

Prepared for

Schlumberger Technology Corporation

105 Industrial Boulevard

Sugar Land, Texas 77478

**FINAL GRAB-GROUNDWATER
ASSESSMENT AND PROPOSED WELL
INSTALLATIONS**

**MIDDLEFIELD-ELLIS-WHISMAN
REGIONAL GROUNDWATER REMEDIATION PROGRAM**

MOUNTAIN VIEW, CALIFORNIA

Prepared by

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Project Number WR1128A

12 September 2013

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September 12, 2013

Penny Reddy
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Subject: **Final Grab-Groundwater Assessment and Proposed Well Installations**
Middlefield-Ellis-Whisman ("MEW") Area
Mountain View, California

Dear Ms. Reddy:

Enclosed with this letter is a report regarding the investigation undertaken pursuant to the 10 July 2012 Work Plan and 5 November 2012 Addendum to the Work Plan submitted to EPA to address hydraulic containment issues at the Middlefield-Ellis-Whisman (MEW) Study Area in Mountain View, California. EPA approved the 5 November 2012 Addendum to the Work Plan on 15 November 2012. The work was implemented between November 2012 and February 2013. An earlier version of this report was submitted to EPA on 27 March 2013 and EPA provided comments to the report on 30 July 2013. This report has been revised based on the EPA comments.

As indicated in the enclosed report, the work resulted in unanticipated concentrations of compounds of concern (COCs) at two locations in shallow groundwater along Evandale Avenue in Mountain View. Both the location and characteristics of the unanticipated concentrations found along Evandale Avenue indicate that those concentrations are the result of independent sources that do not appear to be associated with the historical operations of the semiconductor companies named as responsible parties (RPs) in the MEW Area.

At a meeting with EPA on 22 January 2013, the RPs presented the results of the investigation to EPA. Despite the RPs understanding that they are not responsible for the concentrations along Evandale, they agreed to proceed with monitoring well installation and implementation of a remedy to address those concentrations, with the understanding that EPA would use all available tools under CERCLA to identify responsible parties for the concentrations along Evandale. Please keep the RPs informed of EPA's efforts in that regard.

If you have any questions regarding the Final Grab-Groundwater Assessment and Proposed Well Installations report, please feel free to call me.

Very truly yours,

A handwritten signature in blue ink, appearing to read "V. Cocianni".

Virgilio Cocianni
Remediation Manager

Attachment

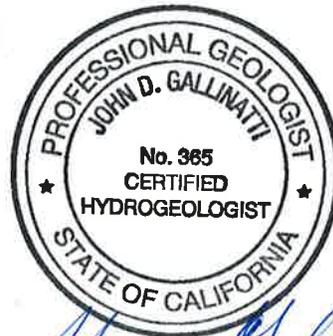
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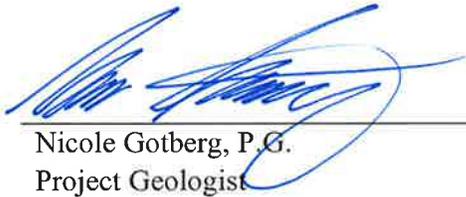
Final Grab-Groundwater Assessment and Proposed Well Installations

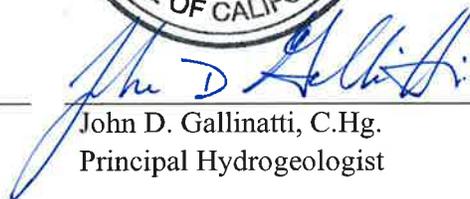
Middlefield-Ellis-Whisman
Regional Groundwater Remediation Program
Mountain View, California

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ACRONYMS AND ABBREVIATIONS

BTEX	Benzene, toluene, ethylbenzene, xylenes
cis-1,2-DCE	cis-1,2-dichloroethene
CPT	cone penetration testing
EPA	United States Environmental Protection Agency
F _s	Sleeve Friction
GPS	Global positioning system
HASP	Health and Safety Plan
HSA	Hollow stem auger
µg/L	micrograms per Liter
MEW	Middlefield-Ellis-Whisman
NASA	National Aeronautics and Space Administration
PID	Photoionization detector
PRPs	Potentially responsible parties
PVC	Polyvinylchloride
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
Q _t	Tip resistance
RGRP	Regional Groundwater Remediation Program
SBT	Soil behavior type
SCVWD	Santa Clara Valley Water District
TCE	Trichloroethylene
USA	Underground Service Alert
U _t	Dynamic pore pressure
VOCs	volatile organic compounds
VC	vinyl chloride

