   f. If conditions change and **CONTRACTOR** employees are at risk the permit will be considered invalid.

   g. The permit will be canceled once the project is complete or conditions change that warrant leaving the site. A new permit will be issued for future entries once a permit has been canceled.

10. Training and Program Review

All workers involved with confined space entry will receive training relative to their role on the project. Since **CONTRACTOR** conducts confined space entry infrequently training will be conducted prior to each project in order to refresh **CONTRACTOR** employees on the use of the equipment, monitoring procedures and the confined space entry program. The program will be reviewed annually or when new equipment is acquired. All completed permits will be reviewed and critiqued at the completion of each entry. The entrants and attendants will be interviewed after entry to determine if there were significant problems or concerns.

DEFINITIONS

Fire Blanket: Blanket made of fire-resistant material, such as NOMEX or KEVLAR (**not asbestos**), or treated wool, which can be used to cover combustible materials to prevent their ignition from sparks, flames or heat during hot work.

Attendant: Person who observes the confined space activities/hot work to ensure that ignition of the surrounding material does not occur. The Attendant will be equipped with a fully charged, suitable fire extinguisher and/or charged fire hose at the work area at the time of the hot work. The Attendant will not be assigned to any other duties.

Confined Space: Confined spaces are spaces that can be bodily entered but are not meant for human occupancy.

Entrant: Person who is trained and authorized to enter a confined space. Entrants are required to review air-monitoring data prior to entry into a PRCS and understand the hazards.

APPENDIX I

CONFINED SPACE PERMIT

CONTRACTOR

Confined Space Entry Permit

- Location of Confined Space ________________ Date/time ________________
  Purpose of entry ________________ Duration ________________

2.1 AUTHORIZED BY____________ EXPIRES ON_____ __________

Attendant ________________

Authorized Entrants ________________

Measures for Isolating Equipment	YES	NO	Measures for Isolating Equipment	YES	NO
LOTO			Protective clothing		
Lines capped			Communications equipment		
Purging			Hot work permit needed		
Ventilation			Other PPE		
Secure area			Special conditions		
Harness and retrieval system					
Fire extinguishers					
Air line system					
SCBAs					
Other Respirators					

Atmospheric Monitoring

Tests to be Taken	yes	no	Acceptable Entry Conditions	Test # Date: Time:	1	2	3	4	5	6	7	8	9	10
Oxygen			19.5-23.5%											
LEL			<10%											
CO			<25 ppm											
H_2S			<5 ppm											
Other														

Individual conducting test:________________

Supervisor authorizing entry________________

Instruments used:

Instrument(s) name	Type	Serial #

Standby persons:________________

Emergency and rescue contact:________________

Entry supervisor approval to conduct entry______________________ Date/time_________

APPENDIX J

INCIDENT REPORTING

1.0 ACCIDENT AND INCIDENT REPORTING

It is important that all accidents and incidents that result in injury, illness, or medical treatment be reported immediately. Reporting consists of calling the Teleclaim Center and providing information on the injury. The Teleclaim Center will complete the first report of injury and file it accordingly. Copies will be sent to the Safety Director. Supervisors are required to complete the Supervisor's Report of Accident included in this section. It is **CONTRACTOR**'s responsibility to investigate each incident, file appropriate paperwork and conduct a follow-up analysis of each incident.

2.0 REPORTING PHONE NUMBERS

Safety and Health Director:	(813) 323-6220
Human Resources Director:	(860) 608-8910

3.0 FIRST AID AND MEDICAL TREATMENT

CONTRACTOR provides a First Aid Kit on each site and in each Company vehicle. It is there for use in the treatment of minor scratches, burns, headaches, nausea, etc. Each employee should verify the location of the nearest first aid kit and should make use of it whenever needed. Each kit is fully stocked and restocked monthly by an outside vendor. The kit includes bandages, over the counter medications, disinfecting supplies and topical ointments. The user of each kit is responsible for contacting the vendor to replace items used or submitting the kit to **CONTRACTOR** for replacement. Kits are to be inventoried by the Project Manager before being sent in the field. Only completely stocked kits are to be brought into the field. The kits are maintained in a weatherproof container and in accordance with ANSI Standard Z308.1-1998. The first aid supplies in each kit are included in Appendix A.

Any work related injury or illness that requires professional medical assistance should be reported immediately. Failure to promptly notify of a work related injury could make the claim questionable and subject to stricter review. The nearest medical center or hospital will be identified for each project. The phone number and location for this center will be determined before commencing field activities and be included in the Health and Safety Plan. The phone numbers will be posted by Health and Safety Director or the Project Manager and available to all employees in order to provide prompt response to all injuries. The Project Manager will contact the nearest medical facility to determine the facility's capabilities and verify that the facility is willing to provide emergency medical services.

4.0 FIRST AID

Each **CONTRACTOR** project will have at least one certified CPR/first aid trained person on site at all times. All Project Managers and anyone acting as the on-site Health and Safety Officer must be current in First Aid/CPR. First aid training sponsored by the American Red Cross is acceptable and must be renewed every three years. CPR training must be renewed annually. Other first aid training will be reviewed to see if it is comparable to the Red Cross training.

1. Minor First Aid Treatment

First aid kits are stored in each company vehicle. If an injury is sustained or results in minor first aid treatment:

a. Inform your supervisor.
b. Administer first aid treatment to the injury or wound.
c. If a first aid kit is used, indicate usage on the accident investigation report.
d. Access to a first aid kit is not intended to be a substitute for medical attention.
e. Provide details for the completion of the accident investigation report.

