TASK 220 EXPLORATORY SITE INVESTIGATION

ConnDOT Higganum Maintenance and Repair Facility

11 Candlewood Hill Road, Higganum, CT

DTC Project No. 03-273-09J

Submitted to:
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Division of Environmental Compliance
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CONNDOT HIGGANUM MAINTENANCE AND REPAIR FACILITY
11 CANDLEWOOD HILL ROAD, HIGGANUM, CONNECTICUT

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FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION

Diversified Technology Consultants (DTC) was retained by the State of Connecticut Department of Transportation (ConnDOT) to conduct a Task 220 Exploratory Site Investigation (ESI) of ConnDOT Site #25, 11 Candlewood Hill Road, Higganum, Connecticut. This report provides a brief description and history of the subject parcel, a discussion of the local environment and receptors, the investigation rationale, a summary of the data obtained during the investigation, an interpretation of the results with respect to the appropriate regulatory criteria, and recommendations for further investigation and/or remediation.

1.1 Backgronnd and Purpose

The ConnDOT Higganum Maintenance and Repair facility occupies a 4-acre site on the south side of Candlewood Hill Road, near the intersection of Connecticut Routes 81 and 154. The property is elongated east to west and is bounded northerly by Candlewood Hill Road, westerly by residences, easterly by a former fire house, and southerly by Candlewood Hill Brook. The area beyond Candlewood Hill Brook, along Maple Avenue, is occupied by residential properties. The site's location and pertinent features are depicted on Figures 1 and 2, respectively.

The site was developed in 1866 when the first of the two existing brick buildings (the one closest to Candlewood Hill Brook) was constructed by the D & H Scovil Hoe Company. The second building, closer to Candlewood Hill Road (northerly), was constructed in 1887. The site was purchased by the State of Connecticut in 1941 for use as vehicle maintenance garage. The site activities included salt storage (1941 to 1973), road maintenance (1941 to 1973), a repair garage (1941 to present), and storage (1941 to present). Associated activities include underground fuel storage (1941 to present). The northwestern portion of the site was formerly the Spar Mill Pond, which was reportedly used by ConnDOT as a dumpsite from 1941 to 1975.

ConnDOT has maintained a refueling pump island and underground fuel storage facility since 1941. Eight underground storage tanks (USTs) for heating oil, waste oil, diesel fuel, and gasoline were installed between 1941 and 1968. Six of the eight USTs were removed in 1989; the remaining two were reportedly removed; however, no supporting documentation to confirm their removal is available. Five USTs were installed in 1989 for heating oil, waste oil, diesel, and gasoline storage.

The DEP received an Environmental Condition Assessment Form (ECAF) for the site on April 18, 2002 prepared on behalf of ConnDOT by HRP Associates (HRP). HRP prepared the ECAF on April 1, 2002. ConnDOT was informed by the DEP that it would retain oversight for the investigation and remediation of this site until further notice.

The purpose of this Task 220 ESI is to collect on-site soil, sediment, and groundwater data to further evaluate the Potential and Confirmed Release Areas identified in the April 2002 ECAF (see Figure 2), and to determine the extent of soil and groundwater impact at the site associated with these Release Areas.

DTC identified the potential for soil and/or groundwater to be impacted with volatile organic compounds (VOCs), petroleum hydrocarbons, polynuclear aromatic hydrocarbons (PAHs), metals, polychlorinated biphenyls (PCBs), chlorinated pesticides, chlorinated herbicides, sodium, and chloride.

1.2 Previous Environmental Reports

During the preparation of this Task 220 ESI, DTC reviewed previously prepared reports pertaining to the subject site, prepared by DTC or provided to DTC by ConnDOT. The findings of these reports are briefly summarized below.

Task 240 Water Quality Monitoring Evaluation Report, November 2005, prepared by DTC

DTC completed a Task 240 Water Quality Monitoring Evaluation in November 2005. The Task 240 investigation included the collection of twenty-three samples from twenty-one drinking water supply wells. Analysis of the drinking water from four properties detected the presence of the chlorinated pesticide dieldrin at or exceeding the Connecticut Department of Public Health (CTDPH) action level. These water supply wells are located at 7 Killingworth Road, 18 Killingworth Road, 7 Maple Avenue, and 8 Hull Avenue. All four properties are located southeast of Candlewood Hill Brook and the subject site.

Analysis of the drinking water from one drinking water supply system, 3 Candlewood Hill Road, located northeast of the subject site near the intersection of Candlewood Hill Road and Saybrook Road (Route 154), detected the presence of trichloroethylene (TCE) at a concentration of 1.0 micrograms per liter (μg /l), below the action level of 5 ug/l.

The detections of dieldrin and TCE prompted a Significant Environmental Hazard Notification under Connecticut General Statutes §22a-6u.

DTC could not confirm whether there is a hydrological connection between the ConnDOT maintenance facility and the private water supply wells where pesticides (dieldrin) have been detected. DTC concluded that Candlewood Hill Brook provides a hydrological barrier to migration beyond the property boundaries within the shallow overburden aquifer.

Dieldrin was widely used as a pesticide in agriculture from the 1950s until 1974. The EPA approved the continued use of dieldrin to control termites. Applications of dieldrin included direct soil injection as a termite barrier in construction, termite proofing of plywood and building boards, and plastic and rubber coverings of electrical and telecommunications cables. In 1984 the EPA banned all use of dieldrin.

DTC concluded that the source of the dieldrin may be somewhere other than the ConnDOT site. This is supported by the detection of dieldrin in the water supply wells only on the southern and opposite side of Candlewood Hill Brook, and not in the drinking water at the site or in any down gradient adjacent properties to the north of Candlewood Hill Brook. A review of an aerial photograph for 1951 of Higganum shows that many of the parcels surrounding the town center, including parcels to the south of Candlewood Hill Brook, were used for agricultural purposes. In addition, the Rossi Corporation at 263 Saybrook Road, approximately 100 feet northeast of the ConnDOT site reportedly processed logs into board timber for construction.

As noted above, TCE was detected in the water supply system at 3 Candlewood Hill Road. Trichloroethylene appears to be a contaminant prevalent within the town's central commercial district. Based on a DEP file review, three potential sources of trichloroethylene were identified;

Royal Wire on Killingworth Road (no number given), Higganum Manufacturing at 365 Saybrook Road, and J.C. Products at 300 Saybrook Road. The closest of these is J. C. Products, Inc. which is northeast, cross gradient, and diagonally across the intersections of Candlewood Hill and Saybrook Roads from the ConnDOT site.

In addition to dieldrin and TCE detections, all of the drinking water samples detected concentrations of chloride ranging from 4.24 to 97.3 mg/l, and sodium ranging from 4.06 mg/l to 73 mg/l. While there is no action level for sodium there is a "notification level" of 28 mg/l that applies to public water systems. Three of the 20 samples analyzed contained sodium at concentrations greater than 28 mg/l.

DTC recommended further investigation and delineation of the release areas and potential release areas outlined in the Environmental Condition Assessment Form submitted to the CTDEP by HRP Associates April 1, 2002.

A copy of this report (text portion only) is included in Appendix C.

Detailed Test Report, ConnDOT Salt Storage and Maintenance Facilities Study, Haddam (Higganum) Facility No. 36 District 2, Section 3, dated August 1986, prepared by Metcalf and Eddy, Inc.

The Detailed Test Report, dated August 1986, was prepared by Metcalf and Eddy, Inc. (M&E) of Wallingford, Connecticut on behalf of ConnDOT. A copy of the M&E report is included as Appendix C.

The following information and conclusions were provided in the M&E report:

- In 1975, approximately four leaking drums of the chlorinated herbicides 2,4,-D and 2, 4,5-T were reportedly buried in the fill area at the western portion of the site. Additionally, an experimental joint sealer was reportedly disposed of along the banks of the Candlewood Hill Brook on the ConnDOT property in the early 1960's;

- Trichlorethylene (TCE) was detected in several off-site drinking water wells in a 1984 survey performed by the CTDEP Water Compliance Unit. The concentrations detected were all below the Connecticut Department of Public Health (CTDPH) action level of 25 µg /l. TCE was not detected in the ConnDOT garage drinking water well during the 1984 survey;

- A Preliminary Test Report was completed by M&E in January, 1986. A trace level of benzene was detected in one monitoring well, and sodium and chloride were detected in all three monitoring wells on the site. The Detailed Test Report recommended to evaluate potential impacts to nearby residential and commercial water supply wells located apparently downgradient of the site;

- During the Detailed Test Report, an electromagnetic (EM) survey of the site was conducted to locate residual salt in the unsaturated zone and the salt plume in the groundwater. The Detailed Test Report concluded that residual salt from salt storage and handling operations (discontinued in 1973) was persisting in the groundwater;

- EM measurements suggested the presence of buried metal or other conductive objects in many areas of the site;

- An interpretation of the subsurface conditions at the site revealed the surficial materials are primarily stratified drift deposits of sand, gravel, and minor amounts of silt. The stratified drift is relatively well sorted with a moderate permeability. Bedrock was encountered at approximate depths of 7.5 to 12.5 feet below grade in select borings. Cores recovered from the borings indicated highly fractured bedrock conditions, as reflected by the low rock quality designations (RQD);

- A soil sample collected from a borehole where experimental joint sealer was reportedly disposed of was found to be CTDEP "hazardous" with respect to lead. A sample taken from a borehole approximately 30 feet east in the same area was not contaminated with metals or hydrocarbons;

- A soil sample collected from the toe of the fill area in the western part of the site was reportedly "not contaminated" with metals. Although petroleum hydrocarbons resembling a weathered kerosene or #6 oil were detected, volatile organic concentrations were all below applicable numerical criteria;

- A soil sample collected near a floor drain discharge was reportedly "contaminated" with respect to lead. A trace concentration of benzene was detected in this sample and in another sample collected about 10 feet further downstream near Candlewood Hill Brook. Although organic compounds were detected in these two samples, the concentrations were all below the numerical criteria;

- One surface water sample was collected in a pool of standing water at the outlet of the floor drain discharge near Candlewood Hill Brook. The sample had evidence of a petroleum-like hydrocarbon sheen on its surface. The surface water sample reportedly contained weathered kerosene or a number 6 oil. The total bulk petroleum hydrocarbon concentration was 9.7 mg/l. Acetone was also detected at a concentration of 404 mg/l in this sample;

- The direction of groundwater flow based on water table elevations was determined to the south/southeast towards Candlewood Hill Brook. The maximum hydraulic gradient at the site was estimated of be 0.07 ft/ft, exhibiting an average slope of 0.05 ft/ft;

- The Detailed Test Report reported that benzene was found at trace levels in two on site wells; with the highest concentration of 4 ug/l in well D-2. Off site wells serving the fire house and the oil company did not have benzene in them, indicating that off-site receptors are not being affected. M&E concluded that benzene detected at these low concentrations is more likely to originate from small surface spills while refueling or from pavement runoff rather than from an underground fuel tank leak;

- Trichloroethylene (TCE) was detected in five off-site drinking water wells. Trichloroethylene was not detected any of the five on-site monitoring wells nor in two on-site drinking water supply wells. Levels of TCE detected in all off-site groundwater samples were below the existing ConnDOHS action level of 25 μg /l, however, they were above the proposed federal MCL of 5 μg /l;

- M&E concluded it was unlikely that the site was the source of the trichloroethylene found in the groundwater,

- M&E concluded that the TCE found in the "industrial park" wells (Rossi, J.C. Products) most likely did not originate from the ConnDOT site, and that contaminants originating at the ConnDOT site are unlikely to reach the industrial park occupied by Rossi, Inc., J.L. Products, Inc., and other tenants.

- M&E concluded that based on the hydrogeologic analysis and the EM survey, contaminants originating at the site did not migrate via groundwater beyond an area defined by Candlewood Hill Brook, Candlewood Hill Road and the western-most boundary of the site. Contaminants which enter the groundwater on ConnDOT property will eventually discharge into Candlewood Hill Brook and be significantly diluted;

- M&E also indicated that one potential source of the elevated sodium levels in off-site wells is the road salting of Route 9A and Route 81.

1.3 Scope of Work

DTC completed this Task 220 Exploratory Site Investigation (ESI) in accordance with DTC's Work Plan, dated March 9, 2006, which was approved by CTDEP. DTC designed the Task 220 ESI activities based on a review of previous environmental reports described above, a site walkover, and discussions with CTDEP and ConnDOT Division of Environmental Compliance personnel.

The scope of work included the following tasks:

- Pre-drilling activities, including marking proposed drilling locations, contacting Call-Before-You-Dig to request mark-outs of publicly-owned utilities, reviewing the drilling locations with site representatives, and preparation of a site specific Health and Safety Plan.

- Completion of a ground-penetrating radar (GPR) survey, in an attempt to locate buried pipelines, USTs and utilities, and possibly other subsurface features that are not identified by Call-Before-You-Dig utility mark-out service;

- Completion of thirty-three soil borings ranging in depth from 1.5 to 12 feet below grade using a Geoprobe® direct-push rig;

- Completion of ten groundwater monitoring wells (ranging in depth from 10 to 29 feet below grade) using a hollow-stem auger (HSA) drill rig;

- Collection and analysis of seventy-seven soil samples for volatile organic compounds (VOCs) by EPA Method 8260 (preserved using EPA Method 5035), extractable total petroleum hydrocarbons (ETPH) by the Connecticut Department of Environmental Protection (CT DEP) approved method, total and/or synthetic precipitation leaching procedure (SPLP) polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270, total and/or SPLP RCRA 8 metals, polychlorinated biphenyls (PCBs) by EPA Method 8082, chlorinated pesticides by EPA Method 8081, and/or chlorinated herbicides by EPA Method 8151A;

- Collection and analysis of five sediment samples from portions of the Candlewood Hill Brook that abut the site;

- Collection and analysis of seventeen groundwater samples (from nine of the ten newly-installed and eight exiting monitoring wells) for VOCs, ETPH, PAHs, dissolved RCRA 8 metals, PCBs, pesticides, herbicides, sodium, and/or chloride; and

- Collection and analysis of groundwater from the on-site supply well for VOCs, ETPH, PAHs, dissolved RCRA 8 metals, PCBs, pesticides, herbicides, sodium, and chloride.

2.0 LOCAL ENVIRONMENT AND RECEPTORS

2.1 Surficial Geology

According to the "Surficial Materials Map of Connecticut" (Stone, et. al., 1992), the surficial deposits at the site consist of thick till which is described as areas where till is greater than 10-15 feet thick and including drumlins in which the thickness commonly exceeds 100 feet.

Based on information observed during the soil boring and monitoring well advancement activities, surficial materials consist primarily of both native and non-native (fill) brown fine to coarse sand and silt, including traces of gravel and cobbles. Brick fragments were also encountered within select exploration locations. The fill material was generally encountered in the western portion of the site in the area of the former dumpsite. Boring logs have been included as Appendix A.

2.2 Bedrock Geology

According to the "Bedrock Geology Map of Connecticut" (Rodgers, 1985), the site is described as underlain by Monson gneiss; a light to dark medium to coarse-grained gneiss. No bedrock outcrops were observed; however, bedrock was frequently encountered during the boring and well advancement activities at depths ranging 1.5 to 8 feet below grade.

2.3 Groundwater

According to the Connecticut Department of Environmental Protection (CTDEP) Water Quality Classifications map of the Connecticut River and South Central Coastal Basins, dated February 1993, the CT DEP has designated groundwater beneath the site and surrounding area as "GA" quality. Groundwater of this classification is defined by the CT DEP as "ground water within the area of existing private water supply wells or an area with the potential to provide water to public or private water supply wells. The Department presumes that ground water in such an area is, at a minimum, suitable for drinking or other domestic uses without treatment."

Groundwater beneath the site was generally found between three and seventeen feet below grade surface (bgs). Shallow groundwater at the ConnDOT site flows from northwest to southeast toward Candlewood Hill Brook, based on groundwater depth measurements obtained during this Task 220 ESI, as well as, previous site investigations. Based on measurements of groundwater elevations in the monitoring wells at the site, an upward vertical gradient is present in the unconfined aquifer. This appears to indicate that the Candlewood Hill Brook is an effective hydrogeologic barrier within the overburden aquifer.

According to DTC's calculations, the maximum hydraulic gradient at the site was estimated of be 0.07 ft/ft, exhibiting an average slope of 0.05 ft/ft. DTC's maximum and gradient calculations are identical to those calculated by M&E as part of its Detailed Test Report (see Section 1.2).

2.4 Surface Water

The Candlewood Hill Brook, which flows in an easterly direction, abuts the southern site boundary. According to the above-referenced CTDEP Water Quality Classifications map, the surface water quality of the Candlewood Hill Brook is designated as Class "A". A "Class A" water body has the

following designated uses: potential drinking water supply; fish and wildlife habitat; recreational use; agricultural and industrial supply and other legitimate uses including navigation.

Bible Rock Brook is located approximately ½ mile north of the site and is classified as a Class A water body. The Higganum Reservoir is located approximately ½ mile south of the site and is also classified as a Class A water body. The Higganum Reservoir, Candlewood Hill Brook, and Bible Rock Brook discharge to Ponset Brook which discharges to the Connecticut River located approximately ¾ mile northeast of the site. Ponset Brook at its closest point is approximately 1/4 mile east of the site. Ponset Brook is classified as a Class B/A water body. A class B/A water body does not meet the water quality criteria of a class A stream. The CTDEP goal is to restore the water quality to class "A".

2.5 Drinking Water Supply

There is no public water supply available in the area of the ConnDOT site. Potable water at the site is provided by a supply well located near the western edge of the property. Residences and commercial businesses in the area are supplied potable water by private supply wells.

3.0 OFF-SITE PARCELS OF POTENTIAL ENVIRONMENTAL CONCERN

DTC identified three off-site properties in the vicinity the site as having moderate to high risk of potential subsurface contamination resulting from current and/or historical site activities. The following section provides a brief discussion of each of these properties. The approximate locations of these properties are shown on Figure D-36-6 in Metcalf & Eddy's Detailed Test Report in Appendix C.

These properties are inferred to be located hydraulically crossgradient to the site. However, due to their location immediately northeast of the site, across Candlewood Hill Road, releases from these sites may have the potential to impact the northeastern portion of the site.

J. C. Products , Inc., 305 Main Street

J.C. Products, Inc. is located at the intersections of Saybrook Road, Depot Road, and Killingworth Road (Route 81) and manufactures wire displays, baskets, racks, wire products, and provides wire forming and welding services. There reportedly was a documented trichloroethylene (TCE) spill from an above-ground storage tank (AST) at this facility in 1984.

As mentioned in Section 1.1, DTC completed a Task 240 Water Quality Monitoring Evaluation and reported that trichloroethylene appears to be a contaminant prevalent in groundwater within the town's central commercial district. A detailed discussion of the J.C. Products site is contained in the Final Site Inspection Prioritization Report, prepared by CDM Federal Programs Corporation on behalf of U.S. EPA, which is available in the CT DEP files.

Rossi Lumber, Inc., Depot Road, Western Side

Rossi Lumber, Inc. (Rossi) is also located at the intersections of Saybrook Road, Depot Road, and Killingworth Road, and is a western abutter to the J. C. Products Company. Rossi reportedly processed logs into board timber for construction.

In the Task 240 report, DTC confirmed the presence of the chlorinated pesticide dieldrin in the drinking water at four properties at concentrations at or exceeding the Connecticut Department of Public Health (CTDPH) action level. These water supply wells are located at 7 Killingworth Road, 18 Killingworth Road, 7 Maple Avenue, and 8 Hull Avenue; potentially downgradient from Rossi.

As noted in Section 1.2, dieldrin was broadly used as a pesticide in agriculture from the 1950s until 1974. The EPA allowed the continued use of dieldrin to control termites until 1984. Applications of dieldrin included direct soil injection as a termite barrier in construction, termite proofing of plywood and building boards.

Town Salt Storage Garage, Depot Road, Eastern Side

The Town of Higganum Salt Storage Garage is located along the eastern side of Depot Road between the intersections of Saybrook Road and Parsonage Road.

In the Task 240 report, DTC found that all of the drinking water samples exhibited varying concentrations of chloride and sodium. Although the source(s) of the sodium and chloride groundwater impact could not be confirmed, several of the wells with higher concentrations are located in an inferred downgradient location to the Town Salt Storage Garage.

4.0 FIELD INVESTIGATION AND SAMPLING METHODS

Sampling conducted during this Task 220 ESI included the advancement of thirty-three soil borings, the completion of ten groundwater monitoring wells, and the collection of soil, sediment, and groundwater samples.

DTC subcontracted with Logical Environmental Solutions, LLC (LES) of Tolland, Connecticut to advance thirty-three soil borings using a Geoprobe® direct-push rig. Following the advancement of the Geoprobe® borings, Associated Borings Company, Inc. (Associated Borings) of Naugatuck, Connecticut installed ten monitoring wells using a hollow-stem auger (HSA) drill rig.

The soil boring advancement and groundwater monitoring well installation activities were completed on June 8, 9, 19-21, 2006. DTC returned to the site on July 18, 19, and 20, 2006 to collect five sediment samples from the Candlewood Hill Brook, and eighteen groundwater samples (from the ten newly installed wells and eight existing wells, including the supply well). All soil boring, monitoring well, and sediment sampling locations are depicted on Figure 2.

Individual soil, sediment, and groundwater samples were analyzed for regulated compounds of concern identified to be potentially present within the vicinity of each sampling location. Table 1 provides a summary of the samples obtained for analysis and the laboratory analysis requested. The following sections summarize the field investigation and sampling methodologies used during this investigation.

4.1 Soil Borings, Monitoring Well Installation, and Sampling

A total of thirty-three soil borings, identified as SB-1 through SB-14, and SB-16 through SB-34, were advanced using a direct-push Geoprobe® rig. The soil borings were completed to varying depths of one and one-half to twelve feet below grade. Continuous soil samples were obtained by LES using a stainless-steel, four-foot spoon lined with a dedicated acetate sample tube. The tube was opened on its horizontal axis to allow inspection, description of lithology, and sampling of the material.

In addition to the thirty-three soil borings, ten 2-inch groundwater monitoring wells, identified as MW-1 through MW-8, MW-10S, and MW-10D, were installed by Associated Borings using a HSA rig. The wells were completed to varying depths of ten to twenty-nine feet below grade. Continuous soil samples were obtained at five-foot intervals using the standard split-spoon sampling technique.

Soil samples collected during the completion of the monitoring wells were visually inspected and described by the DTC environmental scientist. Fill was encountered in most of the borings and monitoring wells, typically described as brown medium to coarse sand with gravel, with little asphalt and brick. Borings in the eastern half of the site generally encountered refusal at depths less than 6 feet below grade. Borings in the western portion of the site, within the reported "dumpsite" typically encountered 10 feet or more fill.

Soils encountered during the well installation were similar to those encountered during the boring advancement activities. Concrete and asphalt fragments were encountered within five monitoring well locations. Refusal was not encountered during the well installations, as the hollow-stem auger rig was able to advance through several feet of bedrock at several locations

Monitoring well logs are included as Appendix A.

Following lithology description, a portion of each soil sample collected from the boring and well locations was placed in a clean polyethylene bag for field screening with a photoionization detector (PID) equipped with a 10.2 eV lamp. The PID was calibrated to a standard of isobutylene measured in parts per million per volume (ppmv). After allowing sufficient time for the soil sample to equilibrate with the headspace within the polyethylene bag, the PID was inserted into the container and a reading was taken.

With the exceptions of soil boring SB-22, advanced along the northeastern corner of the maintenance building which exhibited a slightly elevated PID reading of 109 ppmv, and MW-4, installed along the southeastern corner of the maintenance building which exhibited a slightly elevated PID reading of 156 ppmv, no other indications of environmental impacts were noted during the advancement of the five boreholes (visual, olfactory, or elevated PID readings above background).

Based upon the visual appearance of the soil samples, the results of the field screening, and their locations in/near HRP's Potential and Confirmed Release Areas, seventy-seven soil samples were selected for laboratory analysis of VOCs by EPA Method 8260 (preserved using EPA Method 5035), ETPH by the Connecticut Department of Environmental Protection (CT DEP) approved method, total and/or SPLP (PAHs by EPA Method 8270C, total and/or SPLP RCRA 8 metals, PCBs by EPA Method 8082, chlorinated pesticides by EPA Method 8081, and/or chlorinated herbicides by EPA Method 8151A.

The samples were submitted to Spectrum Analytical Laboratory, Inc. (Spectrum) of Agawam, Massachusetts, a State of Connecticut Department of Public Health certified environmental testing laboratory, using proper preservation techniques and chain of custody control.