1. INTRODUCTION

On 10 July 2012, a Work Plan for Hydraulic Containment of Groundwater Plume for the Regional Groundwater Remediation Program (RGRP) at the Middlefield-Ellis-Whisman (MEW) Study Area located in Mountain View, California was submitted to the United States Environmental Protection Agency (EPA) (Geosyntec, 2012a). The work plan was submitted in response to EPA's 12 March 2012 letter to the RGRP, Navy, and the National Aeronautics and Space Administration (NASA) that requested a work plan be prepared to address issues of hydraulic capture and stability of the volatile organic compound (VOC) groundwater plume identified in the Second Five-Year Review Report for MEW (EPA, 2009).

In a 27 September 2012 letter responding to the Work Plan for Hydraulic Containment of Groundwater Plume, EPA requested that the work plan include:

“... the installation of monitoring and extraction wells to address data gaps identified in the areas listed below...

Northernmost Plume in the B1/A2 Zone north of REG-9B

Eastern Margin of the Plume in A/A1 Zone

Western Margins of Plume in A/A1 Zone

Western Margins of Plume in B1/A2 Zone

B2 Zone north of Highway 101

B2 Zone – Well W88-1”

On 5 November 2012, an Amendment to the Work Plan for Hydraulic Containment of Groundwater Plume was submitted to EPA (Geosyntec, 2012b).

As part of the Amendment to the Work Plan, a cone penetration testing (CPT) and grab-groundwater sampling program was proposed to identify locations for additional monitoring wells. EPA approved the Amendment to the Work Plan in a letter dated 15 November 2012, and the CPT and grab-groundwater assessment scope of work was implemented between November 2012 and February 2013.

This report presents the results of the CPT and grab-groundwater sampling program and provides a work plan for monitoring well installations. An earlier version of this report was submitted to EPA on 27 March 2013 (Geosyntec, 2013a) and EPA provided comments to the report (EPA, 2013) on 30 July 2013. The report has been revised based on the EPA comments and a response to comments is provided in Appendix A.

In addition, this report presents an updated schedule for proposed response actions to address high concentrations of contaminants found along Evandale Avenue, even though the potentially responsible parties (PRPs) do not accept that these two areas are a result of their historic operations and, therefore, their current responsibility.

Information on the site background and RGRP remedy is included in the Work Plan for Hydraulic Containment of Groundwater Plume (Geosyntec, 2012a) and is not repeated herein.

2. GRAB-GROUNDWATER SAMPLING PROGRAM

The grab-groundwater sampling program was conducted between 26 November 2012 and 15 February 2013 in the area illustrated on Figure 1.

2.1 Pre-Field Activities

Prior to beginning work, permits were obtained from the City of Mountain View, NASA, and the Santa Clara Valley Water District (SCVWD) (Appendix B).

The CPT, direct-push and grab-groundwater boring locations were marked with white paint and Underground Service Alert (USA) was notified of the work more than 48 hours prior to the start of field activities. Additionally, a private utility location survey was conducted at the proposed CPT, direct-push and grab-groundwater locations.

The presence of utilities limited the locations where grab-groundwater samples could be collected and therefore some locations were modified from those proposed in the work plan. Additionally, the samples collected between 13 and 15 February 2013 were collected with a direct-push drilling rig due to access constraints. The sample locations are discussed in Section 2.3.

All field activities were performed in accordance with the site-specific health and safety plan (HASP). A safety tailgate meeting was held prior to the start of field activities and all on-site field personnel signed the HASP acknowledging the discussion of potential hazards.

2.2 Sample Depths

Borings were advanced into the A/A1, B1/A2, or B2 zones. Sample depths were as follows:

- A/A1 zone samples were collected from the most permeable water bearing zones encountered above 25 feet below ground surface (ft bgs),
- B1/A2 zone samples were collected from the most permeable water bearing zones encountered between 25 and 75 ft bgs, and
- B2 zone samples were collected from the most permeable water bearing zones encountered between 75 and 100 ft bgs.