2. Non-Emergency Medical Treatment

For non-emergency work-related injuries requiring professional medical assistance, management must first authorize treatment. If you sustain an injury requiring treatment other than first aid:

a. Inform your supervisor.

b. Proceed to the posted medical facility. Your supervisor will assist with transportation, if necessary.

c. Provide details for the completion of the accident investigation report.

3. Emergency Medical Treatment

If you sustain a severe injury requiring emergency treatment:

a. Call for help and seek assistance from a co-worker.

b. Use the emergency telephone numbers and instructions posted next to the telephone in your work area to request assistance and transportation to the local hospital emergency room.

c. Provide details for the completion of the accident investigation report.

d. The Project Manager will identify an ER provider for each long-term project for emergency medical services. The phone number will be posted at each job site.

4. First Aid Training

Each employee will receive training and instructions from his or her supervisor on our first aid procedures.

5. Wounds

a. Minor - Cuts, lacerations, abrasions, or punctures

- Wash the wound using soap and water; rinse it well.

- Cover the wound using clean dressing.

b. Major - Large, deep and bleeding

- Stop the bleeding by pressing directly on the wound, using a bandage or cloth.
- Keep pressure on the wound until medical help arrives.

6. Broken Bones

a. Do not move the victim unless it is absolutely necessary.

b. If the victim must be moved, "splint" the injured area. Use a board, cardboard, or rolled newspaper as a splint.

7. Burns

a. Thermal (Heat)

- Rinse the burned area, without scrubbing it, and immerse it in cold water; do not use ice water.

- Blot dry the area and cover it using sterile gauze or a clean cloth.

b. Chemical

- Flush the exposed area with cool water immediately for 15 to 20 minutes.

8. Eye Injury

a. Small particles

- Do not rub your eyes.

- Use the corner of a soft clean cloth to draw particles out, or hold the eyelids open and flush the eyes continuously with water.

b. Large or stuck particles

- If a particle is stuck in the eye, do not attempt to remove it.
- Cover both eyes with bandage.

c. Chemical

- Immediately irrigate the eyes and under the eyelids, with water, for 30 minutes.

9. Neck and Spine Injury

If the victim appears to have injured his or her neck or spine, or is unable to move his or her arm or leg, do not attempt to move the victim unless it is absolutely necessary.

10. Heat Exhaustion

a. Loosen the victim's tight clothing.
b. Give the victim "sips" of cool water.
c. Make the victim lie down in a cooler place with the feet raised.

5.0 WORKERS' COMPENSATION

Every state has a Workers' Compensation Law to provide benefits to employees for lost wages and medical bills resulting from a work related injury or illness. You are covered under Workers' Compensation. You may request Workers' Compensation benefits from your supervisor. Qualification for benefits is determined by the state, not **CONTRACTOR**. Employees are responsible for keeping appointments, following doctors' instructions on and off the job, maintaining good communication with your supervisor, and to fully cooperating with all instructions given.

Workers' Compensation provides wages at a lower pay scale than what you may earn by working.

1. Employee Safety Rights

Employees have several important rights concerning safety, which are protected by federal, state and local laws that you should be aware of. They are:

a. The right to a safe work-place free from recognized hazards.

b. The right to request information on safety and health hazards in the workplace, precautions that may be taken, and procedures to be followed if an employee is injured or exposed to toxic substances.

c. The right to know about the hazards associated with the chemicals you work with, and the safety procedures.

d. The right to question any instruction which may violate a safety rule, which puts someone in unnecessary danger of serious injury.

e. The right of freedom from retaliation for demanding safety rights.

2. Safety Responsibilities

Employees also have some important responsibilities concerning safety. These are:

a. The responsibility of reporting all injuries and illnesses to your supervisor, no matter how small.

b. The responsibility of always following the safety rules for every task performed.

c. The responsibility of reporting any hazards seen.

d. The responsibility of helping co-workers recognize unsafe actions or conditions.

e. The responsibility of asking about the safety rules.

3. Employee Safety Rules

It is impossible to list or include all safety rules for all the possible tasks. But the following rules have been prepared to help the employee avoid hazards, which may cause injury while doing some of the more common tasks. Failure to follow safety rules and /or safe practices will result in disciplinary action, up to and including termination.

6.0 GENERAL SAFETY RULES

a. Read and follow the safety notices and other information that is posted.

b. Observe and follow all safety instructions, signs, and operation procedures.

c. Help your fellow employee when they ask for assistance or when needed for their safety.

d. Never participate in "horseplay". Horseplay that results in injury is often not covered by Workers' Compensation.

e. Clean up spills immediately.

f. Report all unsafe conditions, hazards, or equipment immediately. Make sure other people are warned of the problem so that they may avoid it.

g. Wear personal protective equipment as required to reduce injury potential. Use gloves, safety glasses, back support belts, etc., as necessary.

h. Never stand on chairs, furniture, or anything other than an approved ladder or step stool.

i. Never use intoxicating beverages or controlled drugs before or during work. Prescription medication should only be used at work with your Doctor's approval.

1. Fire Safety

a. Report all fire hazards to your supervisor immediately.

b. Firefighting equipment shall be used only for firefighting purposes.

c. Smoking is not permitted at any time in the areas where “No Smoking” signs are posted.

d. Do not block off access to firefighting equipment.

e. Keep doors, aisles, fire escapes and stairways completely unobstructed at all times.

f. In the case of a fire, your first consideration must be the safety of all persons, then attention should be directed to the protection of property.

g. Change clothes immediately if they are soaked with oil, gasoline, paint thinner or any other flammable liquid.

h. Know how to report a fire and how to turn on a fire alarm.

i. Know the location of all fire extinguishers, and how to use them.

j. Know the fire exits to be used in an emergency.

