

# **PHASE II - ENVIRONMENTAL SITE ASSESSMENT**

**Mattabassett Regionalization Project  
Middletown Inter Municipal Force Main  
Proposed Sewage Pumping Station  
34 East Main Street  
Middletown, Connecticut**

Prepared for:

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**TABLE OF CONTENTS**

|  | Page Number |
|--|-------------|
| 1.0 INTRODUCTION.....  | 1           |
| 2.0 SITE DESCRIPTION.....  | 3           |
| 2.1 Background.....  | 3           |
| 2.2 Geology.....   | 3           |
| 2.3 Hydrogeology.....  | 4           |
| 3.0 PRELIMINARY CONCEPTUAL SITE MODEL.....                               | 5           |
| 4.0 SUBSURFACE INVESTIGATION.....  | 7           |
| 4.1 Geoprobe® Soil Borings & Soil Sample Analyses.....                   | 7           |
| 4.2 Groundwater Grab Sample Collection & Analyses.....                   | 8           |
| 4.3 Project Quality Assurance/Quality Control Practices.....             | 9           |
| 5.0 DISCUSSION OF SAMPLE RESULTS.....                                    | 11          |
| 5.1 Regulatory Criteria.....   | 11          |
| 5.2 Results of Soil Sample Analyses.....                                 | 13          |
| 5.3 Results of Groundwater Grab Sample Analyses.....                     | 19          |
| 5.4 Quality Assurance/Quality Control Samples.....                       | 23          |
| 5.5 Data Quality Assessment and Data Usability Evaluation (DQA/DUE)..... | 23          |
| 6.0 DISCUSSION OF AFFECTED RESOURCES.....                                | 25          |
| 6.1 Areas of Environmental Concern (AOEC).....                           | 25          |
| 6.2 Low Level Areas of Environmental Concern (LLAOEC's).....             | 28          |
| 6.3 Groundwater Area of Environmental Concern (GWAEOEC).....             | 30          |
| 7.0 RECOMMENDATIONS.....   | 31          |
| 8.0 LIMITATIONS.....   | 33          |

FIGURES

|  |   |
|--|---|
| FIGURE 1 – Project Location Plan.....                                    | 2 |
| FIGURE 2 – Previous Investigations – Boring Location Plan                |   |
| FIGURE 3 – Phase II Environmental Site Assessment – Boring Location Plan |   |
| FIGURE 4 - Areas of Environmental Concern                                |   |
| FIGURE 5 – Low Level Areas of Environmental Concern                      |   |

TABLES

|  |  |
|--|--|
| Table 1 – Results of Geoprobe® Boring Soil Sample Analyses |  |
| Table 2 – Results of Groundwater Sample Analyses           |  |
| Table 3 – Results of QA/QC Samples Analyses                |  |

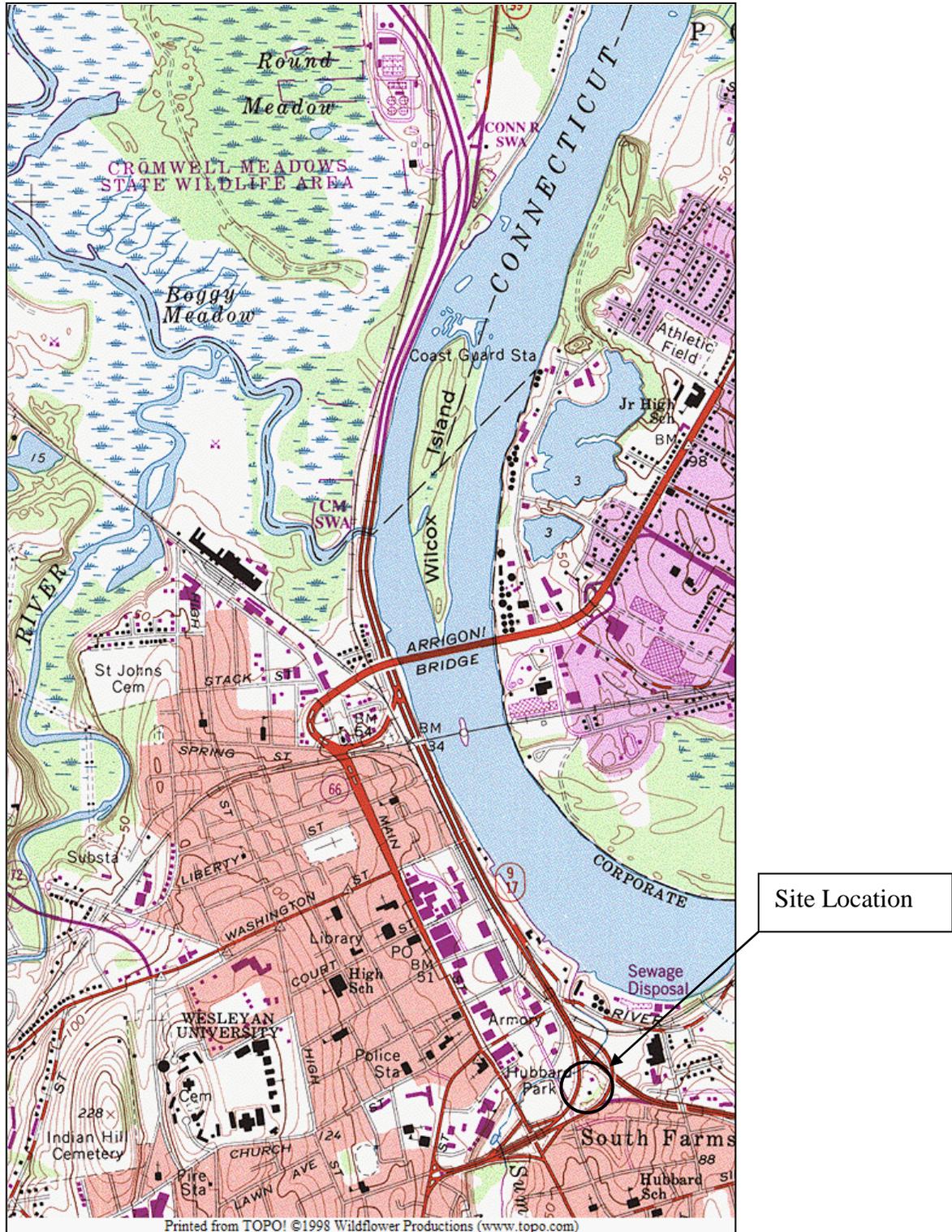
APPENDICES

|                                      |  |
|--------------------------------------|--|
| APPENDIX A – Boring Logs             |  |
| APPENDIX B – Laboratory Reports (CD) |  |
| APPENDIX C – DQA & DUE Worksheets    |  |

## **1.0 INTRODUCTION**

On behalf of the City of Middletown, CDR Maguire Inc. (CDRM) has conducted a Phase II Environmental Site Assessment (ESA) in association with the construction of the proposed Pump Station at 34 East Main Street in Middletown, Connecticut, which is the site of an existing sewage pumping station. (See Figure 1 – Site Location Plan).

The purpose of this Phase II ESA is to verify the absence or presence and location of subsurface contamination, and to assess the potential pollutant impacts to be encountered during construction associated with the proposed pump station. It is anticipated that Environmental Plans, Specifications, and Estimate will subsequently be prepared to assess construction related activities (i.e. proper storage, classification, transport and disposal of contaminated materials), in relationship to the environmental conditions prevalent within the project limits, as well as to specify remedial work to be included in the Contract Bid Documents.



**FIGURE 1 – SITE LOCATION PLAN**  
**34 East Main Street**  
**Middletown, Connecticut**

## **2.0 SITE DESCRIPTION**

### **2.1 Background**

As part of the Mattabassett Regionalization Project, a new pump station is proposed to be constructed at the existing pump station site located at 34 East Main Street in Middletown. The pump station site is bounded to the west by East Main Street, to the north by the off ramp from Route 9 to Route 17, to the east by Route 9 and to the south by the on ramp to Route 9 and Maple Street. The pump station site (Site) is currently occupied by three (3) buildings and a chain link fence surrounds the entire parcel.

The area surrounding the project site consists of the Route 9 and railroad corridors, undeveloped land abutting Route 9, commercial, residential and industrial properties.

This Phase II ESA investigation was conducted within the project limits in the area of anticipated construction activities associated with the proposed pump station construction. The site area is depicted on the figures included at the end of this Report.

### **2.2 Geology**

Topography within the project limits is characterized by urban areas, large floodplains and steep man-made banks. In the built portions of the project area, extensive manipulation of the original topographic features has occurred, including excavation and filling. The ROW of both Route 9 and the Providence and Worcester Railroad (P&WRR) line have been extensively filled within the Connecticut River Floodplain in the past. As a result, steep banks exist along both Route 9 and the railroad corridor. Natural elevations within the project area range from approximately El. 20 feet to El. 30 feet from south to north.

The CTDEEP's "Surficial Materials Map" for Middletown indicates that the soils underlying within the project limits are postglacial deposits composed of Alluvium overlying undifferentiated Coarse deposits consisting of sand and gravel and Artificial Fill. The Bedrock Geological Map of Connecticut, compiled by John Rodgers in 1985,

indicates that the bedrock unit underlying the Site is the Portland Arkose, which is described as a reddish-brown arkose (brownstone).

### **2.3 Hydrogeology**

The CTDEEP's "Water Quality Classifications Map," dated February 25, 2011 for Middletown, Connecticut depicts the groundwater quality within the project limits as Class "GB." The "GB" groundwater classification indicates that the groundwater is within an urbanized area of intense industrial activity where a public water supply source is available. The groundwater may not be suitable for human consumption due to waste discharges, spills or leaks of chemicals, or land use impacts. Groundwater was encountered at depths of five (5) feet (PSGP-40 & PSGP-41) to fourteen (14) feet (PSGP-6, PSGP-10 & PSGP-43) below the existing ground surface.

The project site is located within the Sumner Brook Drainage Basin within the Connecticut Main Stem Regional Drainage Basin within the Connecticut Major Drainage Basin. One (1) surface water body is located within the project limits. Sumner Brook is located near the northern corner of the pump station site and is classified a Class B surface water body according to the CTDEEP's "Water Quality Classifications Map", dated February 25, 2011 for Middletown, Connecticut. The Class B designation indicates that the surface water quality does not meet water quality criteria for one or more of the following uses: recreational use, fish and wildlife habitat, agricultural and industrial supply and other legitimate uses including navigation.

The Connecticut River is located approximately 500-feet east-northeast of the project site and is classified a Class SB surface water body by CTDEEP. The Class SB designation indicates that the surface water quality is known to be tidally influenced and does not meet water quality criteria for one or more of the following uses: recreational use, fish and wildlife habitat, agricultural and industrial supply and other legitimate uses including navigation.

### 3.0 PRELIMINARY CONCEPTUAL SITE MODEL

The following environmental investigations have been conducted at the pump station site:

- *Underground Storage Tank Assessment Report, Various Sewer Facilities, Middletown, Connecticut, Prepared for: City of Middletown, Prepared by: Metcalf & Eddy, Inc., June 2004 (M&E UST Report)*
- *ASTM Phase I Environmental Site Assessment (ESA), Riverfront Revitalization Project, Area 3, 2 Parcels on deKoven Drive and East Main Street, Middletown, Connecticut, Prepared for: City of Middletown, Department of Planning, Conservation & Development, Prepared by: Vanasse Hangen Brustlin, Inc., February 2005 (VHB Phase I)*
- *Phase II Subsurface Investigation (SI), Riverfront Revitalization Project, 34 East Main Street, Middletown, Connecticut, Prepared for: City of Middletown, Department of Planning, Conservation & Development, Prepared by: Vanasse Hangen Brustlin, Inc., February 2005 (VHB Phase II)*
- *Phase I Environmental Site Assessment (ESA), Mattabassett Regionalization Project, Middletown Sewage Pumping Station and Force Main, Existing Sewage Pumping Station Site, 34 East Main Street, Middletown, Connecticut, Prepared for: City of Middletown, Prepared by: Maguire Group Inc., December 9, 2011.*

Based on the results of the previous environmental investigations, a Preliminary Conceptual Site Model (CSM) has been developed for the project site which identified eight (8) Potential Areas of Concern (PAOCs) where releases of Contaminants of Concern (COCs) may have occurred to the environment from historic corridor usage and site operations.

**PRELIMINARY CONCEPTUAL SITE MODEL (CSM)**

| <b>PAOC #</b> | <b>Description</b>  | <b>COCs</b>                 |
|---------------|---|-----------------------------|
| 1             | Former 1,000-gallon Gasoline and 1,000-gallon Heating Oil UST | ETPH, VOCs, PAHs and metals |
| 2             | Geotechnical Borings B-1 and B-3                              | ETPH, VOCs, PAHs and metals |
| 3             | Former 1,500-gallon Heating Oil UST                           | ETPH, VOCs, PAHs and metals |
| 4             | Former Sewage Treatment Area                                  | ETPH, VOCs, PAHs and metals |
| 5             | Equipment Storage Area and Debris Pile                        | ETPH, VOCs, PAHs and metals |
| 6             | AST and Equipment Storage Area                                | ETPH, VOCs, PAHs and metals |
| 7             | Historic Fill Material  | ETPH, VOCs, PAHs and metals |
| 8             | Site Groundwater  | ETPH, VOCs, PAHs and metals |

A comprehensive sampling program was conducted in the areas of anticipated construction activities within the PAOCs for the proposed pump station construction. The following subsection details the results of the investigation.

## **4.0 SUBSURFACE INVESTIGATION**

Based upon the results of the previous environmental investigations and the current/former industrial and commercial nature of the project site, a comprehensive sampling program was conducted in the areas of anticipated construction activities on February 20 to February 22, February 25, June 24, June 25, July 11, and July 12, 2013. The following subsections detail the results of the investigation.

### **4.1 Geoprobe® Soil Borings & Soil Sample Analyses**

Twenty-nine (29) borings (PSGP-01 to PSGP-17, PSGP-36 to PSGP-41, PSGP-55 to PSGP-58, and FMGP #01 and FMGP #02) were advanced to a depth of 10-feet or refusal, eight (8) borings (PSGP-42 to PSGP-49) were advanced to a depth of 20-feet or refusal and five (5) borings (PSGP-50 to PSGP-54) were advanced to a depth of 40-feet or refusal for a total of forty-two (42) borings in the areas of anticipated construction activities at the proposed pump station site. The borings were advanced utilizing a Geoprobe® direct push unit.

The boring locations (PSGP-01 to PSGP-17, PSGP-36 to PSGP-58, FMGP #01, and FMGP #02) are depicted on Figure 3 - Phase II Environmental Site Assessment – Geoprobe Sample Location Plan at the end of this Report. Soil samples were collected continuously to the depths referenced above utilizing a 5-foot long 2-inch diameter Macro Core Sampler with dedicated acetate liners.

The soil samples were visually inspected in the field for staining, and were described as to physical characteristics and soil type. Soil boring logs were generated in the field by the on-site qualified technician. In addition, the soil samples were screened in the field for total volatile organic compounds utilizing a Photovac photoionization detector (PID). The boring logs denote the types of soil encountered, the depth to groundwater and/or bedrock, the total depth reached in each boring, and the highest observed PID reading. Copies of the boring logs are included at the end of this report in Appendix A.

Based upon field screening results and visual observations, soil samples were collected from each boring at the apparent strata changes in the material. A total of seventy (70) soil samples were collected and analyzed from the pump station site. The soil samples were placed in laboratory-supplied glassware, stored in an ice-filled cooler, and submitted to the Phoenix Environmental Laboratories, Inc. in accordance with chain-of-custody procedures. Soil samples were analyzed for a combination of the following parameters:

- Volatile Organic Compounds – EPA Method 8260
- Polycyclic Aromatic Hydrocarbons – EPA Method 8270
- Total and SPLP RCRA 8 Metals
- Total and SPLP Lead
- Extractable Total Petroleum Hydrocarbons – CT ETPH Method
- Polychlorinated Biphenyls – EPA Method 8082
- Pesticides – EPA Method 8081

All Geoprobe® soil borings were back-filled upon completion utilizing clean sand and/or hydrated bentonite. In paved areas, the borehole was filled to 6 inches below existing grade with hydrated bentonite, then patched with asphalt patch or concrete, as appropriate, until flush with the existing pavement. All down-hole sampling equipment was decontaminated in the field between each use utilizing an Alconox and water bath and de-ionized rinse.

#### **4.2 Groundwater Grab Sample Collection & Analyses**

A groundwater sample was collected from existing monitoring well designated MW-13 at the pump station site and four (4) groundwater grab samples were collected from borings PSGP-6, PSGP-10, PSGP-40, and PSGP-43 advanced at the pump station site and were designated MW-6, MW-10, MW-40, and PSGP-43 GW, respectively.

The groundwater samples were collected utilizing a peristaltic pump in accordance with the CTDEEP's Low Flow Sampling Procedures. Groundwater grab samples were collected by inserting one-half inch diameter, schedule 40, 10-slot, PVC well screen and

riser casing into the borehole. The well screen was temporarily installed approximately 4 feet into the observed water table depth. Dedicated polyethylene tubing was placed into the temporary well and the groundwater grab sample was drawn through the tubing using a low-flow peristaltic pump. The groundwater samples were placed in laboratory-supplied glassware, stored in an ice-filled cooler and submitted to Phoenix Environmental Laboratories, Inc. and analyzed for a combination of the following parameters:

- Volatile Organic Compounds – EPA Method 8260
- Polycyclic Aromatic Hydrocarbons – EPA Method 8270
- Total and Dissolved RCRA 8 Metals
- Total and Dissolved Lead
- Extractable Total Petroleum Hydrocarbons – CT ETPH Method
- Polychlorinated Biphenyls – EPA Method 8082

Groundwater samples collected for Dissolved-phase RCRA metals were field filtered using a 0.45- $\mu$ m membrane filter prior to acidification.

#### **4.3 Project Quality Assurance/Quality Control Practices**

The CTDEEP's Quality Assurance and Quality Control (QA/QC) Guidance were used to ensure that the analytical results generated during the investigation are of known and appropriate quality. Specifically, the Laboratory Quality Assurance Control Reasonable Confidence Protocols (RCPs) were utilized for all laboratory analytical methods. The Laboratory Quality Assurance and Quality Control, Data Quality Assessment and Data Usability Evaluation (DQA/DUE) Guidance were utilized to ensure that the analytical data used is of known and sufficient level of quality for the intended purpose.

To assess the collection of samples in the field in terms of the sampling techniques and decontamination procedures followed, quality control and quality assurance samples were collected and analyzed. A field blank sample was prepared by pouring laboratory supplied de-ionized water over decontaminated sampling equipment and collecting the resulting rinsate in appropriate sample containers. The field blank sample was stored with the daily samples in the sample cooler until delivery to the laboratory for analysis.

The field blank was analyzed for the same parameters specified for the daily samples.

Laboratory prepared trip blanks accompanied samples obtained during field sampling activities. The trip blanks consisted of two, 40 ml vials containing laboratory grade de-ionized water. The trip blanks were placed in the sample cooler with the daily samples until delivery to the laboratory for analysis of EPA Method 8260 volatile organic compounds.

All samples collected in the field were stored in a manner that preserves the integrity of the sample chemistry. Samples intended for organic analyses were stored in an ice-filled cooler until delivery to the laboratory. Chain-of-Custody (COC) forms accompanied all samples collected as a legal record of possession of the sample. The COC was initiated in the field and accompanied the containers during sample collection, transportation to the lab, analysis, and final disposal of the sample.

## 5.0 DISCUSSION OF SAMPLE RESULTS

### 5.1 Regulatory Criteria

The CTDEEP has amended the Remediation Standard Regulations (Regulations of Connecticut State Agencies, Section 22a-133k-1 to 3 and 22a-133q-1) effective June 27, 2013. The Remediation Standard Regulations (RSRs) apply to any action which is required pursuant to Chapter 445, 446k or section 22a-208(c)(2) of the General Statutes, including but not limited to any such action required to be taken or verified by a licensed environmental professional. The Regulations also outline the processes for establishing alternative site-specific numerical standards for certain sites and criterion for additional polluting substances not specified in the RSRs, upon approval by the CTDEEP.

The RSRs criteria applicable to the soil and groundwater sampled during this investigation are summarized below. The application of these RSRs to the results of the laboratory analyses from this investigation are discussed in subsections 5.2, and 5.3 of this section.

**Soils Criteria:** The RSRs are organized into two sets of criteria: the Direct Exposure Criteria (DEC) and the Pollutant Mobility Criteria (PMC). The DEC and PMC are briefly explained in the following sub-sections, in relation to how they would be applicable to the types of analyses conducted on the soil samples collected for this investigation. Please refer to the RSRs for a complete explanation of the Regulations.

#### Direct Exposure Criteria

The purpose of the Direct Exposure Criteria (DEC) is to protect human health from risks associated with the direct contact with or ingestion of various common soil contaminants. The DEC are applicable to soil within approximately fifteen (15) feet of the ground surface. Concentrations of contaminants are evaluated based upon mass-based analyses and different criteria are established for residential and industrial/commercial properties.

The use of the less stringent commercial/industrial standards requires the placement of an environmental land use restriction on the property.

The DEC for substances other than PCBs do not apply to “inaccessible” soil at a release area provided that such soil is less than 15-feet below the ground surface and an Environmental Land Use Restriction (ELUR) is in effect with respect to the subject parcel or to the portion of such parcel containing such release area.

The DEC do not apply to metals, petroleum hydrocarbons or semi-volatile substances in soil provided such pollution is the result of: an incidental release due to the normal operation of motor vehicles, not including refueling, repair or maintenance of a motor vehicle; or normal paving and maintenance of a consolidated bituminous concrete surface provided such bituminous concrete surface has been maintained for its intended purpose.

#### Pollutant Mobility Criteria

The purpose of the Pollutant Mobility Criteria (PMC) is to evaluate the potential for contaminants to leach from the soil in concentrations that may degrade groundwater quality.

The PMC do not apply to “environmentally isolated” soil at a release area provided that an Environmental Land Use Restriction (ELUR) is in effect with respect to the subject parcel or to the portion of such parcel containing such release area. The PMC do not apply to polluted fill on a parcel if the fill meets the requirements of section 22a-133k-2(c)(4)(B)(i) through (vi). The PMC do not apply to substances, other than volatile substances, in soil at a release area provided that the release area meets the requirements of section 22a-133k-2(c)(4)(C)(i) through (v).

The PMC do not apply to metals, petroleum hydrocarbons or semi-volatile substances in soil provided such pollution is the result of: an incidental release due to the normal operation of motor vehicles, not including refueling, repair or maintenance of a motor

vehicle; or normal paving and maintenance of a consolidated bituminous concrete surface provided such bituminous concrete surface has been maintained for its intended purpose.

Different numerical criteria are established for GA and GAA groundwater areas, versus GB groundwater areas. Since the project corridor is located within a GB groundwater area, the less stringent criteria apply.

**Groundwater Criteria:** Contaminants in the groundwater are compared either to background quality or the Groundwater Protection Criteria (GWPC), the Volatilization Criteria (VC), as well as the Surface Water Protection Criteria (SWPC). However, based on the guidance provided by CTDEEP, groundwater samples collected for “Construction Projects” are compared to the effluent limits for the *“General Permit for the Discharge of Groundwater Remediation Wastewater Directly to Surface Water”* (GP to Surface Water) and the *“General Permit for the Discharge of Groundwater Remediation Wastewater Directly to Sanitary Sewer”* (GP to Sanitary Sewer) to determine if Groundwater Areas of Environmental Concern (GW AOECs) exist within the project limits.

## **5.2 Results of Soil Sample Analyses**

Soil samples were collected from borings PSGP-01 to PSGP-17, PSGP-36 to PSGP-58, FMGP #01, and FMGP #02 and sent to Phoenix Environmental Laboratories, Inc. for analyses. Summaries of the laboratory results from the soil samples are presented in Table 1 located at the end of this Report, and copies of the soil sample laboratory reports are included in Appendix B. The following summarizes the results of the analyses conducted on the soil samples.

The results of the laboratory analyses indicated the presence of detectable concentrations of ETPH in twenty (20) of the seventy (70) soil samples collected as part of this ESA. The following table summarizes the eight (8) soil samples that contained ETPH at concentrations exceeding the applicable CTDEEP RSR criteria.

**Table A - ETPH Exceedances**

| <b>Sample ID. (Sample Depth)</b> | <b>Concentration (mg/kg)</b> | <b>GB PMC (mg/kg)</b> | <b>RDEC/I&amp;C-DEC (mg/kg)</b> |
|----------------------------------|------------------------------|-----------------------|---------------------------------|
| PSGP-4 (8'-10')                  | <b>750</b>                   | <b>2,500</b>          | <b>500/2,500</b>                |
| PSGP-10 (18'-20')                | <b>1,900</b>                 |                       |                                 |
| PSGP-38 (3'-5')                  | <b>2,800</b>                 |                       |                                 |
| PSGP-39 (1'-3')                  | <b>550</b>                   |                       |                                 |
| PSGP-43 10-14 FT (10'-14')       | <b>1,700</b>                 |                       |                                 |
| PSGP-49 15-20 FT (15'-20')       | <b>1,200</b>                 |                       |                                 |
| PSGP-54 6-10 FT (6'-10')         | <b>3,100</b>                 |                       |                                 |
| FMGP #02 (1'-3')                 | <b>1,100</b>                 |                       |                                 |

No other detected ETPH was present at concentrations exceeding the applicable CTDEEP RSR criteria.

VOCs were detected above analytical detection limits in seven (7) of the seventy (70) soil samples collected as part of this ESA. The VOCs detected in the soil samples are associated with gasoline, gasoline additives, asphalt, and general petroleum-based transportation activities. However, the detected concentrations of VOCs were below the applicable CTDEEP RSR criteria. The following table summarizes the detected concentrations of VOCs in the soil samples.