4.2 Groundwater Monitoring Well Development and Sampling

On July 5, 2006, DTC returned to develop the ten newly-installed groundwater monitoring wells. The wells were developed to provide water free of suspended solids that may carry metal ions or other constituents. Monitoring well MW-2, a well located in a gravel parking area located in the eastern portion of the site, could not be developed due to a water pool in this area which covered the well box. The existing groundwater monitoring wells were not developed by DTC as part of the Task 220 ESI activities.

After a minimum of seven days had elapsed after development activities, DTC sampled the groundwater from nine of the ten newly installed (the remaining well, MW-10S, was dry at the time of sampling) and nine existing monitoring wells (including the one on-site supply well). The low-flow sampling protocol described in the CT DEP Draft Site Characterization Guidance Document, June 12, 2000 was be used for to sample the wells. The groundwater sampling activities were completed from July 18 through July 20, 2006.

Prior to sampling, DTC measured the depth to water (DTW) and total depth (TD) of the monitoring wells, and conducted a relative elevation survey. Depth measurements were obtained relative to the highest point on the PVC will riser pipe. Well depth, depth to water, and relative elevation measurements are tabulated in Table 2. The elevation survey confirmed a predominant groundwater flow direction to the southeast toward the Candlewood Hill Brook (depicted on Figure

3). The DTC elevation survey correlated with data collected during the previous site investigation by Metcalf & Eddy, which also indicated that the groundwater flow direction was to the southeast.

After the gauging and elevation measurements, a narrow diameter Teflon tube was inserted into each well. The Teflon tube was affixed to restaurant grade silicone tube attached to a GeoTech GeoPump-2® variable speed peristaltic pump. The monitoring well was purged for 15-20 minutes until the purge water appeared relatively clear. A total of seventeen monitoring well groundwater samples were obtained from nine newly-installed wells (identified as MW-1 through MW-8, and MW-10S) and eight pre-existing wells (identified as MW-9, W-25-ID, W-25-IS, W-25-2, W-25-4, D-8, D-17, and D-18) were collected for analysis of VOCs, ETPH, PAHs, dissolved RCRA 8 metals, PCBs, pesticides, and/or herbicides.

In addition to the seventeen monitoring well groundwater samples, an existing supply well (identified as Supply Well) was sampled (from a sink located in the bathroom of the northern repair garage) and analyzed for the same constituents of concern identified above.

As previously indicated, all of the groundwater monitoring wells were not developed prior to sampling. Because sediment loads in undeveloped monitoring wells generally yield abnormally high concentrations of total metals, DTC analyzed the groundwater samples collected from the wells for both total and dissolved metals. Dissolved metals were filtered at the laboratory using a 0.45-micron filter and decanted into a nitric acid preserved sample bottle.

The samples were submitted to Spectrum under standard chain of custody protocol. The silicone and Teflon tubing were changed between sampling locations to prevent the possibility of cross contamination.

4.3 Candlewood Hill Brook Sediment Sampling

Five sediment samples, identified as SS-1 through SS-5, were collected on July 18, 2006 from areas of the Candlewood Hill Brook abutting the southern property boundary. Sediment sampling locations are depicted on Figure 2.

A sediment sampling knife was used to collect the sediment samples. The sampling knife was decontaminated between soil samples by the DTC environmental scientist to prevent potential cross contamination between soil samples.

Sediment samples were visually inspected and described by the DTC environmental scientist. Sediment encountered consisted of light to medium brown sand, including some silt.

The five sediment samples were submitted to Spectrum under standard chain of custody protocol for laboratory analysis of VOCs, ETPH, PAHs, RCRA 8 metals, PCBs, pesticides, and herbicides.

4.4 Ground-Penetrating Radar (GPR) Survey

The Task 220 ESI included a Ground Penetrating Radar (GPR) survey to attempt to locate buried pipelines, utilities, and possibly other subsurface features that were not identified by Call-Before-You-Dig utility mark-out service. The GPR survey also attempted to confirm the location of currently in-use underground storage tanks (USTs), and the locations of former underground

storage tanks (FUSTs), and attempted to detect anomalies in the former dumpsite area located in the western portion of the site.

The GPR survey was performed on May 17, 2006, prior to the subsurface investigation activities to avoid damaging subsurface structures, including the currently in-use USTs, which if ruptured could potentially result in a release of petroleum hydrocarbons

DTC contracted with Sub-surface Informational Surveys, Inc. (SIS) of East Longmeadow, Massachusetts to conduct the GPR survey in portions of the property likely/suspected to contain underground anomalies, USTs, or FUSTs.

The equipment utilized for the survey was a SIR-3000 subsurface interface radar unit coupled with a graphic recorded and video display. The unit, mounted on a three-wheel platform, was passed over the suspect area in a perpendicular grid pattern. The unit transmits an electromagnetic signal to the subsurface and then detects, amplifies and displays the signal reflection. Any parabolic anomalies noted below grade were graphically displayed and identified as a potential object of concern. Objects of concern were examined for size, shape, and amplitude. Objects fitting the general pattern of a UST were confirmed by an assessment of metallic properties. The unit was set to detect the features to a depth of ten feet below grade in the eastern portion of the site and twenty to twenty-five feet in the former dumpsite area.

The GPR survey incorporated the entire eastern portion of the property (the repair garage, office, UST, and parking areas) and portions of the western portion of the property, including the former dumpsite area.

The GPR survey detected several anomalies below the ground surface, correlating to known underground utilities and/or currently-in-use USTs. No anomalies were detected in former UST locations, apparently confirming that the USTs have been removed. In the former dumpsite area, the GPR survey detected an apparent change in subsurface stratigraphy at approximately twenty-five feet below the ground surface, possibly related to the presence of loosely-compacted fill materials to this depth, or a representation of the top of the bedrock.

5.0 REGULATORY CRITERIA

The analytical results for soil and groundwater obtained during this investigation were compared to the numeric criteria listed in the Connecticut Remediation Standard Regulations (RSRs), sections 22a-133k-1 through 22a-133k-3 of the Regulations of Connecticut State Agencies dated January 1996, and to numeric criteria in the "Approved Criteria for Additional Polluting Substances" dated April 30, 1999. The RSRs were developed by the CTDEP to define the remediation performance standards for soil and groundwater, specific numeric cleanup criteria, and processes for establishing alternative site-specific standards. The RSRs apply specifically to sites at which remedial actions are required by the CT DEP under Chapters 445 or 446k of the Connecticut General Statutes such as under an administrative order, subsequent to a transfer of an establishment under CGS Section 22a-134a, and to sites that are enrolled in a Voluntary Remediation Program under CGS Sections 22a-133x or 22a-133y.

The RSRs apply to the site as it currently is enrolled in the Voluntary Remediation Program under CGS Section 22a-133x. The following sections provide a brief summary of the criteria evaluated during this Task 220 ESI.

5.1 Soil Criteria

The RSRs provide two criteria for soil including (1) Direct Exposure Criteria (DEC) to protect human health and the environment from risks associated with direct exposure to pollutants in soil; and (2) Pollutant Mobility Criteria (PMC) to protect groundwater quality from pollutants that may migrate from soil to groundwater.

5.1.1 Direct Exposure Criteria

The DEC apply to soil to a depth of 15 feet below surface grade. The DEC generally do not apply to inaccessible soil, provided that an Environmental Land Use Restriction (ELUR) has been recorded on the land records.

Under the RSRs, inaccessible soil refers to polluted soil which is: (1) greater than four feet below the ground surface, (2) more than two feet below a paved surface comprised of a minimum of three inches of bituminous concrete or concrete, or (3) beneath an existing building or a permanent structure approved by the Commissioner of the CTDEP. Site-specific "engineered controls", other than those outlined above may also be implemented to render soil inaccessible. Inaccessible soil may not be exposed by excavation, demolition, or construction activities without written approval from the Commissioner of the CTDEP.

The RSRs provide two sets of DEC, one for residential land use (RES DEC) and another for industrial/commercial land use (I/C DEC). In general, all sites are required to be remediated to the Residential DEC. An industrial/commercial parcel may be remediated to the I/C DEC provided an ELUR has been recorded on the land records limiting the use of the property to industrial/commercial use.

Because no site-specific engineered controls or ELURs are applicable to the project area, DTC compared the analytical results for soil to the RES DEC.

5.1.2 Pollutant Mobility Criteria

The RSRs provide two sets of PMC based on the groundwater classification of the site (i.e. "GA" or "GB"). The purpose of the GA PMC, which apply to "GA" and "GAA" groundwater classification areas, where groundwater is considered by the CTDEP to be of drinking water quality, is to prevent leaching of contaminants from soil to groundwater and preserve the integrity of the groundwater resource. The purpose of the GB PMC (for "GB" groundwater classified areas where groundwater is assumed by the CTDEP to be degraded due to historical land-use activities) is to prevent further degradation of the groundwater resource.

In a GA or GAA groundwater classification area, the GA PMC apply to soil located from the ground surface to the depth of the seasonal low water table. In a "GB" groundwater classification zone, the GB PMC apply to soil from the ground surface to the depth of the seasonal high water table.

The PMC do not apply to environmentally isolated soils that are polluted with substances other than volatile organic compounds (VOCs). Under the RSR's, environmentally isolated soils are defined as contaminated soils beneath an existing building or other permanent structure approved by the Commissioner, provided the soils are not an ongoing source of contamination. The PMC do not apply to polluted fill if such fill is polluted only with coal ash, wood ash, coal fragments, or asphalt paving fragments provided certain additional provisions are met.

As the project area is in a GA area, DTC compared the soil analytical results to the GA PMC.

5.2 Groundwater Criteria

The RSRs provide three criteria for groundwater including (1) Groundwater Protection Criteria (GWPC), (2) Surface Water Protection Criteria (SWPC), and (3) Volatilization Criteria (VC). The groundwater remediation requirements are dependent upon the groundwater classification and use of the property (i.e. residential or industrial/ commercial).

5.2.1 Groundwater Protection Criteria

The GWPC apply to groundwater within "GA" classified areas. The goal of the GWPC is to preserve the designated use of the groundwater resource as an existing or potential future supply of water suitable for drinking or other uses without prior treatment. As the project area is in a GA area, DTC compared the groundwater analytical data to the GWPC.

5.2.2 Surface Water Protection Criteria

The SWPC apply to all groundwater which discharges to surface water. The goal of the SWPC is to preserve surface water quality to protect both human health and the environment. Alternative site-specific SWPC may be developed for compounds detected in groundwater based on site-specific aquifer and surface water parameters. Site-specific

SWPC may be developed and implemented without the approval of the CTDEP (self-implementing).

5.2.3 Volatilization Criteria

The Volatilization Criteria apply to groundwater containing VOCs located within 15 feet of the ground surface or underneath a building; however the DEP has proposed amending the regulations to include groundwater located within 30 feet of the surface. The goal of the VC is to protect human health from contaminants that may volatilize from impacted groundwater into overlying buildings.

The RSRs provide two sets of VC, one for residential land use and another for industrial/commercial land use. In general, sites are required to be remediated to the Residential VC. An industrial/commercial parcel may be remediated to the I/C VC provided an ELUR has been recorded on the land records limiting the use of the property to industrial/commercial uses. There are a number of opportunities to propose site specific exemptions and alternatives to the VC under the RSRs.

The CTDEP proposed revisions to the numeric volatilization criteria in its March 2003 publication "Proposed Revisions – Connecticut's Remediation Standard Regulations Volatilization Criteria". Therefore, DTC compared the groundwater analytical results to both the existing and the proposed RES VC (see Table 4).

5.1.3 Sodium and Chloride Drinking Water Regulatory Criteria

DTC compared the analytical results for the groundwater samples analyzed for sodium and chloride, including the on-site supply well, to the Maximum Contaminant Levels (MCLs) established by the CTDPH in §19-13-B102 of the Public Health Code. Per §19-13-B101 of the Public Health Code, Testing of Water Quality in Private Water Supply Systems, laboratory analytical data obtained for private water supply systems must be compared to the MCLs as established in 19-13-B102 of the Public Health Code. A summary of the laboratory results and the applicable criteria are presented in Table 4. It should be noted that the CTDEP has not established RSR criteria for sodium and chloride.

6.0 SUMMARY AND EVALUATION OF ANALYTICAL DATA

6.1 Soil and Sediment Analytical Results

A total of seventy-seven soil samples and five sediment samples were submitted for laboratory analysis as part of this Task 220 ESI. Soil and sediment samples submitted for laboratory analysis were analyzed for the parameters specified in Table 1. Soil and sediment analytical results are discussed below, and summarized in Table 3, along with the appropriate regulatory criteria.

It should be noted that the RSR criteria do not apply to sediment samples; however, DTC used the numeric criteria in the RSRs as guidelines to assess the sediment sample analytical data.

Extractable Total Petroleum Hydrocarbons (ETPH)

Seventy-five of the seventy-seven soil samples and all of the five sediment samples were analyzed for petroleum hydrocarbons by the Connecticut ETPH method.

As summarized in Table 3, ETPH were detected in fifty-five of the seventy-seven analyzed soil samples. The approximate extent of soil with ETPH concentrations exceeding RSR Criteria is depicted on Figure 4.

The ETPH concentrations detected in soil at the site ranged 41.5 to 3,810 mg/kg. Twenty-five of the fifty-five samples exhibited ETPH concentrations that exceed the Residential DEC and GA PMC of 500 mg/kg. One of the twenty-five samples, MW-10D (10'-14'), exhibited an ETPH concentration of 3,810 mg/kg, a concentration that also exceeded the I/C DEC of 2,500 mg/kg.

ETPH were detected in four of the five sediment samples collected from the Candlewood Hill Brook (identified as SS-1, SS-2, SS-3, and SS-5) at concentrations of 202, 45.2, 41.2, and 49.6 mg/kg, respectively. None of the ETPH concentrations detected in the sediment samples exceeded the Residential DEC or I/C DEC.

Volatile Organic Compounds (VOCs)

Each of the seventy-seven soil and five sediment samples was analyzed for aromatic and halogenated volatile organic hydrocarbons (VOCs) by EPA Method 8260.

No halogenated VOCs were detected above the method detection limits in all of the soil and sediment samples submitted for VOC analysis.

As summarized in Table 3, several aromatic VOCs, including naphthalene, 1,2,4-trimethlybenzene, 1,3,5-trimethlybenzene, xylenes, n-butylbenzene, and/or sec-butylbenzene were detected in forty-one of the seventy-seven soil samples. The VOC compound 1,2,4-trimethlybenzene was detected in soil sample MW-10D (10'-14') at 8.65 mg/kg, a concentration that slightly exceeded the GA PMC for 1,2,4-trimethlybenzene of 7 mg/kg.

The VOC compound acetone was detected in sediment samples SS-3 and SS-5 at concentrations of 0.536 and 0.24 mg/kg, respectively. As acetone is a common analytical laboratory contaminant, it is likely that the detection of acetone is related to laboratory cross-contamination. Regardless,

neither of these two sediment samples exhibited VOC concentrations in excess of the Residential DEC or I/C DEC.

Polynuclear Aromatic Hydrocarbons (PAHs)

Seventy-one of the seventy-seven soil samples and all five sediment samples were analyzed for polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270C.

As summarized in Table 3, one or more PAH compounds were detected at concentrations above method detection limits in fifty-three of the seventy-one soil samples, and in all five sediment samples. Forty-three of the fifty-three soil samples exhibited one or more PAH compounds, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, and/or indeno(1,2,3-cd)pyrene, at concentrations exceeding the RES DEC of 1 mg/kg for each compound. None of the PAHs detected in the sediment samples exceeded the Residential DEC.

The approximate extent of soil with PAH concentrations exceeding the RSR Criteria is depicted on Figure 4.

Ten of the soil samples collected as part of the Task 220 ESI that had elevated PAH compound concentrations were additionally analyzed using the synthetic precipitation leaching procedure (SPLP). The SPLP leachate results were compared with the groundwater protection criteria for each compound to determine compliance with the GA PMC, in accordance with Section 22a-133k-2(c)(2)(A) of the RSRs. The results of the SPLP PAH analysis are summarized in Table 3. As indicated in Table 3, PAH compounds were detected in four of the ten soil samples; identified as SB-4 (6-8'), MW-1 (0-0.5'), MW-10D (6-8'), and MW-10D (10-14'). The detected concentrations of PAHs in each of these four soil samples were well below the groundwater protection criteria for each compound. PAHs were not detected in the remaining six samples. Therefore, compliance with the GA PMC was demonstrated for PAHs.

RCRA Metals

Sixty-two of the seventy-seven soil samples and all of the five sediment samples were analyzed for total RCRA 8 metals.

As summarized in Table 3, several metals (including arsenic, barium, cadmium, chromium, lead, mercury, and/or selenium) were detected in all of the sixty-two analyzed soil and sediment samples. Arsenic was detected in soil samples SB-21 (4'-6') and MW-3 (6'-8') at concentrations of 35 and 17.1 mg/kg, respectively. These arsenic concentrations exceeded the Residential and I/C DEC of 10 mg/kg.

Six of the soil samples exhibiting elevated metals concentrations were additionally analyzed using the synthetic precipitation leaching procedure (SPLP) to evaluate the leachability of the metals and evaluate compliance with the GA PMC. The results of the SPLP metals analyses are summarized in Table 3.

As indicated in Table 3, SPLP lead was detected in soil samples SB-21 (4'-6'), MW-2 (0'-2'), MW-MW-3 (0'-2'), MW-3 (6'-8'), and MW-10D (10'-14'), at concentrations of 0.0935, 0.0918, 0.055,

0.197, and 0.0734 mg/l, respectively. Each of these concentrations exceeded the GA PMC for lead of 0.015 mg/kg.

Polychlorinated Biphenyls (PCBs)

Fifty-two of the seventy-seven soil and each of the five sediment samples were analyzed for polychlorinated biphenyls (PCBs) by EPA Method 8082. No PCBs were detected above the method detection limits in any of the soil and sediment samples submitted for PCB analysis.

Chlorinated Pesticides

Forty-three of the seventy-seven soil and each of the five sediment samples were analyzed for chlorinated pesticides by EPA Method 8081.

As summarized in Table 3, the concentrations of one or more chlorinated pesticide compounds, including 4,4-DDD, 4,4-DDE, and/or 4,4-DDT, were detected above method detection limits in twenty of the forty-three soil samples, and in one of the five sediment samples submitted for chlorinated pesticide analysis. None of the pesticides were detected in the soil and sediment samples at concentrations exceeding the applicable RSR criteria. Dieldrin was not detected in any of the 82 soil and sediment samples submitted for analysis.

Chlorinated Herbicides

Twenty-nine of the seventy-seven soil samples and all of the five sediment samples were analyzed for chlorinated herbicides by EPA Method 8151A. No chlorinated herbicides were detected above the method detection limits in any of the soil and sediment samples submitted for chlorinated herbicides analysis.

6.2 Groundwater Sample Analytical Results

A total of seventeen groundwater samples (from nine of the ten newly-installed wells and eight pre-existing groundwater monitoring wells) were submitted for laboratory analysis as part of this Task 220 ESI. One of the ten newly-installed wells, identified as MW-10S, was not sampled because it was dry on the days of the sampling event. In addition to the seventeen groundwater monitoring well samples, a groundwater sample was collected from the on-site supply well located along the western edge of the property, identified by DTC as "Supply Well".

Groundwater samples were analyzed for the analytical parameters specified in Table 1. Groundwater analytical testing results are summarized in Table 4 along with the appropriate regulatory criteria. The groundwater analytical results are summarized below.

Volatile Organic Compounds (VOCs)

Each of the eighteen groundwater samples was analyzed for aromatic and halogenated VOCs by EPA Method 8260.

No halogenated VOCs were detected above the detection limits in any of the eighteen groundwater samples submitted for VOC analysis.

The aromatic VOC naphthalene was detected in one of the eighteen groundwater samples, identified as MW-10D, at a concentration of 1.0 micrograms per liter (µg/l). The detected concentration of naphthalene in well MW-10D is well below the GWPC for naphthalene of 280 µg/l.

Extractable Total Petroleum Hydrocarbons (ETPH)

Each of the eighteen groundwater samples was analyzed for petroleum hydrocarbons by the Connecticut ETPH method. As summarized in Table 4, ETPH were not detected at concentrations above the method detection limit and the GWPC of 100 micrograms per liter (µg/l).

Polynuclear Aromatic Hydrocarbons (PAHs)

Each of the eighteen groundwater samples was analyzed for polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270C. No PAHs were detected at concentrations above specific compound method detection limits.

Total and Dissolved (Filtered) 8 RCRA Metals

As noted earlier, the existing groundwater monitoring wells were not developed prior to sampling. Because sediment loads in undeveloped monitoring wells generally yield abnormally high concentrations of total metals, DTC analyzed the groundwater samples collected from the existing wells for both total and dissolved metals. Additionally, during the groundwater sampling activities, several of the newly-installed wells were observed to be turbid. Turbid groundwater samples may yield abnormally high concentrations of metals, due to the adsorption of metals to suspended silt particles. Therefore, the analytical results for total metals may not be representative of dissolved-phase groundwater impact.

As summarized in Table 4, several metals, including arsenic, barium, chromium, and/or lead were detected in each of the eighteen groundwater samples. The total arsenic concentrations detected in groundwater collected from monitoring wells MW-3 (16.2 µg/l), MW-4 (15.6 µg/l), W-25-1S (15.0 µg/l), and W-25-4 (16.0 µg/l), and D-18 (15.4 µg/l), exceeded the SWPC for arsenic of 4 µg/l. The total lead concentration detected in groundwater collected from well MW-4 (15.8 µg/l), exceeded the GWPC and SWPC for lead of 15 and 13 µg/l, respectively.

When the filtered samples were analyzed for dissolved metals, dissolved arsenic and lead were not detected above the laboratory method detection limits in any of the wells, indicating that the detected total arsenic and lead concentrations in groundwater are likely due to suspended sediment containing adsorbed arsenic and lead particles and not dissolved-phase arsenic and lead impact. Dissolved barium was detected in twelve wells, ranging from 2.5-28.1 µg/l. These concentrations, however, were well below the GWPC for barium of 1,000 µg/l.

Polychlorinated Biphenyls (PCBs)

Seventeen of the eighteen groundwater samples were analyzed for polychlorinated biphenyls (PCBs) by EPA Method 8082. No PCBs were detected above the method detection limits in any of the groundwater samples submitted for PCB analysis.

Chlorinated Pesticides

Thirteen of the eighteen groundwater samples were analyzed for chlorinated pesticides by EPA Method 8081A. No chlorinated pesticides were detected above the method detection limits in any of the groundwater samples submitted for chlorinated pesticides analysis.

Chlorinated Herbicides

Thirteen of the eighteen groundwater samples were also analyzed for chlorinated herbicides by EPA Method 8151A. No chlorinated herbicides were detected above the method detection limits in any of the groundwater samples submitted for chlorinated herbicides analysis.

Sodium and Chloride

Each of the eighteen groundwater samples was analyzed for sodium and chloride. Varying sodium and chloride concentrations were detected in the eighteen samples, which included the on-site supply well. As discussed in the following paragraphs, the detected concentrations of sodium were compared the Department of Public Health (DPH) notification level of 28 mg/l, which apples to public water supply systems. The chloride concentrations were compared to the DPH Maximum Contaminant Level (MCL) of 250 mg/l. No RSR criteria have currently been established for these constituents.

As summarized in Table 4, fourteen groundwater samples obtained from monitoring wells MW-2 (93 mg/l), MW-3 (139 mg/l), MW-4 (70.1 mg/l), MW-5 (61.4 mg/l), MW-6 (119 mg/l), MW-7 (115 mg/l), MW-8 (216 mg/l), MW-9 (41 mg/l), MW-10D (30.4 mg/l), W-25-2 (87.9 mg/l), W-25-4 (69.3 mg/l), D-8 (195 mg/l), D-17 (32.3 mg/l), and D-18 (75.6 mg/l) contained sodium concentrations exceeding the DPH notification level of 28 mg/l.

A groundwater sample obtained from monitoring well MW-8 exhibited a chloride concentration of 268 mg/l, slightly exceeding the DPH MCL of 250 mg/l. It should be noted that the groundwater sample obtained from groundwater monitoring well MW-8 also exhibited the highest sodium concentration at 216 mg/l.

The sodium and chloride concentrations detected in the on-site supply well at 9.96 mg/l and 13.8 mg/l, respectively, are well below the DPH notification level for sodium of 28 mg/l, and the DPH MCL for chloride of 250 mg/l.

The sodium and chloride concentrations in groundwater are depicted in Figure 4.

6.3 Quality Assurance and Quality Control

As part of Diversified Technology Consultants' quality assurance program, DTC carried three groundwater trip blanks in the coolers. Analysis of the trip blanks for VOCs indicated that no cross-contamination of the groundwater samples occurred in transit.