The depth intervals of the samples are included in Table 1.

2.3 Sample Locations

Grab-groundwater samples were collected at 45 locations. The locations and targeted groundwater zones for each of the borings are described below, and are presented in Figures 2 through 6.

Western Margin of Plume in the A/A1 and B1/A2 Zone– Moffett Field Area

- A/A1 zone (Figure 2) and B1/A2 zone (Figure 3) grab-groundwater samples were collected on South Akron Road, Berry Court, Macon Drive, and Perimeter Road.
- Proposed locations on Fairchild Drive were moved to Macon Drive and Perimeter Road due to underground utilities on Fairchild Drive.

Western Margin of Plume in the A/A1 and B1/A2 Zone – MEW Area

- A/A1 zone (Figure 2) and B1/A2 zone (Figure 3) grab-groundwater samples were collected on Evandale Avenue, Devonshire Avenue, and the 277 Fairchild Drive property.
- A/A1 zone grab-groundwater samples were also collected on the 123 to 125 Evandale Avenue property (Figure 2).

Eastern Margin of the Plume in A/A1 Zone

- An A/A1 zone grab-groundwater sample was collected approximately 175 feet east of 73A (Figure 4).

Northernmost Plume in the B1/A2 Zone north of REG-9B

- A B1/A2 zone grab-groundwater sample was collected north of WU4-19 at CPT-40 (Figure 5).
- Additionally, a low-flow groundwater sample was collected from monitoring well 14D25A2 located north of WU4-19 (Figure 6).

B2 Zone north of Highway 101

- B2 zone grab-groundwater samples were collected on Perimeter Road and Cody Road (Figure 6).

2.4 Cone Penetration Testing (CPT)

All CPT borings were advanced between 26 November 2012 and 14 January 2013. At each location, the CPT rod was advanced in a separate borehole prior to collecting grab-groundwater samples.

The following parameters were measured for each CPT boring:

- Tip Resistance (Q_t);
- Sleeve Friction (F_s); and
- Dynamic Pore Pressure (U_t).

The soil behavior type (SBT) was interpreted using relationships between these parameters (Robertson et al 1986). SBT value represents a measure of physical soil properties rather than grain size; however, between SBT values of 2 and 10, increasing SBT values generally represent a transition from properties associated with fine grain soils to properties associated with coarse grain soils.

The SBT log from each boring was used to select grab-groundwater sampling depth intervals. Proposed sample depth intervals were transmitted to EPA for review and concurrence prior to collection of grab-groundwater samples.

CPT logs for each of the borings advanced as part of the grab-groundwater sampling program are included in Appendix C.

2.5 Direct-Push Borings

All direct-push borings were advanced between 13 February and 15 February 2013. At each location, the direct-push rods were advanced and the soil logged in a separate borehole prior to collecting grab-groundwater samples. The borings were continuously cored for geologic logging by a field engineer using the Unified Soil Classification System. The soil was field-screened using a photoionization detector (PID) and the readings were recorded on the boring logs. Proposed sample depth intervals were transmitted to EPA prior to collection of grab-groundwater samples.

Geologic logs for each of the direct-push borings advanced as part of the grab-groundwater sampling program are included in Appendix D.

2.6 Grab-Groundwater Sampling

Grab-groundwater samples were collected from borings adjacent to each CPT or direct-push boring location. At each location, hollow steel direct-push rods equipped with a disposable tip and a section of slotted polyvinylchloride (PVC) screen was advanced to the sampling depth interval that was selected based on the CPT or geologic logs. Once the bottom of the sampling depth was reached, the rods were retracted approximately 2 to 5 feet, exposing the slotted PVC screen while the disposable tip remained stationary. If water recovery was not sufficient to collect a sample after 30 minutes then an alternative sampling interval within the same zone was selected. In locations where samples were collected from multiple depth intervals the shallowest sample was collected first. The rods were then decontaminated using a steam cleaner in accordance with the Quality Assurance Project Plan (QAPP) (Canonie 1991) before being driven to the next sample depth interval in the boring. This process was repeated between every sample collection depth.