7.0 HAND TOOL SAFETY

a. Wear protective equipment necessary for the job you are performing. Discuss any required safety equipment with your supervisor as changes occur.

b. Defective tools must not be used.

c. Do not carry sharp hand tools in clothing.

d. Check all wiring on electric hand tools for proper insulation and 3-prong plug grounding.

e. **Hammers:** Use eye protection at all times!

f. **Screwdrivers:** Use the right size and type of screwdriver for the job. Do not use a screwdriver as a chisel.

g. **Wrenches:** In using any wrench, it is better to pull than to push. If you have to push, use your open palm. Use the proper wrench for the job.

h. **Handsaws:** Saws that are sharp and rust free are less likely to bind or jump. Insure the object being cut is secured tightly to a flat surface.

8.0 PROTECTIVE EQUIPMENT

a. Approved eye protection (safety glasses with side shields, goggles, etc.) must be worn at all times when assigned any certain job classifications. It is important to check with your supervisor to assure compliance.

b. Moccasins and shoes with open toes or high heels are not permitted.

c. Wear protective clothing and equipment as required by your job classification to protect against hazards at hand. These include, but are not limited to, hard hats, steel-toed shoes, gloves, fall safety harnesses, earplugs, etc.

9.0 MATERIAL HANDLING SAFETY RULES

a. When lifting, lift properly. Keep the back straight, stand close to the load, and use your leg muscles to do the lifting, keeping the load close to the body. Never twist your upper body while carrying a load.

b. When lifting heavy objects, utilize a two-wheeled dolly, or, ask for assistance from another employee.

c. Inspect the object you are going to lift for sharp corners, nails, black widow spiders, or other things that may cause injury.

d. Use gloves when handling rough or sharp materials.

10.0 HOUSEKEEPING

a. Do not place materials in aisles, stairways, or any designated path of travel.

b. Stack material at a safe height so that material will not fall if bumped. Insure heavy loads have proper support, and make sure there is no overhanging or irregular stacking of material.

c. Place all trash or scrap in places provided. Clean up all spills immediately.

d. Report worn or broken flooring, stair treads, handrails, furniture, or other office equipment.

e. Smoking is permitted only in designated areas. Use ashtrays for disposing of butts. Do not throw butts on the floor.

Supervisor's Report of Accident

Supervisor's Name: ____

Basic Rules for Accident Investigation

- Find the cause to prevent future accidents - Use an unbiased approach during investigation
- Interview witnesses & injured employees at the scene - conduct a walkthrough of the accident
- Conduct interviews in private - Interview one witness at a time.
- Get signed statements from all involved.
- Take photos or make a sketch of the accident scene.
- What hazards are present - what unsafe acts contributed to the accident.
- Ensure hazardous conditions are corrected immediately.

Date & Time		**Location**	
Tasks performed		**Witnesses**	
Resulted in	**__ Injury __ Fatality** **__Property Damage**	**Property Damage**	
Injured		**Injured**	
Describe Accident Facts & Events			

Supervisor's Root Cause Analysis		*Check ALL that apply to this accident*	
Unsafe Acts		**Unsafe Conditions**	
Improper work technique		Poor Workstation design	
Safety rule violation		Unsafe Operation Method	
Improper PPE or PPE not used		Improper Maintenance	
Operating without authority		Lack of direct supervision	
Failure to warn or secure		Insufficient Training	
Operating at improper speeds		Lack of experience	
By-passing safety devices		Insufficient knowledge of job	
Protective equipment not in use		Slippery conditions	
Improper loading or placement		Excessive noise	
Improper lifting		Inadequate guarding of hazards	
Servicing machinery in motion		Defective tools/equipment	
Horseplay		Poor housekeeping	
Drug or alcohol use		Insufficient lighting	
Unsafe Acts require a written warning and re-training <u>before</u> the Employee resumes work			

Date		**Date**	
Re-Training Assigned		Unsafe Condition Guarded	
Re-Training Completed		Unsafe Condition Corrected	
Supervisor Signature		**Supervisor Signature**	

Accident Report Review

Supervisor ____ Date _______________

Department Superintendent _________________________ Date _______________

Safety Manager ____________________________________ Date _______________

Plant Manager _____________________________________ Date _______________

ATTACHMENT A

First Aid Kits

Each first aid kit is in a weather proof container and contains the following:

Item	Amount
Ear Plugs	2 pair
Band-aids	2 boxes
Sterile pads	5 2"x2"
Oval eye pads	2
Tylenol	10
Burn cream	1 tube
Tweezers	1 each
Scissors	1 each
Triangular bandage	1
Antiseptic wipes	1 box
Ammonia inhalants	1 box
Flexible gauze	1 roll
First aid guide	
Latex gloves	2 pair

Appendix K
Emergency Evacuation Plan and Map

BAY SHORE/BRIGHTWATERS

SITE-WIDE EMERGENCY EVACUATION PLAN

In the event of severe weather, a chemical emergency, a fire, or other hazard, which warrants evacuation of the personnel onsite or working within the Bay Shore community; the following procedures will be strictly adhered to:

1. **IF THE EMERGENCY IS SITE-WIDE (such as severe inclement weather), SOUND THE ALARM** All staff vehicles are equipped with an air horn. The emergency signal blast with the air horn should be a single blast lasting approximately **30 seconds**. If another horn blast happens to occur at the same time or during your blast, do not discontinue yours. Complete your emergency signal. Be aware that other emergency blasts may occur in the event of an emergency.