7.0 CONCEPTUAL SITE MODEL

DTC developed the conceptual site model for this site during the process of developing the Scope of Work for this investigation and based on our review of the existing reports for the site, including the April 2002 ECAF. The April, 2002 ECAF, which summarized the information available at that time, listed ten confirmed or potential release areas. These confirmed and potential release areas are depicted in Figure 2. It should be noted that two of the potential release areas, corresponding to existing and historic underground storage tank locations, actually comprised multiple areas of the site.

The "confirmed" release areas were identified by HRP Associates based on environmental data gathered by Metcalf & Eddy during the 1980s. These confirmed release areas required further delineation and additional environmental sampling and analysis to assess compliance with the RSR criteria which did exist at the time of M & E's investigation. The potential release areas required sampling to determine whether or not releases had actually occurred. DTC's soil boring, sediment and surface water sampling, monitoring well locations, sampling depths, and analytical parameters were based on the available information and the perceived release mechanism(s).

The soil and groundwater analytical results obtained during the DTC's Task 220 investigation were of adequate quality to further evaluate the confirmed and potential release areas. Applying this conceptual, DTC identified 12 areas where releases of regulated contaminants had occurred to site soil. These release areas are discussed in more detail in Section 8.0 and depicted in Figure 3.

The release area that contains the largest volume of impacted soil is Release Area 1. This is the western portion of the site that was used as a dumpsite and filled between 1941 and 1975, according to previous reports. DTC's borings found a thickness of 10 to 14 feet of fill, generally consisting of relatively loosely consolidated, brown, fine to coarse-grained sand with some silt, gravel and cobbles and asphalt. The depth to groundwater varied from about 6 to 11 feet. Concentrations of PAHs consistently exceeded the residential and industrial/commercial DEC. Several soil samples also had total petroleum hydrocarbons that exceeded the DEC and the GA PMC.

One sample, obtained from a depth of 10 to 14' during the drilling for MW-10D, had concentrations of lead, and one VOC constituent, 1,2,4-trimethylbenzene, that exceeded the GA PMC. These constituents may be related to historic releases of leaded gasoline in this area. It should be noted that the total concentrations of lead did not exceed the residential DEC.

Low levels of now banned chlorinated pesticides, 4,4-DDD, 4,4-DDE, and 4,4-DDT were found in the eight borings performed in this area; consistent with historic investigations; however no dieldrin was detected and no chlorinated herbicides were detected. Boring MW-10D encountered refusal at 29 feet and found the presence of approximately 10 feet of silty clay below the fill. This is consistent with the reported historic presence of a pond in this area of the site prior to filling. .

Release Area 2 corresponds to an area near the Candlewood Hill Brook where several drums of experimental joint sealer were reportedly historically disposed of. PAHs and ETPH were found to exceed the RSR criteria. This area also contained eight to ten feet of fill materials which included some asphalt fragments.

The other release areas are smaller in areal extent and in volume of impact soil. These release areas are near the two site buildings and within the eastern portion of the site. In general, borings in these areas encountered bedrock within 8 feet of the ground surface, but still identified fill materials in the

overburden. The releases were in proximity to a storage shed where drums had reportedly been stored, areas outside the repair bays of the existing buildings, within a fenced impoundment area in the southeast portion of the site used for general storage, a septic tank and leachfield area, and near existing and former underground storage tanks. The constituents that exceeded the RSRs in soil were PAHs, petroleum hydrocarbons, and, to a lesser extent, lead and arsenic.

The investigation did not confirm an on-site source of the dieldrin that was previously detected in several private water supply wells in the vicinity, across Candlewood Hill Brook (see Section 1.2). DTC inspections noted that the Candlewood Hill Brook had a significant flow even after a two week period of no rain in mid-August, 2005, and groundwater data from well nest MW-10S/10D indicate an upward component of groundwater flow towards the brook. These observations suggest that the brook is a discharge point for overburden and shallow bedrock groundwater emanating from the site and an effective hydraulic boundary in the overburden and bedrock aquifers. This agrees with the conclusions reached by Metcalf & Eddy in the Detailed Test Report (1986). .

7.1 Data Gaps

As depicted in Figure 3, PAHs and ETPH exceed the RSR criteria throughout much of the site. Based on the conceptual site model, these constituents were tied to specific release areas and activities that had reportedly occurred at the site. However, the detections of PAHs, ETPH, arsenic and lead above the RSRs may be at least partially caused to the widespread occurrence of fill materials that contain varying amounts of asphalt and the industrial use of the site that dates back to the 19th century.

No soil borings were advanced beneath the site buildings, which are active vehicle maintenance garages. The groundwater data, however, suggest that there have not significant releases of volatile organic compounds and petroleum hydrocarbons to soil beneath the site buildings that have affected groundwater quality.

Based on the results, it can not be determined to what extent the presence of elevated levels of sodium and chloride in site groundwater is related to historic salt storage at the site, and to what extent the continued use of salt on nearby roadways contributes to these effects.

8.0 POTENTIAL AND CONFIRMED RELEASE AREAS

The following is a summary of each of the potential and confirmed sources of soil and groundwater contamination identified by HRP Associates as Potential Release Areas (PRAs) and confirmed Release Areas (RAs) in the April 2002 ECAF, and summary of the confirmed Release Areas identified by DTC (DTC RAs) during completion of this Task 220. The HRP PRAs and RAs are depicted in Figure 2. The DTC identified Release Areas (DTC RAs) are depicted in Figure 3.

Based on available historical data, ten HRP PRAs and RAs were further investigated by DTC, as detailed below.

8.1 HRP Release Area 1 (RA-1)

The western portion of the site was reportedly used as a dumpsite from 1941 to 1975. Earlier investigations found metal, asphalt, and construction debris including a degraded drum containing the chlorinated herbicide 2, 4,5-T.

Three monitoring wells (W-25-1S, W-25-1D, and W-25-4) existed at HRP RA-1 prior to DTC's investigation. DTC advanced six soil borings (SB-1 through SB-6) and installed two additional groundwater-monitoring wells (MW-10S and MW-10D). DTC also collected and analyzed two sediment samples from the Candlewood Hill Brook (SS-5 and SS-4), and collected groundwater samples from well MW-10D and the three pre-existing wells.

DTC RA-1

Based on the analytical data, soil located at zero to fourteen feet bgs in areas within HRP RA-1 is impacted with ETPH, PAHs, and the VOC compound 1,2,4-trimethylbenzene exceeding applicable RSR criteria. This soil impact is identified by DTC as DTC RA-1 and depicted in Figure 3. These impacts may be related to either surficial releases of petroleum hydrocarbons, or historical filling with petroleum hydrocarbon impacted soil. These impacts may be partially related to fill containing asphalt fragments observed in the soil at several locations within RA-1.

Low-level concentrations of the chlorinated pesticides 4,4-DDD and 4,4-DDT, at concentrations that do not exceed RSR criteria, were also identified in soil in this area. No other compounds were detected at concentrations exceeding applicable RSR criteria.

ETPH and chlorinated pesticides were not detected in the groundwater samples in the four wells sampled on this area. Only one VOC compound, naphthalene, was detected at a trace concentration of 1 µg/l in well MW-10D.

8.2 HRP Release Area 2 (RA-2)

An earlier investigation found several containers of an experimental joint sealer buried in the southern portion of the property, southeast of the two buildings along the banks of Candlewood Hill Brook.

Four monitoring wells (W-25-2, MW-9, D-17, and D-18) existed at HRP RA-2 prior to DTC's investigation. DTC installed two soil borings (SB-7 and SB-8) and collected and analyzed one

sediment sample from the Candlewood Hill Brook (SS-3), and groundwater samples from four existing wells.

DTC RA-2

Based on the analytical data, soil located at zero to eight feet bgs within HRP RA-2 is impacted with ETPH and PAHs exceeding applicable RSR criteria. This soil impact is identified by DTC as DTC RA-2 and depicted in Figure 3. These impacts may be related to either surficial releases of petroleum hydrocarbons, or historical filling with petroleum hydrocarbon impacted soil. These impacts may be partially related to fill containing asphalt fragments observed in the soil at several locations within RA-2.

Low-levels of the chlorinated pesticide 4,4-DDT, at concentrations that do not exceed RSR criteria, were also identified in soil in this area. No other compounds were detected in soil or groundwater at concentrations exceeding applicable RSR criteria.

8.3 HRP Potential Release Area 3 (PRA-3)

A storage shed southwest of the original mill building was reportedly used for drum storage was not investigated in earlier studies of the site. DTC completed one soil boring, identified as SB-13, immediately south of the storage shed.

DTC RA-3

Based on the analytical data, soil located at zero to two feet bgs in HRP PRA-3 is impacted with ETPH and PAHs exceeding applicable RSR criteria. This soil impact is identified by DTC as DTC RA-3 and depicted in Figure 3. The source of PAH and ETPH impact may be related to surficial releases of petroleum hydrocarbons in this area. Alternatively, it may be related to fill containing asphalt fragments.

Low-levels of the chlorinated pesticide 4,4-DDT, at concentrations that do not exceed RSR criteria, were also identified in soil in this area.

8.4 HRP Potential Release Area 4 (PRA-4)

The HRP April 2002 ECAF identified a potential solvent release area outside the repair bays of the eastern half of the original (1866) building. This building is the more southerly of the two main buildings. DTC installed one groundwater monitoring well, identified as MW-8, in this location. Two soil samples and one groundwater sample were analyzed for the presence of VOCs.

Low-levels of the VOC naphthalene, at concentrations that do not exceed RSR criteria, were identified at zero to two and four to six feet bgs in soil in this area. The source of this low-level soil impact may be related to surficial releases of petroleum hydrocarbons and/or fill containing asphalt fragments. No VOCs were detected above the minimum detection limits in the groundwater sample MW-8. No constituents exceeded RSR criteria in soil and groundwater within this area.

8.5 HRP Potential Release Area 5 (PRA-5)

PRA-5 is located behind (south) of the repair bays of the western portion of the original (1866) building. It was reported that steam cleaning with the possible use of solvent-based cleaners

occurred in this area. DTC advanced two soil borings (SB-14 and SB-16) and installed and sampled one groundwater monitoring well (MW-7) in this location.

DTC RA-4

Based on the analytical data, soil located at zero to three feet bgs within HRP PRA-5 is impacted with ETPH and PAHs exceeding applicable RSR criteria. This soil impact is identified by DTC as DTC RA-4 and depicted in Figure 3. The source of this soil impact may be related to surficial releases of petroleum hydrocarbons and/or fill containing asphalt fragments. No other compounds were detected at concentrations exceeding applicable RSR criteria.

8.6 HRP Potential Release Area 6 (PRA-6)

This location is a large, fenced, impoundment area in the southeast portion of the site used for general storage. Historic information is incomplete but this area may have been used for solvent storage. A soil boring and groundwater grab sample (sample D-3) obtained in an earlier investigations discovered volatile organics, lead and petroleum hydrocarbons exceeding the RSRs.

DTC advanced two soil borings (SB-33 and SB-34) and installed and sampled one groundwater monitoring well (MW-2) in this area. DTC also obtained a sediment sample (SS-1) from the Candlewood Hill Brook adjacent to this area.

DTC RA-5

Based on the analytical data, soil located at zero to two feet bgs within HRP RA-6 is impacted with ETPH, PAHs, and SPLP lead exceeding applicable RSR criteria. This soil impact is identified by DTC as DTC RA-5 and depicted in Figure 3. The source of this soil impact may be related to surficial releases of petroleum hydrocarbons and/or impacted fill emplaced in this location. No other compounds were detected in soil or groundwater exceeding applicable RSR criteria.

8.7 HRP Potential Release Area 7 (PRA-7)

The area encompassing the repair bays in the western portion of the original (1866 southern) building, most of the second (1887 northern) building, and the gasoline pump island between the two buildings received limited attention in earlier investigations.

DTC advanced two soil borings (SB-12 and SB-31) outside the northern garage (1887) building, two soil borings outside the southern building (SB-19, and SB-32) and installed and sampled two groundwater monitoring wells down gradient of both buildings (MW-4 and MW-5).

DTC RA-6

Based on the analytical data, soil located at zero to two feet bgs in borings SB-12, SB-19, and SB-32, and soil located at zero to five feet bgs in monitoring well MW-4 within HRP PRA-7 is impacted with ETPH, and/or PAHs exceeding applicable RSR criteria. This soil impact has been identified by DTC as DTC RA-6 and depicted in Figure 3. The source of this soil impact may be related to surficial releases of petroleum hydrocarbons, releases of petroleum

hydrocarbons from the eastern repair bays of the 1866 building and the western bay of the 1877 building, and/or impacted fill emplaced in this location.

Total lead and arsenic were detected in the groundwater sample from well MW-4 at concentrations that exceed the GWPC and SWPC. Dissolved arsenic and lead were not detected above the laboratory method detection limits, indicating that the detected total arsenic and lead concentrations in groundwater are likely due to suspended sediment containing adsorbed arsenic particles and not dissolved-phase arsenic and lead impact.

8.8 HRP Potential Release Area 8 (PRA-8)

Previously, no investigations have been conducted in the area of the septic tank and leach field. Soil and groundwater in this area could have potentially received fluid and semi-fluid wastes from sinks and floor drains from both buildings. DTC advanced two soil borings (SB-24 and SB-25 and installed and sampled one groundwater monitoring well MW-1).

DTC RA-7

Based on the analytical data, soil located at zero to three feet bgs in HRP PRA-8 is impacted with PAHs exceeding applicable RSR criteria. Low-level concentrations of ETPH and VOCs, at concentrations that do not exceed RSR criteria, were also identified to three feet bgs. This soil impact is identified by DTC as DTC RA-7 and depicted in Figure 3. This soil impact may be related to either surficial releases of petroleum hydrocarbons or to asphalt pavement fragments. No other compounds were detected in soil or groundwater at concentrations exceeding applicable RSR criteria and above specific analytical method detection limits.

8.9 HRP Potential Release Area 9A (PRA-9A)

PRA9 was divided into four areas where ConnDOT currently maintains underground storage tanks (USTs). PRA9A is the location of an underground heating oil tank in the northeast corner of the northern building. One existing groundwater monitoring well identified as D-8, is located in this area, and was sampled as part of this investigation.

DTC advanced one soil boring (SB-20) in this area. One soil sample and one groundwater sample were collected and analyzed for VOCs, ETPH, and PAHs. No VOCs, ETPH, or PAHs were detected in soil or groundwater above specific analytical method detection limits in boring SB-20 or groundwater from well D-8.

8.10 HRP Potential Release Area 9B (PRA-9B)

ConnDOT maintains a waste oil UST just north of the offices and repair bays in the original (southern) building. DTC installed one groundwater monitoring well (MW-5) near the location of this UST. One soil sample and one groundwater sample were collected and analyzed from this area.

Low-level (background) concentrations of several RCRA metals, at concentrations that do not exceed RSR criteria, were identified from six to eight to three feet bgs at this location. No VOCs, ETPH, or PAHs, PCBs were detected in soil or groundwater above specific analytical method detection limits.

8.11 HRP Potential Release Area 9C (PRA-9C)

A diesel fuel UST is located outside of the northeast corner of the southern (1866) building. No previous investigations are known to have been completed in this area. DTC advanced two soil borings (SB-22 and SB-23) adjacent to this UST.

DTC RA-8

Based on the analytical data, soil located at zero to six feet bgs within HRP PRA-9C is impacted with ETPH and PAHs exceeding applicable RSR criteria. This soil impact is identified by DTC as DTC RA-8 and depicted in Figure 3. The source of the ETPH and PAH soil impact may be related to surficial releases of petroleum hydrocarbons (spills from UST filling activities or other incidental releases), and/or a potentially leaking UST. Low levels of the chlorinated pesticide 4,4-DDT, at a concentration that does not exceed RSR criteria, was also identified in soil in this area.

Groundwater collected from nearby monitoring wells MW-3, MW-4, and MW-5 did not contain constituents of concern (VOCs, ETPH, PAHs) associated with diesel fuel, apparently indicating that this soil impact has not impacted groundwater.

8.12 HRP Potential Release Area 9D (PRA-9D)

Further east of PRA-9C are one heating oil UST and one gasoline UST. DTC advanced one soil boring (SB-21) and installed and sampled one monitoring well (MW-3) immediately south of these two USTs. In addition, DTC collected one sediment sample (SS-2) from Candlewood Hill Brook adjacent to this area.

DTC RA-9

Based on the analytical data, soil located at zero to eight feet bgs within HRP PRA-9D is impacted with ETPH, PAHs, total arsenic and/or SPLP lead exceeding applicable RSR criteria. A low level of a VOC compound, 1,2,4-trimethylbenzene, was detected at concentrations not exceeding applicable RSR criteria, in the soil sample collected at six to eight feet bgs from MW-3. This soil impact is identified by DTC as DTC RA-9 and depicted in Figure 3. The source of this soil impact may be related to surficial releases of petroleum hydrocarbons (spills from UST filling activities or other incidental releases), and/or a potentially leaking UST.

Total arsenic was identified in groundwater collected from well MW-3 at a concentration that exceeds the SWPC. When analyzed for dissolved arsenic, no dissolved arsenic was detected above the laboratory method detection limits in the well, indicating that the detected total arsenic concentration in groundwater is likely due to suspended sediment containing adsorbed arsenic particles and not dissolved-phase arsenic impact. Groundwater collected from MW-3 did not contain constituents of concern (VOCs, ETPH, PAHs) associated with gasoline or heating fuel, indicating that this soil impact has not impacted groundwater.

8.13 HRP Potential Release Area 10A (PRA-10A)

PRA-10 is subdivided into three former UST locations. A heating oil UST and diesel UST were formerly located in the area designated as PRA10A, immediately west of the northern (1887)

building in a paved area outside the garage. No documentation for the removal of these USTs is available. No previous investigations have been performed at this location.

DTC advanced three soil borings (SB-9, SB-10, and SB-11) in this area. Laboratory analysis for soil samples obtained in this area included VOCs, PAH, and ETPH.

DTC RA-10

Based on the analytical data, soil located at zero to eight feet bgs north and south of the former USTs is impacted with ETPH and PAHs exceeding applicable RSR criteria. This soil impact is identified by DTC as DTC RA-10 and depicted in Figure 3. The source of this soil impact may be related to surficial releases of petroleum hydrocarbons (spills from former UST filling activities or other incidental releases), and/or potentially leaking former USTs.

Groundwater collected from nearby monitoring well MW-8 did not contain constituents of concern (VOCs, ETPH, PAHs) associated with heating or diesel fuel, apparently indicating that the soil at this location has not impacted groundwater.

8.14 HRP Potential Release Area 10B (PRA-10B)

PRA-10B is located in the area between the two buildings where four former USTs were removed. DTC advanced five soil borings (SB-26 through SB-30) in the vicinity of the former USTs.

DTC RA-11

Based on the analytical data, soil located at zero to three feet bgs within HRP PRA-10B is impacted with PAHs exceeding applicable RSR criteria. Low-level concentrations of ETPH, metals, and the chlorinated pesticides 4,4-DDD and 4,4-DDT, at concentrations that do not exceed RSR criteria, were also identified in this area. This soil impact is identified by DTC as DTC RA-11 and depicted in Figure 3. The source of PAH soil impact may be related to surficial releases of petroleum hydrocarbons (spills from former UST filling activities or other incidental releases), and/or a potentially leaking former USTs.

Groundwater collected from monitoring well MW-5, located immediately downgradient of this release area, did not contain constituents of concern (VOCs, ETPH, PAHs) associated with heating or diesel fuel, apparently indicating that the soil at this location has not impacted groundwater.

8.15 HRP Potential Release Area 10C (PRA-10C)

ConnDOT maintained a former heating oil UST immediately south of the office of the original southern building. No previous investigations were conducted at this UST location. DTC advanced two soil borings (SB-17 and SB-18) and installed and sampled one groundwater monitoring well (MW-6) along the banks of the brook, directly behind (south of) the mill building.

DTC RA-12

Based on the analytical data, soil located at zero to three feet bgs within HRP PRA-10C is impacted with PAHs exceeding applicable RSR criteria. Low levels of ETPH and metals, at concentrations not exceeding applicable RSR criteria, were also detected in this area. This soil

impact is identified by DTC as DTC RA-12 and depicted in Figure 3. The source of this soil impact may be related to surficial releases of petroleum hydrocarbons (spills from UST filling activities or other incidental releases), and/or traces of asphalt in the samples.

Groundwater collected from MW-6 did not contain constituents of concern (VOCs, ETPH, PAHs) associated with heating fuel, apparently indicating that this soil impact at this location did not impact groundwater. No other constituents exceeded applicable RSR criteria for soil or groundwater.

In addition to investigating the above-mentioned areas, DTC investigated the following:

On-Site Supply Well

The facility has a drinking water supply well located near the northwest corner of the site. As part of this exploratory site investigation, DTC submitted a groundwater sample collected from a sink located in the bathroom of the northern repair garage connected to the on-site supply well for analysis of VOCs, PAHs, herbicides, pesticides, PCBs, metals, and ETPH.

With the exception of low-level sodium, chloride, and barium concentrations detected in the on-site supply well, no other compounds were detected above specific method detection limits.

Former Salt Storage Activities

As previously mentioned, the subject site was used as a salt storage facility from 1941 until 1973. The precise location of the salt storage area is not known. Data obtained by M&E in 1986 indicated the presence of elevated levels of sodium and chloride in certain on-site wells.

Eighteen groundwater monitoring wells were sampled and analyzed for sodium and chloride as part of DTC's Task 220 investigation. Varying sodium and chloride concentrations were detected in each of the eighteen samples, which included the on-site supply well. The highest concentrations of sodium and chloride were detected in the groundwater sample obtained from well MW-8 located immediately west of the more southern maintenance building. A groundwater sample obtained from the monitoring well MW-8 exhibited chloride of 268 mg/l, a concentration that slightly exceeded the DPH MCL of 250 mg/l. It should be noted that the groundwater sample from groundwater monitoring well MW-8 also exhibited the highest sodium concentration at 216 mg/l.

The chloride concentration detected in the on-site supply well of 13.8 mg/l is well below the DPH MCL for chloride of 250 mg/l.

9.0 CONCLUSIONS AND RECOMMENDATIONS

As noted in Section 1.1, the purpose of this Task 220 ESI was to collect on-site soil, sediment, and groundwater data to further evaluate ten Potential and Confirmed Release Areas (PRA and RAs) identified in the April 2002, HRP-prepared ECAF, and to determine the extent of soil and groundwater impact at the site associated with these Release Areas. The HRP PRAs and RAs are depicted in Figure 2. The DTC identified Release Areas (DTC RAs) are depicted in Figure 3.

The Task 220 ESI testing activities completed by DTC included the completion of a GPR survey, the advancement of thirty-three soil borings, the completion of ten groundwater monitoring wells, the collection and analysis of seventy-seven soil samples, the collection and analysis of seventeen groundwater samples (from nine of the ten newly-installed and eight exiting monitoring wells), and the collection and analysis of groundwater from the on-site supply well. The sample locations were intended to further investigate the ten PRAs and RAs that were identified by HRP.

The soil and groundwater data collected by DTC identified a total of twelve (12) release areas at the site, identified as DTC-RA-1 through DTC-RA-12. The release areas are depicted on Figure 3 and summarized below.

9.1 Soil Release Areas

DTC RA-1

Soil located at zero to fourteen feet bgs in areas within DTC RA-1 is impacted with ETPH, PAHs, and the VOC compound 1,2,4-trimethylbenzene exceeding applicable RSR criteria. These impacts may be related to either surficial releases of petroleum hydrocarbons, or historical filling with petroleum hydrocarbon impacted soil. These impacts may be partially related to fill containing asphalt fragments observed in the soil at several locations within DTC RA-1.

DTC RA-2

Soil located at zero to eight feet bgs within DTC RA-2 is impacted with ETPH and PAHs exceeding applicable RSR criteria. These impacts may be related to either surficial releases of petroleum hydrocarbons, or historical filling with petroleum hydrocarbon impacted soil. These impacts may be partially related to fill containing asphalt fragments observed in the soil at several locations within RA-2.

DTC RA-3

Soil located at zero to two feet bgs in DTC RA-3 is impacted with ETPH and PAHs exceeding applicable RSR criteria. The source of PAH and ETPH impact may be related to surficial releases of petroleum hydrocarbons in this area. Alternatively, it may be related to fill containing asphalt fragments.

DTC RA-4

Soil located at zero to three feet bgs in select areas within DTC RA-4 is impacted with ETPH and PAHs exceeding applicable RSR criteria. The source of this soil impact may be related to surficial releases of petroleum hydrocarbons and/or fill containing asphalt fragments.