**Table B - VOCs Detected in Soil Samples**

| <b>Sample ID. (Sample Depth)</b><br><b>VOC Compound</b> | <b>Concentration</b><br><b>(mg/kg)</b> | <b>GB PMC</b><br><b>(mg/kg)</b> | <b>RDEC/I&amp;C-</b><br><b>DEC (mg/kg)</b> |
|---|--|---------------------------------|--|
| <b><u>PSGP-10 (18'-20')</u></b>                         |  |                                 |  |
| 1,2,4-Trimethylbenzene                                  | 2.3                                    | 70                              | 500/1,000                                  |
| 1,3,5-Trimethylbenzene                                  | 0.82                                   | 70                              | 500/1,000                                  |
| 1,4-Dichlorobenzene                                     | 0.64                                   | 15                              | 26/240                                     |
| Chlorobenzene   | 0.42                                   | 20                              | 500/1,000                                  |
| Naphthalene   | 1.6                                    | 56                              | 1,000/2,500                                |
| n-Butylbenzene  | 0.45                                   | 14                              | 500/1,000                                  |
| n-Propylbenzene   | 0.29                                   | 14                              | 500/1,000                                  |
| p-Isopropyltoluene                                      | 0.78                                   | 41.8                            | 500/1,000                                  |
| Xylenes   | 0.84                                   | 19.5                            | 500/1,000                                  |
| <b><u>PSGP-38 (3'-5')</u></b>                           |  |                                 |  |
| 1,2,4-Trimethylbenzene                                  | 4.8                                    | 70                              | 500/1,000                                  |
| 1,3,5-Trimethylbenzene                                  | 1.8                                    | 70                              | 500/1,000                                  |
| 1,4-Dichlorobenzene                                     | 0.3                                    | 15                              | 26/240                                     |
| 2-Isopropyltoluene                                      | 0.24                                   | 41.8                            | 500/1,000                                  |
| Naphthalene   | 0.91                                   | 56                              | 1,000/2,500                                |
| n-Butylbenzene  | 1.1                                    | 14                              | 500/1,000                                  |
| n-Propylbenzene   | 0.32                                   | 14                              | 500/1,000                                  |
| p-Isopropyltoluene                                      | 0.67                                   | 41.8                            | 500/1,000                                  |
| sec-Butylbenzene  | 0.7                                    | 14                              | 500/1,000                                  |
| Toluene   | 0.38                                   | 67                              | 500/1,000                                  |
| <b><u>PSGP-40 (8'-10')</u></b>                          |  |                                 |  |
| 1,4-Dichlorobenzene                                     | 0.64                                   | 15                              | 26/240                                     |
| <b><u>PSGP-43 1-5 FT (10'-14')</u></b>                  |  |                                 |  |
| Naphthalene   | 0.057                                  | 56                              | 1,000/2,500                                |
| <b><u>PSGP-45 15-20 FT (15'-20')</u></b>                |  |                                 |  |
| Naphthalene   | 0.022                                  | 56                              | 1,000/2,500                                |
| <b><u>PSGP-46 15-20 FT (15'-20')</u></b>                |  |                                 |  |
| Naphthalene   | 0.018                                  | 56                              | 1,000/2,500                                |
| <b><u>PSGP-49 15-20 FT (15'-20')</u></b>                |  |                                 |  |
| 1,2,4-Trimethylbenzene                                  | 1.9                                    | 70                              | 500/1,000                                  |
| 1,3,5-Trimethylbenzene                                  | 0.68                                   | 70                              | 500/1,000                                  |
| 1,4-Dichlorobenzene                                     | 0.53                                   | 15                              | 26/240                                     |
| Naphthalene   | 1.4                                    | 56                              | 1,000/2,500                                |
| n-Butylbenzene  | 0.45                                   | 14                              | 500/1,000                                  |
| p-Isopropyltoluene                                      | 0.71                                   | 41.8                            | 500/1,000                                  |
| Xylenes   | 0.4                                    | 19.5                            | 500/1,000                                  |

No other VOCs were detected above analytical detection limits in the soil samples collected as part of this Phase II ESA.

PAHs were detected above analytical detection limits in twenty-nine (29) of the seventy (70) soil samples collected and analyzed. The following table summarizes the ten (10) soil samples that contained PAHs at concentrations exceeding the applicable CTDEEP RSR criteria.

**Table C – PAH Exceedances in Soil Samples**

| <b>Sample ID. (Sample Depth)<br/>PAH Compound</b> | <b>Concentration<br/>(mg/kg)</b> | <b>GB PMC<br/>(mg/kg)</b> | <b>RDEC/I&amp;C-<br/>DEC (mg/kg)</b> |
|---|----------------------------------|---------------------------|--------------------------------------|
| <b><u>PSGP-38 (3'-5')</u></b>                     |                                  |                           |                                      |
| Benz(a)anthracene                                 | 1.3                              | 1                         | 1/7.8                                |
| Benzo(a)pyrene                                    | 1.4                              | 1                         | 1/1                                  |
| Benzo(b)fluoranthene                              | 1.8                              | 1                         | 1/7.8                                |
| Chrysene  | 1.5                              | 1                         | 84/780                               |
| <b><u>PSGP-39 (1'-3')</u></b>                     |                                  |                           |                                      |
| Benz(a)anthracene                                 | 1.3                              | 1                         | 1/7.8                                |
| Benzo(a)pyrene                                    | 1.4                              | 1                         | 1/1                                  |
| Benzo(b)fluoranthene                              | 1.8                              | 1                         | 1/7.8                                |
| Chrysene  | 1.5                              | 1                         | 84/780                               |
| <b><u>PSGP-43 1-5 FT (1'-5')</u></b>              |                                  |                           |                                      |
| Benz(a)anthracene                                 | 1.8                              | 1                         | 1/7.8                                |
| Benzo(a)pyrene                                    | 1.5                              | 1                         | 1/1                                  |
| Benzo(b)fluoranthene                              | 2.1                              | 1                         | 1/7.8                                |
| Chrysene  | 1.7                              | 1                         | 84/780                               |
| <b><u>PSGP-43 10-14 FT (10'-14')</u></b>          |                                  |                           |                                      |
| Benz(a)anthracene                                 | 14                               | 1                         | 1/7.8                                |
| Benzo(a)pyrene                                    | 9.7                              | 1                         | 1/1                                  |
| Benzo(b)fluoranthene                              | 15                               | 1                         | 1/7.8                                |
| Benzo(k)fluoranthene                              | 5.6                              | 1                         | 8.4/78                               |
| Chrysene  | 14                               | 1                         | 84/780                               |
| Indeno(1,2,3-cd)pyrene                            | 5                                | 1                         | 1/7.8                                |
| <b><u>PSGP-45 15-20 FT (15'-20')</u></b>          |                                  |                           |                                      |
| Benz(a)anthracene                                 | 2.2                              | 1                         | 1/7.8                                |
| Benzo(a)pyrene                                    | 1.5                              | 1                         | 1/1                                  |
| Benzo(b)fluoranthene                              | 2.2                              | 1                         | 1/7.8                                |
| Chrysene  | 2.1                              | 1                         | 84/780                               |
| <b><u>PSGP-46 15-20 FT (15'-20')</u></b>          |                                  |                           |                                      |
| Benz(a)anthracene                                 | 4.2                              | 1                         | 1/7.8                                |
| Benzo(a)pyrene                                    | 2.8                              | 1                         | 1/1                                  |
| Benzo(b)fluoranthene                              | 4.7                              | 1                         | 1/7.8                                |
| Benzo(k)fluoranthene                              | 1.4                              | 1                         | 8.4/78                               |
| Chrysene  | 3.7                              | 1                         | 84/780                               |
| Indeno(1,2,3-cd)pyrene                            | 1.3                              | 1                         | 1/7.8                                |

**Table C Continued – PAH Exceedances in Soil Samples**

| <b>Sample ID. (Sample Depth)<br/>PAH Compound</b> | <b>Concentration<br/>(mg/kg)</b> | <b>GB PMC<br/>(mg/kg)</b> | <b>RDEC/I&amp;C-<br/>DEC (mg/kg)</b> |
|---|----------------------------------|---------------------------|--------------------------------------|
| <b><u>PSGP-49 15-20 FT (15'-20')</u></b>          |                                  |                           |                                      |
| Benz(a)anthracene                                 | 1.1                              | 1                         | 1/7.8                                |
| Benzo(b)fluoranthene                              | 1.4                              | 1                         | 1/7.8                                |
| Chrysene  | 1.2                              | 1                         | 84/780                               |
| <b><u>PSGP-52 13-15 FT (13'-15')</u></b>          |                                  |                           |                                      |
| Benz(a)anthracene                                 | 2.6                              | 1                         | 1/7.8                                |
| Benzo(a)pyrene                                    | 2.7                              | 1                         | 1/1                                  |
| Benzo(b)fluoranthene                              | 3.3                              | 1                         | 1/7.8                                |
| Benzo(k)fluoranthene                              | 1.2                              | 1                         | 8.4/78                               |
| Chrysene  | 2.4                              | 1                         | 84/780                               |
| Indeno(1,2,3-cd)pyrene                            | 1.1                              | 1                         | 1/7.8                                |
| <b><u>PSGP-52 13-15 FT (13'-15')</u></b>          |                                  |                           |                                      |
| Benzo(b)fluoranthene                              | 1.3                              | 1                         | 1/7.8                                |
| <b><u>FMGP #02 (1'-3')</u></b>                    |                                  |                           |                                      |
| Benz(a)anthracene                                 | 7.5                              | 1                         | 1/7.8                                |
| Benzo(a)pyrene                                    | 5.7                              | 1                         | 1/1                                  |
| Benzo(b)fluoranthene                              | 8.5                              | 1                         | 1/7.8                                |
| Benzo(k)fluoranthene                              | 2.4                              | 1                         | 8.4/78                               |
| Chrysene  | 7.1                              | 1                         | 84/780                               |
| Indeno(1,2,3-cd)pyrene                            | 3.0                              | 1                         | 1/7.8                                |

No other detected PAHs were present at concentrations exceeding the applicable CTDEEP RSR criteria.

PCBs were not detected above analytical detection limits (ND) in any of the soil samples collected and analyzed from the pump station site.

Pesticides were detected above analytical detection limits in the soil sample collected from boring FMGP #02. Dieldrin was detected in soil sample FMGP #02 (1'-3') at a concentration of 0.022 mg/kg which exceeds the GB PMC of 0.007 mg/kg but is below the RDEC and I/C-DEC of 0.038 mg/kg and 0.36 mg/kg, respectively. 4,4-DDE (0.061 mg/kg) and 4,4'-DDT (0.15 mg/kg) were also detected in soil sample FMGP #02 but at concentrations below the applicable RSR criteria.

Various total metals were detected in the soil samples at concentrations above analytical detection limits but below the applicable CTDEEP RSR criteria with the exception of total lead and total arsenic. The following tables summarize the total lead and total arsenic exceedances in the soil samples.

**Table D – Total Lead Exceedances in Soil Samples**

| <b>Sample ID. (Sample Depth)</b>  | <b>Concentration (mg/kg)</b> | <b>RDEC/I&amp;C-DEC (mg/kg)</b> |
|-----------------------------------|------------------------------|---------------------------------|
| <b>PSGP-38 (3'-5')</b>            | <b>467</b>                   | <b>400/1,000</b>                |
| <b>PSGP-39 (1'-3')</b>            | <b>4,380</b>                 |                                 |
| <b>PSGP-41 (8'-10')</b>           | <b>12,500</b>                |                                 |
| <b>PSGP-54 6-10 FT (6'-10')</b>   | <b>520</b>                   |                                 |
| <b>PSGP-54 14-20 FT (14'-20')</b> | <b>2,040</b>                 |                                 |

**Table E – Total Arsenic Exceedances in Soil Samples**

| <b>Sample ID. (Sample Depth)</b> | <b>Concentration (mg/kg)</b> | <b>RDEC/I&amp;C-DEC (mg/kg)</b> |
|----------------------------------|------------------------------|---------------------------------|
| <b>PSGP-41 (8'-10')</b>          | <b>19.9</b>                  | <b>10/10</b>                    |

No other detected total metals were present at concentrations exceeding the applicable CTDEEP RSR criteria.

Various leachable metals were detected in the soil samples at concentrations above analytical detection limits but below the applicable CTDEEP RSR criteria with the exception of leachable lead. The following table summarizes the leachable lead exceedances in the soil samples.

**Table F – Leachable Lead Exceedances in Soil Samples**

| <b>Sample ID. (Sample Depth)</b>  | <b>Concentration (mg/L)</b> | <b>GB PMC (mg/L)</b> |
|-----------------------------------|-----------------------------|----------------------|
| <b>PSGP-4 (8'-10')</b>            | <b>0.606</b>                | <b>0.15</b>          |
| <b>PSGP-38 (3'-5')</b>            | <b>0.154</b>                |                      |
| <b>PSGP-50 15-17 FT (15'-17')</b> | <b>0.272</b>                |                      |
| <b>PSGP-54 6-10 FT (6'-10')</b>   | <b>0.201</b>                |                      |
| <b>PSGP-54 14-20 FT (14'-20')</b> | <b>1.68</b>                 |                      |

No other detected leachable metals were present at concentrations exceeding the applicable CTDEEP RSR criteria.

**5.3 Results of Groundwater Grab Sample Analyses**

Groundwater grab samples, MW-6, MW-10, MW-40, and PSGP-43 GW were collected from borings PSGP-6, PSGP-10, PSGP-40, and PSGP-43, respectively, located at the pump station site. In addition, a groundwater sample was collected from existing monitoring well MW-13 at the pump station site. All groundwater samples were sent to Phoenix Environmental Laboratories, Inc. for analyses. Summaries of the laboratory results from the groundwater samples are presented in Table 2 located at the end of this report, and copies of the groundwater sample laboratory reports are included in Appendix B. The following summarizes the results of the analyses conducted on the groundwater grab samples.

The results of the laboratory analyses of the groundwater grab samples indicated the presence of ETPH in samples MW-6, MW-10, MW-40, and PSGP-43 GW at concentrations of 0.4 mg/L, 0.82 mg/L, 0.89 mg/L, and 0.6 mg/L, respectively, which are below the CTDEEP GP to Surface Water effluent limit of 5.0 mg/L and the GP to Sanitary Sewer effluent limit of 100 mg/L. ETPH was not detected above analytical detection limits (ND) in the groundwater sample MW-13.

VOCs were not detected above analytical detection limits (ND) in groundwater grab sample MW-40. Various VOCs were detected in groundwater samples MW-6, MW-13, MW-10, and PSGP-43 GW at concentrations above analytical detection limits. Individual effluent limits have not been established for the compounds detected. However, the concentration of total VOCs (53.2 ug/L) detected in groundwater grab sample PSGP-43 GW exceeds the GP to Surface Water effluent limit of 50.0 ug/L but is below the GP to Sanitary Sewer effluent limit of 5,000 ug/L.

PCBs were not detected above analytical detection limits (ND) in any of the groundwater samples MW-6, MW-13, MW-10, MW-40, and PSGP-43 GW.

Various PAHs were detected in all the groundwater samples MW-6, MW-13, MW-10, MW-40, and PSGP-43 GW at concentrations above analytical detection limits. Benz(a)anthracene (0.69 ug/L), benzo(a)pyrene (0.69 ug/L), and dibenz(a,h)anthracene (0.14 ug/L) were detected in groundwater sample MW-6 at concentrations which exceed the GP to Surface Water effluent limits of 0.49 ug/L, 0.49 ug/L, and 0.01 ug/L, respectively. The CTDEEP has not established individual effluent limits for the remaining detected PAHs. The concentration of total PAHs (7.93 ug/L) in groundwater sample MW-6 however, is below the GP to Surface Water effluent limit of 5 ug/L and the GP to Sanitary Sewer effluent limit of 500 ug/L.

The concentrations of PAHs detected in groundwater sample MW-13 did not exceed any established effluent limit. The concentration of total PAHs (0.4 mg/L) detected in groundwater sample MW-13 is also below the GP to Surface Water effluent limit of 5 ug/L and the GP to Sanitary Sewer effluent limit of 500 ug/L.

Benz(a)anthracene (1.8 ug/L), benzo(a)pyrene (0.82 ug/L), benzo(k)fluoranthene (0.93 ug/L), dibenz(a,h)anthracene (0.14 ug/L), and indeno(1,2,3-cd)pyrene (0.56 ug/L) were detected in groundwater sample MW-10 at concentrations which exceed the GP to Surface Water effluent limits of 0.49 ug/L, 0.49 ug/L, 0.49 ug/L, 0.01 ug/L, and 0.49

ug/L, respectively. The CTDEEP has not established individual effluent limits for the remaining detected PAHs. The concentration of total PAHs (52.74 ug/L) in groundwater sample MW-10 also exceeds the GP to Surface Water effluent limit of 5 ug/L for total PAHs, but is below the GP to Sanitary Sewer effluent limit of 500 ug/L.

Benz(a)anthracene (0.92 ug/L), benzo(a)pyrene (1.3 ug/L), benzo(k)fluoranthene (0.53 ug/L), dibenz(a,h)anthracene (0.32 ug/L), and indeno(1,2,3-cd)pyrene (1.2 ug/L) were detected in groundwater sample MW-40 at concentrations which exceed the GP to Surface Water effluent limits of 0.49 ug/L, 0.49 ug/L, 0.49 ug/L, 0.01 ug/L, and 0.49 ug/L, respectively. The CTDEEP has not established individual effluent limits for the remaining detected PAHs. The concentration of total PAHs (16.67 ug/L) in groundwater sample MW-40 also exceeds the GP to Surface Water effluent limit of 5 ug/L for total PAHs, but is below the GP to Sanitary Sewer effluent limit of 500 ug/L.

Benz(a)anthracene (18.0 ug/L), benzo(a)pyrene (14.0 ug/L), benzo(k)fluoranthene (7.0 ug/L), dibenz(a,h)anthracene (2.4 ug/L), and indeno(1,2,3-cd)pyrene (6.9 ug/L) were detected in groundwater sample PSGP-43 GW at concentrations which exceed the GP to Surface Water effluent limits of 0.49 ug/L, 0.49 ug/L, 0.49 ug/L, 0.01 ug/L, and 0.49 ug/L, respectively. The CTDEEP has not established individual effluent limits for the remaining detected PAHs. The concentration of total PAHs (248.5 ug/L) in groundwater sample PSGP-43 GW also exceeds the GP to Surface Water effluent limit of 5 ug/L for total PAHs, but is below the GP to Sanitary Sewer effluent limit of 500 ug/L.

Various total and dissolved metals were detected in the groundwater grab samples at concentrations above analytical detection limits but below the applicable effluent limits with the exception of total arsenic, total lead and dissolved arsenic. Total arsenic was detected in groundwater sample MW-10 at concentration of 0.023 mg/L, which exceeds the GP to Surface Water effluent limit of 0.004 mg/L but is below the GP to Sanitary Sewer effluent limit of 0.1 mg/L. However, dissolved arsenic was not detected above analytical detection limits (ND) in MW-10.

Total lead was detected in groundwater samples MW-10 and MW-40 at concentrations of 0.203 mg/L and 0.22 mg/L, respectively, which exceed the GP to Surface Water effluent limit of 0.004 mg/L and the GP to Sanitary Sewer effluent limit of 0.1 mg/L. However, dissolved lead was not detected above analytical detection limits (ND) in the groundwater samples MW-10 and MW-40.

Total arsenic was not detected above analytical detection limits (ND) in groundwater sample MW-13. However, dissolved arsenic was detected in groundwater sample MW-13 at a concentration of 0.006 mg/L, which slightly exceeds the GP to Surface Water effluent limit of 0.004 mg/L but is below the GP to Sanitary Sewer effluent limit of 0.1 mg/L.

Total and dissolved lead were not detected above analytical detection limits in groundwater sample PSGP-43 GW.

#### **5.4 Quality Assurance/Quality Control Samples**

The field blank sample, FB-1, did not contain any detectable concentrations of contaminants with the exception of PAHs. The presence of these substances in the field blank samples is likely due to field or laboratory contamination. The trip blank samples TB, TB-1, TB-2 and TB-3 did not contain detectable concentrations of VOCs. A summary of the laboratory results from the QA/QC samples is presented in Tables 3-1 and 3-2, which is located at the end of this Report, and copies of the analytical results associated with the quality assurance/quality control samples are included in Appendix B.

#### **5.5 Data Quality Assessment and Data Usability Evaluation (DQA/DUE)**

Seventy (70) soil samples and five (5) groundwater samples were collected from within the project limits and submitted to a state-certified analytical laboratory for analyses using the CTDEEP Reasonable Confidence Protocols (RCPs) established for VOCs, PAHs, ETPH, metals, pesticides and PCBs. The samples were collected to verify the absence or presence and location of subsurface contamination, and to assess the potential pollutant impacts to be encountered during construction of the proposed force main.

A data quality assessment and data usability evaluation was performed for the data generated in accordance with CTDEEP guidance and noted the following quality control non-conformances. Copies of the DQA and DUE worksheets are included in Appendix C

Non-conformances related to Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries, LCS/LCSD Relative Percent Differences (RPDs), Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries, detection limits, Initial Calibration Analytical Limits (ICALs), and Continuing Calibration Verification (CCVs), responses do not have significant bearing on the accuracy and usability of the data for its intended uses. In all cases the non-conformances had no impact on the data usability and the data is of sufficient quality and precision for its intended use based on multiple lines of evidence.

Based on the above findings from the DQA and DUE, the analytical data is of adequate quality and of sufficient accuracy, precision and sensitivity to confirm that contaminants of concern are present in the soil at concentrations exceeding the CTDEEP RSRs Criteria. Contaminants of concern are also present in groundwater within the project limits at concentrations exceeding the effluent limits in CTDEEP's General Permit for Discharge of Groundwater Remediation Wastewater Directly to Surface Water but below the General Permit for Discharge to Sanitary Sewer effluent limits. Environmental Plans, Specifications and Estimate will be required to assess construction related activities (i.e. proper storage, classification, transport and disposal of contaminated materials), in relationship to the environmental conditions prevalent within the project limits, as well as to specify remedial work to be included in the Contract Bid Documents.

## **6.0 DISCUSSION OF AFFECTED RESOURCES**

Based upon the results of the laboratory analyses performed on soil and groundwater samples for this Task 210 investigation and previous environmental investigations conducted at the site, eight (8) areas of environmental concern (AOECs) for soil have been identified where contaminants are present at concentrations that exceed the applicable CTDEEP RSR criteria. In addition, ten (10) low-level areas of environmental concern (LLAOECs) for soil have been identified, where contaminants were detected at concentrations below the applicable CTDEEP RSR standards, but above laboratory detection limits.

The entire project site has been designated a groundwater area of environmental concern (GWAOEC) where contaminants are present at concentrations that exceed both the GP to Surface Water and GP to Sanitary Sewer effluent limits. Therefore, dewatering fluids encountered during construction activities in these areas may not be discharged **directly** to surface water or sanitary sewer. Contaminated groundwater encountered within the GW AOEC will require on-site treatment prior to discharge in accordance with CTDEEP's general permits or will require off-site disposal at a permitted treatment/disposal facility. (See Attached Figure 3 for AOECs).

### **6.1 Areas of Environmental Concern (AOECs)**

#### **AOEC #1 - Boring PSGP-41**

Analytical results from the soil sample collected from boring PSGP-41 indicated the presence of total arsenic and total lead at concentrations exceeding the applicable CTDEEP RSR criteria. PAHs were also detected in the soil sample at concentrations below the applicable CTDEEP RSR criteria. The contaminants were in soils at depths of 8 to 10-feet below grade.

**AOEC #2 - Borings PSGP-38 and PSGP-39**

Analytical results from soil samples collected from borings PSGP-38 and PSGP-39 indicated the presence of ETPH, PAHs, total lead and leachable lead at concentrations exceeding the applicable CTDEEP RSR criteria. VOCs were also detected in the soil sample at concentrations below the applicable CTDEEP RSR criteria. The contaminants were in soils at depths of 0 to 5-feet below grade.

**AOEC #3 - Boring PSGP-43**

Analytical results from soil samples collected from boring PSGP-43 indicated the presence of ETPH and PAHs at concentrations exceeding the applicable CTDEEP RSR criteria. VOCs were also detected in the soil sample at concentrations below the applicable CTDEEP RSR criteria. The contaminants were in soils at depths of 0 to 14-feet below grade.

**AOEC #4 - Borings PSGP-10, PSGP-45, PSGP-46, PSGP-49, and PSGP-50**

Analytical results from soil samples collected from borings PSGP-10, PSGP-45, PSGP-46, PSGP-49, and PSGP-50 indicated the presence of ETPH, PAHs, and leachable lead at concentrations exceeding the applicable CTDEEP RSR criteria. VOCs were also detected in the soil samples at concentrations below the applicable CTDEEP RSR criteria. The contaminants were in soils at depths of 15 to 20-feet below grade.

**AOEC #5 - Boring PSGP-54**

Analytical results from soil samples collected from boring PSGP-54 indicated the presence of ETPH, PAHs, total lead and leachable lead at concentrations exceeding the applicable CTDEEP RSR criteria. The contaminants were in soils at depths of 6 to 21-feet below grade.

**AOEC #6 - Boring PSGP-52**

Analytical results from soil samples collected from boring PSGP-52 indicated the presence of PAHs at concentrations exceeding the applicable CTDEEP RSR criteria. The contaminants were in soils at depths of 13 to 23-feet below grade.

**AOEC #7 - Boring PSGP-4**

Analytical results from the soil sample collected from boring PSGP-4 indicated the presence of ETPH and leachable lead at concentrations exceeding the applicable CTDEEP RSR criteria. The contaminants were in soils at depths of 8 to 10-feet below grade

**AOEC #8 - Boring FMGP #02**

Analytical results from the soil sample collected from boring FMGP #02 advanced as part of the Phase II ESA for the force main installation indicated the presence of ETPH, PAHs, and dieldrin at concentrations exceeding the applicable CTDEEP RSR criteria. Low concentrations of 4,4'-DDE and 4,4'-DDT were also detected in the soil sample at concentrations below the applicable CTDEEP RSR criteria. The contaminants were in soils at depths of 0 to 3-feet below grade.