   IF THE EMERGENCY IS LOCALIZED (such as a fire in the trailer or an accident in the work zone) you do not need to sound the alarm with the air horn. You must yell **FIRE, FIRE, FIRE,** (or other emergency) repeatedly. Make sure that at least one other employee has heard and understood the alarm.

2. **NOTIFY/CALL 911 EMERGENCY OPERATOR.** The employee first observing the fire or other hazard will relocate outside of the immediate area of the hazard,

DIAL 911 and
Report the emergency situation indicating that
THERE IS A FIRE OR OTHER TYPE OF AN EMERGENCY AT:

[Name and location of emergency]
The National Grid Bay Shore/Brightwaters Site
Give Address

3. **EVACUATE!** Select the closest, safest route to exit the site or building and proceed in an orderly and expeditious manner to a prearranged meeting area outside. While in route to the exit, assist in the notification of other employees by re-sounding the alarm to evacuate**. FIRE, EVACUATE!!! FIRE, EVACUATE, FIRE, EVACUATE!!!** While in route from the building(s) or site, take the time to notify the other employees and occupants in the area of the emergency and the necessity for evacuation. For a site-wide evacuation, follow the designated path on the Emergency Evacuation Map.

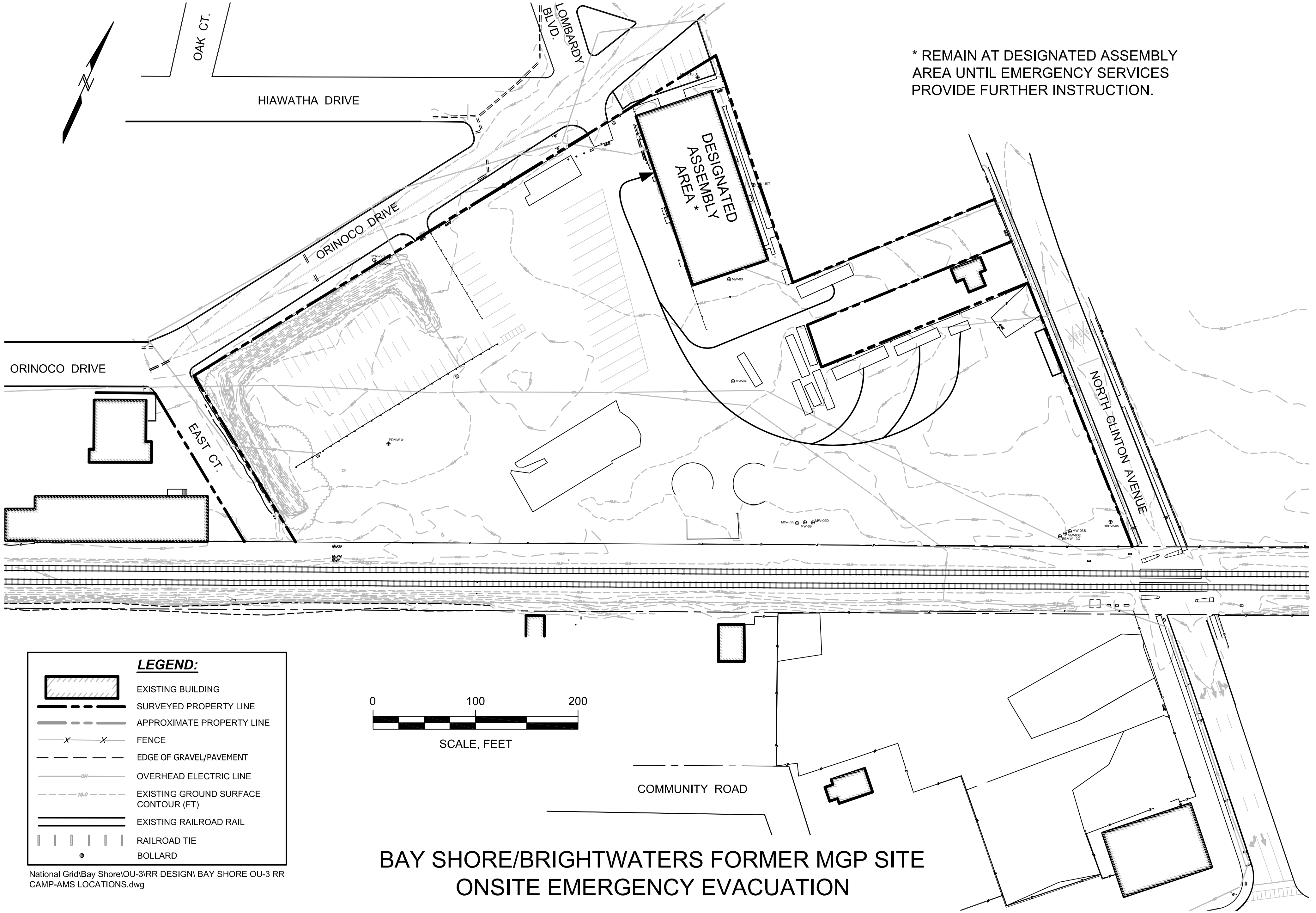
4. **ASSEMBLE:** After you have heard the GEI air horn emergency signal or after you have been clearly notified by other personnel that you must vacate and/or evacuate your area, you must immediately relocate to the **DESIGNATED GEI ASSEMBLY AREA (on**