DTC RA-5

Soil located at zero to two feet bgs within DTC RA-5 is impacted with ETPH, PAHs, and SPLP lead exceeding applicable RSR criteria. The source of this soil impact may be related to surficial releases of petroleum hydrocarbons and/or impacted fill emplaced in this location.

DTC RA-6

Soil located at zero to two feet bgs in borings SB-12, SB-19, and SB-36, and soil located at zero to five feet bgs in monitoring well MW-4 within HRP PRA-7 is impacted with ETPH, and/or PAHs exceeding applicable RSR criteria. The source of this soil impact may be related to surficial releases of petroleum hydrocarbons, releases of petroleum hydrocarbons from the eastern repair bays of the 1866 building and the western bay of the 1877 building, and/or impacted fill emplaced in this location.

DTC RA-7

Soil located at zero to three feet bgs in DTC RA-7 is impacted with PAHs exceeding applicable RSR criteria. This soil impact may be related to either surficial releases of petroleum hydrocarbons or to asphalt pavement fragments.

DTC RA-8

Soil located at zero to six feet bgs in select areas within DTC RA-8 is impacted with ETPH and PAHs exceeding applicable RSR criteria. The source of the ETPH and PAH soil impact may be related to surficial releases of petroleum hydrocarbons (spills from UST filling activities or other incidental releases), and/or a potentially leaking UST.

DTC RA-9

Soil located at zero to eight feet bgs in DTC-RA-9 is impacted with ETPH, PAHs, total arsenic and/or SPLP lead exceeding applicable RSR criteria. The source of this soil impact may be related to surficial releases of petroleum hydrocarbons (spills from UST filling activities or other incidental releases), and/or a potentially leaking UST.

DTC RA-10

Soil located at zero to eight feet bgs north and south of the former USTs is impacted with ETPH and PAHs exceeding applicable RSR criteria. The source of this soil impact may be related to surficial releases of petroleum hydrocarbons (spills from former UST filling activities or other incidental releases), and/or potentially leaking former USTs.

DTC RA-11

Soil located at zero to three feet bgs in DTC RA-11 is impacted with PAHs exceeding applicable RSR criteria. The source of PAH soil impact may be related to surficial releases of petroleum hydrocarbons (spills from former UST filling activities or other incidental releases), and/or a potentially leaking former USTs.

DTC RA-12

Soil located at zero to three feet bgs in DTC RA-12 is impacted with PAHs exceeding applicable RSR criteria. The source of this soil impact may be related to surficial releases of petroleum hydrocarbons (spills from UST filling activities or other incidental releases), impacted fill, and/or a potentially leaking former heating oil UST.

9.2 Groundwater

The data from DTC's investigation confirmed the southeasterly flow direction which was found by M&E in 1986.

Groundwater elevation data from monitoring well MW-10D, screened at a deeper level within the overburden aquifer, suggest the presence of an upward flow gradient at a location immediately downgradient of the reported dumpsite (DTC RA-1) within the western portion of the site. This supports a conclusion that the Candlewood Hill Brook is an effective hydrogeologic barrier within the overburden aquifer.

The data from this investigation indicate that the concentrations of sodium and chloride in groundwater have generally declined since M&E's investigation. However, similar to the findings of M&E's investigation, the highest concentrations were found immediately west of the more southerly maintenance garage.

In general, no significant impacts to groundwater due to regulated constituents of concern were found. The concentration of chloride in one well immediately west of the southerly maintenance building slightly exceeded the CT DPH MCL of 250 mg/l; however, the groundwater concentration declined to less than the MCL when reaching the Candlewood Hill Brook. Elevated levels of sodium and chloride were found in several on-site wells.

The source(s) of the elevated sodium and chloride levels is not known; however, the distribution of the sodium and chloride concentrations suggests that the historical salt storage may have occurred at the location immediately west of the maintenance buildings. The distribution pattern also suggests that the surface runoff from the Candlewood Hill Road, and possibly Saybrook Road (Route 154, further north) have resulted in elevated sodium and chloride in groundwater.

Five of the seventeen monitoring wells that were sampled as part of this investigation had concentrations of total arsenic and one of these wells had a concentration of total lead that exceeded the applicable SWPC; however, concentrations of dissolved arsenic (obtained from filtered groundwater samples) did not exceed the SWPC, suggesting that the elevated levels were due to the turbidity of the unfiltered samples and the adsorption of metal ions onto suspended sediment.

No VOCs, ETPH, PAHs, PCBs, chlorinated pesticides, or chlorinated herbicides were detected in the seventeen groundwater monitoring wells or the on-site water supply system that were sampled as part of this investigation, with the exception of a trace level detection of naphthalene at 1 µg/l in well MW-10D.

9.3 Recommendations

Based on the results of this Task 220 Exploratory Site Investigation, DTC recommends that a Remedial Action Plan (RAP) be prepared. The RAP will evaluate the alternatives to remediate the twelve confirmed release areas to comply with the Remediation Standard Regulations. The RAP will make recommendations regarding the selected remedial approach(es) for each release area and provide protocol for confirmatory soil sampling, reporting, and compliance and post-remediation groundwater monitoring.

DTC will prepare a separate cost estimate to remediate the twelve confirmed release areas to comply with the Remediation Standard Regulations. For purposes of estimating the cost of the remedial actions, DTC will assume that the PAHs and ETPH exceed the RSR criteria throughout the areas depicted in Figure 3.

During this effort, DTC will consider the cost-effectiveness of various approaches, the feasibility of implementation of each approach, and ConnDOT's future plans for the property. This cost estimate will be included in a letter report which will be submitted separately to ConnDOT.

10.0 LIMITATIONS

All work product and reports provided in connection with the performance of this Task 220 Exploratory Site Investigation (ESI) are subject to the following limitations:

This investigation and report were conducted and prepared on behalf of and for the exclusive use of ConnDOT.

The observations, findings, and conclusions provided in this report were based on DTC's observations of the site conditions at the time of the investigation.

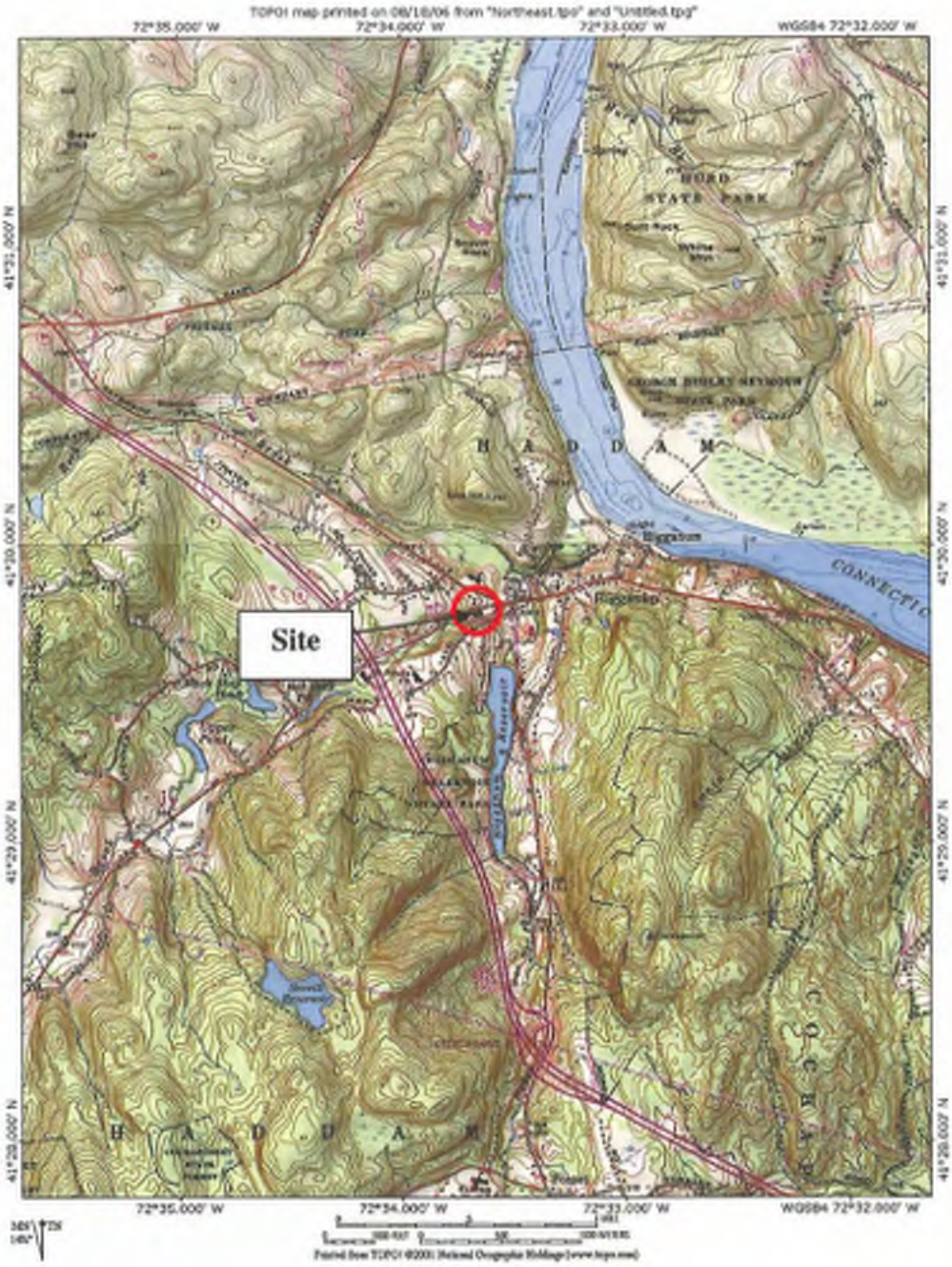
The conclusions summarized herein are based on the observations and investigations described within this report. Future events at the site or surrounding properties may alter these findings.

In completing this Task 220 ESI, DTC has relied upon information provided by subcontractors (i.e. laboratories and drilling contractors). DTC has relied upon this information carefully; however, DTC provides no warranty regarding the accuracy and completeness of the information provided.

DTC has performed this study in a professional manner using a degree of skill and care exercised for similar projects under similar conditions by reputable and competent environmental consultants. The conclusions provided by DTC are based solely on the scope of work conducted and on observations and limited explorations described within this report at the time these services were conducted. No other warranty, expressed or implied, is made as to the professional opinions included by DTC in this report.

11.0 REFERENCES

1. CTDEP Remediation Standard Regulations, Sections 22a-133k-1 through 22a-133k-3 of the Regulations of Connecticut State Agencies, effective January 30, 1996.
2. CTDEP, Approved Criteria for Additional Polluting Substances, April 30, 1999.
3. Connecticut Department of Environmental Protection, Water Management Bureau, Proposed Revisions – Connecticut's Remediation Standard Regulations Volatilization Criteria, March 2003.
4. Connecticut Department of Environmental Protection, "Water Quality Classifications Map, Connecticut River and South Central Coastal Basins," Sheet 2, adopted February 1993.
5. Rogers, J. "Connecticut Bedrock and Natural History Survey", Connecticut Geological and Natural History Survey, Department of the Interior United States Geological Survey, 1985.
6. Stone, J.R., et. al, "Surficial Geology of Connecticut", Connecticut Geological and Natural History Survey, Department of Environmental Protection, 1992.
7. Connecticut Department of Transportation, Division of Environmental Compliance, On-Call Contaminated Soil/Groundwater Scopes manual, dated 2003.
8. Detailed Test Report, ConnDOT Salt Storage and Maintenance Facilities Study, Haddam (Higganum) Facility No. 36 District 2, Section 3, dated August 1986, prepared by Metcalf and Eddy, Inc.
9. Task 240 Water Quality Monitoring Evaluation Report, November 2005, prepared by DTC.



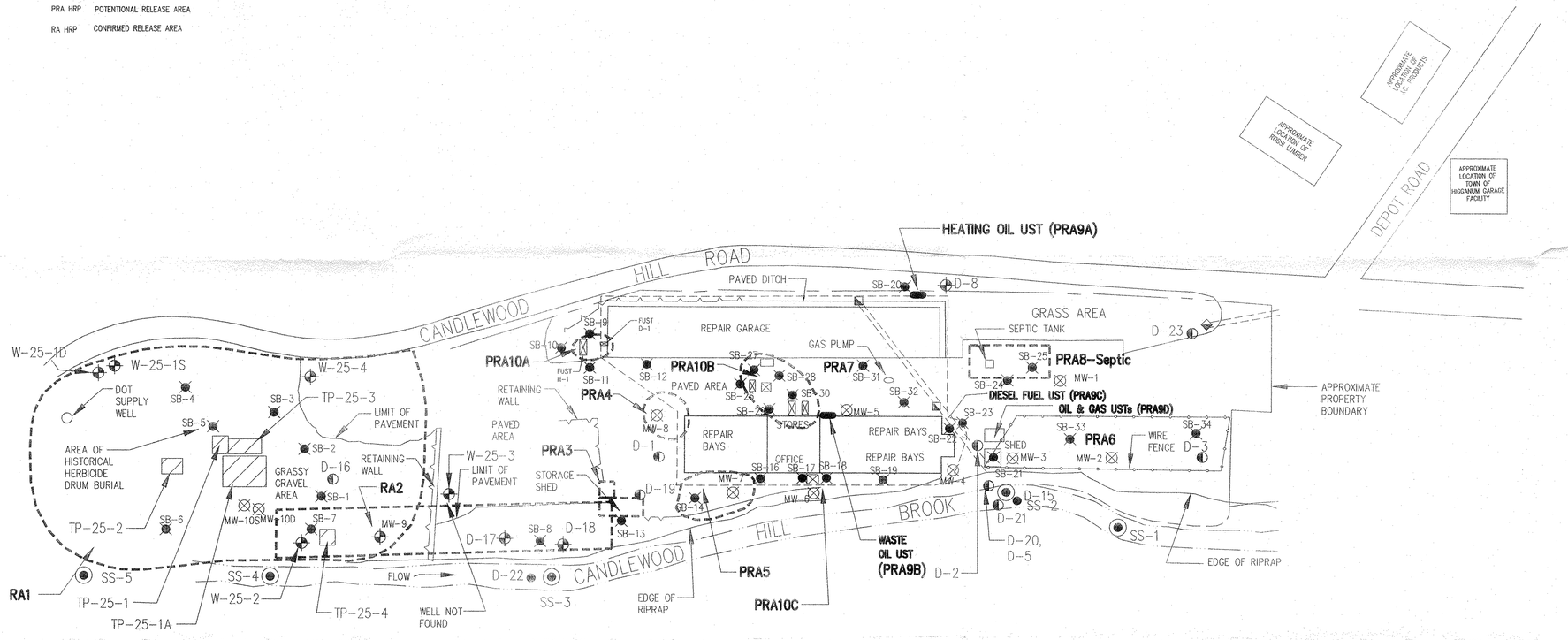
Site Location Map
ConnDOT Higganum Maintenance and Repair Facility
11 Candlewood Hill Road, Higganum, Connecticut

Figure No **1**
Project No **03-273-09J**
Date **January 2007**

Diversified Technology Consultants
556 Washington Avenue North Haven CT 06473 203 239 4200
Stamford, CT, Andover, MA

LEGEND

- DTC SEDIMENT SAMPLE
- DTC SOIL BORING
- DTC MONITORING WELL
- FORMER SURFACE WATER SAMPLE LOCATION (M & E)
- FORMER SOIL BORING/GRAB GROUNDWATER SAMPLE (M & E)
- PREVIOUSLY INSTALLED GROUNDWATER MONITORING WELL (M & E)
- FORMER TEST PIT LOCATIONS
- UNDERGROUND STORAGE TANK LOCATIONS (UST)
- FORMER UNDERGROUND STORAGE TANK LOCATIONS (FUST)
- CATCH BASIN
- DOT SUPPLY WELL
- PRA HRP — POTENTIONAL RELEASE AREA
- RA HRP — CONFIRMED RELEASE AREA



NOTES:

REVISIONS

dtc

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203 239 4200 203 234 7376 FAX

ConnDot Higganum Maintaintance and Repair Facility 11 Candlewood Hill Road Higganum, Connecticut

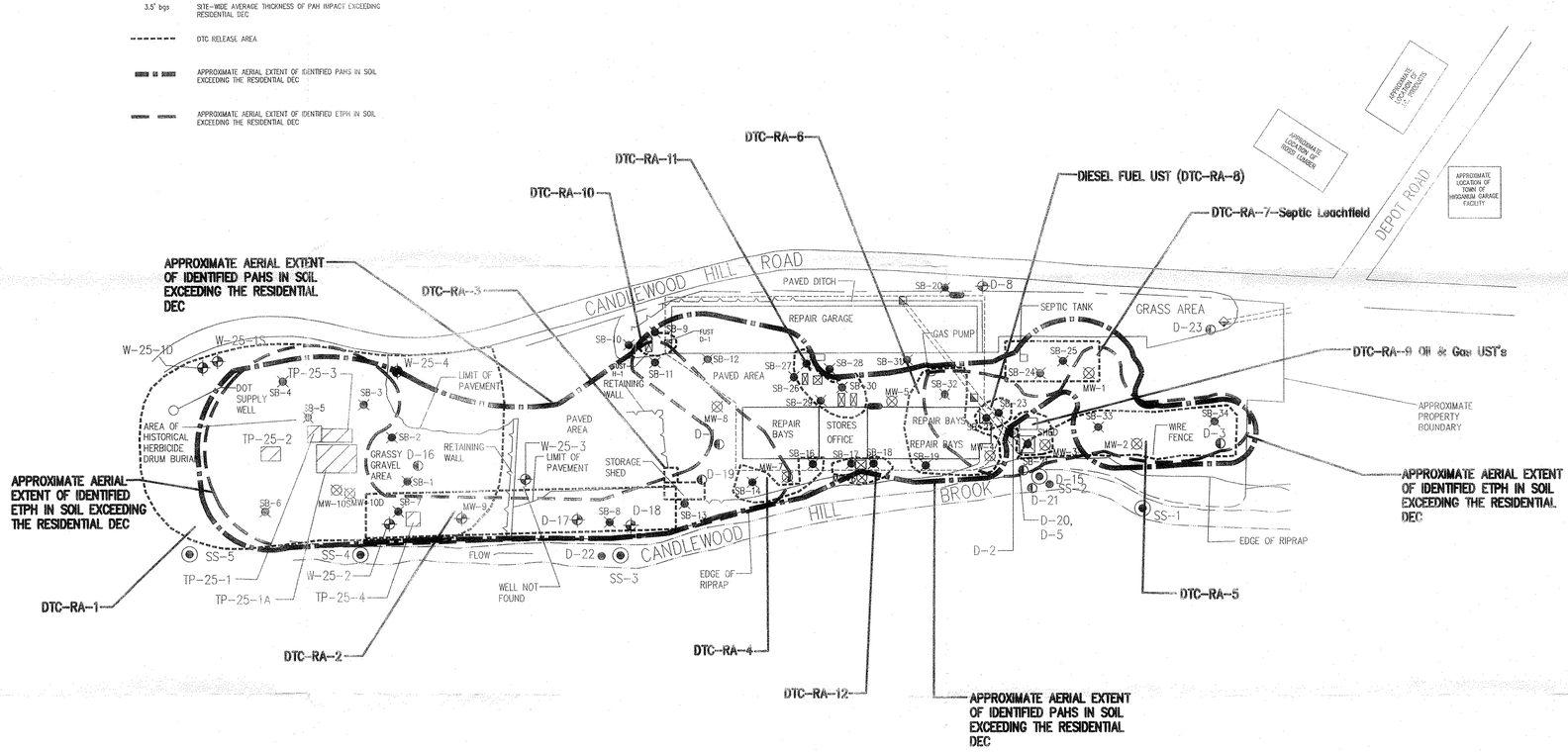
FIGURE 2

SITE PLAN DEPICTING SOIL BORING AND MONITORING WELL LOCATIONS, AND APRIL 2002 HRP ASSOCIATES INC. POTENTIAL AND CONFIRMED RELEASE AREAS

DTC PROJECT NUMBER: 03-273-09J	
DTC DRAWING FILE: R:\03273\032739X-DOT SITE #25.DWG	
SCALE: 1" = 30'	DRAWN BY: CJA
DATE: 10-02-06	CHECKED BY: APD
	SHEET:

LEGEND

- DTC SEDIMENT SAMPLE
- DTC SOIL BORING
- DTC MONITORING WELL
- FORMER SURFACE WATER SAMPLE LOCATION (M & E)
- FORMER SOIL BORING/GRAB GROUNDWATER SAMPLE (M & E)
- PREVIOUSLY INSTALLED GROUNDWATER MONITORING WELL (M & E)
- FORMER TEST PIT LOCATIONS
- UNDERGROUND STORAGE TANK LOCATIONS (UST)
- FORMER UNDERGROUND STORAGE TANK LOCATIONS (FUST)
- CATCH BASIN
- DOT SUPPLY WELL
- PRA3 — HRP POTENTIAL RELEASE AREA
- RA1 — HRP CONFIRMED RELEASE AREA
- DTC-RA-1 — DTC CONFIRMED RELEASE AREA
- 4.5' bgs — SITE-WIDE AVERAGE THICKNESS OF ETPH IMPACT EXCEEDING RESIDENTIAL DEC
- 3.5' bgs — SITE-WIDE AVERAGE THICKNESS OF PAH IMPACT EXCEEDING RESIDENTIAL DEC
- DTC RELEASE AREA
- APPROXIMATE AERIAL EXTENT OF IDENTIFIED PAHS IN SOIL EXCEEDING THE RESIDENTIAL DEC
- APPROXIMATE AERIAL EXTENT OF IDENTIFIED ETPH IN SOIL EXCEEDING THE RESIDENTIAL DEC



GRAPHIC SCALE

30 0 15 30 60

(IN FEET)

NOTES:

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ConnDot Higganum Maintaintance and Repair Facility 11 Candlewood Hill Road Higganum, Connecticut

FIGURE 3

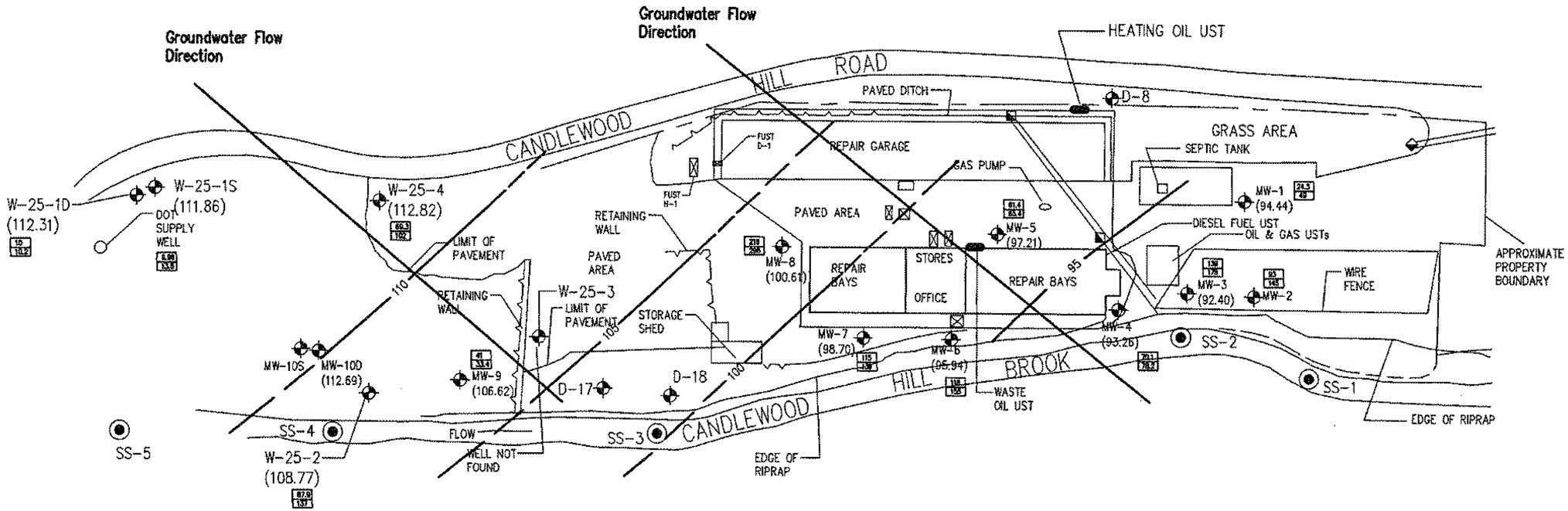
SITE PLAN DEPICTING IDENTIFIED DTC RELEASE AREAS AND THE APPROXIMATE EXTENT OF SOIL WITH CONSTITUENTS OF CONCERN EXCEEDING RSR CRITERIA