Groundwater samples were collected with a stainless steel bailer in laboratory-supplied containers. The stainless steel bailer was decontaminated using a steam cleaner between the collection of samples. The samples were labeled and either analyzed on-site by a mobile laboratory or placed in coolers with ice, and shipped to a laboratory under chain-of-custody procedures. All samples were analyzed for Halogenated VOCs and benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8260B. As part of quality assurance /quality control protocol (QA/QC), a trip blank was included in each cooler and analyzed for VOCs.

Following advancement of the CPT or direct-push borings and grab-groundwater sampling, the boreholes were grouted to the surface using a tremie pipe in accordance with SCVWD requirements. Boreholes were completed to match the surrounding surface, and roadways were repaired in accordance with City of Mountain View requirements.

A Trimble GeoXH handheld global positioning system (GPS) unit was used to record the locations of the borings.

3. RESULTS AND DISCUSSION

Table 1 presents a summary of the grab-groundwater samples, including analytical results for all VOCs detected. Laboratory analytical reports are included in Appendix E, and results of data validation are included in Appendix F. A summary of activities and results from the remedy design data collection work described in a work plan dated 12 April 2013 (Geosyntec, 2013b) and conducted in April 2013 is included in Appendix G.

Figures 2 through 6 present updated trichloroethene (TCE) isoconcentration contours in the areas where grab-groundwater samples were collected. These figures also reflect the results of the 2012 MEW annual groundwater monitoring for wells in these areas.

Five trans-gradient cross sections were developed for the locations shown on Figure 1. Each cross-section, presented on Figures 7 through 9, includes an interpolation of the soil behavior type (SBT) value between adjacent CPT logs. In addition, TCE analytical results are posted for the grab-groundwater samples from this investigation, monitoring wells sampled in 2012, and grab-groundwater samples from other recent investigations.¹

The cross sections demonstrate the small-scale heterogeneity that is typical of the MEW area, as described in the Conceptual Site Model (CSM) report prepared by Geosyntec (Geosyntec, 2011). In particular, the complex SBT variability over relatively short horizontal distances is illustrated in cross section B-B' between CPT-18 and CPT-14 where the CPTs are spaced less than 50 feet apart (Figure 8). The changes in SPT over short horizontal distances are representative of the complex hydrostratigraphic layering at MEW. Due to this complexity, the zone sequence nomenclature is only used to categorize the depth intervals of wells.

The remainder of this section presents a summary discussion of the grab-groundwater sampling results for each of the areas where samples were collected.

Areas Identified on Evandale Avenue

Two previously unidentified areas of relatively high TCE concentrations were identified on Evandale Avenue. One area was identified in the A/A1 and B1/A2 zones in the vicinity of CPT-15 and the other area was identified in the A/A1 zone in the vicinity of CPT-21 (Figures 2 and 3). The concentrations of TCE between the MEW plume and

¹ Investigations conducted by EPA and NASA in 2011.

the newly identified areas are very low, indicating that the areas of higher concentration on Evandale Avenue are related to previously unidentified sources, separate from the MEW plume. In the A/A1 zone, the TCE concentrations on Evandale Avenue between CPT-15 (100,000 µg/L) and the MEW plume are as low as 20 µg/L at CPT-5, 300 µg/L at SB-3, and 77 µg/L at SB-4 (Figure 8). In the B1/A2 zone, the TCE concentrations on Evandale Avenue between CPT-15 (130,000 µg/L) and the MEW plume are as low as 150 µg/L at SB-3 and 170 µg/L at SB-4 (Figure 9). It is the MEW Parties' position that the significantly lower TCE concentrations between the newly identified areas along Evandale and the MEW Plume demonstrate that these higher TCE concentration areas along Evandale are not hydraulically connected to the MEW plume.

Western Margin of Plume in the A/A1 and B1/A2 Zone

With the exception of the previously unidentified areas of relatively high TCE concentrations on Evandale Avenue described above, the grab-groundwater sample results generally confirmed the previous understanding of the western margin of the TCE plume north and south of Highway 101. In particular, the location of the 5 microgram per liter (µg/L) TCE isoconcentration contour in the A/A1 zone north of Highway 101 (Figure 2) was in very close alignment to where it was previously estimated to occur. In the B1/A2 zone, the extent of the 5 µg/L TCE isoconcentration contour was identified extending north from Berry Court and south from Evandale Avenue (Figure 3).