Emergency Evacuation Map) if the emergency is site-wide. If the emergency is localized, relocate to an area outside your work zone that is a **safe distance from the emergency**. Secure your work area if necessary, and if possible. It is understandable that this may not be possible in the event that a tornado is evident. However, **if you are following proper Health and Safety protocols, this should not be a problem! Your work area should already be secure and you should be able to leave it immediately.** As you exit the building or job site, select the closest and safest route and proceed in an orderly manner to the **DESIGNATED ASSEMBLY AREA** where a head count will be taken to ensure that everyone has safely evacuated**. The first person to arrive will conduct the headcount. Use the sign-in sheet (if possible) to help determine who is present onsite, but also be sure to determine from other employees who is onsite at well (include sub-contractors). Sub-contractor crew chiefs must inform GEI of employee presence.** Be especially cautious as you cross traffic lanes for arriving emergency vehicles and other moving private vehicles.

5. Remain in the assembly area until released to return to work or instructed otherwise.

6. Random safety drills regarding the material in this emergency evacuation plan will be conducted to determine the efficacy of the plan and necessary changes.

7. Notify the GEI Project Manager, GEI Corporate Health and Safety Officer, and the National Grid Project Manager of the emergency and actions taken by site personnel.



National Grid\Bay Shore\OU-3\RR DESIGN\ BAY SHORE OU-3 RR CAMP-AMS LOCATIONS.dwg

BAY SHORE/BRIGHTWATERS FORMER MGP SITE
ONSITE EMERGENCY EVACUATION

Appendix L
Utility Clearance Forms and Information

GEI Consultants

Utility Clearance Documentation

Project: ____________________

Site: ____________________

Drilling Location ID: ____________________

Driller: ____________________

GEI PM: ____________________

GEI Field Team Leader: ____________________

Utility Drawings Reviewed: ____________________

Provided By: ____________________

Reviewed By: ____________________

One Call Utility Clearance Call Date: ____________________

Utility Clearance Received back from (list utilities): ____________________

Completed By (Company): ____________________ Date: __________

GEI Staff Responsible for Oversight: ____________________

Metal Detector Survey (yes/no): ____________________

Drilling Location Cleared by: ____________________

Contractor: ____________________ Date: __________

GEI Staff Responsible for Oversight: ____________________

Physical Test Pit Clearance Required (yes/no): ____________________

Contractor: ____________________ Date: __________

GEI Staff Responsible for Oversight: ____________________

Handclearing Performed: ____________________ Date: __________

Contractor: ____________________

GEI Staff Responsible for Oversight: ____________________

Notes: ____________________

____

Based upon the best available information, appropriate utility clearance proceedures were performed for the invasive work specified. If client ordered/site specific deviations from existing GEI utility clearance procedures exist, they are approved by the client signature below.

Client Signature (Optional): ____________________ Date: __________

GEI, Inc. Representative: ____________________ Date: __________

The following is the required information when calling New York City and Long Island One Call Center. You can print out this page out or download an MS Word document of the form by clicking here.

Caller ____
Phone Number (____)____________________________
Contractor ____________________________________
Contractor's Address ___________________________
Start Date_____________ Start Time______________
Borough/County ________________________________
Street Number _________________________________
First Intersection _______________________________
Second Intersection _____________________________
Type of Work __________________________________
Method of Excavation ___________________________
Street ______Sidewalk ______ Private Property ______
Other (Specify) _______________________________
If Private Property: Front _____ Rear _____ Side _____
Person to contact ______________________________
Phone No. (____)_______________________________
Work Being Done For ___________________________
Remarks ______________________________________
____
Serial No. __________ Members Notified____________
____

CALL-BEFORE-U-DIG!!!
UTILITY NOTIFICATION WORKSHEET

SITE: AGLC Macon MGP Site (167 Mulberry Street)
ADDRESS: Both sides of ROW of Terminal Avenue from 200' south of intersection with Walnut Street for another 200 feet south **TICKET #:** 02276-028-016
INSIDE/OUTSIDE CITY LIMITS: inside COUNTY: Bibb
Any horizontal boring or blasting? no Work to be done within 10 feet of overhead power lines? no

DATE CALLED: 2/27/06 @ 08:15 **TICKET GOOD BY:** 3/2/06 @ 0700 **TICKET GOOD THROUGH:** 3/23/2006 **RENEW TICKET BY:** 3/16/2006 @ 08:15

Updated: 2/27/2006

AGENCY	AGENCY NAME	CONTACTED THRU ONE-CALL?	RESPONDED w/in 72 HOURS?	RESPONSE (if applicable)	CONTACT PERSON	PHONE NO.	COMMENTS
							NOTE: request companies to call back if no lines
Gas	AGLC	Y			John Vogel	478-284-7694	478-396-5940
Power	GPC	Y					
Fiber Optic	BELLSOUTH	Y					
Fiber Optic	AT&T	Y				800-252-1133	
Fiber Optic	Williams Communications	Y			David Verrow	478-256-2554	aka Wilco Cable
Fiber Optic	Cox Cable	Y					
Fiber Optic							
Fiber Optic							
Fiber Optic							
Fiber Optic							
Fiber Optic							
Water	Macon Water Authority	Y			Mark Potts	478-960-1902	
Sewer	Macon Sewer Authority	Y			Mark Potts	478-960-1902	

GA ONE-CALL NUMBER: 1-800-282-7411, GA LOCAL NUMBER: 770-623-4344, GA Response number (888) 670-2902
AL ONE-CALL NUMBER: 1-800-292-8525
***Note: most utilites need at least 72 hours notification prior to work performed
Fiber Optic could apply to both phone and cable