DTC PROJECT NUMBER: 03-273-09J

DTC DRAWING FILE: R:\03273\032739X-DOT SITE #25.DWG

SCALE: 1" = 30'	DRAWN BY: CJA
DATE: 12-18-06	CHECKED BY: APD

SHEET:



LEGEND

- EXISTING MONITORING WELL
- UNDERGROUND STORAGE TANK LOCATIONS (UST)
- FORMER UNDERGROUND STORAGE TANK LOCATIONS (FUST)
- CATCH BASIN
- SEDIMENT SAMPLE
- (92.40) GROUNDWATER ELEVATION (FEET)
- GROUNDWATER FLOW DIRECTION
- 28 / 250 SODIUM / CHLORIDE CONCENTRATION, AUGUST 2006, mg/l

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)

DTC PROJECT NUMBER: 03-273-09J
CONNDOT Project #: 170-1877, Assignment #: 302-3010
DTC DRAWING FILE: R:\03273-CTDOT Envir ONCALL\0327309X-DOT Site #25\0327309X-DOT Site #25.dwg
SCALE: 1" = 50' DRAWN BY: CJA
DATE: 10/16/06 CHECKED BY: APD

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Figure 4
Site Plan Depicting Groundwater Elevations, Contours, and Sodium and Chloride Concentrations
DOT Site #25
11 Candlewood Hill Road
Higganum, Connecticut

TABLES

Table 1

Sample Location Rationale and Selected Analyses
Task 220 Exploratory Site Investigation
ConnDOT Higganum Maintenance and Repair Facility
Higganum, Connecticut

Sample Identification	Sample Interval (Soil)	Location Rationale	ETPH	VOCs (8260)	PAHs (8270)	RCRA Total/Dissolved and/or SPLP Metals	Pesticides (8081)	Herbicides (8151)	Sodium/ Chloride	PCBs
SB-1	0'-2'	Within Release Area 1	X	X	X	X	X	X		X
SB-1	10'-12'	Within Release Area 1	X	X	X	X	X	X		X
SB-2	0'-2'	Within Release Area 1	X	X	X	X	X	X		X
SB-2	10'-12'	Within Release Area 1	X	X	X	X	X	X		X
SB-3	0'-2'	Within Release Area 1	X	X	X	X	X	X		X
SB-3	6'-8'	Within Release Area 1	X	X	X	X	X	X		X
SB-4	0'-2'	Within Release Area 1	X	X	X	X	X	X		X
SB-4	6'-8'	Within Release Area 1	X	X	X	X	X	X		X
SB-5	0'-2'	Within Release Area 1	X	X	X	X	X	X		X
SB-5	10'-12'	Within Release Area 1	X	X	X	X	X	X		X
SB-6	0'-2'	Within Release Area 1	X	X	X	X	X	X		X
SB-6	6'-8'	Within Release Area 1	X	X	X	X	X	X		X
SB-7	0'-2'	Within Release Areas 1&2	X	X	X	X	X	X		X
SB-7	6'-8'	Within Release Areas 1&2	X	X	X	X	X	X		X
SB-8	0'-2'	Within Release Area 2	X	X	X	X	X	X		X
SB-8	6'-8'	Within Release Area 2	X	X	X	X	X	X		X
SB-9	0'-2'	Vicinity Potential Release Area 10A	X	X	X					

Table 1

Sample Location Rationale and Selected Analyses
Task 220 Exploratory Site Investigation
ConnDOT Higganum Maintenance and Repair Facility
Higganum, Connecticut

Sample Identification	Sample Interval (Soil)	Location Rationale	ETPH	VOCs (8260)	PAHs (8270)	RCRA Total/Dissolved and/or SPLP Metals	Pesticides (8081)	Herbicides (8151)	Sodium/ Chloride	PCBs
SB-10	0'-2'	Vicinity Potential Release Area 10A	X	X	X					
SB-10	2'-4'	Vicinity Potential Release Area 10A	X	X	X					
SB-11	0'-2'	Vicinity Potential Release Area 10A	X	X	X					
SB-11	2'-4'	Vicinity Potential Release Area 10A	X	X	X					
SB-12	0'-2'	Downgradient of Potential Release Area 10A	X	X	X					
SB-13	0'-2'	Downgradient of Potential Release Area 3	X	X	X	X	X	X		X
SB-13	2'-4'	Downgradient of Potential Release Area 3	X	X	X	X	X	X		X
SB-14	0'-2'	Within Potential Release Area 5	X	X	X	X	X	X		X
SB-16	0'-3'	Within Potential Release Area 5	X	X	X	X	X	X		X
SB-17	0'-2'	Within Potential Release Area 10C	X	X	X	X	X	X		X
SB-18	0'-3'	Within Potential Release Area 10C	X	X	X	X	X	X		X
SB-19	0'-2'	Downgradient of Potential Release Area 9B	X	X	X	X	X	X		X
SB-20	6'-8'	Within Potential Release Area 9A	X	X	X					
SB-21	4'-6'	Within Potential Release Areas 6 & 9D	X	X	X	X				

Table 1

Sample Location Rationale and Selected Analyses
Task 220 Exploratory Site Investigation
ConnDOT Higganum Maintenance and Repair Facility
Higganum, Connecticut

Sample Identification	Sample Interval (Soil)	Location Rationale	ETPH	VOCs (8260)	PAHs (8270)	RCRA Total/Dissolved and/or SPLP Metals	Pesticides (8081)	Herbicides (8151)	Sodium/ Chloride	PCBs
SB-21	6'-8'	Within Potential Release Areas 6 & 9D	X	X	X	X				
SB-22	0'-2'	Within Potential Release Area 9C	X	X	X	X	X			
SB-22	4'-6'	Within Potential Release Area 9C	X	X	X	X	X			
SB-22	6'-8'	Within Potential Release Area 9C	X	X	X	X	X			
SB-23	0'-2'	Within Potential Release Area 9C	X	X	X	X	X			
SB-23	2'-4'	Within Potential Release Area 9C	X	X	X	X	X			
SB-24	0'-3'	Within Potential Release Area 8	X	X	X	X	X	X		X
SB-25	0'-2'	Within Potential Release Area 8	X	X	X	X	X	X		X
SB-25	2'-4'	Within Potential Release Area 8	X	X	X	X	X			X
SB-26	0'-2'	Within Potential Release Area 10B	X	X	X	X	X			X
SB-26	2'-4'	Within Potential Release Area 10B	X	X	X	X	X			X
SB-27	0'-2'	Within Potential Release Area 10B	X	X	X	X	X			X
SB-27	2'-4'	Within Potential Release Area 10B	X	X	X	X	X			X
SB-28	0'-2'	Within Potential Release Area 10B	X	X	X	X	X			X

Table 1

Sample Location Rationale and Selected Analyses
Task 220 Exploratory Site Investigation
ConnDOT Higganum Maintenance and Repair Facility
Higganum, Connecticut

Sample Identification	Sample Interval (Soil)	Location Rationale	ETPH	VOCs (8260)	PAHs (8270)	RCRA Total/Dissolved and/or SPLP Metals	Pesticides (8081)	Herbicides (8151)	Sodium/ Chloride	PCBs
SB-28	2'-4'	Within Potential Release Area 10B	X	X	X	X	X			X
SB-29	0'-3'	Within Potential Release Area 10B	X	X	X	X	X			X
SB-30	0'-2'	Within Potential Release Area 10B	X	X	X	X	X			X
SB-30	2'-4'	Within Potential Release Area 10B	X	X	X	X	X			X
SB-31	0'-2'	Within Potential Release Area 7	X	X	X	X				X
SB-31	2'-4'	Within Potential Release Area 7	X	X	X	X				X
SB-32	0'-2'	Within Potential Release Area 7	X	X	X	X				X
SB-32	2'-4'	Within Potential Release Area 7	X	X	X	X				X
SB-33	0'-2'	Within Potential Release Area 6	X	X	X	X				
SB-33	2'-4'	Within Potential Release Area 6	X	X	X	X				
SB-34	0'-2'	Within Potential Release Area 6	X	X	X	X				
SB-34	4'-6'	Within Potential Release Area 6	X	X	X	X				
MW-1	0.5'-2'	Downgradient from Potential Release Area 8	X	X	X	X	X	X		X

Table 1

Sample Location Rationale and Selected Analyses
Task 220 Exploratory Site Investigation
ConnDOT Higganum Maintenance and Repair Facility
Higganum, Connecticut

Sample Identification	Sample Interval (Soil)	Location Rationale	ETPH	VOCs (8260)	PAHs (8270)	RCRA Total/Dissolved and/or SPLP Metals	Pesticides (8081)	Herbicides (8151)	Sodium/ Chloride	PCBs
MW-1	5'-6'	Downgradient from Potential Release Area 8	X	X	X	X	X	X		X
MW-2	0'-2'	Within Potential Release Area 6	X	X	X	X				
MW-2	6'-7.5'	Within Potential Release Area 6	X	X	X	X				
MW-3	0'-2'	Within Potential Release Area 6	X	X		X				
MW-3	6'-8'	Within Potential Release Area 6	X	X		X				
MW-4	0'-2'	Downgradient from Potential Release Area 9C	X	X	X	X				X
MW-4	4'-5'	Downgradient from Potential Release Area 9C	X	X	X	X				X
MW-4	6'-7.5'	Downgradient from Potential Release Area 9C	X	X	X	X				X
MW-5	6'-8'	Downgradient from Potential Release Area 9B	X	X	X	X				X
MW-6	0'-2'	Downgradient from Potential Release Area 10C	X	X	X	X	X	X		X
MW-6	7'-8.5'	Downgradient from Potential Release Area 10C	X	X	X	X				X
MW-7	4'-4.5'	Within Potential Release Area 5	X	X	X	X				X

Table 1

Sample Location Rationale and Selected Analyses
Task 220 Exploratory Site Investigation
ConnDOT Higganum Maintenance and Repair Facility
Higganum, Connecticut

Sample Identification	Sample Interval (Soil)	Location Rationale	ETPH	VOCs (8260)	PAHs (8270)	RCRA Total/Dissolved and/or SPLP Metals	Pesticides (8081)	Herbicides (8151)	Sodium/ Chloride	PCBs
MW-8	0'-2'	Within Potential Release Area 4		X						
MW-8	4'-6'	Within Potential Release Area 4		X						
MW-10D	0'-2'	Within Release Area 1	X	X	X	X	X	X		X
MW-10D	4'-6'	Within Release Area 1	X	X	X	X	X	X		X
MW-10D	6'-8'	Within Release Area 1	X	X	X	X	X	X		X
MW-10D	10'-14'	Within Release Area 1	X	X	X	X	X	X		X
SS-1	*GRAB*	Within Candlewood Hill Brook, Downgradient of Site	X	X	X	X	X	X		X
SS-2	*GRAB*	Within Candlewood Hill Brook	X	X	X	X	X	X		X
SS-3	*GRAB*	Within Candlewood Hill Brook	X	X	X	X	X	X		X
SS-4	*GRAB*	Within Candlewood Hill Brook	X	X	X	X	X	X		X
SS-5	*GRAB*	Within Candlewood Hill Brook	X	X	X	X	X	X		X
Groundwater Samples										
MW-1		Downgradient from Potential Release Area 8	X	X	X	X	X	X	X	X
MW-2		Within Potential Release Area 6	X	X	X	X	X	X	X	X
MW-3		Within Potential Release Area 6	X	X	X	X	X	X	X	X
MW-4		Downgradient from Potential Release Area 9C	X	X	X	X	X	X	X	X

Table 1

Sample Location Rationale and Selected Analyses
Task 220 Exploratory Site Investigation
ConnDOT Higganum Maintenance and Repair Facility
Higganum, Connecticut

Sample Identification	Sample Interval (Soil)	Location Rationale	ETPH	VOCs (8260)	PAHs (8270)	RCRA Total/Dissolved and/or SPLP Metals	Pesticides (8081)	Herbicides (8151)	Sodium/ Chloride	PCBs
MW-5		Downgradient from Potential Release Area 9B	X	X	X	X			X	X
MW-6		Downgradient from Potential Release Area 10C	X	X	X	X			X	X
MW-7		Within Potential Release Area 5	X	X	X	X			X	X
MW-8		Within Potential Release Area 4	X	X	X					X
MW-9*		Within Release Area 2	X	X	X	X	X	X	X	X
MW-10D		Within Release Area 1	X	X	X	X	X	X	X	X
W-25-1D*		Within Release Area 1	X	X	X	X	X	X	X	X
W-25-1S*		Within Release Area 1	X	X	X	X	X	X	X	X
W-25-2*		Within Release Area 1 & 2	X	X	X	X	X	X	X	X
W-25-4*		Within Release Area 1	X	X	X	X	X	X	X	X
D-8*		Within Release Area 9A	X	X	X				X	
D-17*		Within Release Area 2	X	X	X	X	X	X	X	X
D-18*		Within Release Area 2	X	X	X	X	X	X	X	X
SUPPLY WELL	Drinking Water Standards	Within Release Area 1	X	X	X	X	X	X	X	X

Notes:

SB-15 has been omitted from the sample rationale table as it was eventually completed as a groundwater monitoring well which is identified as MW-7.

* Previously installed groundwater monitoring well.

Table 2

Monitoring Well Gauging Data
Task 220 Exploratory Site Investigation
ConnDOT Higganum Maintenance and Repair Facilty
Higganum, Connecticut

Well Identification	Well Depth (feet)	Screened Interval (feet)	Ground Elevation (feet)	Reference Point Elevation (feet)	Depth to Water (feet)	Depth to Bottom (feet)	Groundwater Elevation (feet)
MW-1	14'	4'-14'	100.2	99.7	5.26	12.95	94.44
MW-2	14'	4'-10'	NS	NS	6.84	13.46	
MW-3	12.5'	2.5'-12.5'	99.17	99.32	6.92	12.15	92.4
MW-4	10'	3'-10'	99.3	99.04	5.78	8.99	93.26
MW-5	14'	4'-14'	102.9	102.66	5.45	13.16	97.21
MW-6	15'	5'-15'	103.19	102.89	6.95	13.9	95.94
MW-7	13'	3'-13'	103.59	103.77	5.07	12.53	98.7
MW-8	12'	2'-12'	104.17	103.81	3.2	11.9	100.61
MW-9*				123.62	17	43.65	106.62
MW-10S	18.5'	8.5'-18.5'	123.16	123.5	DRY		DRY
MW-10D	29'	19'-29'	123.14	123.5	10.81	28.85	112.69
D-8*			NS	NS	13.11	27.05	
D-17*			NS	NS	12.71	35.36	
D-18*			NS	NS	12.4	15.47	
W-25-1S*			NS	124.46	12.6	16.57	111.86
W-25-1D*			NS	124.46	12.15	35.47	112.31
W-25-2*			NS	122.32	13.55	20.57	108.77
W-25-4*			124.3	124.52	11.7	18.95	112.82

Notes:
*Previously installed monitoring well.
Ground elevation and reference point data completed by DTC in July 2006.
Depth to water measurments were obtained by DTC, July 18, 2006.
NS=Not Surveyed

Table 3

Soil Sample Analytical Summary
Task 220 Exploratory Site Investigation
ConnDOT Higganum Maintenance and Repair Facility
Higganum, Connecticut

Parameters	Remediation Standard Regulations (RSR) Criteria: RES DEC	I/C DEC	GA PMC	Sample #	SB-1		SB-2		SB-3		SB-4		SB-5		SB-6		SB-7		SB-8		SB-9		SB-10		SB-11		SB-12	SB-13		SB-14
					0 to 2	10 to 12	0 to 2	10 to 12	0 to 2	6 to 8	0 to 2	6 to 8	0 to 2	10 to 12	0 to 2	6 to 8	0 to 2	6 to 8	0 to 2	6 to 8	0 to 2	4 to 6	0 to 2	2 to 4	0 to 2	2 to 4	0 to 2	0 to 2	2 to 4	0 to 2
					6/8/2006		6/8/2006		6/8/2006		6/8/2006		6/8/2006		6/8/2006		6/8/2006		6/8/2006		6/8/2006		6/8/2006		6/8/2006		6/8/2006	6/8/2006		6/8/2006
VOCs per EPA 8021 or 8260 (mg/kg)																														
Methylene Chloride	82	760	0.1		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	1.1	1000	0.6		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	NE	NE	NE		--	--	0.0753	--	--	--	--	0.482	--	0.123	0.0457	1.1	0.0495	0.225	0.0473	--	0.142	0.607	0.0445	--	0.905	0.228	--	--	0.205	0.37
1,2,4-Trimethylbenzene	500	1000	7		--	--	--	--	--	--	--	--	--	--	--	0.439	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	500	1000	7		--	--	--	--	--	--	--	--	--	--	--	0.138	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	500	1000	19.5		--	--	--	--	--	--	--	--	--	--	--	0.0707	--	--	--	--	--	--	--	--	--	--	--	--	--	--
n-Butylbenzene	500	1000	1.4		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	500	1000	1.4		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ETPH (mg/kg)	500	2,500	500		311	--	123	321	432	808	665	2,330	506	1,030	682	1,970	910	681	805	--	467	--	54.8	--	1,270	41.5	178	748	97.3	721
PAHs per EPA 8270 (mg/kg)																														
Acenaphthene	1,000	2500	--		--	--	--	--	--	--	--	0.764	--	1.56	--	0.378	--	--	--	--	0.269	--	--	--	2.2	--	--	--	--	--
Acenaphthylene	1,000	2500	--		1.02	--	0.34	1.19	1.86	3.33	2.09	7.82	2.09	4.96	2.65	4.32	1.84	2.06	2.38	--	0.417	--	--	--	3.97	--	0.662	1.12	0.392	2.19
Anthracene	1,000	2500	--		0.668	--	0.206	1.65	0.896	4.05	1.21	8.39	1.46	8.81	1.87	3.1	1.68	2.8	1.54	--	1.82	--	--	--	9.46	--	--	--	--	1.39
Benzo (a) anthracene	1	7.8	--		2.86	--	0.951	3.27	4.01	14.1	12.1	25.7	5.9	12.7	9.01	8.51	5.74	5.41	4.99	--	1.08	--	0.173	--	8.74	--	0.431	1.01	0.213	3.55
Benzo (a) pyrene	1	1	--		3.74	--	1.21	3.91	4.3	12.3	11.5	22	7.41	10.4	12.1	9.02	6.59	5.61	5.37	--	1.1	--	0.296	--	7.94	--	1.18	1.48	0.286	4.36
Benzo (b) fluoranthene	1	7.8	--		4.25	--	1.46	3.82	4.92	17.2	14.5	25.7	9.27	10.2	15.4	10	8.07	6.09	7.32	--	0.962	--	0.285	--	8.12	--	1.39	1.64	0.254	4.97
Benzo (g,h,i) perylene	1,000	2500	--		2.2	--	0.69	1.22	1.97	4.71	5.37	9.39	3.83	4.03	5.32	4.3	3.08	2.22	3.05	--	0.419	--	0.186	--	2.68	--	1.02	0.936	0.197	2.42
Benzo (k) fluoranthene	8.4	78	--		2.45	--	0.853	2.19	2.29	7.58	6.44	12.5	4.58	5.79	8.86	5.73	4.59	4.08	3.08	--	0.818	--	0.221	--	4.07	--	0.74	1.52	0.191	3.9
Chrysene	84	780	--		3.6	--	1.13	4.26	4.19	15.2	11.5	25.2	6.65	12.3	10.3	10.9	6.55	6.69	5.04	--	1.37	--	0.249	--	8.91	--	0.551	1.51	0.38	4.42
Dibenz (a,h) anthracene	1	1	--		0.509	--	0.193	0.371	0.69	1.62	1.98	3.14	1.09	1.36	2.74	1.03	0.974	0.598	1.08	--	--	--	--	--	0.857	--	0.23	--	--	0.662
Fluoranthene	1,000	2500	--		4.66	--	1.55	8.19	5.01	26.3	13.2	28.2	10	21.8	16.1	16.1	10.3	11.7	6.39	--	3.94	0.291	0.375	--	19.2	--	0.591	2.52	0.303	7.16
Fluorene	1,000	2500	--		--	--	--	0.377	0.382	2.45	--	3.29	--	8.89	--	1.87	--	0.612	0.591	--	0.752	--	--	--	8.45	--	--	--	--	--
Indeno (1,2,3-cd) pyrene	1	7.8	--		2.2	--	0.71	1.16	2.16	4.45	5.89	9.48	3.92	4.28	5.99	4.15	3.47	2.52	3.13	--	0.43	--	0.161	--	2.87	--	0.831	0.979	0.163	2.51
1-Methylnaphthalene	NE	NE	NE		--	--	--	--	--	0.386	--	0.425	--	1.79	--	0.54	--	--	--	--	0.388	--	--	--	4.27	--	--	--	--	--
2-Methylnaphthalene	474	2500	--		--	--	--	--	--	--	--	0.434	--	1.32	--	0.466	--	--	--	--	--	--	--	--	2.93	--	--	--	--	--
Naphthalene	1000	2500	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.17	--	--	--	--	--
Phenanthrene	1,000	2500	--		1.76	--	0.494	6.39	2.14	27.6	2.11	25.6	3.41	27.7	3.83	16.4	3.01	7.19	3.92	--	3.91	0.293	--	--	30.5	--	--	0.93	0.148	2.55
Pyrene	1,000	2500	--		5.53	--	1.91	8.52	6.36	29.8	12.5	31.6	11.3	22.6	18.5	22.8	12.5	11.7	6.64	--	2.81	0.267	0.451	--	20.4	--	0.885	2.95	0.508	7.67
SPLP PAHs per EPA 8270 (mg/l)			*		NA	NA	NA	NA	--	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	--	--	0.28						--			0.00537																		
Phenanthrene	--	--	0.2						--			0.0058																		
Total 8 RCRA Metals per EPA 6010 & 7471 (mg/kg)																					NA	NA	NA	NA	NA	NA	NA			
Mercury	20	610	--		0.104	--	0.111	--	--	--	--	--	--	--	--	--	--	--	--	--								--	--	--
Arsenic	10	10	--		--	--	--	--	--	--	--	--	--	--	--	--	--	1.8	8.46	1.89								--	--	--
Barium	4700	140000	--		21.4	12.3	15.5	26	30.1	35.3	31.3	33.2	25.9	27.6	20.8	29.1	25.1	31	58.3	31.9								12	43.2	34.3
Cadmium	34	1000	--		--	--	0.303	--	--	--	0.299	--	--	--	--	--	0.35	--	0.558	0.36								--	--	0.79
Chromium	100	NE	--		5.15	5.37	6.97	6.33	8.07	8.68	6.23	4.89	7.05	3.67	9.27	4.36	7.4	5.93	12.1	6.45								9.6	12.2	11.7
Lead	500	1000	--		112	5.28	11	19.9	5.08	79.8	33.3	90.7	69.1	32.3	53.5	70.7	38.9	98.8	30.9	17.1								81.3	8.44	63
Selenium	340	10000	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								--	--	--
SPLP RCRA 8 Metals per EPA 6010 & 7471 (mg/l)					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	--	--	0.05																											
Lead	--	--	0.015																											
Barium	--	--	1																											
Polychlorinated Biphenyls per EPA Method 8082 (mg/kg)																					NA	NA	NA	NA	NA	NA	NA			
PCB 1016	1	10	0.0305		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								--	--	--
Chlorinated Pesticides per EPA Method 8081 (mg/kg)																					NA	NA	NA	NA	NA	NA	NA			NA
4,4-DDD	2.9	24	NE		--	--	--	--	--	--	--	--	--	--	--	0.467	--	--	--	--								--	--	
4,4-DDE	1.8	17	NE		0.0229	--	--	--	--	--	0.0228	--	--	--	--	0.0309	--	--	--	--								--	--	
4,4-DDT	1.8	17	NE		0.275	--	0.0289	--	0.0368	--	0.342	0.294	0.162	0.0223	0.265	0.697	0.0385	0.391	--	--								0.188	--	
Chlorinated Herbicides per EPA Method 8151A (mg/kg)																					NA	NA	NA	NA	NA	NA	NA			NA
Various Herbicides					--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--								--	--	

Notes:
RES DEC = Residential Direct Exposure Criteria.
I/C DEC = Industrial/Commercial Direct Exposure Criteria.
GA PMC = GA Pollutant Mobility Criteria.
* For PAHs, SPLP results were compared to the Groundwater Protection Criteria to determine compliance with the GAPMC.
mg/kg = milligrams per kilogram.
mg/L = milligrams per liter.
ug/l = micrograms per liter.
-- = not detected, see laboratory reports for specific detection limits.
NA = not analyzed for this compound.
NE = no criteria established.
Bold and shaded values indicate an exceedance of the applicable RSR criteria

Table 3

Soil Sample Analytical Summary
Task 220 Exploratory Site Investigation
ConnDOT Higganum Maintenance and Repair Facility
Higganum, Connecticut