## **6.2 Low Level Areas of Environmental Concern (LLAOECs)**

### **LLOEC “A” - Boring PSGP-40**

Analytical results from the soil sample collected from boring PSGP-40 indicated the presence of low concentrations of PAHs in soils at depths ranging from 8 to 10-feet below grade.

### **LLOEC “B” - Boring PSGP-43**

Analytical results from the soil sample collected from boring PSGP-43 indicated the presence of low concentrations of PAHs in soils at depths ranging from 14 to 20-feet below grade.

### **LLOEC “C” - Boring PSGP-2**

Analytical results from the soil sample collected from boring PSGP-2 indicated the presence of low concentrations of PAHs in soils at depths ranging from 0 to 5-feet below grade.

### **LLOEC “D” - Borings PSGP-9, PSGP-10, PSGP-15, PSGP-45, PSGP-46, PSGP-47, and PSGP-49**

Analytical results from soil samples collected from borings PSGP-9, PSGP-10, PSGP-15, PSGP-45, PSGP-46, PSGP-47, and PSGP-49 indicated the presence of low concentrations of PAHs in soils at depths ranging from 0 to 15-feet below grade.

### **LLOEC “E” - Boring PSGP-36**

Analytical results from the soil sample collected from boring PSGP-36 indicated the presence of low concentrations of ETPH and PAHs in soils at depths ranging from 13 to 15-feet below grade.

**LLOEC “F” - Boring PSGP-53**

Analytical results from the soil sample collected from boring PSGP-53 indicated the presence of low concentrations of PAHs in soils at depths ranging from 0 to 5-feet below grade.

**LLOEC “G” - Boring PSGP-12**

Analytical results from the soil sample collected from boring PSGP-12 indicated the presence of low concentrations of ETPH and PAHs in soils at depths ranging from 12 to 14-feet below grade.

**LLOEC “H” - Boring PSGP-6**

Analytical results from the soil sample collected from boring PSGP-6 indicated the presence of low concentrations of PAHs in soils at depths ranging from 13 to 15-feet below grade.

**LLOEC “I” - Boring FMGP #01**

Analytical results from the soil sample collected from force main boring FMGP #01 indicated the presence of low concentrations of ETPH and PAHs in soils at depths ranging from 0 to 3-feet below grade.

### **6.3 Groundwater Area of Environmental Concern (GWAOEC)**

#### **Entire Project Site**

Analytical results from the groundwater samples collected from project site indicated the presence of VOCs, PAHs, total lead and dissolved arsenic at concentrations exceeding the applicable GP to Surface Water effluent limits. The concentration of total lead also exceeds the GP to Sanitary Sewer effluent limit. In addition, ETPH was detected in the groundwater at concentrations below the permit effluent limits.

## 7.0 RECOMMENDATIONS

The results of the Phase II Environmental Site Assessment conducted at the Site indicated the presence of ETPH, PAHs, pesticides, total arsenic, total lead, and leachable lead at concentrations above the applicable CTDEEP RSR criteria. Low concentrations of ETPH, VOCs, PAHs, and pesticides were also detected in the soil samples. Groundwater at the Site has been impacted with ETPH, VOCs, PAHs, total lead and dissolved arsenic at concentrations that exceed the CTDEEP GP to Surface Water effluent limits. In addition, the concentration of total lead exceeds the CTDEEP GP to Sanitary Sewer effluent limit. Therefore, dewatering fluids encountered during construction within the GWAOEC (Entire Site) may not be discharged **directly** to surface water or sanitary sewer without treatment. Dewatering fluids generated from the GWAOEC will require treatment prior to discharge to surface water or sanitary sewer in accordance with the CTDEEP's general permits or will require off-site disposal at a permitted treatment/disposal facility.

In addition, all underground storage tanks currently located on the site must be removed and closed in accordance with the CTDEEP regulations as specified in the Regulations of Connecticut State Agencies (RCSA) Sections 22a-449(d)-1, and Section 22a-449(d)-101 through 113 – Underground Storage Tank Regulations. The 1,000 gallon gasoline UST and 1,000 gallon heating oil UST are located adjacent to the sanitation building and the 1,500 gallon heating oil UST is located adjacent to the incinerator building. The tanks must be removed by a licensed tank removal contractor and confirmation samples must be collected from the tank grave in accordance with CTDEEP guidance for the Sampling and Analytical Methods for Underground Storage Tank Closure.

Special considerations for treatment/disposal/reuse, dewatering activities, and worker health & safety must be given to these areas in order to ensure compliance with all local, State and Federal laws. Environmental Plans, Specifications, and Estimate are therefore,

recommended for the areas of construction within the AOECs, LLAOECs and GWAEOEC described in Section 6.0 above.

## **8.0 LIMITATIONS**

All work product and reports provided by CDRM in connection with the performance of this Phase II Environmental Site Assessment are subject to the following limitations:

1. The observations described in this report were made under the conditions stated therein. The conclusions presented in the report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the scope of described services provided to the City of Middletown.
2. In preparing this report, CDRM has relied on certain information provided by State and local officials and information and representations made by other parties referenced therein, and on information contained in the files of State and/or local agencies made available to CDRM at the time of this investigation. To the extent that such files are missing, incomplete or not provided to CDRM, CDRM is not responsible. Although there may have been some degree of overlap in the information provided by these various sources, CDRM did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this investigation.
3. The conclusions and recommendations contained in this report are based in part upon the data from subsurface explorations. The nature and extent of variations between these explorations may not become evident until further explorations are completed. If variations or other latent conditions become evident, it will be necessary to re-evaluate the conclusions and recommendations of this report.
4. The water level readings made for this investigation were made at the times and conditions stated on the boring logs. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, passage of time and other factors. Should additional data become available in the future, these data

should be reviewed by CDRM, and the conclusions and recommendations presented herein modified accordingly.

5. Where quantitative laboratory analyses have been conducted by an outside certified laboratory, CDRM has relied upon the data provided, and has evaluated the data in accordance with CTDEEP DQA/DUE Guidance, but has not conducted an independent evaluation of the reliability of these tests.
6. If the conclusions and recommendations contained in this report are based, in part, upon various types of chemical data, then the conclusions and recommendations are contingent upon the validity of such data. These data have been reviewed and interpretations made in the report. It should be noted that variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time, and other factors. Should additional chemical data become available in the future, these data should be reviewed by CDRM and the conclusions and recommendations presented herein modified accordingly.
7. Chemical analyses were performed for specific parameters during the course of this investigation, as described in the text. However, it should be noted that testing for all known chemical constituents was not performed. The conclusions and recommendations contained in this report are based only upon the chemical constituents for which testing was accomplished.

The following qualifications apply to the undersigned's opinion:

The activities described and opinions included herein are based on information gathered during this subsurface site investigation, which was limited in scope in adherence to the terms of our agreement. The professional opinion provided herein is based on the information described in this report.

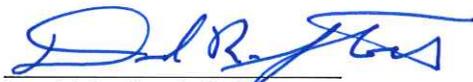
The information contained herein was prepared for the use by the City solely in conjunction with the scope of work. The conclusions and recommendations set forth in this report are based on site conditions at the time of the investigation. Future studies and findings could change the contents of this report. The professional opinions presented in this report have been developed by using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental engineering consultants practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional opinions included in this report.

Prepared by:

Approved by:



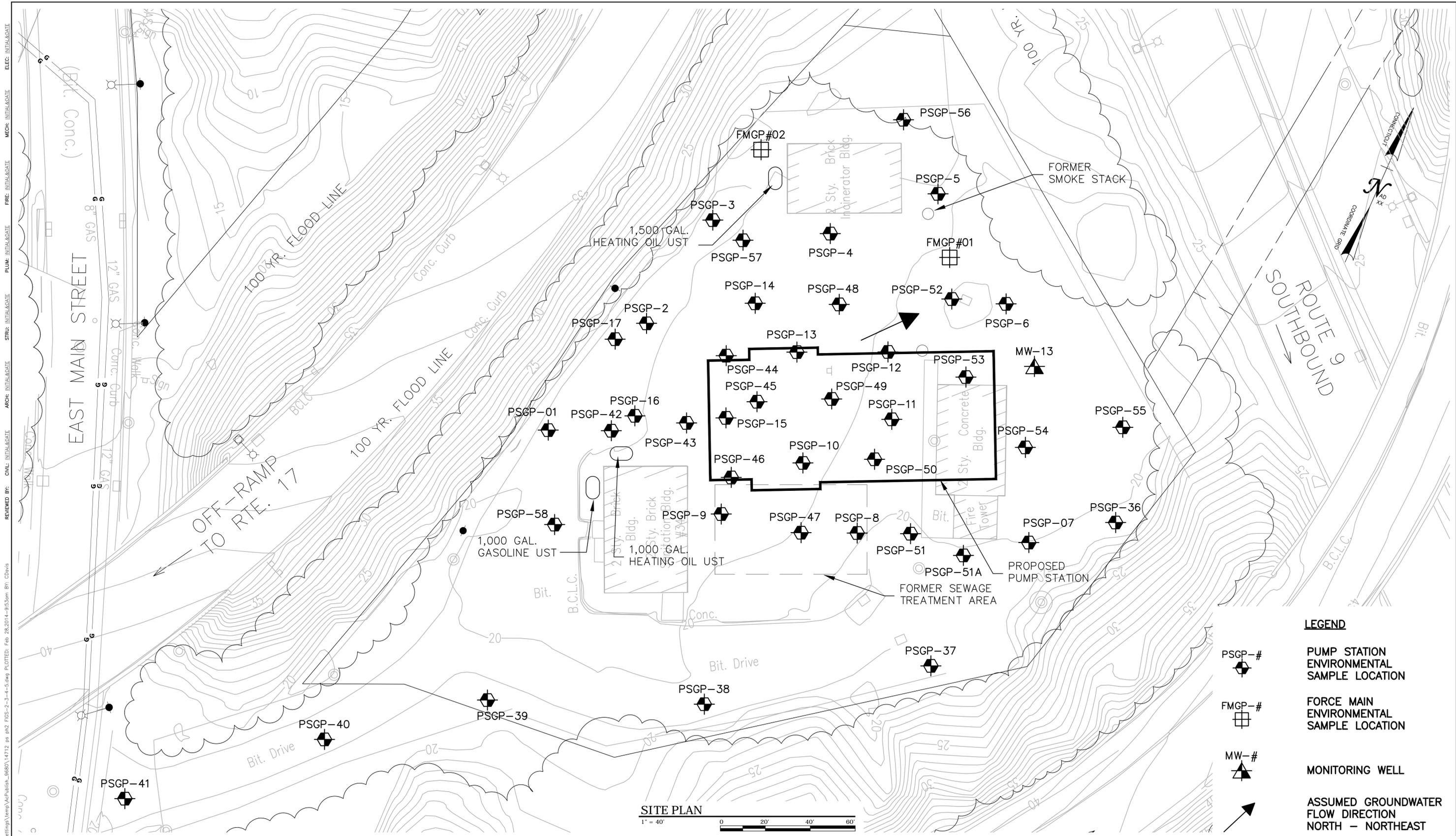
Jane Witherell, PE, LEP, CHMM  
Principal Engineer



David R. Stock, P.E.  
Vice President

# FIGURES





DRAWING FILE: C:\Users\CDavis\local settings\Temp\ApPublic\14712 ps ph2 F05-2-3-4-5.dwg PLOTTED: Feb 28 2014 4:55:58pm By: CDavis  
 REVIEWED BY: CIVIL: INITIALS/DATE ARCH: INITIALS/DATE STRU: INITIALS/DATE PLUM: INITIALS/DATE FIRE: INITIALS/DATE MECH: INITIALS/DATE ELEC: INITIALS/DATE

**LEGEND**

- PSGP-# PUMP STATION ENVIRONMENTAL SAMPLE LOCATION
- FMGP-# FORCE MAIN ENVIRONMENTAL SAMPLE LOCATION
- MW-# MONITORING WELL
- ASSUMED GROUNDWATER FLOW DIRECTION NORTH - NORTHEAST

**SITE PLAN**  
 1" = 40'  
 0 20' 40' 60'



**CDR MAGUIRE**  
 Architects Engineers Planners  
 2080 Silas Deane Highway  
 Rocky Hill, Connecticut 06067

| 1    | 2/27/14 | REVISED PUMP STATION FOOTPRINT | CD | JW    | PROJECT NO.: 14712.01 |
|------|---------|--------------------------------|----|-------|-----------------------|
|      |         |                                |    |       | DESIGNED BY: JDW      |
|      |         |                                |    |       | DRAWN BY: JDL         |
|      |         |                                |    |       | CHK'D BY:             |
|      |         |                                |    |       | DATE: FEBRUARY 2014   |
|      |         |                                |    |       | SCALE: AS NOTED       |
| MARK | DATE    | DESCRIPTION                    | BY | APP'D |                       |

**MATTABASSETT REGIONALIZATION PROJECT**  
**MIDDLETOWN, CONNECTICUT**

**PUMP STATION SITE**  
**PHASE II ENVIRONMENTAL SITE ASSESSMENT**  
**BORING LOCATION PLAN**

**FIG-3**





# TABLES

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

| Sample I.D.:                         | PSGP-01      | PSGP-2       | PSGP-3       | PSGP-4       | PSGP-5       | CTDEEP PMC GB<br>Groundwater<br>Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------------------------------|--|
| Sample Date:                         | 2/20/2013    | 2/22/2013    | 2/21/2013    | 2/21/2013    | 2/21/2013    |                                      |  |
| Sample Depth:                        | 0'-2'        | 3-5'         | 3'-5'        | 8'-10'       | 8'-10'       |                                      |  |
| Sample Location:                     | Pump Station |                                      |  |
| <b>ETPH - CT ETPH Method (mg/Kg)</b> | ND           | ND           | ND           | <b>750</b>   | ND           | 2,500                                | <b>500/2,500</b>   |
| <b>VOCs - Method 8260 (mg/Kg)</b>    |              |              |              |              |              |                                      |  |
| ALL PARAMETERS                       | ND           | ND           | ND           | ND           | ND           | VARIES                               | VARIES   |
| <b>PAH's - Method 8270 (mg/Kg)</b>   |              |              |              |              |              |                                      |  |
| Naphthalene                          | ND           | 1.4          | ND           | ND           | ND           | 56                                   | 1,000/2,500  |
| ALL OTHER PARAMETERS                 | ND           | ND           | ND           | ND           | ND           | VARIES                               | VARIES   |
| Total PAH's                          | ND           | 1.4          | ND           | ND           | ND           |                                      |  |
| <b>PCBs - Method 8082 (mg/Kg)</b>    |              |              |              |              |              |                                      |  |
| ALL PARAMETERS                       | ND           | ND           | ND           | ND           | ND           | 0.005                                | 1/10   |
| <b>Total RCRA 8 Metals (mg/Kg)</b>   |              |              |              |              |              |                                      |  |
| Arsenic                              | 1.6          | 1.2          | 2.0          | 1.7          | 2.0          |                                      | 10/10  |
| Barium                               | 50.8         | 32.3         | 40.4         | 42.0         | 27.5         |                                      | 4,700/140,000  |
| Cadmium                              | <0.36        | <0.38        | <0.38        | <0.38        | <0.34        | NOT                                  | 34/1,000   |
| Chromium                             | 16.1         | 8.57         | 11.5         | 9.9          | 8.14         |                                      | 3,900/51,000   |
| Lead                                 | 7.47         | 4.12         | 5.92         | 91.9         | 3.87         | APPLICABLE                           | 400/1,000  |
| Mercury                              | <0.07        | <0.06        | <0.08        | <0.07        | <0.07        |                                      | 20/610   |
| Selenium                             | <1.4         | <1.5         | <1.5         | <1.5         | <1.3         |                                      | 340/10,000   |
| Silver                               | <0.36        | <0.38        | <0.38        | <0.38        | <0.34        |                                      | 340/10,000   |
| <b>SPLP RCRA 8 Metals (mg/L)</b>     |              |              |              |              |              |                                      |  |
| Arsenic                              | <0.004       | <0.004       | <0.004       | 0.008        | 0.004        | 0.5                                  |  |
| Barium                               | 0.065        | 0.035        | 0.178        | 0.319        | 0.105        | 10                                   |  |
| Cadmium                              | <0.005       | <0.005       | <0.005       | <0.005       | <0.005       | 0.05                                 | NOT  |
| Chromium                             | <0.010       | <0.010       | <0.010       | 0.021        | <0.010       | 0.5                                  |  |
| Lead                                 | <0.010       | <0.010       | <0.010       | <b>0.606</b> | <0.010       | <b>0.15</b>                          | APPLICABLE   |
| Mercury                              | <0.0004      | <0.0004      | <0.0004      | 0.0004       | <0.0004      | 0.02                                 |  |
| Selenium                             | <0.020       | <0.020       | <0.020       | <0.020       | <0.020       | 0.5                                  |  |
| Silver                               | <0.010       | <0.010       | <0.010       | <0.010       | <0.010       | 0.36                                 |  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses**  
**Proposed Sewage Pump Station**  
**Middletown, CT**

Continued

| Sample I.D.:                       | PSGP-6       | PSGP-07      | PSGP-8       | PSGP-9       | PSGP-10      | PSGP-11      | CTDEEP PMC GB<br>Groundwater<br>Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------------------------------|--|
| Sample Date:                       | 2/25/2013    | 2/20/2013    | 2/25/2013    | 2/22/2013    | 2/22/2013    | 2/25/2013    |                                      |  |
| Sample Depth:                      | 13'-15'      | 2'-4'        | 5'-7'        | 0'-2'        | 18'-20'      | 13'-15'      |                                      |  |
| Sample Location:                   | Pump Station |                                      |  |
| <b>ETPH - CT ETPH (mg/Kg)</b>      | ND           | ND           | 180          | ND           | 1,900        | ND           | 2,500                                | 500/2,500  |
| <b>VOCs - Method 8260 (mg/Kg)</b>  |              |              |              |              |              |              |                                      |  |
| 1,2,4-Trimethylbenzene             | ND           | ND           | ND           | ND           | 2.3          | ND           | 70                                   | 500/1,000  |
| 1,3,5-Trimethylbenzene             | ND           | ND           | ND           | ND           | 0.82         | ND           | 70                                   | 500/1,000  |
| 1,4-Dichlorobenzene                | ND           | ND           | ND           | ND           | 0.64         | ND           | 15                                   | 26/240   |
| Chlorobenzene                      | ND           | ND           | ND           | ND           | 0.42         | ND           | 20                                   | 500/1,000  |
| Naphthalene                        | ND           | ND           | ND           | ND           | 1.6          | ND           | 56                                   | 1,000/2,500  |
| n-Butylbenzene                     | ND           | ND           | ND           | ND           | 0.45         | ND           | 14                                   | 500/1,000  |
| n-Propylbenzene                    | ND           | ND           | ND           | ND           | 0.29         | ND           | 14                                   | 500/1,000  |
| p-Isopropyltoluene                 | ND           | ND           | ND           | ND           | 0.78         | ND           | 41.8                                 | 500/1,000  |
| Total Xylenes                      | ND           | ND           | ND           | ND           | 0.84         | ND           | 19.5                                 | 500/1,000  |
| ALL OTHER PARAMETERS               | ND           | ND           | ND           | ND           | ND           | ND           | VARIES                               | VARIES   |
| <b>PAH's - Method 8270 (mg/Kg)</b> |              |              |              |              |              |              |                                      |  |
| 2-Methylnaphthalene                | ND           | ND           | ND           | ND           | 1.3          | ND           | 84                                   | 1,000/2,500  |
| Anthracene                         | ND           | ND           | ND           | ND           | 0.33         | ND           | 400                                  | 1,000/2,500  |
| Benz(a)anthracene                  | 0.47         | ND           | ND           | 0.29         | 0.55         | ND           | 1                                    | 1/7.8  |
| Benzo(a)pyrene                     | 0.45         | ND           | ND           | 0.34         | 0.51         | ND           | 1                                    | 1/1  |
| Benzo(b)fluoranthene               | 0.62         | ND           | ND           | 0.46         | 0.76         | ND           | 1                                    | 1/7.8  |
| Benzo(g,h,i)perylene               | 0.28         | ND           | ND           | ND           | ND           | ND           | 42                                   | 1,000/2,500  |
| Benzo(k)fluoranthene               | ND           | ND           | ND           | ND           | 0.32         | ND           | 1                                    | 8.4/78   |
| Chrysene                           | 0.46         | ND           | ND           | 0.34         | 0.69         | ND           | 1                                    | 84/780   |
| Fluoranthene                       | 1.0          | ND           | ND           | 0.45         | 1.2          | ND           | 56                                   | 1,000/2,500  |
| Fluorene                           | ND           | ND           | ND           | ND           | 0.27         | ND           | 56                                   | 1,000/2,500  |
| Naphthalene                        | ND           | ND           | ND           | ND           | 0.35         | ND           | 56                                   | 1,000/2,500  |
| Phenanthrene                       | 0.51         | ND           | ND           | ND           | 1.3          | ND           | 40                                   | 1,000/2,500  |
| Pyrene                             | 0.97         | ND           | ND           | 0.43         | 1.1          | ND           | 40                                   | 1,000/2,500  |
| ALL OTHER PARAMETERS               | ND           | ND           | ND           | ND           | ND           | ND           | VARIES                               | VARIES   |
| Total PAH's                        | 4.76         | ND           | ND           | 2.31         | 8.68         | ND           |                                      |  |
| <b>PCBs - Method 8082 (mg/Kg)</b>  |              |              |              |              |              |              |                                      |  |
| ALL PARAMETERS                     | ND           | ND           | ND           | ND           | ND           | ND           | 0.005                                | 1/10   |
| <b>Total RCRA 8 Metals (mg/Kg)</b> |              |              |              |              |              |              |                                      |  |
| Arsenic                            | 2.3          | 2.3          | 1.4          | 3.1          | 3.1          | 2.0          | NOT<br>APPLICABLE                    | 10/10  |
| Barium                             | 104          | 66           | 64.5         | 42.7         | 114          | 68.3         |                                      | 4,700/140,000  |
| Cadmium                            | <0.35        | <0.42        | <0.34        | <0.38        | <0.4         | <0.34        |                                      | 34/1,000   |
| Chromium                           | 13.7         | 16.8         | 9.21         | 13.2         | 29.4         | 17.3         |                                      | 3,900/51,000   |
| Lead                               | 65.6         | 9.19         | 3.54         | 9.06         | 19.1         | 9.14         |                                      | 400/1,000  |
| Mercury                            | <0.08        | <0.08        | <0.08        | <0.06        | <0.07        | <0.07        |                                      | 20/610   |
| Selenium                           | <1.4         | <1.7         | <1.4         | <1.5         | <1.6         | <1.4         |                                      | 340/10,000   |
| Silver                             | <0.80        | <0.42        | <0.80        | <0.38        | <0.4         | <0.8         |                                      | 340/10,000   |
| <b>SPLP RCRA 8 Metals (mg/L)</b>   |              |              |              |              |              |              |                                      |  |
| Arsenic                            | <0.004       | <0.004       | <0.004       | <0.004       | 0.012        | <0.004       | 0.5                                  | NOT<br>APPLICABLE  |
| Barium                             | 0.064        | 0.07         | 0.038        | 0.137        | 0.443        | 0.092        | 10                                   |  |
| Cadmium                            | <0.005       | <0.005       | <0.005       | <0.005       | <0.005       | <0.005       | 0.05                                 |  |
| Chromium                           | <0.010       | <0.010       | <0.010       | <0.010       | 0.027        | <0.010       | 0.5                                  |  |
| Lead                               | 0.012        | <0.010       | <0.010       | 0.012        | 0.05         | <0.010       | 0.15                                 |  |
| Mercury                            | <0.0004      | <0.0004      | <0.0004      | <0.0004      | <0.0004      | <0.0004      | 0.02                                 |  |
| Selenium                           | <0.020       | <0.020       | <0.020       | <0.020       | <0.020       | <0.020       | 0.5                                  |  |
| Silver                             | <0.010       | <0.010       | <0.010       | <0.010       | <0.010       | <0.010       | 0.36                                 |  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