CALL-BEFORE-U-DIG!!!
UTILITY NOTIFICATION WORKSHEET

SITE: AGLC Macon MGP Site (167 Mulberry Street)
ADDRESS: Western ROW of Sixth Street at intersection of Mulberry Street for 150 feet in both directions **TICKET #:** 02276-028-017
INSIDE/OUTSIDE CITY LIMITS: inside COUNTY: Bibb
Any horizontal boring or blasting? no Work to be done within 10 feet of overhead power lines? no

DATE CALLED: 2/24/06 @ 08:15 **TICKET GOOD BY:** 3/1/06 @ 0700 **TICKET GOOD THROUGH:** 3/23/2006 **RENEW TICKET BY:** 3/16/2006 @ 08:15

Updated: 2/27/2006

AGENCY	AGENCY NAME	CONTACTED THRU ONE-CALL?	RESPONDED w/in 72 HOURS?	RESPONSE (if applicable)	CONTACT PERSON	PHONE NO.	COMMENTS
							NOTE: request companies to call back if no lines
Gas	AGLC	Y	Y	marked	John Vogel	478-284-7694	478-396-5940
Power	GPC	Y	Y	clear			
Fiber Optic	BELLSOUTH	Y	Y	clear			
Fiber Optic	AT&T	Y	Y	clear		800-252-1133	
Fiber Optic	Williams Communications	Y	Y	no conflict	David Verrow	478-256-2554	aka Wilco Cable
Fiber Optic	Cox Cable	Y	Y	no conflict			
Fiber Optic							
Fiber Optic							
Fiber Optic							
Fiber Optic							
Fiber Optic							
Water	Macon Water Authority	Y	Y	marked	Mark Potts	478-960-1902	Requested to meet on site
Sewer	Macon Sewer Authority	Y	Y	marked	Mark Potts	478-960-1902	Requested to meet on site

GA ONE-CALL NUMBER: 1-800-282-7411, GA LOCAL NUMBER: 770-623-4344, GA Response number (888) 670-2902
AL ONE-CALL NUMBER: 1-800-292-8525
***Note: most utilites need at least 72 hours notification prior to work performed
Fiber Optic could apply to both phone and cable

CALL-BEFORE-U-DIG!!!
UTILITY NOTIFICATION WORKSHEET

SITE: National Grid ____________________
WORK START DATE/TIME: ____________________
ADDRESS: ____________________ **TICKET #:** ____________________
INSIDE/OUTSIDE CITY LIMITS: __________ BURROUGH/COUNTY: __________
TYPE OF WORK: __________ __________
Any horizontal boring or blasting? __________ Work to be done within 10 feet of overhead power lines? __________

DATE CALLED: ____ @ ____ **TICKET GOOD BY:** ____ @ ____ **TICKET GOOD THROUGH:** __________ **RENEW TICKET BY:** ____ @ ____

Updated: 4/14/2009

AGENCY	AGENCY NAME	CONTACTED THRU ONE-CALL?	RESPONDED w/in 72 HOURS?	RESPONSE (if applicable)*	CONTACT PERSON	PHONE NO.	EMAIL (if available)	COMMENTS
Gas	National Grid	Y			Dan McGarry	516-545-2245	dmcgarry@keyspanenergy.com	
Power	LIPA	Y			Rich Booth	516-545-3242	rbooth@keyspanenergy.com	
Fiber Optic	AT&T	Y			Lloyd Mcgown	n/a	n/a	
Fiber Optic	Cablevision	Y			Barry Monopoli[#]	631-846-5570	bmonopoli@cablevision.com	[#]Cablevision Systems (Hauppage)
Fiber Optic	Verizon	Y			Roger Sampson	516-785-5860	roger.e.sampson@verizon.com	
Fiber Optic								
Water	Suffolk Cty. Water Authority	Y			Richard Marrero	631-854-4186	n/a	**** Must call SCWA directly to get locate!!**
Sewer	Suffolk Cty. Sewer	Y			Michael McMahon	631-563-5667	mmcmahon@scwa.com	**** Must call Suffolk Cty. PDW directly to get locate!!**
	Town of Islip				Donald F. Caputo	631-224-5610	n/a	

Notes:
NY ONE-CALL NUMBER: 1-800-272-4480, NY Response number:
* Attach copies of utility notifications (either fax or email) to this spreadsheet.
***Note: most utilites need at least 72 hours notification prior to work performed
Fiber Optic could apply to both phone and cable

NYC & LI One Call/Dig Safely Members	Contact Information	
ALBERTSON WATER DISTRICT		
Mr. Rudolph Henriksen	516-621-3610	(voice)
184 Shepherd Lane	516-626-8042	(fax)
Roslyn Heights, NY 11577		(email)
AQUA NEW YORK OF SEA CLIFF		
Mr. Arthur Hall	516-676-1166	(voice)
325 Prospect Ave.	516-676-1379	(fax)
Sea Cliff, NY 11579		(email)
AT&T		
Mr. Lloyd Mcgown		(voice)
301 W. Whaley St., Rm 403		(fax)
Longview, TX 75601		(email)
BELGRAVE WATER POLLUTION CONTROL DISTRICT		
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BETHPAGE WATER DISTRICT		
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Bethpage, NY 11714		(email)
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CITY OF LONG BEACH DPW

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P.O. Box 296, 6 Third St.	516-671-3332	(fax)
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GLOBAL CROSSING, LTD

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GREENLAWN WATER DISTRICT

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IROQUOIS GAS TRANSMISSION

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JERICHO WATER DISTRICT

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KEYSPAN COMMUNICATIONS

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LEGGETTE, BRASHEARS & GRAHAM, INC.