Parameters	Remediation Standard Regulations (RSR) Criteria			Sample #	SB-16	SB-17	SB-18	SB-19	SB-20	SB-21		SB-22			SB-23		SB-24	SB-25		SB-26		SB-27		SB-28		SB-29	SB-30	
					0 to 3	0 to 2	0 to 3	0 to 2	6 to 8	4 to 6	6 to 8	0 to 2	4 to 6	6 to 8	0 to 2	2 to 4	0 to 3	0 to 2	2 to 4	0 to 2	2 to 4	0 to 2	2 to 4	0 to 2	2 to 4	0 to 2	2 to 4	0 to 3	0 to 2	2 to 4
	RES DEC	I/C DEC	GA PMC		6/8/2006	6/8/2006	6/8/2006	6/8/2006	6/9/2006	6/9/2006		6/9/2006			6/9/2006		6/9/2006	6/9/2006		6/9/2006		6/9/2006		6/9/2006		6/9/2006	6/9/2006	
VOCs per EPA 8021 or 8260 (mg/kg)																											
Methylene Chloride	82	760	0.1		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	1.1	1000	0.6		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	NE	NE	NE		0.237	0.115	0.288	0.158	--	0.121	--	0.279	--	--	--	--	--	--	--	0.491	0.0914	0.0705	--	--	--	--	0.0791	--
1,2,4-Trimethylbenzene	500	1000	7		--	--	--	--	--	--	--	--	0.0517	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	500	1000	7		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	500	1000	19.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
n-Butylbenzene	500	1000	1.4		--	--	--	--	--	--	--	--	--	0.174	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	500	1000	1.4		--	--	--	--	--	--	--	--	--	0.167	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ETPH (mg/kg)	500	2,500	500		441	343	352	106	--	1,670	--	552	651	431	836	--	134	192	--	265	72.7	320	--	50	--	153	236	--
PAHs per EPA 8270 (mg/kg)										*NA*	*NA*																	
Acenaphthene	1,000	2500	--		--	--	--	--	--			--	--	--	--	--	--	--	--	0.627	--	--	--	--	--	--	--	--
Acenaphthylene	1,000	2500	--		2.28	1.33	1.43	0.284	--			0.332	1.42	--	4.59	--	0.661	0.392	--	1.68	0.185	1.72	--	--	--	0.26	0.887	--
Anthracene	1,000	2500	--		1.66	1.13	2.35	0.486	--			0.805	0.439	--	1.66	--	1.6	0.965	--	3.22	0.991	0.893	--	--	--	--	2.15	--
Benzo (a) anthracene	1	7.8	--		3.49	1.96	4.13	0.932	--			0.656	1.56	--	3.13	--	1.26	1.4	--	2.61	0.392	1.84	--	--	--	1	2.68	--
Benzo (a) pyrene	1	1	--		5.14	2.47	6.01	1.04	--			0.776	2.63	--	7.03	--	1.5	1.61	--	2.96	0.404	3.27	--	--	--	1.16	3.28	--
Benzo (b) fluoranthene	1	7.8	--		5.66	3.28	4.49	1.1	--			0.876	2.56	--	8.22	--	1.71	1.62	--	2.71	0.417	3.83	--	--	--	1.4	3.71	--
Benzo (g,h,i) perylene	1,000	2500	--		2.23	1.33	1.69	0.409	--			0.348	1.15	--	5.95	--	0.969	0.667	--	1.33	--	2.66	--	--	--	0.575	1.63	--
Benzo (k) fluoranthene	8.4	78	--		3.66	1.97	2.67	0.872	--			0.773	2.1	--	4.91	--	0.965	1.11	--	2.27	0.249	2.01	--	--	--	0.911	2.39	--
Chrysene	84	780	--		4.23	2.54	4.36	1.02	--			0.886	1.61	--	3.18	--	1.58	1.95	--	3.98	0.633	1.19	--	--	--	1.01	3.38	--
Dibenz (a,h) anthracene	1	1	--		0.714	0.369	0.464	--	--			--	0.295	--	1.71	--	0.265	--	--	0.389	--	0.747	--	--	--	--	0.429	--
Fluoranthene	1,000	2500	--		7.33	5.48	9.99	2.11	--			1.88	1.65	--	1.89	--	3.51	3.55	--	6.34	1.21	1.51	--	--	--	1.84	8.36	--
Fluorene	1,000	2500	--		--	0.255	0.525	--	--			--	--	--	--	--	0.422	--	--	2.16	0.364	--	--	--	--	--	--	--
Indeno (1,2,3-cd) pyrene	1	7.8	--		2.48	1.44	1.69	0.395	--			0.356	1.18	--	5.61	--	0.929	0.708	--	1.29	--	2.88	--	--	--	0.57	1.65	--
1-Methylnaphthalene	NE	NE	--		--	--	--	--	--			--	--	--	--	--	--	--	--	1.2	--	--	--	--	--	--	--	--
2-Methylnaphthalene	474	2500	--		--	--	--	--	--			--	--	--	--	--	--	--	--	0.521	--	--	--	--	--	--	--	--
Naphthalene	1000	2500	--		--	--	--	--	--			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	1,000	2500	--		2.27	2.51	3.9	0.851	--			1.3	0.439	--	--	--	3.56	1.31	--	9.04	1.52	1.02	--	--	--	--	4.54	--
Pyrene	1,000	2500	--		7.83	4.95	9.61	2.44	--			2.27	2.5	--	3.45	--	3.29	3.28	--	7.68	1.35	1.94	--	--	--	1.72	8.37	--
SPLP PAHs per EPA 8270 (mg/l)			*		*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
Fluoranthene	--	--	0.28																									
Phenanthrene	--	--	0.2																									
Total 8 RCRA Metals per EPA 6010 & 7471 (mg/kg)									*NA*			*NA*	*NA*	*NA*	*NA*	*NA*												
Mercury	20	610	--		--	--	--	--		--	--						--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	10	10	--		2.16	5.99	--	3.31		35	1.85						2.24	--	--	2.18	--	9.11	--	1.89	--	7.47	2.96	--
Barium	4700	140000	--		38.8	65.8	24	33.3		38.9	17.5						86.2	34.5	19.9	65.6	32.3	47.4	31.1	55.6	15.3	25.5	54.7	14.1
Cadmium	34	1000	--		0.525	0.694	--	--		0.663	--						0.281	--	0.338	--	--	0.335	--	0.298	--	0.42	0.328	--
Chromium	100	NE	--		17.8	31.2	6.55	12.6		8.16	3.16						8.6	6.01	3.23	7.87	15	9.24	4.78	7.42	5.54	7.84	8.88	6.55
Lead	500	1000	--		54.6	56	47.9	19.8		209	6.26						11	12.8	11.7	9.54	3.57	64.8	3.05	3.03	2.21	19.8	3.47	1.29
Selenium	340	10000	--		--	--	--	--		3.32	--						--	--	--	--	--	--	--	--	--	--	--	--
SPLP RCRA 8 Metals per EPA 6010 & 7471 (mg/l)					*NA*	*NA*	*NA*	*NA*	*NA*		*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
Arsenic	--	--	0.05							--																		
Lead	--	--	0.015							0.0935																		
Barium	--	--	1							0.015																		
Polychlorinated Biphenyls per EPA Method 8082 (mg/kg)									*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*												
PCB 1016	1	10	0.0005		--	--	--	--									--	--	--	--	--	--	--	--	--	--	--	--
Chlorinated Pesticides per EPA Method 8081 (mg/kg)					*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*																	
4,4-DDD	2.6	24	NE									--	--	--	--	--	--	--	--	--	--	0.0352	--	0.0679	--	--	--	--
4,4-DDE	1.8	17	NE									--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4,4-DDT	1.8	17	NE									--	--	--	0.0417	--	--	--	--	--	--	0.0483	--	0.0992	--	--	0.0159	--
Chlorinated Herbicides per EPA Method 8151A (mg/kg)					*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*						*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
Various Herbicides																	--	--	--									

Notes:
RES DEC = Residential Direct Exposure Criteria.
I/C DEC = Industrial/Commercial Direct Exposure Criteria.
GA PMC = GA Pollutant Mobility Criteria.
* For PAHs, SPLP results were compared to the Groundwater Protection Criteria to determine compliance with the GAPMC
mg/kg = milligrams per kilogram.
mg/L = milligrams per liter.
ug/l = micrograms per liter.
-- = not detected, see laboratory reports for specific detection limits.
NA = not analyzed for this compound.
NE = no criteria established.
Bold and shaded values indicate an exceedance of the applicable RSR criteria

Table 3

Soil Sample Analytical Summary
Task 220 Exploratory Site Investigation
ConnDOT Higganum Maintenance and Repair Facility
Higganum, Connecticut

Parameters	Remediation Standard Regulations (RSR) Criteria			Sample #	SB-31		SB-32		SB-33		SB-34		SS-1	SS-2	SS-3	SS-4	SS-5
					0 to 2	2 to 4	0 to 2	2 to 4	0 to 2	2 to 4	0 to 2	4 to 6	Sediment	Sediment	Sediment	Sediment	Sediment
	RES DEC	I/C DEC	GA PMC		6/9/2006		6/9/2006		6/9/2006		6/9/2006		7/18/2006	7/18/2006	7/18/2006	7/18/2006	7/18/2006
VOCs per EPA 8021 or 8260 (mg/kg)																	
Methylene Chloride	82	760	0.1		--	--	--	--	--	--	--	--	--	--	--	--	--
Acetone	1.1	1000	0.6		--	--	--	--	--	--	--	--	--	--	0.536	--	0.24
Naphthalene	NE	NE	NE		--	--	0.761	--	0.0461	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	500	1000	7		--	--	--	--	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	500	1000	7		--	--	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	500	1000	19.5		--	--	--	--	--	--	--	--	--	--	--	--	--
n-Butylbenzene	500	1000	1.4		--	--	--	--	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	500	1000	1.4		--	--	--	--	--	--	--	--	--	--	--	--	--
ETPH (mg/kg)	500	2,500	500		71.6	--	289	--	794	41.7	165	--	202	45.2	41.2	--	49.6
PAHs per EPA 8270 (mg/kg)																	
Acenaphthene	1,000	2500	--		--	--	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	1,000	2500	--		--	--	1.33	--	10.7	--	0.649	--	0.226	--	--	--	--
Anthracene	1,000	2500	--		0.262	--	1.32	--	7.63	--	0.798	--	0.326	--	--	--	--
Benzo (a) anthracene	1	7.8	--		0.244	--	**3.81**	--	**17.5**	--	**1.71**	--	**1.14**	0.569	0.601	0.462	0.662
Benzo (a) pyrene	1	1	--		0.428	--	**4.48**	--	**21**	--	**2.21**	--	**1.24**	0.588	0.659	0.478	0.652
Benzo (b) fluoranthene	1	7.8	--		0.401	--	**4.85**	--	**31.5**	--	**2.3**	--	**1.01**	0.425	0.495	0.342	0.485
Benzo (g,h,i) perylene	1,000	2500	--		0.241	--	1.85	--	12	--	1.03	--	0.911	0.454	0.461	0.374	0.430
Benzo (k) fluoranthene	8.4	78	--		0.349	--	**3.97**	--	16.6	--	**2.19**	--	0.948	0.506	0.575	0.405	0.547
Chrysene	84	780	--		0.462	--	4.37	--	25.2	--	2.19	--	1.44	0.735	0.776	0.6	0.781
Dibenz (a,h) anthracene	1	1	--		--	--	0.584	--	3.55	--	0.243	--	0.256	--	--	--	--
Fluoranthene	1,000	2500	--		0.719	--	5.27	--	41.2	--	3.27	--	2.82	1.67	1.66	1.36	1.67
Fluorene	1,000	2500	--		--	--	--	--	--	0.187	--	--	--	--	--	--	--
Indeno (1,2,3-cd) pyrene	1	7.8	--		0.216	--	**3.99**	--	**12.4**	--	**1.08**	--	0.798	0.404	0.411	0.334	0.404
1-Methylnaphthalene	NE	NE	--		--	--	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	474	2500	--		--	--	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	1000	2500	--		--	--	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	1,000	2500	--		0.297	--	2.1	--	14.2	--	0.882	--	1.64	1.04	0.880	0.796	1.04
Pyrene	1,000	2500	--		0.75	--	6.53	--	43.2	0.184	4.18	--	2.55	1.3	1.39	1.04	1.42
SPLP PAHs per EPA 8270 (mg/l)			*		*NA*	*NA*	*NA*	*NA*		*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
Fluoranthene	--	--	0.28						--								
Phenanthrene	--	--	0.2						--								
Total 8 RCRA Metals per EPA 6010 & 7471 (mg/kg)																	
Mercury	20	610	--		--	--	0.0882	--	--	0.696	0.0951	--	--	--	--	--	--
Arsenic	10	10	--		--	1.77	7.75	--	3	30.4	5.97	--	--	--	--	--	--
Barium	4700	140000	--		62.3	48.1	46.6	6.92	33.4	66.3	31.8	12.7	10	8.9	17.4	14.4	16.1
Cadmium	34	1000	--		0.294	0.299	0.492	--	0.347	2.48	0.474	--	--	--	--	--	--
Chromium	100	NE	--		9.93	5.74	5.78	3.61	9.56	17.9	6.97	6.54	3.61	3.02	4.87	2.89	3.37
Lead	500	1000	--		3.78	16.8	160	2.12	63.1	275	23.3	1.74	21.9	4.42	6.08	2.69	3.45
Selenium	340	10000	--		--	--	1.91	--	--	--	--	--	--	--	--	--	--
SPLP RCRA 8 Metals per EPA 6010 & 7471 (mg/l)					*NA*	*NA*	*NA*	*NA*	*NA*		*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
Arsenic	--	--	0.05							--							
Lead	--	--	0.015							--							
Barium	--	--	1							0.0295							
Polychlorinated Biphenyls per EPA Method 8082 (mg/kg)									*NA*	*NA*	*NA*	*NA*					
PCB 1016	1	10	0.0005		--	--	--	--					--	--	--	--	--
Chlorinated Pesticides per EPA Method 8081 (mg/kg)					*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*					
4,4-DDD	2.5	24	NE										--	--	--	--	--
4,4-DDE	1.8	17	NE										--	--	--	--	--
4,4-DDT	1.8	17	NE										0.0819	--	--	--	--
Chlorinated Herbicides per EPA Method 8151A (mg/kg)					*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*					
Various Herbicides													--	--	--	--	--

Notes:
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I/C DEC = Industrial/Commercial Direct Exposure Criteria.
GA PMC = GA Pollutant Mobility Criteria.
* For PAHs, SPLP results were compared to the Groundwater Protection Criteria to determine compliance with the GAPMC.
mg/kg = milligrams per kilogram.
mg/L = milligrams per liter.
ug/l = micrograms per liter.
-- = not detected, see laboratory reports for specific detection limits.
NA = not analyzed for this compound.
NE = no criteria established.
Bold and shaded values indicate an exceedance of the applicable RSR criteria.

Table 3

Soil Analytical Summary
Task 220 Exploratory Site Investigation
ConnDOT Higganum Maintenance and Repair Facility
Higganum, Connecticut

Parameters	Remediation Standard Regulations (RSR) Criteria			Sample #	MW-1		MW-2		MW-3		MW-4			MW-5	MW-6		MW-7	MW-8		MW-10D			
					0.5 to 2	5 to 6	0 to 2	6 to 7.5	0 to 2	6 to 8	0 to 2	4 to 5	6 to 7.5	6 to 8	0 to 2	7 to 8.5	4 to 4.5	0 to 2	4 to 6	0 to 2	4 to 6	6 to 8	10 to 14
	RES DEC	I/C DEC	GA PMC		6/20/2006		6/19/2006		6/19/2006		6/19/2006			6/20/2006	6/20/2006		6/20/2006	6/19/2006		6/21/2006			
Aromatic VOCs per EPA 8021 or 8260 (mg/kg)																							
Ethylbenzene	500	1,000	10.1		--	--	--	--	--	--	--	0.106	--	--	--	--	--	--	--	--	--	--	0.381
Isopropylbenzene	NE	NE	NE		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.279
4-Isopropyltoluene	500	1000	0.6		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.23
Naphthalene	NE	NE	NE		0.778	--	0.192	--	0.145	0.0336	0.209	0.176	--	--	--	--	--	8.02	0.0735	1.07	0.397	3.49	19.9
n-Propylbenzene	500	1000	1.4		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.1
n-Butylbenzene	500	1000	1.4		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.928
sec-Butylbenzene	500	1000	1.4		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.236
1,2,4-Trimethylbenzene	500	1000	7		--	--	--	--	--	0.0711	--	0.528	--	--	--	--	--	--	--	--	--	--	8.65
1,3,5-Trimethylbenzene	500	1000	7		--	--	--	--	--	--	--	0.19	--	--	--	--	--	--	--	--	--	--	2.79
Toluene	NE	NE	NE		--	--	--	--	--	--	--	0.549	--	--	--	--	--	--	--	--	--	--	--
Xylenes (Total)	500	1000	19.5		--	--	--	--	--	--	--	1.766	--	--	--	--	--	--	--	--	--	--	1.594
ETPH (mg/kg)	500	2,500	500		242	--	1610	--	1,150	214	2,030	3,590	--	--	--	437	--	NA	NA	224	565	1,180	3,810
PAHs per EPA 8270 (mg/kg)									NA	NA								NA	NA				
Acenaphthene	1,000	2500	--		0.285	--	--	--			1.1	2.05	--	--	--	--	--			--	0.36	0.905	8.84
Acenaphthylene	1,000	2500	--		1.19	--	4.36	--			6.67	3.96	--	--	--	0.14	0.155			0.762	2.46	5.29	8.17
Anthracene	1,000	2500	--		1.43	--	2.68	--			9.91	7.56	--	--	--	0.162	0.138			0.637	2.31	5.6	9.09
Benzo (a) anthracene	1	7.8	--		2.4	--	9.47	--			24.9	17.8	--	--	--	0.426	0.251			2.43	6.45	15	17.2
Benzo (a) pyrene	1	1	--		2.71	--	10.7	--			24.4	19.3	--	--	0.143	0.478	0.31			2.98	7.75	15.1	15.6
Benzo (b) fluoranthene	1	7.8	--		3.31	--	15	--			26.9	17.8	--	--	0.185	0.48	0.253			2.94	7.9	16.6	14.3
Benzo (g,h,i) perylene	1,000	2500	--		1.78	--	5.55	--			10.3	8.57	--	--	--	0.254	0.172			1.34	3.25	6.42	7.82
Benzo (k) fluoranthene	8.4	78	--		1.66	--	8.63	--			18.2	13.8	--	--	--	0.36	0.223			2.19	4.14	8.81	10.1
Chrysene	84	780	--		2.53	--	14.4	--			23	18.3	--	--	--	0.48	0.248			2.52	6.82	16.1	20.9
Dibenz (a,h) anthracene	1	1	--		0.472	--	1.46	--			7.9	2.34	--	--	--	--	--			0.318	0.876	1.91	1.94
Fluoranthene	1,000	2500	--		5.01	--	23.5	--			59.5	46.4	--	--	0.309	0.797	0.514			4.04	11.9	18.1	20.9
Fluorene	1,000	2500	--		0.937	--	--	--			4.61	2.51	--	--	--	--	--			0.217	1.29	2.61	10.1
Indeno (1,2,3-cd) pyrene	1	7.8	--		1.37	--	4.48	--			8.48	7.2	--	--	--	0.175	--			1.12	2.62	5.56	6.15
1-Methylnaphthalene	NE	NE	--		0.405	--	--	--			1.52	--	--	--	--	--	--			--	0.476	1.4	18.7
2-Methylnaphthalene	474	2500	--		0.387	--	--	--			1.23	--	--	--	--	--	--			--	0.357	1.15	17.1
Naphthalene	1,000	2500	--		--	--	--	--			--	--	--	--	--	--	--			--	--	0.357	19.8
Phenanthrene	1,000	2500	--		5.42	--	10.7	--			48.2	26.3	--	--	--	0.468	0.313			2.17	9.39	13.9	56
Pyrene	1,000	2500	--		7.24	--	25.9	0.164			66.8	48.6	--	--	0.382	1.24	0.645			5.4	14.9	40.3	66.7
SPLP PAHs per EPA 8270 (mg/l)			*			NA		NA	NA	NA			NA	NA	NA	NA	NA	NA	NA	NA			
Acenaphthene	--	--	0.42		--	--	--	--			--	--									--	--	0.0142
Fluoranthene	--	--	0.28		--	--	--	--			--	--									--	0.00505	--
Fluorene	--	--	0.28		0.00605	--	--	--			--	--									--	0.00591	0.0174
1-Methylnaphthalene	--	--	NE		--	--	--	--			--	--									--	--	0.0364
Phenanthrene	--	--	0.2		0.012	--	--	--			--	--									--	0.0741	0.019
Pyrene	--	--	0.2		--	--	--	--			--	--									--	--	--
Total 8 RCRA Metals per EPA 6010 & 7471 (mg/kg)																		NA	NA				
Mercury	20	610	--		--	--	--	--	--	0.132	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	10	10	--		3.45	1.81	3.11	3.25	2.99	12.3	6.66	9.83	1.69	3.08	3.6	3.01	--			2.69	2.18	1.9	1.66
Barium	4700	140000	--		58.4	25.3	70	28.3	20	62.4	24.3	29.8	16.6	22.9	31.6	54.7	26.4			27.5	28.1	23.5	28.4
Cadmium	34	1000	--		0.346	0.312	0.329	0.331	0.266	0.902	0.344	0.436	--	--	--	0.294	--			--	--	--	0.236
Chromium	190	NE	--		14.6	3.15	10.6	7.1	12	7.43	15.2	19.9	5.52	2.16	13.9	13.4	1.55			9.67	7.27	5.97	7.3
Lead	500	1600	--		5.26	37	122	3.39	180	405	194	59.6	24.3	1.43	16.2	64.2	--			37.7	45.6	49.4	159
SPLP Metals per EPA 6010 & 7471 (mg/l)					NA	NA		NA			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Barium	--	--	1				0.0285		0.0108	0.0219													0.0157
Chromium	--	--	0.06				0.0094		--	--													--
Lead	--	--	0.015				0.0918		0.055	0.197													0.0734
Polychlorinated Biphenyls per EPA Method 8082 (mg/kg)	1	10	0.0095				NA	NA	NA	NA								NA	NA				
PCB 1016					--	--					--	--	--	--	--	--	--			--	--	--	--
PCB 1221					--	--					--	--	--	--	--	--	--			--	--	--	--
PCB 1232					--	--					--	--	--	--	--	--	--			--	--	--	--
PCB 1242					--	--					--	--	--	--	--	--	--			--	--	--	--
PCB 1248					--	--					--	--	--	--	--	--	--			--	--	--	--
PCB 1254					--	--					--	--	--	--	--	--	--			--	--	--	--
PCB 1260					--	--					--	--	--	--	--	--	--			--	--	--	--
PCB 1262					--	--					--	--	--	--	--	--	--			--	--	--	--
PCB 1268					--	--					--	--	--	--	--	--	--			--	--	--	--
Chlorinated Pesticides per EPA Method 8081 (mg/kg)							NA	NA	NA	NA	NA	NA		NA		NA	NA	NA	NA				
Various Pesticides					--	--							--		--								
4,4-DDD	2.6	24	NE		--	--							--		--					0.0252	0.042	0.0286	0.432
4,4-DDE	1.8	17	NE		--	--							--		--					--	--	--	0.0491
4,4-DDT	1.8	17	NE		--	--							--		--					0.0276	0.022	0.0223	0.273
Chlorinated Herbicides per EPA Method 8151A (mg/kg)							NA	NA	NA	NA	NA	NA	NA			NA	NA	NA	NA				
Various Herbicides					--	--									--					--	--	--	--

Notes:
RES DEC = Residential Direct Exposure Criteria.
I/C DEC = Industrial/Commercial Direct Exposure Criteria.
GA PMC = GA Pollutant Mobility Criteria.
* For PAHs, SPLP results were compared to the Groundwater Protection Criteria to determine compliance with the GA PMC.
mg/kg = milligrams per kilogram
mg/l = milligrams per liter.
ug/l = microgram per liter.
-- = not detected, see laboratory reports for specific detection limits.
NA = not analyzed for this compound.
NE = no criteria established.
Bold and shaded values indicate an exceedance of the applicable RSR criteria.