Continued

| Sample I.D.:                       | PSGP-12      | PSGP-13      | PSGP-14      | PSGP-15      | PSGP-16      | PSGP-17      | CTDEEP PMC GB<br>Groundwater<br>Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------------------------------|--|
| Sample Date:                       | 2/25/2013    | 2/22/2013    | 2/25/2013    | 2/22/2013    | 2/22/2013    | 2/22/2013    |                                      |  |
| Sample Depth:                      | 12'-14'      | 5'-7'        | 3'-5'        | 2'-4'        | 18'-20'      | 1'-3'        |                                      |  |
| Sample Location:                   | Pump Station |                                      |  |
| <b>CT ETPH - (mg/Kg)</b>           | 79           | ND           | ND           | ND           | ND           | ND           | 2,500                                | 500/2,500  |
| <b>VOCs - Method 8260 (mg/Kg)</b>  |              |              |              |              |              |              |                                      |  |
| ALL PARAMETERS                     | ND           | ND           | ND           | ND           | ND           | ND           | VARIABLES                            | VARIABLES  |
| <b>PAH's (mg/Kg)</b>               |              |              |              |              |              |              |                                      |  |
| Benz(a)anthracene                  | ND           | ND           | ND           | 0.37         | ND           | ND           | 1                                    | 1/7.8  |
| Benzo(a)pyrene                     | ND           | ND           | ND           | 0.35         | ND           | ND           | 1                                    | 1/1  |
| Benzo(b)fluoranthene               | 0.27         | ND           | ND           | 0.49         | ND           | ND           | 1                                    | 1/7.8  |
| Fluoranthene                       | 0.66         | ND           | ND           | ND           | ND           | ND           | 56                                   | 1,000/2,500  |
| Fluorene                           | ND           | ND           | ND           | 0.37         | ND           | ND           | 56                                   | 1,000/2,500  |
| Phenanthrene                       | ND           | ND           | ND           | 0.41         | ND           | ND           | 40                                   | 1,000/2,500  |
| Pyrene                             | 0.59         | ND           | ND           | 0.38         | ND           | ND           | 40                                   | 1,000/2,500  |
| ALL OTHER PARAMETERS               | ND           | ND           | ND           | ND           | ND           | ND           | VARIABLES                            | VARIABLES  |
| Total PAH's                        | 1.52         | ND           | ND           | 2.37         | ND           | ND           |                                      |  |
| <b>PCBs - Method 8082 (mg/Kg)</b>  |              |              |              |              |              |              |                                      |  |
| ALL PARAMETERS                     | ND           | ND           | ND           | ND           | ND           | ND           | 0.005                                | 1/10   |
| <b>Total RCRA 8 Metals (mg/Kg)</b> |              |              |              |              |              |              |                                      |  |
| Arsenic                            | 3.0          | 7.3          | 2.2          | 3.1          | 1.1          | 2.5          | NOT<br>APPLICABLE                    | 10/10  |
| Barium                             | 95.7         | 64.1         | 74.7         | 57.1         | 48.4         | 74.6         |                                      | 4,700/140,000  |
| Cadmium                            | <0.37        | <0.39        | <0.34        | <0.40        | <0.35        | <0.37        |                                      | 34/1,000   |
| Chromium                           | 17.8         | 16.4         | 17.6         | 19.6         | 12.5         | 16.6         |                                      | 3,900/51,000   |
| Lead                               | 42.2         | 44.8         | 7.73         | 11.9         | 5.89         | 9.22         |                                      | 400/1,000  |
| Mercury                            | 0.29         | <0.07        | <0.07        | <0.08        | <0.08        | <0.07        |                                      | 20/610   |
| Selenium                           | <1.5         | <1.6         | <1.4         | <1.6         | <1.4         | <1.5         |                                      | 340/10,000   |
| Silver                             | <0.8         | <0.39        | <0.80        | <0.40        | <0.35        | <0.37        |                                      | 340/10,000   |
| <b>SPLP RCRA 8 Metals (mg/L)</b>   |              |              |              |              |              |              |                                      |  |
| Arsenic                            | 0.006        | 0.074        | <0.004       | <0.004       | 0.006        | <0.004       | 0.5                                  | NOT<br>APPLICABLE  |
| Barium                             | 0.067        | 0.625        | 0.144        | 0.9          | 0.064        | 0.114        | 10                                   |  |
| Cadmium                            | <0.005       | <0.005       | <0.005       | <0.005       | <0.005       | <0.005       | 0.05                                 |  |
| Chromium                           | <0.010       | 0.037        | 0.011        | 0.05         | <0.010       | <0.010       | 0.5                                  |  |
| Lead                               | <0.010       | 0.137        | <0.010       | 0.023        | <0.010       | <0.010       | 0.15                                 |  |
| Mercury                            | <0.0004      | <0.0004      | <0.0004      | <0.0004      | <0.0004      | <0.0004      | 0.02                                 |  |
| Selenium                           | <0.020       | <0.020       | <0.020       | <0.020       | <0.020       | <0.020       | 0.5                                  |  |
| Silver                             | <0.010       | <0.010       | <0.010       | <0.010       | <0.010       | <0.010       | 0.36                                 |  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

Continued

| Sample I.D.:                         | PSGP-36      | PSGP-37      | PSGP-38      | PSGP-39      | PSGP-40      | PSGP-41       | CTDEEP PMC GB<br>Groundwater<br>Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|--------------------------------------|--------------|--------------|--------------|--------------|--------------|---------------|--------------------------------------|--|
| Sample Date:                         | 2/22/2013    | 2/20/2013    | 2/20/2013    | 2/20/2013    | 2/25/2013    | 2/25/2013     |                                      |  |
| Sample Depth:                        | 5'-7'        | 3'-5'        | 3'-5'        | 1'-3'        | 8'-10'       | 8'-10'        |                                      |  |
| Sample Location:                     | Pump Station  |                                      |  |
| <b>ETPH - CT ETPH Method (mg/Kg)</b> | 18           | ND           | <b>2,800</b> | <b>550</b>   | ND           | ND            | <b>2,500</b>                         | <b>500/2,500</b>   |
| <b>VOCs - Method 8260 (mg/Kg)</b>    |              |              |              |              |              |               |                                      |  |
| 1,2,4-Trimethylbenzene               | ND           | ND           | 4.8          | ND           | ND           | ND            | 70                                   | 500/1,000  |
| 1,3,5-Trimethylbenzene               | ND           | ND           | 1.8          | ND           | ND           | ND            | 70                                   | 500/1,000  |
| 1,4-Dichlorobenzene                  | ND           | ND           | 0.3          | ND           | 0.64         | ND            | 15                                   | 26/240   |
| 2-Isopropyltoluene                   | ND           | ND           | 0.24         | ND           | ND           | ND            | 41.8                                 | 500/1,000  |
| Naphthalene                          | ND           | ND           | 0.91         | ND           | ND           | ND            | 56                                   | 1,000/2,500  |
| n-Butylbenzene                       | ND           | ND           | 1.1          | ND           | ND           | ND            | 14                                   | 500/1,000  |
| n-Propylbenzene                      | ND           | ND           | 0.32         | ND           | ND           | ND            | 14                                   | 500/1,000  |
| p-Isopropyltoluene                   | ND           | ND           | 0.67         | ND           | ND           | ND            | 41.8                                 | 500/1,000  |
| sec-Butylbenzene                     | ND           | ND           | 0.7          | ND           | ND           | ND            | 14                                   | 500/1,000  |
| Toluene                              | ND           | ND           | 0.38         | ND           | ND           | ND            | 67                                   | 500/1,000  |
| ALL OTHER PARAMETERS                 | ND           | ND           | ND           | ND           | ND           | ND            | VARIES                               | VARIES   |
| <b>PAH's - Method 8270 (mg/Kg)</b>   |              |              |              |              |              |               |                                      |  |
| Acenaphthylene                       | ND           | ND           | ND           | ND           | 0.28         | ND            | 84                                   | 1,000/2,500  |
| Benz(a)anthracene                    | 0.66         | ND           | <b>1.6</b>   | <b>1.6</b>   | 0.68         | ND            | <b>1</b>                             | <b>1/7.8</b>   |
| Benzo(a)pyrene                       | 0.69         | ND           | <b>1.7</b>   | <b>1.8</b>   | 0.6          | ND            | <b>1</b>                             | <b>1/1</b>   |
| Benzo(b)fluoranthene                 | 0.96         | ND           | <b>2.5</b>   | <b>2.8</b>   | 0.77         | ND            | <b>1</b>                             | <b>1/7.8</b>   |
| Benzo(g,h,i)perylene                 | 0.35         | ND           | ND           | 0.73         | 0.37         | ND            | 42                                   | 1,000/2,500  |
| Benzo(k)fluoranthene                 | 0.39         | ND           | ND           | 0.79         | 0.28         | ND            | 1                                    | 8.4/78   |
| Chrysene                             | 0.74         | ND           | <b>2</b>     | <b>2.3</b>   | 0.82         | ND            | <b>1</b>                             | <b>84/780</b>  |
| Fluoranthene                         | 1.1          | ND           | 2.8          | 2.7          | 1.4          | 0.42          | 56                                   | 1,000/2,500  |
| Indeno(1,2,3-cd)pyrene               | 0.3          | ND           | ND           | 0.69         | 0.32         | ND            | 1                                    | 1/7.8  |
| Naphthalene                          | 0.83         | ND           | ND           | ND           | ND           | ND            | 56                                   | 1,000/2,500  |
| Phenanthrene                         | 0.73         | ND           | 2.2          | 1.3          | 0.33         | ND            | 40                                   | 1,000/2,500  |
| Pyrene                               | 0.9          | ND           | 2.8          | 3            | 1.7          | 0.58          | 40                                   | 1,000/2,500  |
| ALL OTHER PARAMETERS                 | ND           | ND           | ND           | ND           | ND           | ND            | VARIES                               | VARIES   |
| Total PAH's                          | 7.65         | ND           | 15.6         | 17.71        | 7.55         | 1             |                                      |  |
| <b>PCBs - Method 8082 (mg/Kg)</b>    |              |              |              |              |              |               |                                      |  |
| ALL PARAMETERS                       | ND           | ND           | ND           | ND           | ND           | ND            | 0.005                                | 1/10   |
| <b>Total RCRA 8 Metals (mg/Kg)</b>   |              |              |              |              |              |               |                                      |  |
| Arsenic                              | 2            | 5.6          | 5            | 5.4          | 3.9          | <b>19.9</b>   | NOT<br>APPLICABLE                    | <b>10/10</b>   |
| Barium                               | 59           | 149          | 238          | 315          | 62.7         | 548           |                                      | 4,700/140,000  |
| Cadmium                              | <0.38        | <0.39        | 11.2         | 1.46         | <0.41        | <0.37         |                                      | 34/1,000   |
| Chromium                             | 10.5         | 15.8         | 34.2         | 20.5         | 14.3         | 19.2          |                                      | 3,900/51,000   |
| Lead                                 | 55.3         | 63.2         | <b>467</b>   | <b>4,380</b> | 122          | <b>12,500</b> |                                      | <b>400/1,000</b>   |
| Mercury                              | <0.70        | <0.07        | 2.41         | 0.73         | 0.45         | 0.31          |                                      | 20/610   |
| Selenium                             | <1.5         | <1.6         | <1.9         | <1.5         | <1.6         | <1.5          |                                      | 340/10,000   |
| Silver                               | <0.38        | 2.87         | 24.7         | 1.44         | <0.80        | <0.80         |                                      | 340/10,000   |
| <b>SPLP RCRA 8 Metals (mg/L)</b>     |              |              |              |              |              |               |                                      |  |
| Arsenic                              | <0.004       | <0.004       | 0.005        | 0.005        | 0.005        | <0.004        | 0.5                                  | NOT<br>APPLICABLE  |
| Barium                               | 0.103        | 0.065        | 0.143        | 0.081        | 0.074        | 0.064         | 10                                   |  |
| Cadmium                              | <0.005       | <0.005       | 0.006        | <0.005       | <0.005       | <0.005        | 0.05                                 |  |
| Chromium                             | <0.010       | <0.010       | <0.010       | <0.010       | <0.010       | <0.010        | 0.5                                  |  |
| Lead                                 | <0.010       | <0.010       | <b>0.154</b> | 0.018        | 0.056        | 0.019         | <b>0.15</b>                          |  |
| Mercury                              | <0.0004      | <0.0004      | 0.0012       | <0.0004      | <0.0004      | <0.0004       | 0.02                                 |  |
| Selenium                             | <0.020       | <0.020       | <0.020       | <0.020       | <0.020       | <0.020        | 0.5                                  |  |
| Silver                               | <0.010       | <0.010       | <0.020       | <0.010       | <0.010       | <0.010        | 0.36                                 |  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

Continued

| Sample I.D.:                         | PSGP-42 1-5 FT | PSGP-42 9-13 FT | PSGP-42 15-20 FT | PSGP-43 1-5 FT | PSGP-43 10-14 FT | PSGP-43 14-20 FT | CTDEEP PMC GB<br>Groundwater<br>Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|--------------------------------------|----------------|-----------------|------------------|----------------|------------------|------------------|--------------------------------------|--|
| Sample Date:                         | 7/12/2013      | 7/12/2013       | 7/12/2013        | 7/11/2013      | 7/11/2013        | 7/11/2013        |                                      |  |
| Sample Depth:                        | 1'-5'          | 9'-13'          | 15'-20'          | 1'-5'          | 10'-14'          | 14'-20'          |                                      |  |
| Sample Location:                     | Pump Station   | Pump Station    | Pump Station     | Pump Station   | Pump Station     | Pump Station     |                                      |  |
| <b>ETPH - CT ETPH Method (mg/Kg)</b> | ND             | ND              | ND               | ND             | <b>1,700</b>     | ND               | 2,500                                | <b>500/2,500</b>   |
| <b>VOCs - Method 8260 (mg/Kg)</b>    |                |                 |                  |                |                  |                  |                                      |  |
| Naphthalene                          | ND             | ND              | ND               | ND             | 0.057            | ND               | 56                                   | 1,000/2,500  |
| ALL OTHER PARAMETERS                 | ND             | ND              | ND               | ND             | ND               | ND               | VARIES                               | VARIES   |
| <b>PAH's - Method 8270 (mg/Kg)</b>   |                |                 |                  |                |                  |                  |                                      |  |
| Acenaphthylene                       | ND             | ND              | ND               | 0.45           | ND               | ND               | 84                                   | 1,000/2,500  |
| Anthracene                           | ND             | ND              | ND               | 0.78           | 5.4              | ND               | 400                                  | 1,000/2,500  |
| Benz(a)anthracene                    | ND             | ND              | ND               | <b>1.8</b>     | <b>14</b>        | 0.36             | <b>1</b>                             | <b>1/7.8</b>   |
| Benzo(a)pyrene                       | ND             | ND              | ND               | <b>1.5</b>     | <b>9.7</b>       | ND               | <b>1</b>                             | <b>1/1</b>   |
| Benzo(b)fluoranthene                 | ND             | ND              | ND               | <b>2.1</b>     | <b>15</b>        | 0.3              | <b>1</b>                             | <b>1/7.8</b>   |
| Benzo(g,h,i)perylene                 | ND             | ND              | ND               | 0.67           | 5.8              | ND               | 42                                   | 1,000/2,500  |
| Benzo(k)fluoranthene                 | ND             | ND              | ND               | 0.82           | <b>5.6</b>       | ND               | <b>1</b>                             | <b>8.4/78</b>  |
| Chrysene                             | ND             | ND              | ND               | <b>1.7</b>     | <b>14</b>        | 0.31             | <b>1</b>                             | <b>84/780</b>  |
| Fluoranthene                         | ND             | ND              | ND               | 4.9            | 30               | 0.77             | 56                                   | 1,000/2,500  |
| Fluorene                             | ND             | ND              | ND               | 0.34           | ND               | ND               | 56                                   | 1,000/2,500  |
| Indeno(1,2,3-cd)pyrene               | ND             | ND              | ND               | 0.62           | <b>5</b>         | ND               | <b>1</b>                             | <b>1/7.8</b>   |
| Phenanthrene                         | ND             | ND              | ND               | 4.7            | 30               | 0.79             | 40                                   | 1,000/2,500  |
| Pyrene                               | ND             | ND              | ND               | 3.8            | 23               | 0.58             | 40                                   | 1,000/2,500  |
| ALL OTHER PARAMETERS                 | ND             | ND              | ND               | ND             | ND               | ND               | VARIES                               | VARIES   |
| Total PAH's                          | ND             | ND              | ND               | 24.18          | 157.5            | 3.11             |                                      |  |
| <b>PCBs - Method 8082 (mg/Kg)</b>    |                |                 |                  |                |                  |                  |                                      |  |
| ALL PARAMETERS                       | ND             | ND              | ND               | NOT TESTED     | NOT TESTED       | NOT TESTED       | 0.005                                | 1/10   |
| <b>Total RCRA 8 Metals (mg/Kg)</b>   |                |                 |                  |                |                  |                  |                                      |  |
| Lead                                 | 4.9            | 5.55            | 4.3              | 15.9           | 43               | 5.55             | N/A                                  | 400/1,000  |
| <b>SPLP RCRA 8 Metals (mg/L)</b>     |                |                 |                  |                |                  |                  |                                      |  |
| Lead                                 | <0.010         | 0.035           | <0.010           | 0.018          | 0.023            | <0.010           | 0.15                                 | N/A  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

Continued

| Sample I.D.:                         | PSGP-44 2-5 FT | PSGP-44 8-12 FT | PSGP-44 15-20 FT | PSGP-45 1-5 FT | PSGP-45 15-20 FT | CTDEEP PMC GB<br>Groundwater<br>Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|--------------------------------------|----------------|-----------------|------------------|----------------|------------------|--------------------------------------|--|
| Sample Date:                         | 7/12/2013      | 7/12/2013       | 7/12/2013        | 7/11/2013      | 7/11/2013        |                                      |  |
| Sample Depth:                        | 1'-5'          | 8'-12'          | 15'-20'          | 1'-5'          | 15'-20'          |                                      |  |
| Sample Location:                     | Pump Station   | Pump Station    | Pump Station     | Pump Station   | Pump Station     |                                      |  |
| <b>ETPH - CT ETPH Method (mg/Kg)</b> | ND             | ND              | ND               | ND             | ND               | 2,500                                | 500/2,500  |
| <b>VOCs - Method 8260 (mg/Kg)</b>    |                |                 |                  |                |                  |                                      |  |
| Naphthalene                          | ND             | ND              | ND               | ND             | 0.022            | 56                                   | 1,000/2,500  |
| ALL OTHER PARAMETERS                 | ND             | ND              | ND               | ND             | ND               | VARIES                               | VARIES   |
| <b>PAH's - Method 8270 (mg/Kg)</b>   |                |                 |                  |                |                  |                                      |  |
| Acenaphthene                         | ND             | ND              | ND               | ND             | 0.39             | 84                                   | 1,000/2,500  |
| Anthracene                           | ND             | ND              | ND               | ND             | 1.1              | 400                                  | 1,000/2,500  |
| Benz(a)anthracene                    | ND             | ND              | ND               | 0.45           | 2.2              | 1                                    | 1/7.8  |
| Benzo(a)pyrene                       | ND             | ND              | ND               | 0.36           | 1.5              | 1                                    | 1/1  |
| Benzo(b)fluoranthene                 | ND             | ND              | ND               | 0.54           | 2.2              | 1                                    | 1/7.8  |
| Benzo(g,h,i)perylene                 | ND             | ND              | ND               | 0.28           | 0.79             | 42                                   | 1,000/2,500  |
| Benzo(k)fluoranthene                 | ND             | ND              | ND               | ND             | 0.87             | 1                                    | 8.4/78   |
| Chrysene                             | ND             | ND              | ND               | 0.4            | 2.1              | 1                                    | 84/780   |
| Fluoranthene                         | ND             | ND              | ND               | 0.69           | 4.7              | 56                                   | 1,000/2,500  |
| Fluorene                             | ND             | ND              | ND               | ND             | 0.53             | 56                                   | 1,000/2,500  |
| Indeno(1,2,3-cd)pyrene               | ND             | ND              | ND               | ND             | 0.74             | 1                                    | 1/7.8  |
| Phenanthrene                         | ND             | ND              | ND               | 0.37           | 5.6              | 40                                   | 1,000/2,500  |
| Pyrene                               | ND             | ND              | ND               | 0.59           | 3.6              | 40                                   | 1,000/2,500  |
| ALL OTHER PARAMETERS                 | ND             | ND              | ND               | ND             | ND               | VARIES                               | VARIES   |
| Total PAH's                          | ND             | ND              | ND               | 3.68           | 26.32            |                                      |  |
| <b>PCBs - Method 8082 (mg/Kg)</b>    |                |                 |                  |                |                  |                                      |  |
| ALL PARAMETERS                       | ND             | ND              | ND               | NOT TESTED     | NOT TESTED       | 0.005                                | 1/10   |
| <b>Total RCRA 8 Metals (mg/Kg)</b>   |                |                 |                  |                |                  |                                      |  |
| Lead                                 | 6.7            | 5.66            | 5.16             | 5.52           | 4.79             | N/A                                  | 400/1,000  |
| <b>SPLP RCRA 8 Metals (mg/L)</b>     |                |                 |                  |                |                  |                                      |  |
| Lead                                 | <0.010         | <0.010          | <0.010           | <0.010         | <0.010           | 0.15                                 | N/A  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

Continued

| Sample I.D.:                         | PSGP-46 1-5 FT | PSGP-46 15-20 FT | CTDEEP PMC GB<br>Groundwater Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|--------------------------------------|----------------|------------------|-----------------------------------|--|
| Sample Date:                         | 7/11/2013      | 7/11/2013        |                                   |  |
| Sample Depth:                        | 1'-5'          | 15'-20'          |                                   |  |
| Sample Location:                     | Pump Station   | Pump Station     |                                   |  |
| <b>ETPH - CT ETPH Method (mg/Kg)</b> | ND             | ND               | 2,500                             | 500/2,500  |
| <b>VOCs - Method 8260 (mg/Kg)</b>    |                |                  |                                   |  |
| Naphthalene                          | ND             | 0.018            | 56                                | 1,000/2,500  |
| ALL OTHER PARAMETERS                 | ND             | ND               | VARIES                            | VARIES   |
| <b>PAH's - Method 8270 (mg/Kg)</b>   |                |                  |                                   |  |
| Acenaphthene                         | ND             | 0.42             | 84                                | 1,000/2,500  |
| Anthracene                           | ND             | 1.6              | 400                               | 1,000/2,500  |
| Benz(a)anthracene                    | 0.28           | <b>4.2</b>       | <b>1</b>                          | <b>1/7.8</b>   |
| Benzo(a)pyrene                       | 0.25           | <b>2.8</b>       | <b>1</b>                          | <b>1/1</b>   |
| Benzo(b)fluoranthene                 | 0.34           | <b>4.7</b>       | <b>1</b>                          | <b>1/7.8</b>   |
| Benzo(g,h,i)perylene                 | ND             | 1.3              | 42                                | 1,000/2,500  |
| Benzo(k)fluoranthene                 | ND             | <b>1.4</b>       | <b>1</b>                          | 8.4/78   |
| Chrysene                             | 0.31           | <b>3.7</b>       | <b>1</b>                          | 84/780   |
| Dibenz(a,h)anthracene                | ND             | 0.4              | 1                                 | 1/1  |
| Fluoranthene                         | 0.53           | 7.5              | 56                                | 1,000/2,500  |
| Fluorene                             | ND             | 0.5              | 56                                | 1,000/2,500  |
| Indeno(1,2,3-cd)pyrene               | ND             | <b>1.3</b>       | <b>1</b>                          | <b>1/7.8</b>   |
| Phenanthrene                         | 0.32           | 8.1              | 40                                | 1,000/2,500  |
| Pyrene                               | 0.46           | 5.6              | 40                                | 1,000/2,500  |
| ALL OTHER PARAMETERS                 | ND             | ND               | VARIES                            | VARIES   |
| Total PAH's                          | 2.49           | 43.52            |                                   |  |
| <b>Total RCRA 8 Metals (mg/Kg)</b>   |                |                  |                                   |  |
| Lead                                 | 4.95           | 3.36             | N/A                               | 400/1,000  |
| <b>SPLP RCRA 8 Metals (mg/L)</b>     |                |                  |                                   |  |
| Lead                                 | <0.010         | <0.010           | 0.15                              | N/A  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

Continued

| Sample I.D.:                         | PSGP-47 1-5 FT | PSGP-47 10-15 FT | PSGP-47 15-20 FT | PSGP-48 2-5 FT | PSGP-48 15-20 FT | CTDEEP PMC GB<br>Groundwater<br>Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|--------------------------------------|----------------|------------------|------------------|----------------|------------------|--------------------------------------|--|
| Sample Date:                         | 6/25/2013      | 6/25/2013        | 6/25/2013        | 6/24/2013      | 6/24/2013        |                                      |  |
| Sample Depth:                        | 1'-5'          | 10'-15'          | 15'-20'          | 2'-5'          | 15'-20'          |                                      |  |
| Sample Location:                     | Pump Station   | Pump Station     | Pump Station     | Pump Station   | Pump Station     |                                      |  |
| <b>ETPH - CT ETPH Method (mg/Kg)</b> | ND             | ND               | ND               | ND             | ND               | 2,500                                | 500/2,500  |
| <b>VOCs - Method 8260 (mg/Kg)</b>    |                |                  |                  |                |                  |                                      |  |
| ALL PARAMETERS                       | ND             | ND               | ND               | ND             | ND               | VARIES                               | VARIES   |
| <b>PAH's - Method 8270 (mg/Kg)</b>   |                |                  |                  |                |                  |                                      |  |
| Benz(a)anthracene                    | 0.38           | ND               | ND               | ND             | ND               | 1                                    | 1/7.8  |
| Benzo(a)pyrene                       | 0.39           | ND               | ND               | ND             | ND               | 1                                    | 1/1  |
| Benzo(b)fluoranthene                 | 0.54           | 0.3              | ND               | ND             | ND               | 1                                    | 1/7.8  |
| Chrysene                             | 0.36           | ND               | ND               | ND             | ND               | 1                                    | 84/780   |
| Fluoranthene                         | 0.59           | ND               | ND               | ND             | ND               | 56                                   | 1,000/2,500  |
| Phenanthrene                         | 0.32           | ND               | ND               | ND             | ND               | 40                                   | 1,000/2,500  |
| Pyrene                               | 0.52           | ND               | ND               | ND             | ND               | 40                                   | 1,000/2,500  |
| ALL OTHER PARAMETERS                 | ND             | ND               | ND               | ND             | ND               | VARIES                               | VARIES   |
| Total PAH's                          | 3.1            | ND               | ND               | ND             | ND               |                                      |  |
| <b>Total RCRA 8 Metals (mg/Kg)</b>   |                |                  |                  |                |                  |                                      |  |
| Lead                                 | 12.5           | 20.9             | 14.8             | 4.72           | 8.32             | N/A                                  | 400/1,000  |
| <b>SPLP RCRA 8 Metals (mg/L)</b>     |                |                  |                  |                |                  |                                      |  |
| Lead                                 | <0.010         | 0.018            | <0.010           | 0.044          | 0.011            | 0.15                                 | N/A  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