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LEVEL 3 COMMUNICATIONS, LLC

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Broomfield, CO 80021		(email)

LIPA

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MANHASSET LAKEVILLE WATER DISTRICT

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MASSAPEQUA WATER DISTRICT

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OPEN ACCESS, INC.

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APPENDIX M

ACTIVITY HAZARD ANALYSIS

Site Hazard Identification and Risk Assessment (Page 1 of 2)

Project: Bay Shore/Brightwaters Former MGP Site

ACTIVITY: Major Tasks	Persons Affected	Anticipated Hazard	Possible Consequence	Severity	Likelihood	Frequency	Risk Rating Before Controls	Controls/Mitigation Steps Engineering; Operational; Administrative; PPE	Risk Rating After Controls
Mobilization/Setup	E,C	Vehicular Traffic Cuts/Abrasions Persons struck by equipment or load/rollover. Physical injuries or strain Slips/trips/falls	1,2,11,12,14	2	2	5	**M**	Work Zone Traffic Protection Police/Flag persons Training, PPE, High visibility/reflective clothing Traffic Plan Use Proper Lifting Techniques, request help when lifting	**M**
Traffic Control and Safety	E,C	Persons struck by vehicle, strains from lifting	2,3,14	5	1	1	**M**	Training, PPE, High visibility/reflective clothing Use Proper Lifting Techniques, request help when lifting	**L**
Subsurface Exploration (Drilling, excavation, trenching)	E,C	Electrical Contact Trench/excavation collapse Utility Damage (water, sewer, gas and others) Mechanical failures Excessive noise Persons struck by equipment or load/rollover. Fuel Spills Flying debris Drill rig injuries due to contact with auger Slips/Trips/Falls Noise Chemical Hazards associated with contamination	1,2,3,4,7,8,12, 14	5	3	5	**H**	Dig Safe requirements, company procedures and municipal utility verification Trench box Work area protection Training, PPE Daily tailgate meetings to discuss day's activities and risks Equipment maintenance requirements Maintain proper distance from drill rig during operation (if not operating rig) Test pit soil samples to be collected from excavator bucket Detailed Health and Safety Plan (for contamination)	**M**
Heat Stress	E, C	Heat Stress	10,14 11,14	5	2	3	**M**	Review signs and symptoms and PPE depending upon weather conditions Fluids and breaks	**M**
Cold Stress	E, C	Cold Stress		5	2	3	**M**	Review signs and symptoms and PPE depending upon weather conditions Fluids and breaks	**M**
Demobilization	E,C	Vehicular Traffic Cuts/Abrasions Physical injuries or strain Slips/trips/falls	1,2,11,12,14	2	2	5	**M**	Work Zone Traffic Protection Police/Flag persons Traffic Plan Training, PPE	**M**
Chemical Exposures	E, C	skin, eye and respiratory irritation, headache, dizziness,	5, 8, 9, 14	2	4	4	**M**	Training, PPE	**M**
Fire/Explosions	E, C	burns, death, shrapnel	8, 9,13, 14	3	1	1	**M**	No smoking where flammable materials are in use Training in use of fire extinguishers, Dig Safe requirements, company procedures and municipal utility verification	**L**
Line Breaking	E, C	burns, chemical exposure, physical injuries or strain	1, 2, 3, 5, 9, 13, 14	3	2	1	**M**	Follow line breaking procedures, training, PPE,	**M**
Confined Space Entry	E, C	Chemical exposure, physical injuries, asphixiation, entrapment	1, 2, 3, 4, 5, 8, 9, 10, 11, 13, 14	3	2	1	**H**	Follow PRCS entry procedures, use proper air monitroing equipment, PPE, training	**M**
Noise Hazards	E, C	hearing damage	7	2	3	4	**M**	Use hearing protection if required, keep distance from operating machinery	**M**
Hand Held Equipment	E, C	Cuts/Abrasions, amputation	1, 2, 3, 13	3	3	3	**M**	Training, PPE	**M**
Biological Hazards	E, C	insect or animal bites, skin rash/irritation, blood poisoning,	1, 12, 13	2	2	2	**M**	Use insect repellent, wear long sleeves, tuck pants into socks	**M**
Steam, Heat, Splashing	E, C	burns, chemical exposure	13,	5	2	2	**M**	Follow line breaking procedures, training, PPE	**M**
High Crime Area	E, C	physical injuries	1, 2, 3, 13, 14	5	2	3	**H**	Request police detail when appropriate Accompany or be accompanied by others to vehicles. Do not remain on site alone	**M**
Inclement Weather	E, C	Electricution, cold stress	13	3	2	1	**M**	Stop outdoor work during electrical storms and other extreme weather conditions, such as extreme heat or cold temperatures. Take cover indoors or in vehicle. Listen to local forecasts for warnings about specific weather hazards, such as tornados, hurricanes, and flash floods	**L**
Heavy Equipment Safety	E, C	physical injuries, crushing	2, 3, 13, 14	5	4	4	**H**	Identify yourself and your work location to heavy equipment operators, so they may incorporate you into their operations. Coordinate hand signals with operators. Stay Alert! Pay attention to equipment back-up alarms and swing radii. Wear a high visibility vest when working near equipment or motor vehicle traffic. Position yourself in a safe location.	**M**
Community Air Monitoring	E	Electrical Contact Slips/Trips/Falls Cuts/Abrasions Physical injuries or strain Noise Persons struck by equipment Vehicular Traffic Potential Exposure to on-site contaminants Potential Exposure to decontamination supplies Heat Stress/ Cold Stress	4 1,2 1,2 1,2 7 1,2,3,14 1,2,3,14 5 5 10,11,14	5	3	5	**H**	Use GFCI curcuits and breakers/ Good house keeping Training, PPE Training, PPE Use Proper Lifting Techniques, request help when lifting Training, PPE High visibility/reflective clothing, Use caution around equipment High visibility/reflective clothing, Use caution when crossing the street Training, PPE Training, PPE Review in job brief depending upon weather conditions/ Fluids and breaks Daily tailgate meetings to discuss day's activities and risks Detailed Health and Safety Plan (for contamination)	**M**
Soil Vapor Monitoring Installation Activities (Drilling, Abandonment)	E,C	Drill rig injuries due to contact with Geoprobe Potential Exposure to on-site contaminants Potential Exposure to decontamination supplies Slips/Trips/Falls Cuts/Abrasions Physical injuries or strain Noise Persons struck by equipment Vehicular Traffic Biological agents (poison ivy/ oak/ insects) Heat Stress/ Cold Stress Contactwith sub-surface utilities	1,2,3,7,8 5 5 1,2 1,2 1,2 7 1,2,3,14 1,2,3,14 12 10,11,14 4,7,8,14	5	5	5	**H**	Training, PPE Training, PPE Training, PPE Training, PPE Training, PPE Use Proper Lifting Techniques, request help when lifting Training, PPE High visibility/reflective clothing, Use caution around equipment High visibility/reflective clothing, Use caution when crossing the street, traffic control Training, PPE Review in job brief depending upon weather conditions/ Fluids and breaks Daily tailgate meetings to discuss day's activities and risks, Notify One Call and private utility locator if necessary Detailed Health and Safety Plan (for contamination)	**M**
Soil Vapor Monitoring Activities	E,C	Slips/Trips/Falls Cuts/Abrasions Physical injuries or strain Noise Persons struck by equipment Vehicular Traffic Potential Exposure to on-site contaminants Potential Exposure to decontamination supplies Biological agents (poison ivy/ oak/ insects) Heat Stress/ Cold Stress	1,2 1,2 1,2 7 1,2,3,14 1,2,3,14 5 5 12 10,11,14	5	2	5	**H**	Training, PPE Training, PPE Use Proper Lifting Techniques, request help when lifting Training, PPE High visibility/reflective clothing, Use caution around equipment High visibility/reflective clothing, Use caution when crossing the street Training, PPE Training, PPE Training, PPE Review in job brief depending upon weather conditions/ Fluids and breaks Daily tailgate meetings to discuss day's activities and risks Detailed Health and Safety Plan (for contamination)	**M**