Table 4

Groundwater Sample Analytical Summary
Task 220 Exploratory Site Investigation
ConnDOT Higganum Maintenance and Repair Facility
Higganum, Connecticut

	Remediation Standard Regulations				Sample #	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9*	MW-10D	W-25-1D*	W-25-1S*	W-25-2*	W-25-4*	D-8*	D-17*	D-18*	Trip Blank	Trip Blank	Trip Blank	Supply Well
	RES VC	Proposed RES VC	GWPC	SWPC		7/20/06	7/20/06	7/19/06	7/19/06	7/20/06	7/20/06	7/20/06	7/20/06	7/18/06	7/18/06	7/19/06	7/19/06	7/18/06	7/18/06	7/19/06	7/19/06	7/19/06	7/18/06	7/19/06	7/20/06	7/20/06
VOCs per EPA 8260 (ug/l)																										
Naphthalene	NE	NE	280	NE		--	--	--	--	--	--	--	--	--	J	--	--	--	--	--	--	--	--	--	--	--
ETPH per CT DEP method (ug/l)	NE	NE	500	NE		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	--
PAHs per EPA 8270 (ug/l)						--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	--
Naphthalene	NE	NE	280	NE		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	--
Polychlorinated Biphenyls per EPA Method 8082 (ug/l)	NE	NE	0.5	0.5		--	--	--	--	--	--	--	--	--	--	--	--	--	--	NA	--	--	NA	NA	NA	--
PCB 1016	NE	NE				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB 1221	NE	NE				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB 1232	NE	NE				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB 1242	NE	NE				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB 1248	NE	NE				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB 1254	NE	NE				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB 1260	NE	NE				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB 1262	NE	NE				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PCB 1268	NE	NE				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chlorinated Herbicides per EPA Method 8151A (ug/l)						--	--	--	--	NA	NA	NA	NA	--	--	--	--	--	--	NA	--	--	NA	NA	NA	--
2,4-D	NE	NE	70	NE		--	--	--	--					--	--	--	--	--	--		--	--				--
2,4,5-T	NE	NE				--	--	--	--					--	--	--	--	--	--		--	--				--
2,4,5-TP	NE	NE				--	--	--	--					--	--	--	--	--	--		--	--				--
2,4-DB	NE	NE				--	--	--	--					--	--	--	--	--	--		--	--				--
Dalapon	NE	NE				--	--	--	--					--	--	--	--	--	--		--	--				--
Dicamba	NE	NE	210.00	NE		--	--	--	--					--	--	--	--	--	--		--	--				--
Dinoseb	NE	NE				--	--	--	--					--	--	--	--	--	--		--	--				--
Dichlorprop	NE	NE	35.00	NE		--	--	--	--					--	--	--	--	--	--		--	--				--
MCPB	NE	NE				--	--	--	--					--	--	--	--	--	--		--	--				--
MCPA	NE	NE				--	--	--	--					--	--	--	--	--	--		--	--				--
MCPP	NE	NE				--	--	--	--					--	--	--	--	--	--		--	--				--
Chlorinated Pesticides per EPA Method 8081A (ug/l)						--	--	--	--	NA	NA	NA	NA	--	--	--	--	--	--	NA	--	--	NA	NA	NA	--
Chlordane	NE	NE	0.1	0.1		--	--	--	--					--	--	--	--	--	--		--	--				--
4,4-DDD	NE	NE	0.15	NE		--	--	--	--					--	--	--	--	--	--		--	--				--
4,4-DDE	NE	NE	0.1	NE		--	--	--	--					--	--	--	--	--	--		--	--				--
4,4-DDT	NE	NE	0.1	NE		--	--	--	--					--	--	--	--	--	--		--	--				--
Dieldrin	NE	NE	0.002	0.1		--	--	--	--					--	--	--	--	--	--		--	--				--
Endosulfan I	NE	NE	42	NE		--	--	--	--					--	--	--	--	--	--		--	--				--
Endosulfan II	NE	NE	42	NE		--	--	--	--					--	--	--	--	--	--		--	--				--
Endosulfan Sulfate	NE	NE	42	NE		--	--	--	--					--	--	--	--	--	--		--	--				--
Endrin	NE	NE	2.1	0.1		--	--	--	--					--	--	--	--	--	--		--	--				--
Endrin Aldehyde	NE	NE	2.1	NE		--	--	--	--					--	--	--	--	--	--		--	--				--
Heptachlor	NE	NE	0.05	0.4		--	--	--	--					--	--	--	--	--	--		--	--				--
Methoxychlor	NE	NE	40	NE		--	--	--	--					--	--	--	--	--	--		--	--				--
Heptachlor Epoxide	NE	NE	0.05	0.2		--	--	--	--					--	--	--	--	--	--		--	--				--
Toxaphene	NE	NE	3	1		--	--	--	--					--	--	--	--	--	--		--	--				--
a-Chlordane	NE	NE	0.1	NE		--	--	--	--					--	--	--	--	--	--		--	--				--
g-Chlordane	NE	NE	0.1	NE		--	--	--	--					--	--	--	--	--	--		--	--				--
Endrin Ketone	NE	NE	2.1	NE		--	--	--	--					--	--	--	--	--	--		--	--				--
Total Metals per EPA 6010/200.7 (ug/l)																							NA	NA	NA	
Lead	NE	NE	15	13		--	--	--	15.8	--	--	--	--	--	--	--	--	--	--	--	--	--				--
Barium	NE	NE	1,000	NE		22	23.2	32	34.6	22.7	55.2	9.6	--	8.6	24.7	9.8	12.6	31.4	26.8	--	16.4	13.9				3
Chromium	NE	NE	50	110		--	--	--	--	--	8.9	--	--	--	--	--	--	--	--	--	--	--				--
Sodium	NE	NE	NE	NE		24,300	93,000	138,000	70,100	61,400	115,000	115,000	216,000	41,000	30,400	10,000	16,000	87,900	69,300	195,000	32,300	75,600				9,960
Arsenic	NE	0.0	50	4		--	--	16.4	15.6	--	--	--	--	--	--	--	15.0	--	16.0	--	--	15.3				--
Dissolved Metals per EPA 6010/200.7 (ug/l)																										
Barium	NE	NE	1,000	NE		18.9	17.5	28.1	21.7	--	10.5	--	NA	--	19.2	--	10.8	29.5	24.4	NA	15.5	11.5	NA	NA	NA	2.5
Chloride (mg/l)**						49	145	178	78.2	65.4	135	139	268	33.4	38.8	10.2	21.1	137	107	284	82.5	50.2	NA	NA	NA	13.9

Notes:
RES VC = Residential Volatilization Criteria.
Proposed VC = revised criteria proposed by the CT DEP in a March 2003 document.
GWPC = Groundwater Protection Criteria.
SWPC = Surface Water Protection Criteria.
VOCs = volatile organic compounds.
ETPH = extractable total petroleum hydrocarbons.
PAHs = polynuclear aromatic hydrocarbons.
*Previously installed groundwater monitoring well.
NE = no criteria established.
ug/l = micrograms per liter/approximately parts per billion (ppb).
-- = not detected, see laboratory reports for specific detection limits.
NA = not analyzed for this parameter.
Bold and shaded values indicate an exceedance of RSR criteria.
**Department of Public Health (DPH) Maximum Contaminant Level (MCL) for chloride is 250 mg/l. No RSR criteria have been established.

APPENDIX A

Soil Boring and Monitoring Well Logs

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-093

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: DOT Facility Higganum, CT.
Assignment No. 302-3010
DOT Project No. 170-1877
Task 210
Date: June 8, 2006

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.: SB-1

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-4	MC	0.0-2.0	36	0.0		Brown, medium SAND and gravel , some silt, little crushed stone, trace asphalt.
		2.0-4.0		0.0		Brown, medium SAND and gravel , some silt, little crushed stone, trace asphalt.
4-8	MC	4.0-6.0	42	0.0		Brown, fine-medium SAND some gravel, little silt, no odor.
		6.0-8.0		0.0		Brown, fine-medium SAND some gravel, little silt, trace black staining at 7.5 feet, no odor.
8-12	MC	8.0-10.0	40	0.0		Brown, fine-medium SAND some gravel, little silt, no odor. Moist.
		10.0-12.0		0.1		Brown/grey medium SAND, some gravel, slight odor. Wet 10.5 feet.
						End of Boring 12.0'

NOTES
MC Sampler = 48-inch Macro-Core sampling tube
Sampling depths are approximate
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 10.5 fbg

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | dtc | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: **DOT Facility Higganum, CT.**

Assignment No. 302-3010

DOT Project No. 170-1877
Task 210

Date: **June 8, 2006**

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.:

SB-2

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-4	MC	0.0-2.0	38	0.0		Brown, medium SAND, some silt, little gravel.
		2.0-4.0		0.0		Dark brown, medium SAND, some silt and gravel, trace asphalt 3.5'-4.0'.
4-8	MC	4.0-6.0	42	0.0		Dark brown, medium SAND, some silt and gravel, trace asphalt.
		6.0-8.0		0.0		Brown, coarse-medium SAND, some crushed rock, trace gravel, no odor.
8-12	MC	8.0-10.0	40	0.0		Brown, coarse-medium SAND, some crushed rock, trace gravel, no odor.
		10.0-12.0		0.1		Brown coarse-medium SAND, with gravel, some asphalt, brick, rock, no odor. Wet 10.5 feet.
						Fill Material 0-12'
						End of Boring 12.0'

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube
Sampling depths are approximate
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 10.5 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS	LAND STRUCTURES WATER	GEOPROBE EXPLORATION REPORT	Project: DOT Facility Higganum, CT. Assignment No. 302-3010 DOT Project No. 170-1877 Task 210 Date: June 8, 2006	Boring No.: SB-3
DTC Project No.: 03-273-09J		Logged by: E. Stewart	Drilling Contractor: Logical Environmental Solutions, LLC	

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-4	MC	0.0-2.0	36	0.6		Dark brown/brown, medium SAND, some silt, gravel, little asphalt.
		2.0-4.0		0.0		Dark brown, medium SAND, and gravel, some silt, trace asphalt.
4-8	MC	4.0-6.0	36	1.0		Dark brown, medium SAND, and gravel, some silt, trace asphalt.
		6.0-8.0		1.6		Dark brown, medium SAND, and gravel, some silt, trace asphalt, crushed rock at 7'5". Wet at 6'.
8-12	MC	8.0-10.0	24	NA		No Recovery
		10.0-12.0		0.0		Dark brown/grey medium-coarse SAND, wet, little asphalt.
						Fill Material 0-10'
						End of Boring 12.0'

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube
Sampling depths are approximate
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 6.0 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade

ENGINEERED SOLUTIONS dtc LAND STRUCTURES WATER DTC Project No.: 03-273-09J	**GEOPROBE EXPLORATION REPORT** Logged by: E. Stewart	Project: **DOT Facility Higganum, CT.** Assignment No. 302-3010 DOT Project No. 170-1877 Task 210 Date: **June 8, 2006** Drilling Contractor: Logical Environmental Solutions, LLC	**Boring No.:** SB-4

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-4	MC	0.0-2.0	36	1.5		Brown SILT and medium SAND, some gravel.
		2.0-4.0		2.0		Dark brown SILTand medium SAND, some gravel, trace asphalt.
4-8	MC	4.0-6.0	38	0.0		Dark brown SILTand medium SAND, little gravel, trace asphalt.
		6.0-8.0		2.8		Dark brown/grey medium SAND, with gravel, little silt. At 7', one inch of asphalt. Moist at 8'.
8-12	MC	8.0-10.0	12	NA		No Recovery
		10.0-12.0		1.8		Brown coarse SAND, some gravel, wet.
						Fill Material 8-12'
						End of Boring 12.0'

NOTES:
MC Sampler – 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 8.0 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | dtc | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: DOT Facility Higganum, CT.
Assignment No. 302-3010
DOT Project No. 170-1877
Task 210
Date: June 8, 2006

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.: SB-5

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-4	MC	0.0-2.0	40	0.1		Dark brown SILT, some medium sand, little gravel, trace crushed rock.
		2.0-4.0		0.0		Brown medium SAND, some silt, little gravel, trace asphalt.
4-8	MC	4.0-6.0	40	1.3		Light brown medium SAND, little gravel.
		6.0-8.0		0.2		Light brown medium SAND, little gravel. At 6.5-7.0', 2 inches asphalt.
8-12	MC	8.0-10.0	38	1.1		Dark brown/brown medium SAND, with asphalt mixed within, moist.
		10.0-12.0		2.0		Brown medium-coarse SAND, with gravel, wet.
						Fill Material 0-10'
						End of Boring 12.0'

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 10.5 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | dtc | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: DOT Facility Higganum, CT.

Assignment No. 302-3010

DOT Project No. 170-1877
Task 210

Date: June 8, 2006

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.:

SB-6

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-4	MC	0.0-2.0	42	0.3		Brown SILT and medium-fine Sand, little gravel, trace brick.
		2.0-4.0		0.2		Dark brown medium SAND, some gravel, little layered asphalt, trace black staining.
4-8	MC	4.0-6.0	24	NA		No Recovery.
		6.0-8.0		2.2		Brown medium SAND, some silt, gravel. Wet 7 feet.
8-12	MC	8.0-10.0	24	NA		No Recovery.
		10.0-12.0		1.1		Brown medium-coarse SAND and gravel, with asphalt, crushed rock, wet.
						Fill Material 0-12'
						End of Boring 12.0'

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube
Sampling depths are approximate
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 7.0 fbg

Groundwater depth measurements calculated from grade.
fbg = feet below grade

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-093

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: **DOT Facility Higganum, CT.**
Assignment No. 302-3010
DOT Project No. 170-1877
Task 210
Date: **June 8, 2006**

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.: SB-7

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-4	MC	0.0-2.0	36	0.0		Dark brown medium-fine SAND and gravel, some asphalt.
		2.0-4.0		0.2		Dark brown medium-fine SAND and gravel, some asphalt. Moist 3-4'.
4-8	MC	4.0-6.0	38	0.6		Dark brown medium-fine SAND and gravel, some asphalt. Moist .
		6.0-8.0		1.4		Dark brown medium-fine SAND and gravel, some asphalt. Crushed rock within 7-8'. Moist.
8-12	MC	8.0-10.0	30	0.3		Dark brown medium-fine SAND and gravel, some asphalt.
		10.0-12.0		0.0		Brown medium-coarse SAND, some gravel. Bottom 5 inches is grey medium-fine SAND, trace gravel, odor/organic.
						Fill Material 0-10'
						End of Boring 12.0'

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 12.0 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: **DOT Facility Higganum, CT.**

Assignment No. 302-3010

DOT Project No. 170-1877
Task 210

Date: **June 8, 2006**

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.:

SB-8

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-4	MC	0.0-2.0	24	0.1		Brown SILT, some medium SAND, gravel, asphalt, little crushed stone.
		2.0-4.0		0.1		Brown SILT, some medium SAND, gravel, asphalt, little crushed stone.
4-8	MC	4.0-6.0	18	NA		No Recovery.
		6.0-8.0		0.1		Brown medium SAND and gravel, crushed rock. Moist at 7.5'..
						Fill Material 0-8'
						End of Boring 8.0'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: >8.0 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: DOT Facility Higganum, CT.

Assignment No. 302-3010

DOT Project No. 170-1877
Task 210

Date: **June 8, 2006**

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.:

SB-9

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-4	MC	0.0-2.0	40	0.5		3" asphalt Brown medium SAND, with gravel, silt, little brick, crushed stone.
		2.0-4.0		0.6		2-3' Brown SILT and gravel, some medium sand. 3-4' Brown/dense fine SAND/clay material, trace gravel, very dense, moist.
4-8	MC	4.0-6.0	36	1.2		Brown/dense fine SAND/clay material, trace gravel, very dense, wet.
		6.0-8.0		1.2		Brown/dense fine SAND/clay material, trace gravel, very dense, wet.
						Fill Material 0-7'
						End of Boring 7.5'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube
Sampling depths are approximate
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 4.0 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade

ENGINEERED SOLUTIONS dtc LAND STRUCTURES WATER DTC Project No.: 03-273-09J	**GEOPROBE EXPLORATION REPORT** Logged by: E. Stewart	Project: DOT Facility Higganum, CT. Assignment No. 302-3010 DOT Project No. 170-1877 Task 210 Date: **June 8, 2006** Drilling Contractor: Logical Environmental Solutions, LLC	**Boring No.:** SB-10

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-4	MC	0.0-2.0	40	0.8		Brown/red SILT and medium SAND, with gravel.
		2.0-4.0		2.1		Brown medium SAND, some silt, gravel, slight staining at 3', wet at 3.5'.
4-8	MC	4.0-6.0	44	0.0		Brown medium-coarse SAND and gravel, wet.
		6.0-8.0		0.0		Brown medium-coarse SAND and gravel, wet.
						Fill Material 0-4'
						End of Boring 8.0'

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube
DEPTH TO GROUNDWATER: 3.5 fbg.
Sampling depths are approximate
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

Groundwater depth measurements calculated from grade.
fbg = feet below grade

ENGINEERED SOLUTIONS	GEOPROBE EXPLORATION REPORT	Project: DOT Facility Higganum, CT. Assignment No. 302-3010 DOT Project No. 170-1877 Task 210 Date: June 8, 2006	Boring No.: SB-11
LAND STRUCTURES WATER			
DTC Project No.: 03-273-09J	Logged by: E. Stewart	Drilling Contractor: Logical Environmental Solutions, LLC	

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-4	MC	0.0-2.0	38	1.7		3 inches of asphalt Brown/red SILT and medium SAND, with gravel.
		2.0-4.0		2.5		Brown medium SAND and gravel, with silt, wet at 3.5'.
						End of Boring 4.0'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube
DEPTH TO GROUNDWATER: 3.5 fbg.
Sampling depths are approximate
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

Groundwater depth measurements calculated from grade.
fbg. = feet below grade

ENGINEERED SOLUTIONS dtc LAND STRUCTURES WATER DTC Project No.: 03-273-09J	**GEOPROBE EXPLORATION REPORT** Logged by: E. Stewart	Project: **DOT Facility Higganum, CT.** Assignment No. 302-3010 DOT Project No. 170-1877 Task 210 Date: **June 8, 2006** Drilling Contractor: Logical Environmental Solutions, LLC	**Boring No.:** SB-12

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-2	MC	0.0-2.0	6	0.1		3 inches of asphalt Brown/red medium SAND and gravel, some crushed stone.
						End of Boring 1.5'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: >1.5 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: **DOT Facility Higganum, CT.**

Assignment No. 302-3010

DOT Project No. 170-1877
Task 210

Date: **June 8, 2006**

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.:

SB-13

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-4	MC	0.0-2.0	36	0.6		Brown medium SAND, with gravel. 1 inch asphalt at 2', trace asphalt throughout.
		2.0-4.0		0.8		Brown medium-coarse SAND and gravel, wet 3.5'.
4-8	MC	4.0-6.0	40	0.0		Brown medium-coarse SAND and gravel.
		6.0-8.0		0.0		Weathered Rock.
						Fill Material 0-4'
						End of Boring 8.0'

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 3.5 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: **DOT Facility Higganum, CT.**

Assignment No. 302-3010

DOT Project No. 170-1877
Task 210

Date: **June 8, 2006**

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.:

SB-14

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-4	MC	0.0-2.0	18	1.0		Brown SILT, with medium sand, gravel, trace asphalt. Bottom 3 inches is crushed rock and weathered rock in the tip, moist. Fill Material 0-2' End of Boring 2.5'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: >2.5 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS dtc LAND STRUCTURES WATER DTC Project No.: 03-273-09J	**GEOPROBE EXPLORATION REPORT** Logged by: E. Stewart	Project: **DOT Facility Higganum, CT.** Assignment No. 302-3010 DOT Project No. 170-1877 Task 210 Date: **June 8, 2006** Drilling Contractor: Logical Environmental Solutions, LLC	**Boring No.:** SB-16

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-3	MC	0.0-3.0	24	0.0		Brown medium SAND with silt, gravel, trace brick. Fill Material 0-3' End of Boring 3.0'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: >3.0 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-093

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: DOT Facility Higganum, CT.
Assignment No. 302-3010
DOT Project No. 170-1877
Task 210
Date: **June 8, 2006**

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.: SB-17

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-2	MC	0.0-2.0	15	0.0		Brown SILT and gravel, some medium SAND, little crushed rock.
						End of Boring 2.0'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: >2.0 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

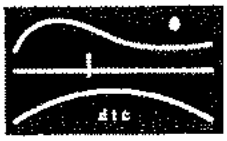
ENGINEERED SOLUTIONS dtc LAND STRUCTURES WATER DTC Project No.: 03-273-09J	**GEOPROBE EXPLORATION REPORT** Logged by: E. Stewart	Project: **DOT Facility Higganum, CT.** Assignment No. 302-3010 DOT Project No. 170-1877 Task 210 Date: **June 8, 2006** Drilling Contractor: Logical Environmental Solutions, LLC	**Boring No.:** SB-18

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-3	MC	0.0-3.0	20	0.0		Brown medium-coarse SAND and gravel, with crushed stone, silt, trace asphalt.
						End of Boring 3.0'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: >3.0 bg.

Groundwater depth measurements calculated from grade.
bg = feet below grade.

ENGINEERED SOLUTIONS  LAND STRUCTURES WATER DTC Project No.: 03-273-09J	**GEOPROBE EXPLORATION REPORT** Logged by: E. Stewart	Project: DOT Facility Higganum, CT. Assignment No. 302-3010 DOT Project No. 170-1877 Task 210 Date: **June 8, 2006** Drilling Contractor: Logical Environmental Solutions, LLC	**Boring No.:** SB-19

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-2	MC	0.0-2.0	14	0.0		Brown SILT and medium-coarse sand with gravel, little crushed stone.
						End of Boring 2.0'-Refusal

NOTES:
MC Sampler = 48 inch Macro-Core sampling tube. **DEPTH TO GROUNDWATER: >2.0 fbg.**
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS	LAND STRUCTURES WATER	GEOPROBE EXPLORATION REPORT	Project: DOT Facility Higganum, CT. Assignment No. 302-3010 DOT Project No. 170-1877 Task 210 Date: June 8, 2006 Drilling Contractor: Logical Environmental Solutions, LLC	Boring No.: SB-20
DTC Project No.: 03-273-09J		Logged by: E. Stewart		

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-4	MC	0.0-2.0	38	0.0		Dark brown SILT (top soil), some medium-fine Sand, little brick.
		2.0-4.0		0.1		Dark brown medium SAND, some gravel, little layered asphalt, trace black staining.
4-8	MC	4.0-6.0	40	0.1		Brown/red SILT, some medium sand, little gravel.
		6.0-8.0		0.1		Brown/red SILT, some medium sand, little gravel.
						Fill Material 0-2'
						End of Boring 8.0'-Refusal

NOTES:
MC-Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: >8.0 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS dtc LAND STRUCTURES WATER DTC Project No.: 03-273-09J	**GEOPROBE EXPLORATION REPORT** Logged by: E. Stewart	Project: **DOT Facility Higganum, CT.** Assignment No. 302-3010 DOT Project No. 170-1877 Task 210 Date: **June 9, 2006** Drilling Contractor: Logical Environmental Solutions, LLC	**Boring No.:** SB-21

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-4	MC	0.0-2.0	24	0.0		No Recovery.
		2.0-4.0		NA		Brown medium-coarse SAND, some silt, wet.
4-8	MC	4.0-6.0	30	0.2		Brown medium-coarse SAND, some silt, asphalt, wet.
		6.0-8.0		0.1		Brown medium-coarse SAND and gravel, with crushed rock.
						Fill Material 0-6'
						End of Boring 8.0'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube
Sampling depths are approximate
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp

DEPTH TO GROUNDWATER: 3.67 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-093

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: DOT Facility Higganum, CT.
Assignment No. 302-3010
DOT Project No. 170-1877
Task 210
Date: June 9, 2006

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.: SB-22

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-4	MC	0.0-2.0	18	0.0		4 inches asphalt Brown/green medium-coarse SAND and gravel.
		2.0-4.0		0.3		Brown medium SAND with gravel, little asphalt.
4-8	MC	4.0-6.0	30	0.3		Dark brown medium-coarse SAND, wet.
		6.0-8.0		109		Light brown medium-coarse SAND and gravel, strong petroleum odor at 7 feet.
						Fill Material 0-4'
						End of Boring 7.0'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 4.5 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS dtc LAND STRUCTURES WATER DTC Project No.: 03-273-09J	**GEOPROBE EXPLORATION REPORT** Logged by: E. Stewart	Project: **DOT Facility Higganum, CT.** Assignment No. 302-3010 DOT Project No. 170-1877 Task 210 Date: **June 9, 2006** Drilling Contractor: Logical Environmental Solutions, LLC	**Boring No.:** SB-23

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-4	MC	0.0-2.0	36	0.0		4 inches asphalt Brown/red fine-medium SAND some silt, crushed rock.
		2.0-4.0		0.0		Black fine-medium SAND and silt, moist.
4-8	MC	4.0-6.0	12	0.0		Brown/red fine-medium SAND and rock, wet.
		6.0-8.0		NA		
						Fill Material 0-2'
						End of Boring 6.0'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube
DEPTH TO GROUNDWATER: 3.5 fbg.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS dtc LAND STRUCTURES WATER DTC Project No.: 03-273-09J	**GEOPROBE EXPLORATION REPORT** Logged by: E. Stewart	Project: **DOT Facility Higganum, CT.** Assignment No. 302-3010 DOT Project No. 170-1877 Task 210 Date: **June 9, 2006** Drilling Contractor: Logical Environmental Solutions, LLC	**Boring No.:** SB-24

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-4	MC	0.0-2.0	30	0.0		4 inches asphalt Brown/red medium-coarse SAND, with gravel, some silt, black staining at 1.5'.
		2.0-4.0		0.0		Brown fine-medium SAND with gravel.
						End of Boring 3.0'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
DEPTH TO GROUNDWATER: >3.0 fbg.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: DOT Facility Higganum, CT.
Assignment No. 302-3010
DOT Project No. 170-1877
Task 210
Date: **June 9, 2006**

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.: SB-25

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-4	MC	0.0-2.0	30	0.0		4 inches asphalt Brown medium-coarse SAND, some silt, trace asphalt.
		2.0-4.0		0.0		Brown fine-medium SAND, little gravel, silt, crushed rock at 3.5'. Wet at 3'.
4-8	MC	4.0-6.0	10	0.0		Brown medium-coarse SAND, some gravel, weathered rock at bottom.
						Fill Material 0-2'
						End of Boring 5.5'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: >3.0 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS	GEOPROBE EXPLORATION REPORT	Project: DOT Facility Higganum, CT.	Boring No.:
LAND STRUCTURES WATER		Assignment No. 302-3010	SB-26
DTC Project No.: 03-273-09J	Logged by: E. Stewart	DOT Project No. 170-1877 Task 210 Date: June 9, 2006	
		Drilling Contractor: Logical Environmental Solutions, LLC	

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-4	MC	0.0-2.0	30	0.7		4 inches asphalt Dark brown medium-coarse SAND, some silt.
		2.0-4.0		0.2		Light brown fine-medium SAND, little gravel, silt, wet at 3.5'. Trace asphalt 3-4'.
						Fill Material 0-4'
						End of Boring 4.5'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube
Sampling depths are approximate
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp

DEPTH TO GROUNDWATER: 3.5 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: DOT Facility Higganum, CT.
Assignment No. 302-3010
DOT Project No. 170-1877
Task 210
Date: June 9, 2006

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.: SB-27

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-4	MC	0.0-2.0	30	0.0		4 inches asphalt Dark brown medium-coarse SAND, some silt, gravel.
		2.0-4.0		0.0		Brown fine-medium SAND, some gravel, silt. Crushed rock at 3-3.5'.
						End of Boring 4.0'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube
Sampling depths are approximate
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 3.5 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS dtc LAND STRUCTURES WATER DTC Project No.: 03-273-09J	**GEOPROBE EXPLORATION REPORT** Logged by: E. Stewart	Project: **DOT Facility Higganum, CT.** Assignment No. 302-3010 DOT Project No. 170-1877 Task 210 Date: **June 9, 2006** Drilling Contractor: Logical Environmental Solutions, LLC	**Boring No.:** SB-28

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-4	MC	0.0-2.0	30	0.0		4 inches asphalt Brown/red medium-coarse SAND, with gravel, some silt.
		2.0-4.0		0.0		Light brown fine-medium SAND, some silt, crushed rock at 3'8".
						End of Boring 4.0'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 3.5 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: DOT Facility
Higganum, CT.