Continued

| Sample I.D.:                         | PSGP-49 1-5 FT | PSGP-49 5-10 FT | PSGP-49 15-20 FT | PSGP-49 20-30 FT | CTDEEP PMC GB<br>Groundwater<br>Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|--------------------------------------|----------------|-----------------|------------------|------------------|--------------------------------------|--|
| Sample Date:                         | 6/25/2013      | 6/25/2013       | 6/25/2013        | 6/25/2013        |                                      |  |
| Sample Depth:                        | 1'-5'          | 5'-10'          | 15'-20'          | 20'-30'          |                                      |  |
| Sample Location:                     | Pump Station   | Pump Station    | Pump Station     | Pump Station     |                                      |  |
| <b>ETPH - CT ETPH Method (mg/Kg)</b> | ND             | ND              | <b>1,200</b>     | ND               | 2,500                                | <b>500/2,500</b>   |
| <b>VOCs - Method 8260 (mg/Kg)</b>    |                |                 |                  |                  |                                      |  |
| 1,2,4-Trimethylbenzene               | ND             | ND              | 1.9              | ND               | 70                                   | 500/1,000  |
| 1,3,5-Trimethylbenzene               | ND             | ND              | 0.68             | ND               | 70                                   | 500/1,000  |
| 1,4-Dichlorobenzene                  | ND             | ND              | 0.53             | ND               | 15                                   | 26/240   |
| 2-Isopropyltoluene                   | ND             | ND              | ND               | ND               | 41.8                                 | 500/1,000  |
| Naphthalene                          | ND             | ND              | 1.4              | ND               | 56                                   | 1,000/2,500  |
| n-Butylbenzene                       | ND             | ND              | 0.45             | ND               | 14                                   | 500/1,000  |
| p-Isopropyltoluene                   | ND             | ND              | 0.71             | ND               | 41.8                                 | 500/1,000  |
| Total Xylenes                        | ND             | ND              | 0.4              | ND               | 19.5                                 | 500/1,000  |
| ALL OTHER PARAMETERS                 | ND             | ND              | ND               | ND               | VARIABLES                            | VARIABLES  |
| <b>PAH's - Method 8270 (mg/Kg)</b>   |                |                 |                  |                  |                                      |  |
| 2-Methylnaphthalene                  | ND             | ND              | 2                | ND               | 9.8                                  | 474/2,500  |
| Anthracene                           | ND             | ND              | 0.7              | ND               | 400                                  | 1,000/2,500  |
| Benz(a)anthracene                    | 0.56           | 0.54            | <b>1.1</b>       | ND               | <b>1</b>                             | <b>1/7.8</b>   |
| Benzo(a)pyrene                       | 0.68           | 0.41            | 0.96             | ND               | 1                                    | 1/1  |
| Benzo(b)fluoranthene                 | 0.84           | 0.53            | <b>1.4</b>       | ND               | <b>1</b>                             | <b>1/7.8</b>   |
| Benzo(g,h,i)perylene                 | 0.29           | ND              | ND               | ND               | 42                                   | 1,000/2,500  |
| Benzo(k)fluoranthene                 | 0.35           | ND              | 0.49             | ND               | 1                                    | 8.4/78   |
| Chrysene                             | 0.58           | 0.54            | <b>1.2</b>       | ND               | <b>1</b>                             | <b>84/780</b>  |
| Fluoranthene                         | 1.1            | 1.2             | 2.6              | ND               | 56                                   | 1,000/2,500  |
| Fluorene                             | ND             | ND              | 0.83             | ND               | 56                                   | 1,000/2,500  |
| Naphthalene                          | ND             | ND              | 0.39             | ND               | 56                                   | 1,000/2,500  |
| Phenanthrene                         | 0.34           | 1.2             | 2.9              | ND               | 40                                   | 1,000/2,500  |
| Pyrene                               | 1.1            | 1               | 2.1              | ND               | 40                                   | 1,000/2,500  |
| ALL OTHER PARAMETERS                 | ND             | ND              | ND               | ND               | VARIABLES                            | VARIABLES  |
| Total PAH's                          | 5.84           | 5.42            | 16.67            | ND               |                                      |  |
| <b>Total RCRA 8 Metals (mg/Kg)</b>   |                |                 |                  |                  |                                      |  |
| Lead                                 | 6.12           | 9.91            | 73.7             | 7.62             | N/A                                  | 400/1,000  |
| <b>SPLP RCRA 8 Metals (mg/L)</b>     |                |                 |                  |                  |                                      |  |
| Lead                                 | <0.010         | <0.010          | <0.010           | <0.010           | 0.15                                 | N/A  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

Continued

| Sample I.D.:                         | PSGP-50 2-5 FT | PSGP-50 9-13 FT | PSGP-50 15-17 FT | CTDEEP PMC GB<br>Groundwater<br>Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|--------------------------------------|----------------|-----------------|------------------|--------------------------------------|--|
| Sample Date:                         | 6/24/2013      | 6/24/2013       | 6/24/2013        |                                      |  |
| Sample Depth:                        | 2'-5'          | 9'-13'          | 15'-17'          |                                      |  |
| Sample Location:                     | Pump Station   | Pump Station    | Pump Station     |                                      |  |
| <b>ETPH - CT ETPH Method (mg/Kg)</b> | ND             | ND              | ND               | 2,500                                | 500/2,500  |
| <b>VOCs - Method 8260 (mg/Kg)</b>    |                |                 |                  |                                      |  |
| ALL PARAMETERS                       | ND             | ND              | ND               | VARIES                               | VARIES   |
| <b>PAH's - Method 8270 (mg/Kg)</b>   |                |                 |                  |                                      |  |
| ALL PARAMETERS                       | ND             | ND              | ND               | VARIES                               | VARIES   |
| Total PAH's                          | ND             | ND              | ND               |                                      |  |
| <b>Total RCRA 8 Metals (mg/Kg)</b>   |                |                 |                  |                                      |  |
| Lead                                 | 12.6           | 18.1            | 17.3             | N/A                                  | 400/1,000  |
| <b>SPLP RCRA 8 Metals (mg/L)</b>     |                |                 |                  |                                      |  |
| Lead                                 | 0.068          | 0.045           | <b>0.272</b>     | 0.15                                 | N/A  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

Continued

| Sample I.D.:                         | PSGP-51 2-5 FT | PSGP-51 10-15 FT | PSGP-51A 25-30 FT | PSGP-51A 35-40 FT | CTDEEP PMC GB<br>Groundwater<br>Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|--------------------------------------|----------------|------------------|-------------------|-------------------|--------------------------------------|--|
| Sample Date:                         | 6/24/2013      | 6/24/2013        | 6/25/2013         | 6/25/2013         |                                      |  |
| Sample Depth:                        | 2'-5'          | 10'-15'          | 25'-30'           | 35'-40'           |                                      |  |
| Sample Location:                     | Pump Station   | Pump Station     | Pump Station      | Pump Station      |                                      |  |
| <b>ETPH - CT ETPH Method (mg/Kg)</b> | ND             | ND               | ND                | ND                | 2,500                                | 500/2,500  |
| <b>VOCs - Method 8260 (mg/Kg)</b>    |                |                  |                   |                   |                                      |  |
| ALL PARAMETERS                       | ND             | ND               | ND                | ND                | VARIES                               | VARIES   |
| <b>PAH's - Method 8270 (mg/Kg)</b>   |                |                  |                   |                   |                                      |  |
| ALL PARAMETERS                       | ND             | ND               | ND                | ND                | VARIES                               | VARIES   |
| <b>Total RCRA 8 Metals (mg/Kg)</b>   |                |                  |                   |                   |                                      |  |
| Lead                                 | 16.1           | 56.4             | 8.91              | 8.29              | N/A                                  | 400/1,000  |
| <b>SPLP RCRA 8 Metals (mg/L)</b>     |                |                  |                   |                   |                                      |  |
| Lead                                 | 0.025          | 0.062            | <0.010            | <0.010            | 0.15                                 | N/A  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

Continued

| Sample I.D.:                         | PSGP-52 2-5 FT | PSGP-52 13-15 FT | PSGP-52 23-25 FT | PSGP-52 31-35 FT | CTDEEP PMC GB<br>Groundwater<br>Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|--------------------------------------|----------------|------------------|------------------|------------------|--------------------------------------|--|
| Sample Date:                         | 6/24/2013      | 6/24/2013        | 6/24/2013        | 6/24/2013        |                                      |  |
| Sample Depth:                        | 2'-5'          | 13'-15'          | 23'-25'          | 31'-35'          |                                      |  |
| Sample Location:                     | Pump Station   | Pump Station     | Pump Station     | Pump Station     |                                      |  |
| <b>ETPH - CT ETPH Method (mg/Kg)</b> | ND             | ND               | ND               | ND               | 2,500                                | 500/2,500  |
| <b>VOCs - Method 8260 (mg/Kg)</b>    |                |                  |                  |                  |                                      |  |
| ALL PARAMETERS                       | ND             | ND               | ND               | ND               | VARIES                               | VARIES   |
| <b>PAH's - Method 8270 (mg/Kg)</b>   |                |                  |                  |                  |                                      |  |
| Acenaphthylene                       | ND             | 0.34             | ND               | ND               | 84                                   | 1,000/2,500  |
| Anthracene                           | ND             | 0.41             | ND               | ND               | 400                                  | 1,000/2,500  |
| Benzo(a)anthracene                   | ND             | 2.6              | ND               | ND               | 1                                    | 1/7.8  |
| Benzo(a)pyrene                       | ND             | 2.7              | ND               | ND               | 1                                    | 1/1  |
| Benzo(b)fluoranthene                 | ND             | 3.3              | ND               | ND               | 1                                    | 1/7.8  |
| Benzo(g,h,i)perylene                 | ND             | 1.1              | ND               | ND               | 42                                   | 1,000/2,500  |
| Benzo(k)fluoranthene                 | ND             | 1.2              | ND               | ND               | 1                                    | 8.4/78   |
| Chrysene                             | ND             | 2.4              | ND               | ND               | 1                                    | 84/780   |
| Dibenz(a,h)anthracene                | ND             | 0.33             | ND               | ND               | 1                                    | 1/1  |
| Fluoranthene                         | ND             | 4.8              | ND               | ND               | 56                                   | 1,000/2,500  |
| Indeno(1,2,3-cd)pyrene               | ND             | 1.1              | ND               | ND               | 1                                    | 1/7.8  |
| Phenanthrene                         | ND             | 1.2              | ND               | ND               | 40                                   | 1,000/2,500  |
| Pyrene                               | ND             | 4.5              | ND               | ND               | 40                                   | 1,000/2,500  |
| ALL OTHER PARAMETERS                 | ND             | ND               | ND               | ND               | VARIES                               | VARIES   |
| Total PAH's                          | ND             | 25.98            | ND               | ND               |                                      |  |
| <b>Total RCRA 8 Metals (mg/Kg)</b>   |                |                  |                  |                  |                                      |  |
| Lead                                 | 5.97           | 38.5             | 3.75             | 1.67             | N/A                                  | 400/1,000  |
| <b>SPLP RCRA 8 Metals (mg/L)</b>     |                |                  |                  |                  |                                      |  |
| Lead                                 | 0.045          | 0.019            | <0.010           | <0.010           | 0.15                                 | N/A  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

Continued

| Sample I.D.:                         | PSGP-53 1-5 FT | PSGP-53 10-15 FT | PSGP-53 25-30 FT | CTDEEP PMC GB<br>Groundwater<br>Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|--------------------------------------|----------------|------------------|------------------|--------------------------------------|--|
| Sample Date:                         | 6/25/2013      | 6/25/2013        | 6/25/2013        |                                      |  |
| Sample Depth:                        | 1'-5'          | 10'-15'          | 25'-30'          |                                      |  |
| Sample Location:                     | Pump Station   | Pump Station     | Pump Station     |                                      |  |
| <b>ETPH - CT ETPH Method (mg/Kg)</b> | ND             | ND               | ND               | 2,500                                | 500/2,500  |
| <b>VOCs - Method 8260 (mg/Kg)</b>    |                |                  |                  |                                      |  |
| ALL PARAMETERS                       | ND             | ND               | ND               | VARIES                               | VARIES   |
| <b>PAH's - Method 8270 (mg/Kg)</b>   |                |                  |                  |                                      |  |
| Acenaphthylene                       | 0.25           | ND               | ND               | 84                                   | 1,000/2,500  |
| Benz(a)anthracene                    | 0.51           | ND               | ND               | 1                                    | 1/7.8  |
| Benzo(a)pyrene                       | 0.7            | ND               | ND               | 1                                    | 1/1  |
| Benzo(b)fluoranthene                 | 0.82           | ND               | ND               | 1                                    | 1/7.8  |
| Benzo(g,h,i)perylene                 | 0.33           | ND               | ND               | 42                                   | 1,000/2,500  |
| Benzo(k)fluoranthene                 | 0.26           | ND               | ND               | 1                                    | 8.4/78   |
| Chrysene                             | 0.54           | ND               | ND               | 1                                    | 84/780   |
| Fluoranthene                         | 0.69           | ND               | ND               | 56                                   | 1,000/2,500  |
| Indeno(1,2,3-cd)pyrene               | 0.26           | ND               | ND               | 1                                    | 1/7.8  |
| Pyrene                               | 0.73           | ND               | ND               | 40                                   | 1,000/2,500  |
| ALL OTHER PARAMETERS                 | ND             | ND               | ND               | VARIES                               | VARIES   |
| Total PAH's                          | 5.09           | ND               | ND               |                                      |  |
| <b>Total RCRA 8 Metals (mg/Kg)</b>   |                |                  |                  |                                      |  |
| Lead                                 | 10.2           | 23.3             | 11.6             | N/A                                  | 400/1,000  |
| <b>SPLP RCRA 8 Metals (mg/L)</b>     |                |                  |                  |                                      |  |
| Lead                                 | <0.010         | 0.021            | <0.010           | 0.15                                 | N/A  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

Continued

| Sample I.D.:                         | PSGP-54 2-5 FT | PSGP-54 6-10 FT | PSGP-54 14-20 FT | PSGP-54 21-25 FT | PSGP-54 35-40 FT | CTDEEP PMC GB<br>Groundwater<br>Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|--------------------------------------|----------------|-----------------|------------------|------------------|------------------|--------------------------------------|--|
| Sample Date:                         | 7/11/2013      | 7/11/2013       | 7/11/2013        | 7/11/2013        | 7/11/2013        |                                      |  |
| Sample Depth:                        | 2'-5'          | 6'-10'          | 14'-20'          | 21'-25'          | 35'-40'          |                                      |  |
| Sample Location:                     | Pump Station   | Pump Station    | Pump Station     | Pump Station     | Pump Station     |                                      |  |
| <b>ETPH - CT ETPH Method (mg/Kg)</b> | ND             | <b>3100</b>     | ND               | ND               | ND               | 2,500                                | 500/2,500  |
| <b>VOCs - Method 8260 (mg/Kg)</b>    |                |                 |                  |                  |                  |                                      |  |
| ALL PARAMETERS                       | ND             | ND              | ND               | ND               | ND               | VARIES                               | VARIES   |
| <b>PAH's - Method 8270 (mg/Kg)</b>   |                |                 |                  |                  |                  |                                      |  |
| Acenaphthene                         | ND             | ND              | 0.35             | ND               | ND               | 84                                   | 1,000/2,500  |
| Anthracene                           | ND             | ND              | 0.61             | ND               | ND               | 400                                  | 1,000/2,500  |
| Benz(a)anthracene                    | ND             | ND              | 1                | ND               | ND               | 1                                    | 1/7.8  |
| Benzo(a)pyrene                       | ND             | ND              | 0.91             | ND               | ND               | 1                                    | 1/1  |
| Benzo(b)fluoranthene                 | ND             | ND              | <b>1.3</b>       | ND               | ND               | <b>1</b>                             | <b>1/7.8</b>   |
| Benzo(k)fluoranthene                 | ND             | ND              | 0.47             | ND               | ND               | 1                                    | 8.4/78   |
| Chrysene                             | ND             | ND              | 1                | ND               | ND               | 1                                    | 84/780   |
| Fluoranthene                         | ND             | 0.47            | 1.6              | ND               | ND               | 56                                   | 1,000/2,500  |
| Fluorene                             | ND             | ND              | 0.63             | ND               | ND               | 56                                   | 1,000/2,500  |
| Phenanthrene                         | ND             | 0.42            | 2.4              | ND               | ND               | 40                                   | 1,000/2,500  |
| Pyrene                               | ND             | 0.44            | 1.2              | ND               | ND               | 40                                   | 1,000/2,500  |
| ALL OTHER PARAMETERS                 | ND             | ND              | ND               | ND               | ND               | VARIES                               | VARIES   |
| Total PAH's                          | ND             | 1.33            | 11.47            | ND               | ND               |                                      |  |
| <b>Total RCRA 8 Metals (mg/Kg)</b>   |                |                 |                  |                  |                  |                                      |  |
| Lead                                 | 8.05           | <b>520</b>      | <b>2,040</b>     | 23.4             | 11.6             | N/A                                  | <b>400/1,000</b>   |
| <b>SPLP RCRA 8 Metals (mg/L)</b>     |                |                 |                  |                  |                  |                                      |  |
| Lead                                 | 0.036          | <b>0.201</b>    | <b>1.68</b>      | 0.053            | 0.016            | <b>0.15</b>                          | N/A  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

Continued

| Sample I.D.:                         | PSGP-55 2-5 FT | PSGP-56 2-5 FT | PSGP 57 1-5 FT | PSGP 58 2-5 FT | CTDEEP PMC GB<br>Groundwater<br>Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|--------------------------------------|----------------|----------------|----------------|----------------|--------------------------------------|--|
| Sample Date:                         | 7/11/2013      | 6/24/2013      | 7/12/2013      | 7/13/2013      |                                      |  |
| Sample Depth:                        | 2'-5'          | 2'-5'          | 1'-5'          | 2'-5'          |                                      |  |
| Sample Location:                     | Pump Station   | Pump Station   | Pump Station   | Pump Station   |                                      |  |
| <b>ETPH - CT ETPH Method (mg/Kg)</b> | ND             | ND             | ND             | ND             | 2,500                                | 500/2,500  |
| <b>VOCs - Method 8260 (mg/Kg)</b>    |                |                |                |                |                                      |  |
| ALL PARAMETERS                       | ND             | ND             | ND             | ND             | VARIES                               | VARIES   |
| <b>PAH's - Method 8270 (mg/Kg)</b>   |                |                |                |                |                                      |  |
| ALL PARAMETERS                       | ND             | ND             | ND             | ND             | VARIES                               | VARIES   |
| <b>Total RCRA 8 Metals (mg/Kg)</b>   |                |                |                |                |                                      |  |
| Lead                                 | 7.53           | 10.1           | 4.71           | 5.41           | N/A                                  | 400/1,000  |
| <b>SPLP RCRA 8 Metals (mg/L)</b>     |                |                |                |                |                                      |  |
| Lead                                 | 0.011          | <0.010         | <0.010         | <0.010         | 0.15                                 | N/A  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 1- Results of Geoprobe® Boring Soil Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

Continued

| Sample I.D.:                           | FMGP #01 | FMGP #02     | CTDEEP PMC GB     | CTDEEP DEC                   |
|--|----------|--------------|-------------------|------------------------------|
| Sample Depth:                          | 1'-3'    | 1'-3'        | Groundwater Area  | Residential/<br>Commercial & |
| Sample Date:                           | 1/7/2013 | 1/7/2013     |                   |                              |
| <b>CT ETPH - (mg/Kg)</b>               | 17       | <b>1,100</b> | 2,500             | <b>500/2,500</b>             |
| <b>VOCs - Method 8260 (mg/Kg)</b>      |          |              |                   |                              |
| ALL PARAMETERS                         | ND       | ND           | VARIES            | VARIES                       |
| <b>Chlorinated Herbicides (MG/Kg)</b>  |          |              |                   |                              |
| ALL PARAMETERS                         | ND       | ND           | VARIES            | VARIES                       |
| <b>Polynuclear Aromatic HC (mg/Kg)</b> |          |              |                   |                              |
| Acenaphthene                           | ND       | 0.95         | 84                | 1,000/2,500                  |
| Acenaphthylene                         | ND       | 1.2          | 84                | 1,000/2,500                  |
| Anthracene                             | ND       | 2.8          | 400               | 1,000/2,500                  |
| Benzo(a)anthracene                     | 0.29     | <b>7.5</b>   | <b>1</b>          | <b>1/7.8</b>                 |
| Benzo(a)pyrene                         | 0.34     | <b>5.7</b>   | <b>1</b>          | <b>1/1</b>                   |
| Benzo(b)fluoranthene                   | 0.5      | <b>8.5</b>   | <b>1</b>          | <b>1/7.8</b>                 |
| Benzo(g,h,i)perylene                   | ND       | 3.2          | 42                | 1,000/2,500                  |
| Benzo(k)fluoranthene                   | ND       | <b>2.4</b>   | <b>1</b>          | <b>8.4/78</b>                |
| Chrysene                               | ND       | <b>7.1</b>   | <b>1</b>          | <b>84/780</b>                |
| Dibenz(a,h)anthracene                  | ND       | 1            | 1                 | 1/1                          |
| Fluoranthene                           | ND       | 18           | 56                | 1,000/2,500                  |
| Fluorene                               | ND       | 0.99         | 56                | 1,000/2,500                  |
| Indeno(1,2,3-cd)pyrene                 | ND       | <b>3</b>     | <b>1</b>          | <b>1/7.8</b>                 |
| Phenanthrene                           | ND       | 10           | 40                | 1,000/2,500                  |
| Pyrene                                 | ND       | 16           | 40                | 1,000/2,500                  |
| ALL OTHER PARAMETERS                   | ND       | ND           | VARIES            | VARIES                       |
| Total PAH's                            | 1.13     | 88.34        |                   |                              |
| <b>PCBs - Method 8082 (mg/Kg)</b>      |          |              |                   |                              |
| ALL PARAMETERS                         | ND       | ND           | 0.005             | 1/10                         |
| <b>Pesticides (mg/Kg)</b>              |          |              |                   |                              |
| 4,4'-DDE                               | ND       | 0.061        | NS                | 1.8/17                       |
| 4,4'-DDT                               | ND       | 0.15         | NS                | 1.8/17                       |
| d-BHC                                  | ND       | ND*          | NS                | 0.097/0.91                   |
| Dieldrin                               | ND       | <b>0.022</b> | <b>0.007</b>      | <b>0.038/0.36</b>            |
| ALL OTHER PARAMETERS                   | ND       | ND           | VARIES            | VARIES                       |
| <b>Total RCRA 8 Metals (mg/Kg)</b>     |          |              |                   |                              |
| Arsenic                                | 1.3      | 6.6          | NOT<br>APPLICABLE | 10/10                        |
| Barium                                 | 72.3     | 280          |                   | 4,700/140,000                |
| Cadmium                                | <0.39    | 2.26         |                   | 34/1,000                     |
| Chromium                               | 12       | 22.3         |                   | 3,900/51,000                 |
| Lead                                   | 45.6     | 317          |                   | 400/1,000                    |
| Mercury                                | <0.07    | 2.77         |                   | 20/610                       |
| Selenium                               | <1.6     | <1.6         |                   | 340/10000                    |
| Silver                                 | <10      | <10          |                   | 340/10000                    |
| <b>SPLP RCRA 8 Metals (mg/L)</b>       |          |              |                   |                              |
| Arsenic                                | 0.004    | <0.004       | 0.5               | NOT<br>APPLICABLE            |
| Barium                                 | 0.324    | 0.067        | 10                |                              |
| Cadmium                                | <0.005   | <0.005       | 0.05              |                              |
| Chromium                               | 0.032    | 0.014        | 0.5               |                              |
| Lead                                   | 0.097    | 0.105        | 0.15              |                              |
| Mercury                                | <0.0004  | <0.0005      | 0.02              |                              |
| Selenium                               | <0.020   | <0.020       | 0.5               |                              |
| Silver                                 | <0.010   | <0.010       | 0.36              |                              |