Comments: If site activities are covered by the Hazardous Waste Operations and Emergency Response (HAZWOPER) standard, 29 CFR 1910.120, then a written site-specific health and safety plan (HASP) that addresses the safety and health hazards of each phase of site operation and includes the requirements and procedures for employee protection must be developed and implemented. The minimu
(Note: The HAZWOPER standard covers hazardous waste operations at sites recognized by a federal, state, local or other governmental body as hazardous waste/spil
safety or health hazards during the operation due to the release of hazardous substances in the worksite.)

Notify the contractor immediately if any problems arise.
Do not stand or sit under suspended loads or near any pressurized equipment lines

Hazard Identification and Risk Assessment Work Sheet (Page 2 of 2)

Hazard and Significance	**Hazard Ranking Matrix**				
	1	**2**	**3**	**4**	**5**
Severity of Exposure	Minimal	First Aid Required	Moderate Injuries	Severe Injuries (hospitalization)	Death – potential for System-wide impact
Likelihood of Exposure	Very unlikely under normal conditions	Occurs during abnormal/emergency	May occur during routine activities	Occurs during normal operating conditions	Likely to occur during routine activities
Frequency of Exposure	Slight < 1 hr per day	Infrequent <8 hrs per day	Moderate exposure 1-2 days per week	Frequent exposure 3-4 days per week	Daily Exposure

Key:
Persons Affected: E-employees; C-Contractors; P-members of the public.
Possible Consequences: 1-soreness/strain/sprain; 2-laceration; 3-break; 4-burns (electrical), electrocution; 5-chemical; 6-ergonomics; 7-hearing damage; 8-sight damage; 9-respiratory damage; 10-heat stress; 11-cold exposure effects; 12-biological (blood borne pathogens, chronic lead exposure, pcbs); 13-other; 14 Death.
Risk Rating: The sum of the Severity the Likelihood and the Frequency divided by 3.
Risk Rating of less than 2 is Low (L)
Risk Rating greater than 2 but less than 4 is Medium (M)
Risk Rating of 4 and above is High (H)

Comment: If site activities are covered by the Hazardous Waste Operations and Emergency Response (HAZWOPER) standard, 29 CFR 1910.120, then a written site-specific health and safety plan (HASP) that addresses the safety and health hazards of each phase of site operation and includes the requirements and procedures for employee protection must be developed and implemented. The minimum elements for this plan are contained 29 CFR 1910.120(b)(4)(ii).

(Note: The HAZWOPER standard covers hazardous waste operations at sites recognized by a federal, state, local or other governmental body as hazardous waste/spill sites and where employees are exposed to or potentially exposed to safety or health hazards during the operation due to the release of hazardous substances in the worksite.)