Assignment No. 302-3010

DOT Project No. 170-1877
Task 210

Date: **June 9, 2006**

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.:

SB-29

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-4	MC	0.0-2.0	30	0.0		4 inches asphalt Dark brown fine-medium SAND and gravel, traces of asphalt.
		2.0-4.0		0.0		Brown/orange fine-medium SAND, some silt, with gravel, crushed rock at 3'5".
						Fill Material 0-2'
						End of Boring 3.5'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube

DEPTH TO GROUNDWATER: >3.5 fbg.

Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 05-273-09J

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: DOT Facility Higganum, CT.
Assignment No. 302-3010
DOT Project No. 170-1877
Task 210
Date: **June 9, 2006**

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.:

SB-30

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-4	MC	0.0-2.0	40	0.0		4 inches asphalt Dark brown/red fine-medium SAND, some silt, with gravel.
		2.0-4.0		0.0		Brown/orange fine-medium SAND, some silt, with gravel, little crushed rock. Wet 3.5'
						End of Boring 4.0'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 3.5 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: DOT Facility Higganum, CT.
Assignment No. 302-3010
DOT Project No. 170-1877
Task 210
Date: **June 9, 2006**

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.: SB-31

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-4	MC	0.0-2.0	38	0.0		4 inches asphalt Brown medium-coarse SAND, some gravel, little silt. Crushed stone at 2'.
		2.0-4.0		0.0		Light brown coarse SAND and gravel, with crushed stone , trace asphalt. Wet 4.5'
						Fill Material 0-4'
						End of Boring 5.0'

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 4.5 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: **DOT Facility Higganum, CT.**

Assignment No. 302-3010

DOT Project No. 170-1877
Task 210

Date: **June 9, 2006**

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.:

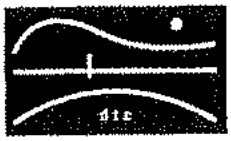
SB-32

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-4	MC	0.0-2.0	36	0.0		4 inches asphalt Brown/black medium-coarse SAND, some gravel, asphalt, trace brick.
		2.0-4.0		0.0		Brown fine-medium SAND with gravel, some silt. Wet 3.5'
						Fill Material 0-2'
						End of Boring 5.0'

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 3.5 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS  LAND STRUCTURES WATER DTC Project No.: 03-273-09J	**GEOPROBE EXPLORATION REPORT** Logged by: E. Stewart	Project: **DOT Facility Higganum, CT.** Assignment No. 302-3010 DOT Project No. 170-1877 Task 210 Date: **June 9, 2006** Drilling Contractor: Logical Environmental Solutions, LLC	**Boring No.:** SB-33

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations	
	Sampler Type	Depth Interval (feet)	Recovery (inches)		Depth	Soil Description
0-5	MC	0.0-2.0	36	0.0		4 inches asphalt Brown medium-coarse SAND, little gravel, crushed stone at 2'.
		2.0-5.0		0.0		Brown fine-medium SAND, some silt, little asphalt and wood. Wet 4.5'
						Fill Material 0-4'
						End of Boring 5.0'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 4.5 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

GEOPROBE EXPLORATION REPORT

Logged by: E. Stewart

Project: DOT Facility Higganum, CT.
Assignment No. 302-3010
DOT Project No. 170-1877 Task 210
Date: **June 9, 2006**

Drilling Contractor: Logical Environmental Solutions, LLC

Boring No.:

SB-34

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Depth Interval (feet)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth	Field Observations: Soil Description
0-4	MC	0.0-2.0	36	0.0		4 inches asphalt Brown/black medium-coarse SAND and gravel, with asphalt.
		2.0-4.0		0.3		Brown fine-medium SAND, some silt. Wet 4.5'
0-8		4.0-6.0	16	1.1		Brown medium-fine SAND, some silt, weathered rock at 6'.
						Fill Material 0-2'
						End of Boring 6.0'-Refusal

NOTES:
MC Sampler = 48-inch Macro-Core sampling tube.
Sampling depths are approximate.
Four soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.

DEPTH TO GROUNDWATER: 4.5 fbg.

Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

HOLLOW-STEM AUGER EXPLORATION REPORT

Logged by: V. Koneru

Project: **DOT Facility Higganum, CT.**

Assignment No. 302-3010

DOT Project No. 170-1877
Task 210
Date: **June 20, 2006**

Drilling Contractor: Associated Borings, Inc. of Naugatuck, CT

Boring No.:

MW-1

Feet Below Grade	Soil Samples			PID Reading (ppm)	Sample Description	Field Observations	
	Sampler Type	Blow Counts (Every 6 inches)	Recovery (Inches)			Depth	Soil Description
0.5-2	SS	12, 17, 22-1"	8	0.0	Brown medium-coarse SAND and crushed rock, some gravel, trace silt.	0.4	Bituminous Concrete
							Br. C-F Sand, Some C-F Gravel, Little Silt, Cobbles
2-3.5	SS	31, 37, 58-1"	14	0.0	Crushed ROCK (90%), brown fine-coarse sand, trace silt.	6	
5-6.2	SS	32, 50-1"	10	0.0	Brown fine-coarse SAND, little gravel, trace silt, crushed rock.		Decomposed Rock
						14	
6.2-6.7	SS	70-1"	0	0.0	Bedrock, wet.		End of Boaring-14.0
							Well Set at 14'
							10'2" PVC SCREEN
							3.5'2" RISER
							FLUSH PROTECTOR
							Screened interval 4-14'

NOTES:
SS Sampler = 24-inch Split-spoon sampling tube
Sampling depths are approximate
Soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.
Groundwater depth measurements calculated from grade.
fbg = feet below grade.

DEPTH TO GROUNDWATER: 6.0 fbg.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

HOLLOW-STEM AUGER EXPLORATION REPORT

Logged by: V. Konetu

Project: **DOT Facility Higganum, CT.**

Assignment No. 302-3010

DOT Project No. 170-1877
Task 210

Date: **June 19, 2006**

Drilling Contractor: Associated Borings, Inc. of Naugatuck, CT

Boring No.:

MW-2

Feet Below Grade	Soil Samples: Sampler Type:	Soil Samples: Blow Counts (Every 6 inches)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Field Observations: Depth		Field Observations: Soil Description
0-2	SS	12, 19, 9, 5	6	0.0	Brown fine-coarse SAND, some gravel, little silt, crushed rock at 2'.	6	Dk .Br. M-F Sand, Some Silt, Cobbles, Boulders
2-4	SS	5, 4, 3, 7	8	0.0	Brown/black fine-coarse SAND, some gravel, asphalt.		Gr. Br. C-F Sand, Some C-F Gravel, Little Silt, Cobbles
4-6	SS	5, 8, 18, 21	10	0.0	Brown fine-coarse SAND, and asphalt, crushed rock at the bottom, moist.	14	
6-7.5	SS	53, 65, 52	12	0.0	Dark brown medium-coarse SAND, with silt, wet at 6'.		End of Boaring -14.0 ***Well Set at 14'*** ***10'2" PVC SCREEN*** ***3.5'2" RISER*** ***FLUSH PROTECTO*** ***Screened interval 4-14'***

NOTES:
SS Sampler = 24-inch Split-spoon sampling tube
Sampling depths are approximate.
Soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.
Groundwater depth measurements calculated from grade.
fbg = feet below grade.

DEPTH TO GROUNDWATER: 6.0 fbg.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

HOLLOW-STEM AUGER EXPLORATION REPORT

Logged by: V. Koneru

Project: **DOT Facility Higganum, CT.**

Assignment No. 302-3010

DOT Project No. 170-1877
Task 210

Date: **June 19, 2006**

Drilling Contractor: Associated Borings, Inc. of Naugatuck, CT

Boring No.:

MW-3

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Blow Counts (Every 6 Inches)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Sample Description	Field Observations: Depth	Field Observations: Soil Description
							Dk. Br. M-F Sand, Some silt, Cobbles, Boulders
0-2	SS	2, 2, 1, 2	4	0.0	Brown medium-coarse SAND, little silt, asphalt.	7	
2-4	SS	1, 1, 5, 6	6	0.0	Brown fine-coarse SAND, little silt, some concrete.		Gr. Br C-F Sand, Some C-F Gravel, Little Silt, Cobbles
						12	
4-6	SS	26, 50	8	0.0	Brown medium-coarse SAND, some gravel, little silt, 3 inches of crushed rock at the bottom	12.5	Weathered Rock
							Refusal 12.5
6-8	SS	5, 5, 5, 5	6	0.0	Dark brown medium-coarse SAND, with gravel, little silt, crushed rock, odor at the tip, wet at 7'.		***Well set at 12.5'*** ***10'2" PVC SCREEN*** ***2'2" RISER*** ***FLUSH PROTECTOR*** ***Screened interval 2.5-12.5'***

NOTES:
SS Sampler = 24-inch Split-spoon sampling tube
Sampling depths are approximate
Soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.
Groundwater depth measurements calculated from grade.
fbg = feet below grade.

DEPTH TO GROUNDWATER: 7.0 fbg.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

HOLLOW-STEM AUGER EXPLORATION REPORT

Logged by: V. Koneru

Project: **DOT Facility Higganum, CT.**

Assignment No. 302-3010

DOT Project No. 170-1877
Task 210

Date: **June 19, 2006**

Drilling Contractor: Associated Borings, Inc. of Naugatuck, CT

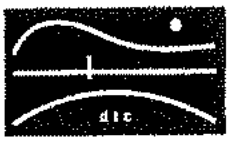
Boring No.:

MW-4

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Blow Counts (Every 6 inches)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Sample Description	Field Observations: Depth	Field Observations: Soil Description
							Dk.Br. M-F Sand, Some Silt, Cobbles, Boulders
0-2	SS	11, 11, 15, 23	8	0.0	Brown fine-medium SAND, some silt, 2 inches of asphalt at the bottom.	6	
2-4	SS	15, 17, 1, 1	4	0.0	Brown medium SAND and gravel, some silt, rock at the bottom.		Gr.Br. C-F Sand, Some C-F Gravel, Little Silt, Cobbles
4-5	SS	23, 50	6	0.0	Dark brown fine-medium SAND, with rock at the bottom, moist.	8.5	Weathered Rock
6-7.5	SS	19, 27, 50	2	111	Brown medium-coarse SAND, some gravel, petroleum/diesel odor at 7'.	9.5	Refusal -9.5
8-9	SS	62, 85	1	156	Brown medium-coarse SAND, little gravel, weathered rock at the bottom.		***Well set at 9.5'*** ***7'2" PVC SCREEN*** ***2'2" RISER*** ***FLUSH PROTECTOR*** ***Screened interval 3-10'***

NOTES:
SS Sampler = 24-inch Split-spoon sampling tube
Sampling depths are approximate
Soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.
Groundwater depth measurements calculated from grade.
fbg = feet below grade.

DEPTH TO GROUNDWATER: 5.0 fbg.

ENGINEERED SOLUTIONS  LAND STRUCTURES WATER DTC Project No.: 03-273-09J	**HOLLOW-STEM AUGER EXPLORATION REPORT** Logged by: V. Koneru	Project: **DOT Facility Higganum, CT.** Assignment No. 302-3010 DOT Project No. 170-1877 Task 210 Date: **June 20, 2006** Drilling Contractor: Associated Borings, Inc. of Naugatuck, CT	**Boring No.:** MW-5

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations		
	Sampler Type	Blow Counts (Every 6 Inches)	Recovery (Inches)		Sample Description	Depth	Soil Description
0.5-2	SS	8, 11, 11, 11	20	0.0	Peat.	0.4	Bituminous Concrete
2-4	SS	8, 10, 15, 22	24	0.0	Peat, crushed rock in the tip.	3.5	Peat, Stone, Gravel
4-4.7	SS	40, 30-1"	1	0.0	Crushed Rock, little brown coarse sand.	7	Br.C-F Sand, Some C-F Gravel, Little Silt, Cobbles
6-8	SS	17, 30, 45, 60	12	0.0	Brown fine-medium SAND, with silt, very dense, rock, wet.	14	Very Dense F, Sand and Silt
							End of Boaring -14. ***Well Set at 14'*** ***10'2" PVC SCREEN*** ***3.5'2" RISER*** ***FLUSH PROTECTOR*** ***Screened interval 4-14'***

NOTES:
SS Sampler = 24-inch Split-spoon sampling tube **DEPTH TO GROUNDWATER: 6.0 fbg.**
Sampling depths are approximate
Soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.
Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

HOLLOW-STEM AUGER EXPLORATION REPORT

Logged by: V. Koneru

Project: **DOT Facility Higganum, CT.**
Assignment No. 302-3010
DOT Project No. 170-1877
Task 210
Date: **June 20, 2006**

Drilling Contractor: Associated Borings, Inc. of Naugatuck, CT

Boring No.: MW-6

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Blow Counts (Every 6 inches)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Sample Description	Field Observations: Depth	Field Observations: Soil Description
						0.4	Bituminous Concrete
0-2	SS	7, 14, 14, 21	10	3.9	Brown fine-medium SAND, little gravel, trace silt, crushed rock in tip.	8	Br. C-F Sand, Some C-F Gravel, Little Silt, Cobbles, Boulders
2-4	SS	6, 9, 8, 8	10	4.2	Crushed ROCK, little brown coarse sand.		Decomposed Rock
5-7	SS	7, 15, 32, 33	10	0.0	Brown fine-coarse SAND, some gravel, little silt, crushed rock.	15	
7-8.5	SS	28, 31, 57-1"	10	0.0	Brown coarse-fine SAND, some gravel, wet, light odor, crushed rock in tip.		End of Boaring-15.0 ***Well Set at 15'*** ***10'2" PVC SCREEN*** ***4.5'2" RISER*** ***FLUSH PROTECTOR*** ***Screened interval 5-15'***

NOTES:
SS Sampler = 24-inch Split-spoon sampling tube
DEPTH TO GROUNDWATER: 7.0 fbg.
Sampling depths are approximate
Soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.
Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

HOLLOW-STEM AUGER EXPLORATION REPORT

Logged by: V. Konera

Project: **DOT Facility Higganum, CT.**

Assigament No. 302-3010

DOT Project No. 170-1877
Task 210
Date: **June 20, 2006**

Drilling Contractor: Associated Borings, Inc. of Naugatuck, CT

Boring No.:

MW-7

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Blow Counts (Every 6 inches)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Sample Description	Field Observations: Depth	Field Observations: Soil Description
0-2	SS	7, 17, 31, 14	0	NA	No Recovery.		Br. C-F Sand, Some C-F Gravel, Little Silt, Cobbles, Boulders
2-4	SS	16, 8, 21, 30	0	NA	No Recovery.	4	
4-4.5	SS	50	8	3.2	Weathered rock.		Decomposed Rock
						13	Boaring Ends-13.0 *Well Set at 13* *'10'2" PVC SCREEN* *2.5'2" RISER* *FLUSH PROTECTOR* *Screened interval 3-13'*

NOTES:
SS Sampler = 24-inch Split-spoon sampling tube
Sampling depths are approximate
Soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.
Groundwater depth measurements calculated from grade.
fbg = feet below grade.

DEPTH TO GROUNDWATER: 6.0 fbg.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-090

HOLLOW-STEM AUGER EXPLORATION REPORT

Logged by: V. Konero

Project: **DOT Facility Higganum, CT.**

Assignment No. 302-3010

DOT Project No. 170-1877
Task 210

Date: **June 19, 2006**

Drilling Contractor: Associated Borings, Inc. of Naugatuck, CT

Boring No.:

MW-8

Feet Below Grade	Soil Samples			PID Reading (ppm)	Field Observations		
	Sampler Type	Blow Counts (Every 6 inches)	Recovery (inches)			Depth	Soil Description
0-2	SS	25, 29, 31, 40	12	0.0	Crushed rock (80%), brown medium-coarse SAND, little brick, asphalt.	5.5	Dk. Br. M-F Sand, Some Silt, Cobbles
2-4	SS	27, 17, 21, 12	10	0.0	Dark brown medium-coarse SAND, some crushed rock, gravel, moist.	12	Weathered Bedrock
4-6	SS	17, 17, 19, 26	12	0.0	Brown medium-fine SAND and crushed rock, 4 inches of weathered rock in the tip, wet.		Refusal- 12.0 ***Well set at 12'*** ***10'2" PVC SCREEN*** ***1.5'2" RISER*** ***FLUSH PROTECTOR*** ***Screened interval 2-12'***

NOTES:
SS Sampler = 24-inch Split-spoon sampling tube
Sampling depths are approximate
Soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.
Groundwater depth measurements calculated from grade.
fbg = feet below grade.

DEPTH TO GROUNDWATER: 5.0 fbg.

ENGINEERED SOLUTIONS | dtc | LAND STRUCTURES WATER

DTC Project No.: 03-273-093

HOLLOW-STEM AUGER EXPLORATION REPORT

Logged by: V. Koneru

Project: **DOT Facility Higganum, CT.**

Assignment No. 302-3010

DOT Project No. 170-1877
Task 210
Date: **June 20, 2006**

Drilling Contractor: Associated Borings, Inc. of Naugatuck, CT

Boring No.:

MW-10S

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Blow Counts (Every 6 inches)	Soil Samples: Recovery (inches)	PID Reading (ppm)	Sample Description	Field Observations: Depth	Field Observations: Soil Description
0-2	SS	7, 17, 18, 12	12	0.0	Brown fine-coarse SAND, some gravel, trace asphalt.	10	Dk. Br.M-F Sand, Some Silt, Cobbles, Boulders (Fill)
2-4	SS	7, 10, 9, 10	10	0.0	Brown medium-coarse SAND, some gravel, moist, crushed rock at 3.5'.	14	Blk M-F Sand (Fill)
4-6	SS	6, 6, 7, 9	12	0.0	Brown fine-coarse SAND, with gravel, some silt, some staining, moist, rock in tip.	17	Br.C-F Sand and C-F Gravel, Tr.Silt
6-8	SS	8, 13, 6, 20	12	0.0	Brown coarse-medium SAND and gravel, some asphalt, silt, rock, wet.	18.5	Red Br.Silty Clay
8-10	SS	NA	NA	NA	No Recovery.		End of Boaring at 18.5
10-12	SS	8, 8, 9, 11	12	0.0	Dark brown/black coarse-medium SAND, some silt, little gravel, asphalt, trace brick, light odor.		***Well Set at 18.5"*** ***10'2" PVC SCREEN*** ***8'2" RISER*** ***FLUSH PROTECTOR*** ***Screened interval 8.5-18.5'***
12-14	SS	30, 18, 30, 27	12	0.0	Fill Material		
14-17	SS	NA	NA	NA	No Recovery		

NOTES:
SS Sampler = 24-inch Split-spoon sampling tube
DEPTH TO GROUNDWATER: 15.0 fbg.
Sampling depths are approximate
Soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.
Groundwater depth measurements calculated from grade.
fbg = feet below grade.

ENGINEERED SOLUTIONS | LAND STRUCTURES WATER

DTC Project No.: 03-273-09J

HOLLOW-STEM AUGER EXPLORATION REPORT

Logged by: V. Koneru

Project: **DOT Facility Higganum, CT.**
Assignment No. 302-3010
DOT Project No. 170-1877
Task 210
Date: **June 20, 2006**

Drilling Contractor: Associated Borings, Inc. of Naugatuck, CT

Boring No.: MW-10D

Feet Below Grade	Soil Samples: Sampler Type	Soil Samples: Blow Counts (Every 6 inches)	Soil Samples: Recovery (Inches)	PID Reading (ppm)		Field Observations: Depth	Field Observations: Soil Description
0-2	SS	7, 17, 18, 12	12	0.0	Brown fine-coarse SAND, some gravel, trace asphalt.		Dk. Br.M-F Sand, Some Silt, Cobbles, Boulders (Fill)
						10	
2-4	SS	7, 10, 9, 10	10	0.0	Brown medium-coarse SAND, some gravel, moist, crushed rock at 3.5'.		Blk M-F Sand (Fill)
						14	
4-6	SS	6, 6, 7, 9	12	0.0	Brown fine-coarse SAND, with gravel, some silt, some staining, moist, rock in tip.		Br.C-F Sand and C-F Gravel, Tr.Silt
						20	
6-8	SS	8, 13, 6, 20	12	0.0	Brown coarse-medium SAND and gravel, some asphalt, silt, rock, wet.		Red Br.Silty Clay
8-10	SS	NA	NA	NA	No Recovery.		
10-12	SS	8, 8, 9, 11	12	0.0	Dark brown/black coarse-medium SAND, some silt, little gravel, asphalt, trace brick, light odor.		
						29	
12-14	SS	30, 18, 30, 27	12	0.0	Fill Material		Refusal -29.0
14-17	SS	NA	NA	NA	No Recovery		***Well Set at 29*** ***10'2" PVC SCREEN*** ***19'2" RISER*** ***FLUSH PROTECTOR*** ***Screened interval 8.5-18.5'***

NOTES:
SS Sampler = 24-inch Split-spoon sampling tube
DEPTH TO GROUNDWATER: 15.0 fbg.
Sampling depths are approximate
Soil samples obtained and screened with a photoionization detector (PID) equipped with a 10.6 eV lamp.
Groundwater depth measurements calculated from grade.
fbg = feet below grade.