**TABLE 2 - Results of Groundwater Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

| Sample I.D.:                          | MW-6        | MW-13                       | MW-10        | MW-40        | PSGP-43 GW   | CTDEEP GP to "B"<br>Surface Water Effluent<br>Limits | CTDEEP GP to Sanitary<br>Sewer Effluent Limits |
|---------------------------------------|-------------|-----------------------------|--------------|--------------|--------------|--|--|
| Sample Date:                          | 2/25/2013   | 2/21/2013                   | 2/22/2013    | 2/25/2013    | 7/15/2013    |  |  |
| Sample Location:                      | PSGP-6      | Existing<br>Monitoring Well | PSGP-10      | PSGP-40      | PSGP-43      |  |  |
| Depth to Water (feet):                | 14          | 19.05                       | 14           | 5            | 14           |  |  |
| <b>ETPH - CT ETPH Method (mg/L)</b>   | 0.4         | ND                          | 0.82         | 0.89         | 0.6          | 5.0  | 100.0  |
| <b>PCBs - Method 8082 (ug/L)</b>      |             |                             |              |              |              |  |  |
| ALL PARAMETERS                        | NA          | ND                          | ND           | ND           | ND           | 0.5  | 1.0  |
| <b>VOCs - Method 8260 (ug/L)</b>      |             |                             |              |              |              |  |  |
| 1,2,4-Trimethylbenzene                | ND          | ND                          | 4.9          | ND           | 22           | None Established                                     | None Established                               |
| 1,3,5-Trimethylbenzene                | ND          | ND                          | 1.5          | ND           | 8.4          | None Established                                     | None Established                               |
| 1,2-Dichlorobenzene                   | ND          | ND                          | 1.1          | ND           | ND           | None Established                                     | None Established                               |
| 1,4-Dichlorobenzene                   | ND          | ND                          | 2.8          | ND           | ND           | None Established                                     | None Established                               |
| Chlorobenzene                         | ND          | ND                          | 4.6          | ND           | ND           | None Established                                     | None Established                               |
| Methyl t-butyl ether (MTBE)           | ND          | 4.8                         | ND           | ND           | ND           | 70   | None Established                               |
| Naphthalene                           | ND          | ND                          | 5.8          | ND           | 5.2          | None Established                                     | None Established                               |
| n-Butylbenzene                        | ND          | ND                          | ND           | ND           | 3.6          | None Established                                     | None Established                               |
| n-Propylbenzene                       | ND          | ND                          | ND           | ND           | 4.7          | None Established                                     | None Established                               |
| p-Isopropyltoluene                    | ND          | ND                          | 2.1          | ND           | ND           | None Established                                     | None Established                               |
| sec-Butylbenzene                      | ND          | ND                          | ND           | ND           | 1.8          | None Established                                     | None Established                               |
| Toluene                               | 1.4         | ND                          | ND           | ND           | 3.8          | None Established                                     | None Established                               |
| Total Xylenes                         | 1.2         | ND                          | 4            | ND           | 3.7          | None Established                                     | None Established                               |
| ALL OTHER PARAMETERS                  | ND          | ND                          | ND           | ND           | ND           | None Established                                     | None Established                               |
| Total Chlorinated VOCs                | ND          | ND                          | 8.5          | ND           | ND           | None Established                                     | 1,000  |
| Total VOCs                            | 2.6         | 4.8                         | 26.8         | ND           | <b>53.2</b>  | <b>50</b>  | 5,000  |
| <b>PAHs - Method 8270 (ug/L)</b>      |             |                             |              |              |              |  |  |
| 2-Methylnaphthalene                   | ND          | 0.18                        | 8.2          | 0.33         | 8.4          | None Established                                     | None Established                               |
| Acenaphthene                          | ND          | ND                          | 3.7          | 0.23         | 5.5          | None Established                                     | None Established                               |
| Acenaphthylene                        | ND          | ND                          | 0.22         | 0.54         | 1            | None Established                                     | None Established                               |
| Anthracene                            | ND          | ND                          | 2.8          | 0.35         | 9.1          | None Established                                     | None Established                               |
| Benz(a)anthracene                     | <b>0.69</b> | 0.02                        | <b>1.8</b>   | <b>0.92</b>  | <b>18</b>    | <b>0.49</b>  | None Established                               |
| Benzo(a)pyrene                        | <b>0.69</b> | 0.02                        | <b>0.82</b>  | <b>1.3</b>   | <b>14</b>    | <b>0.49</b>  | None Established                               |
| Benzo(b)fluoranthene                  | 0.91        | ND                          | 1.7          | 1.5          | 20           | None Established                                     | None Established                               |
| Benzo(g,h,i)perylene                  | 0.47        | ND                          | 0.58         | 1.5          | 8            | None Established                                     | None Established                               |
| Benzo(k)fluoranthene                  | 0.34        | ND                          | <b>0.93</b>  | <b>0.53</b>  | <b>7</b>     | <b>0.49</b>  | None Established                               |
| Chrysene                              | 0.59        | ND                          | 1.8          | 1            | 17           | None Established                                     | None Established                               |
| Dibenz(a,h)anthracene                 | <b>0.14</b> | ND                          | <b>0.23</b>  | <b>0.32</b>  | <b>2.4</b>   | <b>0.01</b>  | None Established                               |
| Fluoranthene                          | 1.6         | ND                          | 9.2          | 2.7          | 41           | None Established                                     | None Established                               |
| Fluorene                              | ND          | ND                          | 4.1          | 0.23         | 7.7          | None Established                                     | None Established                               |
| Indeno(1,2,3-cd)pyrene                | 0.44        | ND                          | <b>0.56</b>  | <b>1.2</b>   | 6.9          | <b>0.49</b>  | None Established                               |
| Naphthalene                           | 0.23        | 0.18                        | 3.9          | 0.54         | 5.5          | None Established                                     | None Established                               |
| Phenanthrene                          | 0.33        | ND                          | 8            | 0.68         | 45           | None Established                                     | None Established                               |
| Pyrene                                | 1.5         | ND                          | 4.2          | 2.8          | 32           | None Established                                     | None Established                               |
| Total PAHs                            | <b>7.93</b> | 0.4                         | <b>52.74</b> | <b>16.67</b> | <b>248.5</b> | <b>5</b>   | 500  |
| <b>Total RCRA 8 Metals (mg/L)</b>     |             |                             |              |              |              |  |  |
| Arsenic                               | NA          | <0.004                      | 0.023        | <0.004       | NOT TESTED   | <b>0.004</b>   | 0.1  |
| Barium                                | NA          | 0.855                       | 1.95         | 0.341        | NOT TESTED   | None Established                                     | 5  |
| Cadmium                               | NA          | 0.002                       | 0.007        | 0.005        | NOT TESTED   | 0.0959   | 0.1  |
| Chromium                              | NA          | 0.001                       | 0.236        | 0.04         | NOT TESTED   | 1.0  | 1.0  |
| Lead                                  | NA          | 0.003                       | <b>0.203</b> | <b>0.22</b>  | <0.002       | <b>0.0936</b>  | <b>0.1</b>                                     |
| Mercury                               | NA          | <0.0002                     | 0.0009       | 0.001        | NOT TESTED   | 0.0097   | 0.005  |
| Selenium                              | NA          | 0.014                       | <0.010       | <0.016       | NOT TESTED   | 0.39   | 1.0  |
| Silver                                | NA          | <0.001                      | <0.005       | <0.002       | NOT TESTED   | 0.048  | 0.1  |
| <b>Dissolved RCRA 8 Metals (mg/L)</b> |             |                             |              |              |              |  |  |
| Arsenic                               | NA          | <b>0.006</b>                | <0.004       | <0.004       | NOT TESTED   | <b>0.004</b>   | 0.1  |
| Barium                                | NA          | 0.692                       | 0.106        | 0.096        | NOT TESTED   | None Established                                     | 5  |
| Cadmium                               | NA          | <0.001                      | <0.001       | 0.007        | NOT TESTED   | 0.0959   | 0.1  |
| Chromium                              | NA          | <0.001                      | <0.001       | <0.001       | NOT TESTED   | 1.0  | 1.0  |
| Lead                                  | NA          | <0.002                      | <0.002       | <0.002       | <0.002       | 0.0936   | 0.1  |
| Mercury                               | NA          | <0.0002                     | <0.0002      | <0.0002      | NOT TESTED   | 0.0097   | 0.005  |
| Selenium                              | NA          | <0.011                      | <0.011       | <0.011       | NOT TESTED   | 0.39   | 1.0  |
| Silver                                | NA          | <0.001                      | <0.001       | <0.001       | NOT TESTED   | 0.048  | 0.1  |

ND – Not Detected (see laboratory reports for compound specific detection limits)

NA - Not Analyzed

**TABLE 3-1 - Results of QA/QC Sample Analyses  
Proposed Sewage Pump Station  
Middletown, CT**

| Sample I.D.<br>Sample Date: | TB H<br>2/20/2013 | TB L<br>2/20/2013 | TB (LL)<br>3/5/2013 | TB (HL)<br>3/5/2013 | TB-1 LOW<br>6/25/2013 | TB-1 HIGH<br>6/25/2013 | TB-2 LOW<br>7/11/2013 | TB-2 HIGH<br>7/11/2013 | TB-3 LOW<br>7/12/2013 | TB-3 HIGH<br>7/12/2013 | CTDEEP GP to<br>"B" Surface<br>Water Effluent<br>Limits | CTDEEP GP to<br>Sanitary Sewer<br>Effluent Limits |
|-----------------------------|-------------------|-------------------|---------------------|---------------------|-----------------------|------------------------|-----------------------|------------------------|-----------------------|------------------------|---|---|
| VOCs - Method 8260 (mg/Kg)  |                   |                   |                     |                     |                       |                        |                       |                        |                       |                        |   |   |
| ALL PARAMETERS              | ND                | ND                | ND                  | ND                  | ND                    | ND                     | ND                    | ND                     | ND                    | ND                     | VARIES  | VARIES  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

**TABLE 3-2 - Results of QA/QC Sample Analyses**  
**Proposed Sewage Pump Station**  
**Middletown, CT**

| Sample I.D.:<br>Sample Date:         | FB-1<br>6/24/2013 | CTDEEP PMC GB<br>Groundwater Area | CTDEEP DEC<br>Residential/<br>Commercial &<br>Industrial |
|--------------------------------------|-------------------|-----------------------------------|--|
| <b>ETPH - CT ETPH Method (mg/Kg)</b> | ND                | 2,500                             | 500/2,500  |
| <b>VOCs - Method 8260 (mg/Kg)</b>    |                   |                                   |  |
| ALL PARAMETERS                       | ND                | VARIES                            | VARIES   |
| <b>SVOC's - Method 8270 (mg/Kg)</b>  |                   |                                   |  |
| Benz(a)anthracene                    | 0.00003           | 1                                 | 1/7.8  |
| Naphthalene                          | 0.00029           | 56                                | 1,00/2,500   |
| ALL OTHER PARAMETERS                 | ND                | VARIES                            | VARIES   |
| Total PAH's                          | 0.00032           |                                   |  |
| <b>Total RCRA 8 Metals (mg/Kg)</b>   |                   |                                   |  |
| Lead                                 | <0.002            | N/A                               | 500/1000   |
| <b>SPLP RCRA 8 Metals (mg/L)</b>     |                   |                                   |  |
| Lead                                 | <0.002            | 0.15                              | N/A  |

ND – Not Detected (see laboratory reports for compound specific detection limits) The compounds listed above are those that were detected - please see laboratory reports for full lists of compounds and their specific detection limits.

# **APPENDIX A**

## **Boring Logs**

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geopros*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-1        |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-20-13         |

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval  |
|--------------|--------|--|--------------|-----------|------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                  |
|              |        | ASPHALT - 3"   | 0.4          |           |                  |
| 1.0          |        | Red-Brown fine to coarse SAND, little Cobble & fine to coarse Gravel, trace Silt |              | 0         | Macro Core 0'-5' |
| 2.0          |        |  |              |           |                  |
| 3.0          |        |  |              |           |                  |
| 4.0          |        |  |              |           |                  |
| 5.0          |        |  | 5.0          |           |                  |
| 6.0          |        | Refusal at 5' on Cobble<br><br>Attempted 2 Offsets                               |              |           |                  |
| 7.0          |        |  |              |           |                  |
| 8.0          |        |  |              |           |                  |
| 9.0          |        |  |              |           |                  |
| 10.0         |        |  |              |           |                  |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

**Driller:** W. Lineberry

**Depth to Water:** Dry

**Boring Dia.:** 2"

**Rig:** Geoprobe 540U

**Boring Depth:** 5'

**Page:** 1 of 1

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-2        |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-22-13         |

| Depth (feet) | Symbol   | Description   | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|--|---|--------------|-----------|-------------------|
| 0.0          |  | Ground Surface  | 0.0          |           |                   |
| 0.4          |  | Dark-Brown fine to medium SAND, little fine to coarse Gravel, trace Silt  | 0.4          |           |                   |
| 1.0          | [Symbol: Fine to medium sand with gravel and silt] |   |              |           |                   |
| 2.0          |  |   |              | 0         | Macro Core 0'-5'  |
| 3.0          |  |   |              |           |                   |
| 4.0          |  |   |              |           |                   |
| 5.0          |  | Red-Brown fine to medium SAND, trace Silt, fine to coarse Gravel & Cobble |              |           |                   |
| 6.0          |  |   |              |           |                   |
| 7.0          |  |   |              |           |                   |
| 8.0          |  |   |              | 0         | Macro Core 5'-10' |
| 9.0          |  |   |              |           |                   |
| 10.0         |  |   | 10.0         |           |                   |
| 11.0         |  | End of Boring at 10'  |              |           |                   |
| 12.0         |  |   |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 10'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geopros*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-3        |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-21-13         |

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|--------|--|--------------|-----------|-------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                   |
| 0.4          |        | Gray medium to coarse GRAVEL, mixed with fine to medium Sand, trace Silt | 0.4          |           |                   |
| 1.0          |        |  |              |           |                   |
| 2.0          |        |  |              |           |                   |
| 3.0          |        | Red-Brown fine to medium SAND, little Silt                               |              | 0         | Macro Core 0'-5'  |
| 4.0          |        |  | 4.5          |           |                   |
| 5.0          |        |  |              |           |                   |
| 6.0          |        | Red-Brown fine to coarse SAND, trace Silt                                |              |           |                   |
| 7.0          |        |  |              |           |                   |
| 8.0          |        |  | 8.0          | 0         | Macro Core 5'-10' |
| 9.0          |        | Red-Brown SILT, little fine to coarse Gravel, trace fine Sand            |              |           |                   |
| 10.0         |        |  | 10.0         |           |                   |
| 11.0         |        | End of Boring at 10'   |              |           |                   |
| 12.0         |        |  |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

**Driller:** W. Lineberry

**Depth to Water:** Dry

**Boring Dia.:** 2"

**Rig:** Geoprobe 540U

**Boring Depth:** 10'

**Page:** 1 of 1

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-4        |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-21-13         |

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|--------|--|--------------|-----------|-------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                   |
| 1.0          |        | Gray to Black medium to coarse GRAVEL, little Cinders, trace fine to coarse Sand | 1.0          |           |                   |
| 2.0          |        | Red-Brown SILT, trace fine Sand & Gravel   |              | 0         | Macro Core 0'-5'  |
| 3.0          |        |  |              |           |                   |
| 4.0          |        |  |              |           |                   |
| 5.0          |        |  |              |           |                   |
| 6.0          |        |  |              |           |                   |
| 7.0          |        |  |              |           |                   |
| 8.0          |        |  | 8.0          | 0         | Macro Core 5'-10' |
| 9.0          |        | Red-Brown SILT, little fine to coarse Gravel, trace fine Sand                    |              |           |                   |
| 10.0         |        |  | 10.0         |           |                   |
| 11.0         |        | End of Boring at 10'   |              |           |                   |
| 12.0         |        |  |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 10'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geopros*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-5        |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-21-13         |

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|--------|--|--------------|-----------|-------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                   |
| 1.0          |        | Black to Gray ASH & CINDERS mixed with Concrete, Brick and fine to coarse Gravel | 2.5          | 0         | Macro Core 0'-5'  |
| 2.0          |        |  |              |           |                   |
| 3.0          |        |  |              |           |                   |
| 4.0          |        |  |              |           |                   |
| 5.0          |        |  |              |           |                   |
| 6.0          |        | Red-Brown fine to medium SAND, little fine Gravel, trace Silt                    | 10.0         | 0         | Macro Core 5'-10' |
| 7.0          |        |  |              |           |                   |
| 8.0          |        |  |              |           |                   |
| 9.0          |        |  |              |           |                   |
| 10.0         |        |  |              |           |                   |
| 11.0         |        | End of Boring at 10'   |              |           |                   |
| 12.0         |        |  |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

**Driller:** W. Lineberry

**Depth to Water:** Dry

**Boring Dia.:** 2"

**Rig:** Geoprobe 540U

**Boring Depth:** 10'

**Page:** 1 of 1

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-6        |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-25-13         |



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*Truck, Portable & ATV/Backhoe-Mounted Geoprobes*

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|--|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                    |
| 1.0          |        | Brown fine to medium SAND & GRAVEL, trace Silt   | 1.0          |           | Macro Core 0'-5'   |
| 2.0          |        | Orange-Brown to Light-Brown fine to medium SAND, little Silt, trace fine Gravel  |              | 0         |                    |
| 3.0          |        |  |              | 0         |                    |
| 5.0          |        |  |              | 0         | Macro Core 5'-10'  |
| 8.0          |        | Red-Brown fine to medium SAND, little Silt, trace fine Gravel, grading to Red-Brown SILT, little fine to medium Sand, trace fine Gravel (wet at 14') |              | 0         |                    |
| 10.0         |        |  |              | 0         | Macro Core 10'-15' |
| 15.0         |        |  | 15.0         |           |                    |
| 16.0         |        |  |              |           |                    |
| 17.0         |        |  |              |           |                    |
| 18.0         |        | End of Boring at 15' - Groundwater Grab Sample Collected   |              |           |                    |
| 19.0         |        |  |              |           |                    |
| 20.0         |        |  |              |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> 14' | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 15'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-7        |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-20-13         |

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval  |   |                   |
|--------------|--------|---|--------------|-----------|------------------|---|-------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                  |   |                   |
| 1.0          |        | Olive-Brown fine to medium SAND & GRAVEL  | 1.0          | 0         | Macro Core 0'-5' |   |                   |
| 1.5          |        | Orange-Brown fine to coarse SAND, little Silt, trace fine to coarse Gravel          | 1.5          |           |                  |   |                   |
| 2.0          |        | Brown SILT, little fine to coarse Gravel, trace fine Sand                           | 3.0          |           |                  |   |                   |
| 3.0          |        |   |              |           |                  |   |                   |
| 4.0          |        |   |              |           |                  |   |                   |
| 5.0          |        | Red-Brown SILT, little fine to coarse Gravel, trace Cobble & fine Sand (TILL)       | 7.0          |           |                  | 0 | Macro Core 5'-10' |
| 6.0          |        |   |              |           |                  |   |                   |
| 7.0          |        |   |              |           |                  |   |                   |
| 8.0          |        |   |              |           |                  |   |                   |
| 9.0          |        | Black ASH & CINDERS, little fine to coarse Gravel, trace fine to coarse Sand (FILL) | 10.0         |           |                  |   |                   |
| 10.0         |        |   |              |           |                  |   |                   |
| 11.0         |        | End of Boring at 10'  |              |           |                  |   |                   |
| 12.0         |        |   |              |           |                  |   |                   |

**Soil Description:** and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 10'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <u>Project:</u> Pump Station & Gravity Sewers | <u>Boring:</u> PSGP-8        |
| <u>Location:</u> Middletown, CT               | <u>Inspector:</u> J. Buehler |
| <u>Client:</u> CDR Maguire                    | <u>Date:</u> 2-25-13         |



**Logical Environmental Solutions**  
 354 South River Road  
 Tolland, CT 06084  
*Truck, Portable & ATV/Backhoe-Mounted Geoproses*

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval  |
|--------------|--------|---|--------------|-----------|------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                  |
| 0.4          |        | Gray fine to coarse Gravel, mixed with Brown fine to medium Sand, trace Silt                    | 0.4          |           |                  |
| 1.0          |        | Orange-Brown to Light-Brown fine to medium SAND, little Silt, trace fine Gravel                 | 1.0          |           |                  |
| 2.0          |        | Red-Brown fine to medium SAND, little fine to coarse Cobble & Silt, trace fine to coarse Gravel |              | 0         | Macro Core 0'-5' |
| 3.0          |        |   |              |           |                  |
| 4.0          |        |   |              |           |                  |
| 5.0          |        |   |              |           |                  |
| 6.0          |        |   |              | 0         | Macro Core 5'-7' |
| 7.0          |        |   | 7.0          |           |                  |
| 8.0          |        |   |              |           |                  |
| 9.0          |        |   |              |           |                  |
| 10.0         |        | Refusal at 7' on Concrete   |              |           |                  |
| 11.0         |        | Attempted 2 Offsets   |              |           |                  |
| 12.0         |        |   |              |           |                  |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <u>Driller:</u> W. Lineberry | <u>Depth to Water:</u> Dry | <u>Boring Dia.:</u> 2" |
| <u>Rig:</u> Geoprobe 540U    | <u>Boring Depth:</u> 7'    | <u>Page:</u> 1 of 1    |

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-9        |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-22-13         |

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval  |
|--------------|--------|--|--------------|-----------|------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                  |
|              |        | Dark-Brown fine SAND, little Silt, trace fine Gravel                             | 0.4          |           |                  |
| 1.0          |        | Red-Brown fine to medium SAND, little Silt, trace fine to coarse Gravel & Cobble | 3.0          | 0         | Macro Core 0'-3' |
| 2.0          |        |  |              |           |                  |
| 3.0          |        |  |              |           |                  |
| 4.0          |        | Refusal at 3' on Concrete<br><br>Attempted 2 Offsets                             |              |           |                  |
| 5.0          |        |  |              |           |                  |
| 6.0          |        |  |              |           |                  |
| 7.0          |        |  |              |           |                  |
| 8.0          |        |  |              |           |                  |
| 9.0          |        |  |              |           |                  |
| 10.0         |        |  |              |           |                  |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 3'    | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobes*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-10       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-22-13         |

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|---|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                    |
| 0.5          |        | Dark-Brown SILT, trace fine Sand & fine to coarse Gravel                | 0.5          |           |                    |
| 1.0          |        | Red-Brown fine to coarse SAND, little Silt, trace fine to coarse Gravel |              | 0         | Macro Core 0'-5'   |
| 2.0          |        |   |              |           |                    |
| 3.0          |        |   |              |           |                    |
| 4.0          |        |   |              |           |                    |
| 5.0          |        |   |              |           |                    |
| 6.0          |        |   | 6.0          |           |                    |
| 7.0          |        | Red-Brown SILT, trace Clay, fine Sand & Gravel (moist)                  |              | 0         | Macro Core 5'-10'  |
| 8.0          |        |   |              |           |                    |
| 9.0          |        |   |              |           |                    |
| 10.0         |        |   |              |           |                    |
| 11.0         |        |   |              |           |                    |
| 12.0         |        |   |              | 0         | Macro Core 10'-15' |
| 13.0         |        |   |              |           |                    |
| 14.0         |        |   |              |           |                    |
| 15.0         |        |   |              |           |                    |
| 16.0         |        |   |              |           |                    |
| 17.0         |        | Red-Brown SILT, little Cobble, trace Clay, fine Sand & Gravel (moist)   | 17.0         |           | Macro Core 15'-20' |
| 18.0         |        |   | 18.5         | 28        |                    |
| 19.0         |        | Black ASH & CINDERS little Silt (Fuel Oil Odor, Wet)                    |              |           |                    |
| 20.0         |        | End of Boring at 20' - GW Grab Sample                                   | 20.0         |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> 14' | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 20'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-11       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-25-13         |



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*Truck, Portable & ATV/Backhoe-Mounted Geoprobes*

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|--|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                    |
| 0.5          |        | Gray medium to coarse GRAVEL, mixed with fine to medium Sand, trace Silt               | 0.5          |           |                    |
| 1.0          |        | Red-Brown fine to medium SAND, trace Silt & fine to coarse Gravel                      | 4.0          | 0         | Macro Core 0'-5'   |
| 2.0          |        |  |              |           |                    |
| 3.0          |        |  |              |           |                    |
| 4.0          |        |  |              |           |                    |
| 5.0          |        | Red-Brown fine to medium, little Silt, trace fine to coarse Gravel (very moist at 14') | 15.0         | 0         | Macro Core 5'-10'  |
| 6.0          |        |  |              |           |                    |
| 7.0          |        |  |              |           |                    |
| 8.0          |        |  |              |           |                    |
| 9.0          |        |  |              |           |                    |
| 10.0         |        |  |              |           |                    |
| 11.0         |        |  | 15.0         | 0.3       | Macro Core 10'-15' |
| 12.0         |        |  |              |           |                    |
| 13.0         |        |  |              |           |                    |
| 14.0         |        |  |              |           |                    |
| 15.0         |        | Refusal at 15' on Wood<br>Creosote Odor  |              |           |                    |
| 16.0         |        |  |              |           |                    |
| 17.0         |        |  |              |           |                    |
| 18.0         |        |  |              |           |                    |
| 19.0         |        |  |              |           |                    |
| 20.0         |        |  |              |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

**Driller:** W. Lineberry

**Depth to Water:** Dry

**Boring Dia.:** 2"

**Rig:** Geoprobe 540U

**Boring Depth:** 15'

**Page:** 1 of 1

# SOIL BORING LOG



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|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-12       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-25-13         |

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval         |
|--------------|--------|---|--------------|-----------|-------------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                         |
| 1.0          |        | Gray fine to medium GRAVEL, little Silt, trace fine to coarse Sand  | 1.0          |           | 0    Macro Core 0'-5'   |
| 2.0          |        | Orange-Brown to Light-Brown fine to medium SAND, trace Silt & fine Gravel   |              |           |                         |
| 3.0          |        | Brown fine to coarse SAND, trace Silt   | 4.0          |           |                         |
| 5.0          |        |   |              |           | 0    Macro Core 5'-10'  |
| 10.0         |        | Red-Brown SILT, little fine Sand, trace fine to coarse Gravel & Cobble (very moist at 14', Slight Petroleum Odor) |              |           |                         |
| 15.0         |        |   | 15.0         |           | 0    Macro Core 10'-15' |
| 15.0         |        | Refusal at 15' on Basalt<br>Slight Petroleum Odor   |              |           |                         |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 15'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG



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|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-13       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-22-13         |

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|--------|--|--------------|-----------|-------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                   |
| 0.5          |        | Dark-Brown SILT, trace fine Sand & fine to coarse Gravel                         | 0.5          |           |                   |
| 1.0          |        | Red-Brown fine to medium SAND, little Silt, trace fine to coarse Gravel & Cobble | 7.0          | 0         | Macro Core 0'-5'  |
| 2.0          |        |  |              |           |                   |
| 3.0          |        |  |              |           |                   |
| 4.0          |        |  |              |           |                   |
| 5.0          |        |  |              |           |                   |
| 6.0          |        |  |              |           |                   |
| 7.0          |        | Red-Brown SILT, trace fine to coarse Gravel, Cobble, & Clay (very moist)         | 10.0         | 0         | Macro Core 5'-10' |
| 8.0          |        |  |              |           |                   |
| 9.0          |        |  |              |           |                   |
| 10.0         |        |  |              |           |                   |
| 11.0         |        | Refusal at 10' on Concrete   |              |           |                   |
| 12.0         |        | Attempted 2 Offsets  |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 10'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG



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*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-14       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-25-13         |

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval  |
|--------------|--------|--|--------------|-----------|------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                  |
| 0.4          |        | Gray medium to coarse Gravel, mixed with Brown fine Sand & Silt                  | 0.4          |           |                  |
| 1.0          |        |  |              |           |                  |
| 2.0          |        |  |              |           |                  |
| 3.0          |        |  |              | 0         | Macro Core 0'-5' |
| 4.0          |        |  |              |           |                  |
| 5.0          |        | Red-Brown fine to medium SAND, little Silt, trace fine to coarse Gravel & Cobble |              |           |                  |
| 6.0          |        |  |              |           |                  |
| 7.0          |        |  |              | 0         | Macro Core 5'-9' |
| 8.0          |        |  |              |           |                  |
| 9.0          |        |  | 9.0          |           |                  |
| 10.0         |        |  |              |           |                  |
| 11.0         |        | Refusal at 9' on Concrete<br>Attempted 2 Offsets                                 |              |           |                  |
| 12.0         |        |  |              |           |                  |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 9'    | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG



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*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-15       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-22-13         |

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval  |
|--------------|--------|--|--------------|-----------|------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                  |
|              |        | Dark-Brown fine SAND, little Silt, trace fine Gravel                             | 0.4          |           |                  |
| 1.0          |        | Red-Brown fine to medium SAND, little Silt & Cobble, trace fine to coarse Gravel | 4.0          | 0         | Macro Core 0'-4' |
| 2.0          |        |  |              |           |                  |
| 3.0          |        |  |              |           |                  |
| 4.0          |        |  |              |           |                  |
| 5.0          |        | Refusal at 4' on Brick<br><br>Attempted 2 Offsets - Refusal on Concrete          |              |           |                  |
| 6.0          |        |  |              |           |                  |
| 7.0          |        |  |              |           |                  |
| 8.0          |        |  |              |           |                  |
| 9.0          |        |  |              |           |                  |
| 10.0         |        |  |              |           |                  |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 4'    | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-16       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-22-13         |



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| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|---|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                    |
| 0.5          |        | Dark-Gray medium to coarse GRAVEL, little fine to medium Sand & Silt    | 0.5          |           | Macro Core 0'-5'   |
| 1.0          |        | Red-Brown fine to medium SAND, little Silt, trace fine to coarse Gravel |              |           |                    |
| 2.0          |        | CONCRETE  |              |           |                    |
| 3.0          |        |   |              | 0         |                    |
| 4.0          |        |   |              |           |                    |
| 5.0          |        |   |              |           |                    |
| 6.0          |        |   |              |           |                    |
| 7.0          |        |   |              | 0         | Macro Core 5'-10'  |
| 8.0          |        |   |              |           |                    |
| 9.0          |        |   |              |           |                    |
| 10.0         |        |   |              |           |                    |
| 11.0         |        | Red-Brown SILT, trace fine to medium Sand (moist at 15')                |              |           |                    |
| 12.0         |        |   |              | 0         | Macro Core 10'-15' |
| 13.0         |        |   |              |           |                    |
| 14.0         |        |   |              |           |                    |
| 15.0         |        |   |              |           |                    |
| 16.0         |        |   |              |           |                    |
| 17.0         |        |   |              |           |                    |
| 18.0         |        |   |              | 0         | Macro Core 15'-20' |
| 19.0         |        |   |              |           |                    |
| 20.0         |        | Refusal at 20' - Set Well - Groundwater Not Encountered                 | 20.0         |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

**Driller:** W. Lineberry

**Depth to Water:** Dry

**Boring Dia.:** 2"

**Rig:** Geoprobe 540U

**Boring Depth:** 20'

**Page:** 1 of 1

# SOIL BORING LOG



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*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-17       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-22-13         |

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|--------|---|--------------|-----------|-------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                   |
| 0.4          |        | Dark-Gray medium to coarse Gravel, little fine to medium Sand & Silt    | 0.4          |           |                   |
| 1.0          |        | Red-Brown fine to medium SAND, trace Silt & fine to coarse Gravel       |              | 0         | Macro Core 0'-5'  |
| 2.0          |        |   |              |           |                   |
| 3.0          |        |   |              |           |                   |
| 4.0          |        |   |              |           |                   |
| 4.5          |        | Red-Brown SILT, trace fine Sand & Gravel                                | 4.5          |           |                   |
| 5.0          |        | Red-Brown fine to medium SAND, little Silt, trace fine to coarse Gravel | 5.0          | 0         | Macro Core 5'-10' |
| 6.0          |        |   |              |           |                   |
| 7.0          |        |   |              |           |                   |
| 8.0          |        |   |              |           |                   |
| 9.0          |        |   |              |           |                   |
| 10.0         |        |   |              |           |                   |
| 10.0         |        | End of Boring at 10'  |              |           |                   |
| 11.0         |        |   |              |           |                   |
| 12.0         |        |   |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 10'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-36       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-22-13         |



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*Truck, Portable & ATV/Backhoe-Mounted Geopros*

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|--------|---|--------------|-----------|-------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                   |
| 0.4          |        | Brown to Gray-Brown fine to medium SAND, little Silt, trace fine to coarse Gravel   | 0.4          |           |                   |
| 1.0          |        | Brown fine to medium SAND, mixed with fine to coarse Gravel, Brick, Concrete (FILL) | 4.5          | 0         | Macro Core 0'-5'  |
| 2.0          |        |   |              |           |                   |
| 3.0          |        |   |              |           |                   |
| 4.0          |        |   |              |           |                   |
| 5.0          |        | Dark-Gray to Black Organic SILT, trace fine Sand                                    | 5.5          | 0         | Macro Core 5'-10' |
| 6.0          |        |   |              |           |                   |
| 7.0          |        | Red-Brown fine to medium SAND, little Silt, trace fine to coarse Gravel             | 7.5          | 0         | Macro Core 5'-10' |
| 8.0          |        |   |              |           |                   |
| 9.0          |        |   |              |           |                   |
| 10.0         |        | Gray ASH & CINDERS, little fine to coarse Gravel (FILL)                             | 10.0         |           |                   |
| 11.0         |        |   |              |           |                   |
| 12.0         |        |   |              |           |                   |
|              |        | End of Boring at 10'  |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 10'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-37       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-20-13         |

  
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*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|--------|---|--------------|-----------|-------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                   |
| 0.4          |        | Dark-Brown SILT, trace fine Sand & Gravel   | 0.4          |           |                   |
| 1.5          |        | Red-Brown fine to medium SAND, little Silt, trace fine Gravel                             | 1.5          |           |                   |
| 4.5          |        | Brown fine SAND, little Silt mixed with Black Ash, Cinders & fine to coarse Gravel (FILL) | 4.5          | 0         | Macro Core 0'-5'  |
| 10.0         |        | Red-Brown SILT, trace fine Sand & Gravel  | 10.0         | 0         | Macro Core 5'-10' |
| 11.0         |        | End of Boring at 10'  |              |           |                   |
| 12.0         |        |   |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 10'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <u>Project:</u> Pump Station & Gravity Sewers | <u>Boring:</u> PSGP-38       |
| <u>Location:</u> Middletown, CT               | <u>Inspector:</u> J. Buehler |
| <u>Client:</u> CDR Maguire                    | <u>Date:</u> 2-20-13         |



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| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|--------|---|--------------|-----------|-------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                   |
|              |        | ASPHALT - 7"  | 0.6          |           |                   |
| 1.0          |        | Olive-Brown fine to medium SAND, little fine to coarse Gravel, trace Silt | 2.0          |           |                   |
| 2.0          |        | Gray-Brown SILT, trace Clay   | 3.7          |           | Macro Core 0'-5'  |
| 3.0          |        |   | 5.5          |           |                   |
| 4.0          |        | Red-Brown SILT, little fine to medium Sand, trace fine Gravel & Organics  | 10.0         | 1.1       | Macro Core 5'-10' |
| 5.0          |        |   |              |           |                   |
| 6.0          |        |   |              |           |                   |
| 7.0          |        |   |              |           |                   |
| 8.0          |        |   |              |           |                   |
| 9.0          |        |   |              |           |                   |
| 10.0         |        | End of Boring at 10'  |              |           |                   |
| 11.0         |        |   |              |           |                   |
| 12.0         |        |   |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <u>Driller:</u> W. Lineberry | <u>Depth to Water:</u> Dry | <u>Boring Dia.:</u> 2" |
| <u>Rig:</u> Geoprobe 540U    | <u>Boring Depth:</u> 10'   | <u>Page:</u> 1 of 1    |

# SOIL BORING LOG



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*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-39       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-20-13         |

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|--------|---|--------------|-----------|-------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                   |
|              |        | ASPHALT - 2"  |              |           |                   |
| 1.0          |        | Red-Brown fine to medium SAND, little Silt, trace fine Gravel   | 1.5          |           |                   |
| 2.0          |        | Gray to Black ASH & CINDERS mixed with Brick, Concrete, fine to medium Sand, fine to coarse Gravel, and Ceramics (FILL) |              | 0         | Macro Core 0'-5'  |
| 3.0          |        |   |              |           |                   |
| 4.0          |        |   |              |           |                   |
| 5.0          |        |   |              |           |                   |
| 6.0          |        |   |              | 0         | Macro Core 5'-10' |
| 7.0          |        |   |              |           |                   |
| 8.0          |        |   |              |           |                   |
| 9.0          |        |   |              |           |                   |
| 10.0         |        |   | 10.0         |           |                   |
| 11.0         |        | End of Boring at 10'  |              |           |                   |
| 12.0         |        |   |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 10'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG



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354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-40       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-25-13         |

| Depth (feet) | Symbol   | Description   | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|----------|---|--------------|-----------|-------------------|
| 0.0          | [Symbol] | Ground Surface  | 0.0          |           |                   |
| 0.0 - 1.0    | [Symbol] | ASPHALT - 3"<br>Gray fine to coarse GRAVEL mixed with Brown fine Sand | 1.0          |           |                   |
| 1.0 - 5.0    | [Symbol] | Red-Brown SILT, little fine Sand, trace fine to coarse Gravel         | 5.0          | 0         | Macro Core 0'-5'  |
| 5.0 - 10.0   | [Symbol] | Dark-Brown fine to medium SAND, little Silt (wet, Petroleum Odor)     | 10.0         | 4.7       | Macro Core 5'-10' |
| 10.0         |          | End of Boring at 10'  |              |           |                   |
| 11.0         |          | Groundwater Grab Sample Collected                                     |              |           |                   |
| 12.0         |          |   |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

**Driller:** W. Lineberry

**Depth to Water:** 5'

**Boring Dia.:** 2"

**Rig:** Geoprobe 540U

**Boring Depth:** 10'

**Page:** 1 of 1

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-41       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> J. Buehler |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 2-25-13         |

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|--------|--|--------------|-----------|-------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                   |
| 1.0          |        | Brown SILT, little Concrete & Brick, trace fine Sand & Gravel (FILL)     | 5.0          | 0         | Macro Core 0'-5'  |
| 2.0          |        |  |              |           |                   |
| 3.0          |        |  |              |           |                   |
| 4.0          |        |  |              |           |                   |
| 5.0          |        | Dark-Brown fine to coarse SAND, trace fine to coarse Gravel & Silt (wet) | 10.0         | 0         | Macro Core 5'-10' |
| 6.0          |        |  |              |           |                   |
| 7.0          |        |  |              |           |                   |
| 8.0          |        |  |              |           |                   |
| 9.0          |        |  |              |           |                   |
| 10.0         |        | End of Boring at 10'   |              |           |                   |
| 11.0         |        |  |              |           |                   |
| 12.0         |        |  |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

**Driller:** W. Lineberry

**Depth to Water:** 5'

**Boring Dia.:** 2"

**Rig:** Geoprobe 540U

**Boring Depth:** 10'

**Page:** 1 of 1

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-42       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 7-12-13         |



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*Truck, Portable & ATV/Backhoe-Mounted Geopros*

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|---|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                    |
| 1.0          |        | Dark-Brown fine to medium SAND, little medium to coarse Gravel & Cobble                           | 1.0          |           |                    |
| 2.0          |        | Red-Brown fine to medium SAND, little Silt, trace Concrete, Coal & fine to coarse Gravel & Cobble |              | 1.7       | Macro Core 0'-5'   |
| 3.0          |        |   |              |           |                    |
| 4.0          |        |   |              |           |                    |
| 5.0          |        |   |              |           |                    |
| 6.0          |        | Red-Brown SILT, trace fine to medium Sand (moist)   |              | 0.8       | Macro Core 5'-10'  |
| 7.0          |        |   |              |           |                    |
| 8.0          |        |   |              |           |                    |
| 9.0          |        |   |              |           |                    |
| 10.0         |        | Red-Brown to Brown SILT, with seams of fine to medium Sand, trace fine Gravel                     |              | 0.7       | Macro Core 10'-15' |
| 11.0         |        |   |              |           |                    |
| 12.0         |        |   |              |           |                    |
| 13.0         |        |   |              |           |                    |
| 14.0         |        | End of Boring at 20'  |              | 0.7       | Macro Core 15'-20' |
| 15.0         |        |   |              |           |                    |
| 16.0         |        |   |              |           |                    |
| 17.0         |        |   |              |           |                    |
| 18.0         |        |   |              |           |                    |
| 19.0         |        |   |              |           |                    |
| 20.0         |        |   | 20.0         |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 20'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobes*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-43       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 7-11-13         |

| Depth (feet) | Symbol | Description  | Depth (feet)         | PID (ppm) | Sample Interval    |
|--------------|--------|--|----------------------|-----------|--------------------|
| 0.0          |        | Ground Surface   | 0.0                  |           |                    |
| 1.0          |        | Dark-Gray medium to coarse GRAVEL, little fine to medium Sand & Silt, trace Asphalt  | 1.0                  |           |                    |
| 2.0          |        | Red-Brown to Orange-Brown fine to coarse SAND, trace fine Gravel & Silt  |                      | 1.5       | Macro Core 0'-5'   |
| 3.0          |        |  |                      |           |                    |
| 4.0          |        |  |                      |           |                    |
| 5.0          |        |  |                      |           |                    |
| 6.0          |        |  |                      |           |                    |
| 7.0          |        | Red-Brown to Gray-Brown fine to coarse SAND, little Silt, trace fine Gravel (wet, Petroleum Odor at Groundwater Interface, very loose) |                      | 0.9       | Macro Core 5'-10'  |
| 8.0          |        |  |                      |           |                    |
| 9.0          |        |  |                      |           |                    |
| 10.0         |        |  |                      |           |                    |
| 11.0         |        |  |                      |           |                    |
| 12.0         |        | Red-Brown to Gray-Brown fine to coarse SAND, little Silt, trace fine Gravel (wet, Petroleum Odor at Groundwater Interface, very loose) |                      | 6.9       | Macro Core 10'-15' |
| 13.0         |        |  |                      |           |                    |
| 14.0         |        |  |                      |           |                    |
| 15.0         |        |  |                      |           |                    |
| 16.0         |        |  |                      |           |                    |
| 17.0         |        | Red-Brown to Gray-Brown fine to coarse SAND, little Silt, trace fine Gravel (wet, Petroleum Odor at Groundwater Interface, very loose) |                      | 2.0       | Macro Core 15'-20' |
| 18.0         |        |  |                      |           |                    |
| 19.0         |        |  |                      |           |                    |
| 20.0         |        |  |                      |           |                    |
| 20.0         |        |  | End of Boring at 20' | 20.0      |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> 14' | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 20'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-44       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 7-12-13         |

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|--|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                    |
| 1.0          |        | Dark-Brown to Black fine to medium SAND, little medium to coarse Gravel, trace Silt & Asphalt Fragments (FILL) | 2.0          |           |                    |
| 3.0          |        | Red-Brown SILT, little fine to medium Sand with seams of fine to coarse Sand, trace fine to coarse Gravel      | 8.0          | 1.6       | Macro Core 0'-5'   |
| 5.0          |        |  |              |           |                    |
| 7.0          |        |  |              |           |                    |
| 9.0          |        |  |              |           |                    |
| 11.0         |        | Red-Brown to Brown SILT, trace fine to medium Sand & Cobble (moist)  | 15.0         | 1.1       | Macro Core 5'-10'  |
| 13.0         |        |  |              |           |                    |
| 15.0         |        |  |              |           |                    |
| 17.0         |        |  |              |           |                    |
| 19.0         |        |  | 20.0         | 1.0       | Macro Core 10'-15' |
| 20.0         |        | End of Boring at 20'   |              | 1.1       | Macro Core 15'-20' |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 20'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-45       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 7-11-13         |



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| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|--|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                    |
| 1.0          | □      | Dark-Brown fine to medium SAND, little Silt, trace fine to coarse Gravel   | 1.2          |           | Macro Core 0'-5'   |
| 2.0          | □      | Light-Brown to Dark-Brown fine to medium SAND, little fine to coarse Gravel  |              | 0.7       |                    |
| 3.0          | □      | Red-Brown to Orange-Brown fine to coarse SAND, trace fine Gravel & Silt  |              |           | Macro Core 5'-10'  |
| 4.0          | □      |  |              |           |                    |
| 5.0          | □      |  |              |           | 0.5                |
| 6.0          | □      |  |              |           |                    |
| 7.0          | □      | Red-Brown to Gray-Brown fine to coarse SAND, little Silt, trace fine Gravel (wet, Petroleum Odor at Groundwater Interface, very loose) |              |           | Macro Core 10'-15' |
| 8.0          | □      |  |              |           |                    |
| 9.0          | □      |  |              |           | 0.3                |
| 10.0         | □      |  |              |           |                    |
| 11.0         | □      | End of Boring at 20'   |              |           | Macro Core 15'-20' |
| 12.0         | □      |  |              |           |                    |
| 13.0         | □      |  |              |           | 0.2                |
| 14.0         | □      |  |              |           |                    |
| 15.0         | □      |  | 15.0         |           |                    |
| 16.0         | □      |  |              |           |                    |
| 17.0         | □      |  |              |           |                    |
| 18.0         | □      |  |              |           |                    |
| 19.0         | □      |  |              |           |                    |
| 20.0         | □      |  | 20.0         |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 20'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-46       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 7-11-13         |



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| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|--|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                    |
| 1.0          |        | Dark-Brown fine to medium SAND, little Silt, trace fine to coarse Gravel   | 1.2          |           | Macro Core 0'-5'   |
| 2.0          |        | Light-Brown to Dark-Brown fine to medium SAND, little fine to coarse Gravel  |              | 1.6       |                    |
| 3.0          |        | Red-Brown to Orange-Brown fine to coarse SAND, trace fine Gravel & Silt  |              |           | Macro Core 5'-10'  |
| 4.0          |        |  |              |           |                    |
| 5.0          |        |  |              |           | 1.1                |
| 6.0          |        |  |              |           |                    |
| 7.0          |        | Red-Brown to Gray-Brown fine to coarse SAND, little Silt, trace fine Gravel (wet, Petroleum Odor at Groundwater Interface, very loose) |              |           | Macro Core 10'-15' |
| 8.0          |        |  |              |           |                    |
| 9.0          |        |  |              |           | 1.0                |
| 10.0         |        |  |              |           |                    |
| 11.0         |        | End of Boring at 20'   |              |           | Macro Core 15'-20' |
| 12.0         |        |  |              |           |                    |
| 13.0         |        |  |              |           | 1.1                |
| 14.0         |        |  |              |           |                    |
| 15.0         |        |  | 15.0         |           |                    |
| 16.0         |        |  |              |           |                    |
| 17.0         |        |  |              |           |                    |
| 18.0         |        |  |              |           |                    |
| 19.0         |        |  |              |           |                    |
| 20.0         |        |  | 20.0         |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 20'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <u>Project:</u> Pump Station & Gravity Sewers | <u>Boring:</u> PSGP-47       |
| <u>Location:</u> Middletown, CT               | <u>Inspector:</u> M. Bazzano |
| <u>Client:</u> CDR Maguire                    | <u>Date:</u> 6-25-13         |



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobes*

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|---|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                    |
| 0.5          |        | Red-Brown SILT, trace fine Sand & fine to coarse Gravel   | 0.5          |           |                    |
| 1.0          |        | Red-Brown fine to coarse SAND, little fine to coarse Gravel, trace Cobble, Brick, Asphalt Fragments & Concrete (FILL) | 1.0          |           |                    |
| 2.0          |        |   |              | 0.9       | Macro Core 0'-5'   |
| 3.0          |        |   |              |           |                    |
| 4.0          |        |   |              |           |                    |
| 5.0          |        |   |              |           |                    |
| 6.0          |        | Red-Brown SILT, little fine to coarse Gravel, trace fine Sand & Cobble (moist)  |              |           |                    |
| 7.0          |        |   |              | 0.4       | Macro Core 5'-10'  |
| 8.0          |        |   |              |           |                    |
| 9.0          |        |   |              |           |                    |
| 10.0         |        |   | 10.0         |           |                    |
| 11.0         |        | Red-Brown SILT, little Cobble, trace Clay, fine Sand & Gravel (moist)   |              |           |                    |
| 12.0         |        |   |              | 1.1       | Macro Core 10'-15' |
| 13.0         |        |   |              |           |                    |
| 14.0         |        |   |              |           |                    |
| 15.0         |        |   | 15.0         |           |                    |
| 16.0         |        |   |              |           |                    |
| 17.0         |        | Gray to Red-Brown SILT, trace Clay (wet at 18')   |              |           |                    |
| 18.0         |        |   |              | 1.0       | Macro Core 15'-20' |
| 19.0         |        |   |              |           |                    |
| 20.0         |        | End of Boring at 20'  | 20.0         |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

Driller: W. Lineberry

Depth to Water: 18'

Boring Dia.: 2"

Rig: Geoprobe 540U

Boring Depth: 20'

Page: 1 of 1

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-48       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 6-24-13         |



**Logical Environmental Solutions**  
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| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|--|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                    |
| 0.0 - 1.0    |        | Red-Brown SILT, trace fine Sand  |              |           |                    |
| 1.0 - 2.0    |        | Light-Brown fine to medium SAND, trace Silt & fine Gravel  | 2.0          |           |                    |
| 2.0 - 5.0    |        |  |              | 1.6       | Macro Core 0'-5'   |
| 5.0 - 10.0   |        |  |              | 0.7       | Macro Core 5'-10'  |
| 10.0 - 15.0  |        | Red-Brown SILT, little fine Sand, trace fine to coarse Gravel, Cobble, Coal, Brick & Concrete (FILL) |              | 0.6       | Macro Core 10'-15' |
| 15.0 - 20.0  |        |  | 15.0         |           |                    |
| 15.0 - 20.0  |        | Red-Brown to Gray SILT, trace Clay (moist)   |              | 0.4       | Macro Core 15'-20' |
| 20.0         |        | End of Boring at 20'   | 20.0         |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 20'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-49       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 6-25-13         |



**Logical Environmental Solutions**  
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*Truck, Portable & ATV/Backhoe-Mounted Geoprobes*

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|--|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                    |
| 0.5          |        | Red-Brown SILT, trace fine Sand & fine to coarse Gravel  | 0.5          |           |                    |
| 1.0          |        | Red-Brown fine to medium SAND, little fine to coarse Gravel & Silt, trace Cobble, Brick, Asphalt Fragments & Concrete (FILL) | 1.3          |           | Macro Core 0'-5'   |
| 2.0          |        |  |              |           |                    |
| 3.0          |        |  |              |           |                    |
| 4.0          |        |  |              | 4.5       |                    |
| 5.0          |        | Red-Brown SILT, little fine to coarse Gravel, trace fine Sand & Cobble (moist)   | 1.5          |           | Macro Core 5'-10'  |
| 6.0          |        |  |              |           |                    |
| 7.0          |        |  |              |           |                    |
| 8.0          |        |  |              |           |                    |
| 9.0          |        |  |              |           |                    |
| 10.0         |        |  |              |           |                    |
| 11.0         |        | Gray fine to coarse SAND, little Concrete (wet)  | 0.8          |           | Macro Core 10'-15' |
| 12.0         |        |  |              |           |                    |
| 13.0         |        |  |              |           |                    |
| 14.0         |        |  |              |           |                    |
| 15.0         |        | Gray to Red-Brown SILT, trace Clay (wet)   | 18.0         | 0.5       | Macro Core 15'-20' |
| 16.0         |        |  |              |           |                    |
| 17.0         |        |  |              |           |                    |
| 18.0         |        |  | 19.0         |           |                    |
| 19.0         |        |  | 20.0         |           |                    |
| 20.0         |        |  |              |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> 18' | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 40'   | <b>Page:</b> 1 of 2    |

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-49       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 6-25-13         |

| Depth (feet) | Symbol | Description  | Depth (feet)         | PID (ppm) | Sample Interval |                    |
|--------------|--------|--|----------------------|-----------|-----------------|--------------------|
| 21.0         |        | Gray to Red-Brown SILT, trace Clay with seams of fine to medium Sand (wet) |                      |           |                 |                    |
| 22.0         |        |  |                      |           |                 |                    |
| 23.0         |        |  |                      |           | 0.7             | Macro Core 20'-25' |
| 24.0         |        |  |                      |           |                 |                    |
| 25.0         |        |  |                      |           |                 |                    |
| 26.0         |        |  |                      |           |                 |                    |
| 27.0         |        |  |                      |           |                 |                    |
| 28.0         |        |  |                      |           | 1.3             | Macro Core 25'-30' |
| 29.0         |        |  |                      |           |                 |                    |
| 30.0         |        |  |                      |           |                 |                    |
| 31.0         |        |  |                      |           |                 |                    |
| 32.0         |        |  |                      |           |                 |                    |
| 33.0         |        |  |                      |           | 0.3             | Macro Core 30'-35' |
| 34.0         |        |  |                      |           |                 |                    |
| 35.0         |        |  |                      |           |                 |                    |
| 36.0         |        |  |                      |           |                 |                    |
| 37.0         |        |  |                      |           |                 |                    |
| 38.0         |        |  |                      |           | 0.2             | Macro Core 35'-40' |
| 39.0         |        |  |                      |           |                 |                    |
| 40.0         |        |  | End of Boring at 40' | 40.0      |                 |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

**Driller:** W. Lineberry

**Depth to Water:** 18'

**Boring Dia.:** 2"

**Rig:** Geoprobe 540U

**Boring Depth:** 40'

**Page:** 2 of 2

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-50       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 6-24-13         |

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|---|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                    |
| 1.0          |        | Light-Brown fine SAND, little fine to coarse Gravel, trace Silt             | 1.5          |           |                    |
| 2.0          |        | Red-Brown SILT, little fine Gravel, trace Clay, fine Sand & Cobble (moist)  | 3.0          | 0.3       | Macro Core 0'-5'   |
| 4.0          |        |   | 5.0          |           |                    |
| 6.0          |        |   | 7.0          |           |                    |
| 8.0          |        |   | 9.0          | 2.6       | Macro Core 5'-10'  |
| 10.0         |        |   | 11.0         |           |                    |
| 12.0         |        |   | 13.0         |           |                    |
| 14.0         |        |   | 15.0         | 0.4       | Macro Core 10'-15' |
| 15.0         |        | Red-Brown SILT, little Clay & fine Gravel, trace fine Sand (very soft, wet) | 17.0         | 0.8       | Macro Core 15'-17' |
| 18.0         |        | Refusal at 17' on Concrete  |              |           |                    |
| 19.0         |        |   |              |           |                    |
| 20.0         |        |   |              |           |                    |

**Soil Description:** and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> 15' | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 17'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobes*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-51       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 6-24-13         |

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|---|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                    |
| 1.0          |        | Red-Brown SILT, trace fine Sand   | 1.0          |           | Macro Core 0'-5'   |
| 2.0          |        | Light-Brown fine to coarse SAND, little fine to coarse Gravel, trace Silt & Cobble                |              | 1.2       |                    |
| 4.0          |        | Red-Brown SILT, little fine to coarse Gravel, trace fine Sand                                     |              |           |                    |
| 7.0          |        |   | 7.0          |           | Macro Core 5'-10'  |
| 10.0         |        | Red-Brown SILT, trace Clay, fine Sand & fine to coarse Gravel                                     |              | 1.0       |                    |
| 15.0         |        |   | 15.0         |           |                    |
| 16.0         |        | Red-Brown SILT, trace Clay, fine Sand & fine to coarse Gravel mixed with weathered Concrete (wet) | 16.0         | 0.9       | Macro Core 10'-15' |
| 16.0         |        |   |              |           | Macro Core 15'-16' |
| 17.0         |        |   |              |           |                    |
| 18.0         |        | Refusal at 16' on Concrete  |              |           |                    |
| 19.0         |        |   |              |           |                    |
| 20.0         |        |   |              |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> 15' | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 16'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <u>Project:</u> Pump Station & Gravity Sewers | <u>Boring:</u> PSGP-51A      |
| <u>Location:</u> Middletown, CT               | <u>Inspector:</u> M. Bazzano |
| <u>Client:</u> CDR Maguire                    | <u>Date:</u> 6-25-13         |



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|--|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                    |
| 1.0          |        | Dark-Brown SILT, trace fine Sand   | 1.0          |           | Macro Core 0'-5'   |
| 2.0          |        | Light-Brown fine to medium SAND, little fine to coarse Gravel, trace Silt & Cobble | 2.0          |           |                    |
| 3.0          |        | Brown SILT, little Brick, trace Coal (FILL)  | 3.0          | 0.9       |                    |
| 4.0          |        | Red-Brown SILT, trace Clay, Cobble, fine Sand & fine to coarse Gravel              | 4.0          |           | Macro Core 5'-10'  |
| 5.0          |        |  | 5.0          |           |                    |
| 6.0          |        |  | 6.0          | 0.6       |                    |
| 7.0          |        | Black ASH & CINDERS mixed with Black fine to medium Sand (wet at 12')              | 7.0          |           | Macro Core 10'-15' |
| 8.0          |        |  | 8.0          |           |                    |
| 9.0          |        |  | 9.0          |           |                    |
| 10.0         |        | Black ASH & CINDERS mixed with Black fine to medium Sand (wet at 12')              | 10.0         |           | Macro Core 15'-20' |
| 11.0         |        |  | 11.0         |           |                    |
| 12.0         |        |  | 12.0         | 0.7       |                    |
| 13.0         |        | Dark-Brown to Red-Brown SILT, little Clay, trace fine Sand (wet)                   | 13.0         |           | Macro Core 15'-20' |
| 14.0         |        |  | 14.0         |           |                    |
| 15.0         |        |  | 15.0         |           |                    |
| 16.0         |        | Dark-Brown to Red-Brown SILT, little Clay, trace fine Sand (wet)                   | 16.0         |           | Macro Core 15'-20' |
| 17.0         |        |  | 17.0         | 0.5       |                    |
| 18.0         |        |  | 18.0         |           |                    |
| 19.0         |        | Dark-Brown to Red-Brown SILT, little Clay, trace fine Sand (wet)                   | 19.0         |           | Macro Core 15'-20' |
| 20.0         |        |  | 20.0         |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

Driller: W. Lineberry

Depth to Water: 12'

Boring Dia.: 2"

Rig: Geoprobe 540U

Boring Depth: 40'

Page: 1 of 2

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-51A      |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 6-25-13         |



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geopros*

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|---|--------------|-----------|--------------------|
| 21.0         |        | Dark-Brown to Red-Brown SILT, little Clay, trace fine Sand (wet)                      | 25.0         | 0.8       | Macro Core 20'-25' |
| 22.0         |        |   |              |           |                    |
| 23.0         |        |   |              |           |                    |
| 24.0         |        |   |              |           |                    |
| 25.0         |        |   |              |           |                    |
| 26.0         |        | Red-Brown to Gray SILT, trace Clay with seams of Gray-Brown fine to coarse Sand (wet) | 40.0         | 0.8       | Macro Core 25'-30' |
| 27.0         |        |   |              |           |                    |
| 28.0         |        |   |              |           |                    |
| 29.0         |        |   |              |           |                    |
| 30.0         |        |   |              |           |                    |
| 31.0         |        |   |              |           |                    |
| 32.0         |        |   |              |           |                    |
| 33.0         |        |   |              |           |                    |
| 34.0         |        |   |              |           |                    |
| 35.0         |        |   |              |           |                    |
| 36.0         |        |   |              |           |                    |
| 37.0         |        |   |              |           |                    |
| 38.0         |        |   |              |           |                    |
| 39.0         |        |   |              |           |                    |
| 40.0         |        |   |              |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

**Driller:** W. Lineberry

**Depth to Water:** 12'

**Boring Dia.:** 2"

**Rig:** Geoprobe 540U

**Boring Depth:** 40'

**Page:** 2 of 2

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-52       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 6-24-13         |



**Logical Environmental Solutions**  
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 Tolland, CT 06084  
*Truck, Portable & ATV/Backhoe-Mounted Geoprobes*

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|--|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                    |
| 0.8          |        | Gray-Brown fine SAND, little Silt, trace fine Gravel             | 0.8          |           |                    |
| 1.0          |        | Light-Brown fine SAND, little fine to coarse Gravel, trace Silt  |              |           |                    |
| 2.0          |        | ASPHALT - 1"   |              |           |                    |
| 3.0          |        |  |              | 1.1       | Macro Core 0'-5'   |
| 4.0          |        |  |              |           |                    |
| 5.0          |        |  |              |           |                    |
| 6.0          |        |  |              |           |                    |
| 7.0          |        |  |              |           |                    |
| 8.0          |        | Red-Brown SILT, little fine to medium Gravel, trace Cobble       |              | 0.9       | Macro Core 5'-10'  |
| 9.0          |        |  |              |           |                    |
| 10.0         |        |  |              |           |                    |
| 11.0         |        |  |              |           |                    |
| 12.0         |        |  |              |           |                    |
| 13.0         |        |  | 13.0         | 1.0       | Macro Core 10'-15' |
| 14.0         |        |  |              |           |                    |
| 15.0         |        |  |              |           |                    |
| 16.0         |        | Dark-Brown SILT, trace Organics, Cobble, & fine to coarse Gravel |              |           |                    |
| 17.0         |        |  |              | 0.7       | Macro Core 15'-17' |
| 18.0         |        |  |              |           |                    |
| 19.0         |        |  |              |           |                    |
| 20.0         |        |  | 20.0         |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> 21' | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 40'   | <b>Page:</b> 1 of 2    |

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <u>Project:</u> Pump Station & Gravity Sewers | <u>Boring:</u> PSGP-52       |
| <u>Location:</u> Middletown, CT               | <u>Inspector:</u> M. Bazzano |
| <u>Client:</u> CDR Maguire                    | <u>Date:</u> 6-24-13         |



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|---|--------------|-----------|--------------------|
| 21.0         |        | Dark-Brown SILT, trace Organics, Cobble, & fine to coarse Gravel (wet at 21') | 23.0         | 0.9       | Macro Core 20'-25' |
| 22.0         |        |   |              |           |                    |
| 23.0         |        | Red-Brown to Gray SILT, trace Clay (very soft, wet)                           | 31.0         | 0.6       | Macro Core 25'-30' |
| 24.0         |        |   |              |           |                    |
| 25.0         |        |   |              |           |                    |
| 26.0         |        |   |              |           |                    |
| 27.0         |        |   |              |           |                    |
| 28.0         |        |   |              |           |                    |
| 29.0         |        |   |              |           |                    |
| 30.0         |        | Gray fine to coarse SAND, trace to little Silt, trace fine Gravel (wet)       | 40.0         | 0.7       | Macro Core 30'-35' |
| 31.0         |        |   |              |           |                    |
| 32.0         |        |   |              |           |                    |
| 33.0         |        |   |              |           |                    |
| 34.0         |        | End of Boring at 40'  | 40.0         | 0.4       | Macro Core 35'-40' |
| 35.0         |        |   |              |           |                    |
| 36.0         |        |   |              |           |                    |
| 37.0         |        |   |              |           |                    |
| 38.0         |        |   |              |           |                    |
| 39.0         |        |   |              |           |                    |
| 40.0         |        |   |              |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

Driller: W. Lineberry

Depth to Water: 21'

Boring Dia.: 2"

Rig: Geoprobe 540U

Boring Depth: 40'

Page: 2 of 2

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-53       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 6-25-13         |



**Logical Environmental Solutions**  
 354 South River Road  
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*Truck, Portable & ATV/Backhoe-Mounted Geoprobes*

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|---|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                    |
| 0.7          |        | Gray-Brown fine SAND, little Silt, trace fine Gravel            | 0.7          |           |                    |
| 1.0          |        | Light-Brown fine SAND, little fine to coarse Gravel, trace Silt |              |           |                    |
| 2.0          |        | ASPHALT - 2"  |              |           |                    |
| 3.0          |        |   |              | 1.4       | Macro Core 0'-5'   |
| 4.0          |        |   |              |           |                    |
| 5.0          |        |   |              |           |                    |
| 6.0          |        |   |              |           |                    |
| 7.0          |        |   |              | 1.2       | Macro Core 5'-10'  |
| 8.0          |        | Red-Brown SILT, little fine to medium Gravel, trace Cobble      |              |           |                    |
| 9.0          |        |   |              |           |                    |
| 10.0         |        |   |              |           |                    |
| 11.0         |        |   |              |           |                    |
| 12.0         |        |   |              | 1.0       | Macro Core 10'-15' |
| 13.0         |        |   |              |           |                    |
| 14.0         |        |   | 14.0         |           |                    |
| 15.0         |        |   |              |           |                    |
| 16.0         |        |   |              |           |                    |
| 17.0         |        | Dark-Brown SILT, trace Cobble & fine to coarse Gravel           |              | 0.9       | Macro Core 15'-17' |
| 18.0         |        |   |              |           |                    |
| 19.0         |        |   |              |           |                    |
| 20.0         |        |   | 20.0         |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> 20' | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 40'   | <b>Page:</b> 1 of 2    |

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <u>Project:</u> Pump Station & Gravity Sewers | <u>Boring:</u> PSGP-53       |
| <u>Location:</u> Middletown, CT               | <u>Inspector:</u> M. Bazzano |
| <u>Client:</u> CDR Maguire                    | <u>Date:</u> 6-25-13         |



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

| Depth (feet) | Symbol    | Description  | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|-----------|--|--------------|-----------|--------------------|
| 21.0         |           | Dark-Brown SILT, trace Cobble, & fine to coarse Gravel (wet at 20')        | 25.0         | 0.6       | Macro Core 20'-25' |
| 22.0         |           |  |              |           |                    |
| 23.0         |           |  |              |           |                    |
| 24.0         |           |  |              |           |                    |
| 25.0         |           |  |              |           |                    |
| 26.0         | / / / / / | Red-Brown to Gray SILT, trace Clay with seams of fine to coarse Sand (wet) | 40.0         | 1.0       | Macro Core 25'-30' |
| 27.0         |           |  |              |           |                    |
| 28.0         |           |  |              |           |                    |
| 29.0         |           |  |              |           |                    |
| 30.0         |           |  |              |           |                    |
| 31.0         |           |  |              |           |                    |
| 32.0         |           |  |              |           |                    |
| 33.0         |           |  |              |           |                    |
| 34.0         |           |  |              |           |                    |
| 35.0         |           |  |              |           |                    |
| 36.0         |           |  |              |           |                    |
| 37.0         |           |  |              |           |                    |
| 38.0         |           |  |              |           |                    |
| 39.0         |           |  |              |           |                    |
| 40.0         |           |  |              |           |                    |
| 40.0         |           | End of Boring at 40'   |              |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

Driller: W. Lineberry

Depth to Water: 20'

Boring Dia.: 2"

Rig: Geoprobe 540U

Boring Depth: 40'

Page: 2 of 2

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-54       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 7-11-13         |



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*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|--------|---|--------------|-----------|--------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                    |
| 0.5          |        | Light-Brown to Dark-Brown fine to medium SAND, little Silt & fine to coarse Gravel  | 0.5          |           |                    |
| 1.0          |        | ASPHALT - 3"  |              |           |                    |
| 2.0          |        |   |              |           |                    |
| 3.0          |        |   |              | 1.3       | Macro Core 0'-5'   |
| 4.0          |        | Light-Brown to Dark-Brown fine to medium SAND, little Silt, trace fine to coarse Gravel & Cobble                                  |              |           |                    |
| 5.0          |        |   |              |           |                    |
| 6.0          |        |   | 6.0          |           |                    |
| 7.0          |        |   |              | 0.7       | Macro Core 5'-10'  |
| 8.0          |        |   |              |           |                    |
| 9.0          |        |   |              |           |                    |
| 10.0         |        | Black ASH & CINDERS mixed with Gray to Black fine to medium Sand, trace Glass (FILL)  |              |           |                    |
| 11.0         |        |   |              |           |                    |
| 12.0         |        |   |              | 1.1       | Macro Core 10'-15' |
| 13.0         |        |   |              |           |                    |
| 14.0         |        |   | 14.0         |           |                    |
| 15.0         |        |   |              |           |                    |
| 16.0         |        | Brown fine to coarse SAND, little Brick, trace Silt & fine to coarse Gravel with seams of Dark-Gray to Red-Brown Silt (wet, FILL) |              |           |                    |
| 17.0         |        |   |              | 0.9       | Macro Core 15'-17' |
| 18.0         |        |   |              |           |                    |
| 19.0         |        |   |              |           |                    |
| 20.0         |        |   | 20.0         |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> 14' | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 40'   | <b>Page:</b> 1 of 2    |

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <u>Project:</u> Pump Station & Gravity Sewers | <u>Boring:</u> PSGP-54       |
| <u>Location:</u> Middletown, CT               | <u>Inspector:</u> M. Bazzano |
| <u>Client:</u> CDR Maguire                    | <u>Date:</u> 7-11-13         |



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobes*

| Depth (feet) | Symbol      | Description   | Depth (feet) | PID (ppm) | Sample Interval    |
|--------------|-------------|---|--------------|-----------|--------------------|
| 21.0         | S<br>G<br>S | Brown fine to coarse SAND, little Brick, trace Silt & fine to coarse Gravel with seams of Dark-Gray to Red-Brown Silt (wet, FILL) | 21.0         |           |                    |
| 22.0         |             |   |              | 0.7       | Macro Core 20'-25' |
| 23.0         |             |   |              |           |                    |
| 24.0         |             |   |              |           |                    |
| 25.0         |             |   |              |           |                    |
| 26.0         |             |   |              |           |                    |
| 27.0         |             |   |              |           |                    |
| 28.0         |             | Red-Brown to Gray SILT, trace Clay with seams of fine to coarse Sand (wet)  |              | 0.6       | Macro Core 25'-30' |
| 29.0         |             |   |              |           |                    |
| 30.0         |             |   |              |           |                    |
| 31.0         |             |   |              |           |                    |
| 32.0         |             |   |              |           |                    |
| 33.0         |             |   |              | 0.7       | Macro Core 30'-35' |
| 34.0         |             |   |              |           |                    |
| 35.0         |             |   | 35.0         |           |                    |
| 36.0         |             |   |              |           |                    |
| 37.0         |             | Red-Brown to Gray fine to medium SAND, little Silt, trace Clay (wet)  |              | 0.3       | Macro Core 35'-40' |
| 38.0         |             |   |              |           |                    |
| 39.0         |             |   |              |           |                    |
| 40.0         |             | End of Boring at 40'  | 40.0         |           |                    |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

Driller: W. Lineberry

Depth to Water: 14'

Boring Dia.: 2"

Rig: Geoprobe 540U

Boring Depth: 40'

Page: 2 of 2

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-55       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 7-11-13         |



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| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval          |
|--------------|--------|--|--------------|-----------|--------------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                          |
| 1.0          |        | Dark-Brown SILT, trace fine Sand   | 1.0          |           | 0.4    Macro Core 0'-5'  |
| 2.0          |        | Light-Brown fine to medium SAND, little fine to coarse Gravel, trace Silt & Cobble | 2.0          |           |                          |
| 3.0          |        | Brown SILT, little Brick, trace Coal (FILL)  | 3.0          |           |                          |
| 5.0          |        | Red-Brown SILT, trace Clay, Cobble, fine Sand & fine to coarse Gravel              | 5.0          |           | 0.1    Macro Core 5'-10' |
| 6.0          |        |  |              |           |                          |
| 7.0          |        |  |              |           |                          |
| 8.0          |        |  |              |           |                          |
| 9.0          |        | Black ASH & CINDERS mixed with Black fine to medium Sand                           | 9.0          |           |                          |
| 10.0         |        |  | 10.0         |           |                          |
| 11.0         |        | End of Boring at 10'   |              |           |                          |
| 12.0         |        |  |              |           |                          |
| 13.0         |        |  |              |           |                          |
| 14.0         |        |  |              |           |                          |
| 15.0         |        |  |              |           |                          |
| 16.0         |        |  |              |           |                          |
| 17.0         |        |  |              |           |                          |
| 18.0         |        |  |              |           |                          |
| 19.0         |        |  |              |           |                          |
| 20.0         |        |  |              |           |                          |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 10'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-56       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 6-24-13         |



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| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|--------|--|--------------|-----------|-------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                   |
|              |        | Dark-Brown SILT, trace fine to medium Sand                                       | 0.3          |           |                   |
| 1.0          |        | Black to Gray ASH & CINDERS mixed with Concrete, Brick and fine to coarse Gravel |              |           |                   |
| 2.0          |        |  | 2.0          |           |                   |
| 3.0          |        |  |              | 0.7       | Macro Core 0'-5'  |
| 4.0          |        |  |              |           |                   |
| 5.0          |        |  |              |           |                   |
| 6.0          |        | Red-Brown fine to medium SAND, little fine Gravel, trace Silt                    |              |           |                   |
| 7.0          |        |  |              |           |                   |
| 8.0          |        |  |              | 0.2       | Macro Core 5'-10' |
| 9.0          |        |  |              |           |                   |
| 10.0         |        |  | 10.0         |           |                   |
| 11.0         |        | End of Boring at 10'   |              |           |                   |
| 12.0         |        |  |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 10'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG



**Logical Environmental Solutions**

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*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-57       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 7-12-13         |

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|--------|--|--------------|-----------|-------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                   |
| 1.0          |        | Dark-Brown to Black fine to medium SAND, little medium to coarse Gravel, trace Silt & Asphalt Fragments (FILL) | 2.0          | 0.9       | Macro Core 0'-5'  |
| 2.0          |        |  |              |           |                   |
| 3.0          |        | Red-Brown SILT, little fine to medium Sand with seams of fine to coarse Sand, trace fine to coarse Gravel      | 8.0          | 0.4       | Macro Core 5'-10' |
| 4.0          |        |  |              |           |                   |
| 5.0          |        |  |              |           |                   |
| 6.0          |        |  |              |           |                   |
| 7.0          |        | Red-Brown to Brown SILT, trace fine to medium Sand & Cobble (moist)  | 10.0         |           |                   |
| 8.0          |        |  |              |           |                   |
| 9.0          |        | End of Boring at 10'   |              |           |                   |
| 10.0         |        |  |              |           |                   |
| 11.0         |        |  |              |           |                   |
| 12.0         |        |  |              |           |                   |
| 13.0         |        |  |              |           |                   |
| 14.0         |        |  |              |           |                   |
| 15.0         |        |  |              |           |                   |
| 16.0         |        |  |              |           |                   |
| 17.0         |        |  |              |           |                   |
| 18.0         |        |  |              |           |                   |
| 19.0         |        |  |              |           |                   |
| 20.0         |        |  |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 10'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG



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354 South River Road  
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*Truck, Portable & ATV/Backhoe-Mounted Geopros*

|   |                              |
|---|------------------------------|
| <b>Project:</b> Pump Station & Gravity Sewers | <b>Boring:</b> PSGP-58       |
| <b>Location:</b> Middletown, CT               | <b>Inspector:</b> M. Bazzano |
| <b>Client:</b> CDR Maguire                    | <b>Date:</b> 7-12-13         |

| Depth (feet) | Symbol | Description   | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|--------|---|--------------|-----------|-------------------|
| 0.0          |        | Ground Surface  | 0.0          |           |                   |
| 1.0          |        | ASPHALT & medium to coarse GRAVEL   | 1.0          |           |                   |
| 2.0          |        | Red-Brown fine to medium SAND, little fine to coarse Gravel                           | 2.0          |           |                   |
| 3.0          |        | Red-Brown fine to medium SAND, little Silt, trace fine to coarse Gravel (moist at 9') |              | 1.4       | Macro Core 0'-5'  |
| 4.0          |        |   |              |           |                   |
| 5.0          |        |   |              |           |                   |
| 6.0          |        |   |              |           |                   |
| 7.0          |        |   |              |           |                   |
| 8.0          |        |   |              | 0.7       | Macro Core 5'-10' |
| 9.0          |        |   |              |           |                   |
| 10.0         |        |   | 10.0         |           |                   |
| 11.0         |        | End of Boring at 10'  |              |           |                   |
| 12.0         |        |   |              |           |                   |
| 13.0         |        |   |              |           |                   |
| 14.0         |        |   |              |           |                   |
| 15.0         |        |   |              |           |                   |
| 16.0         |        |   |              |           |                   |
| 17.0         |        |   |              |           |                   |
| 18.0         |        |   |              |           |                   |
| 19.0         |        |   |              |           |                   |
| 20.0         |        |   |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 10'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                                   |
|---|-----------------------------------|
| <b>Project:</b> Force Main Geoprobe Investigation | <b>Boring:</b> FMGP-1             |
| <b>Location:</b> Middletown, CT                   | <b>Inspector:</b> L. Lindenberger |
| <b>Client:</b> CDR Maguire                        | <b>Date:</b> 1-7-13               |

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval   |
|--------------|--------|--|--------------|-----------|-------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                   |
| 0.4          |        | Red-Brown fine to coarse SAND, trace fine to coarse Gravel & Silt    | 0.4          |           |                   |
| 0.7          |        | Olive-Brown fine SAND & GRAVEL                                       | 0.7          |           |                   |
| 2.0          |        | Orange-Brown to Brown fine SAND, little Silt & fine to coarse Gravel | 2.0          |           |                   |
| 3.0          |        | Red-Brown fine to coarse SAND, with seams of SILT and SANDSTONE      |              | 0.1       | Macro Core 0'-5'  |
| 4.0          |        |  |              |           |                   |
| 5.0          |        |  |              |           |                   |
| 6.0          |        |  |              |           |                   |
| 7.0          |        |  |              | 0         | Macro Core 5'-10' |
| 8.0          |        |  |              |           |                   |
| 9.0          |        |  |              |           |                   |
| 10.0         |        |  | 10.0         |           |                   |
| 11.0         |        | End of Soil Sampling at 10'  |              |           |                   |
| 12.0         |        | Pre-probed to 16' - GW not encountered                               |              |           |                   |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 16'   | <b>Page:</b> 1 of 1    |

# SOIL BORING LOG



**Logical Environmental Solutions**

354 South River Road  
Tolland, CT 06084

*Truck, Portable & ATV/Backhoe-Mounted Geoprobos*

|   |                                 |
|---|---------------------------------|
| <b>Project:</b> Force Main Geoprobe Investigation | <b>Boring:</b> FMGP-2           |
| <b>Location:</b> Middletown, CT                   | <b>Inspector:</b> L. Lindenberg |
| <b>Client:</b> CDR Maguire                        | <b>Date:</b> 1-7-13             |

| Depth (feet) | Symbol | Description  | Depth (feet) | PID (ppm) | Sample Interval  |
|--------------|--------|--|--------------|-----------|------------------|
| 0.0          |        | Ground Surface   | 0.0          |           |                  |
| 0.5          |        | Dark-Brown SILT, trace fine Sand   | 0.5          |           |                  |
| 1.0          |        | Crushed ASPHALT mixed with Cinders, Ash, & Black fine to medium SAND, little Silt (FILL) | 0.4          | 0         | Macro Core 0'-5' |
| 2.0          |        |  |              |           |                  |
| 3.0          |        |  |              |           |                  |
| 4.0          |        |  |              |           |                  |
| 5.0          |        |  |              |           |                  |
| 6.0          |        |  |              |           |                  |
| 7.0          |        |  |              |           |                  |
| 8.0          |        |  |              |           |                  |
| 9.0          |        |  |              |           |                  |
| 10.0         |        |  |              |           |                  |
| 11.0         |        | End of Soil Sampling at 10'  |              |           |                  |
| 12.0         |        | Pre-probed to 18' - GW not encountered   |              |           |                  |

**Soil Description:**    and = 35-50%    some = 20-35%    little = 10-20%    trace = 1-10%

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| <b>Driller:</b> W. Lineberry | <b>Depth to Water:</b> Dry | <b>Boring Dia.:</b> 2" |
| <b>Rig:</b> Geoprobe 540U    | <b>Boring Depth:</b> 18'   | <b>Page:</b> 1 of 1    |

# **APPENDIX B**

# **Laboratory Reports**