Eastern Margin of the Plume in A/A1 Zone

Grab-groundwater sample CPT-38 was collected to the east of 73A during the grab-groundwater sampling program. In addition, NASA collected grab-groundwater samples from the A/A1 zone at three locations (PS-8-2, PS-8-4, and PS-8-5) to the north and northeast of monitoring well 73A in 2009.

The results from the grab-groundwater sampling show that the concentrations of TCE decline from 410 µg/L at monitoring well 73A to less than 50 µg/L within 200 feet to the north and east (Figure 4) and the high concentration area along the eastern plume margin is constrained to the vicinity of monitoring well 73A.

Due to access restrictions on the Moffett Field airfield, no step-out sampling was performed east of the CPT-38 location.

Northernmost Plume in the B1/A2 Zone North of REG-9B

The northern and eastern downgradient extent of the 5 µg/L TCE isoconcentration contour in the B1/A2 zone is bounded by CPT-40 and monitoring wells 139B1 and 14D31A2 (Figure 5).

B2 Zone North of Highway 101

At CPT-39, no permeable water bearing units in the B2 zone (75 to 100 ft bgs) were identified on the CPT log. Despite the lack of identifiable permeable strata, a grab-groundwater sample was attempted at CPT-39 from 94-98 ft bgs and after 30 minutes there was no water recovery. The screen for the grab groundwater sample was then extended by 10 feet and a sample was attempted from 84-98 ft bgs. After an additional 30 minutes with 14 ft of screen exposed, 80 mL, the minimum volume of water needed by the laboratory for VOC analysis, was recovered.

The eastern extent of the 5 µg/L TCE isoconcentration contour in the B2 zone north of Highway 101 is bounded by CPT-39 (Figure 6). The southern extent of the of the 5 µg/L TCE isoconcentration contour in the B2 zone north of Highway 101 is bounded by CPT-24 and monitoring well 17B2 (Figure 6). Further, the analytical results from CPT-24 demonstrate that the B2 zone TCE plume north of Highway 101 is not connected to the B2 zone plume south of Highway 101.

4. SUPPLEMENTAL GRAB-GROUNDWATER SAMPLING PROGRAM

Supplemental grab-groundwater sampling will be conducted to evaluate VOC concentrations upgradient of CPT-15, pending property owner access.

4.1 Locations

If access can be obtained from the property owner, A/A1 and B1/A2 zone grab groundwater samples will be collected from one location south of CPT-15, along the western edge of the 600 Whisman Apartment Complex property. Figures 2 and 3 present the proposed grab groundwater sample location. Up to four samples will be collected from the most permeable water bearing zones between the first encountered groundwater and 75 ft bgs.

4.2 Sampling

The supplemental grab-groundwater sampling will be conducted in accordance with the Amendment to the Work Plan for Hydraulic Containment of Groundwater Plume (Geosyntec, 2012b).

5. PROPOSED MONITORING WELL INSTALLATIONS

Based on the issues identified by EPA in the second five-year review and the results of the grab-groundwater sampling program described above in Section 3, eleven new groundwater monitoring wells are proposed: five monitoring wells in the A/A1 zone and six monitoring wells in the B1/A2 zone. Proposed monitoring wells located within the treatment zone footprint for the Evandale Avenue high TCE concentration areas will be provided separately with the proposed remedy design. Figure 10 shows the proposed monitoring well locations.²

- A monitoring well pair for the A/A1 and B1/A2 zones will be installed near the intersection of S. Akron Rd and Westcoat Rd, in the vicinity of CPT-23;
- If access can be obtained from the property owner, an A1 zone monitoring well will be installed on the 159 Fairchild Drive property downgradient of CPT-21. A B1/A2 monitoring well is not proposed at this location because an existing B1/A2 monitoring well (ME2B1) is located on an adjacent property;
- A B1/A2 zone monitoring well will be installed on Evandale Avenue in the vicinity of CPT-09. An A/A1 zone monitoring well is not proposed in this report at this location because this area is in the vicinity of an A/A1 treatment zone;
- A B1/A2 zone well will be installed near the intersection of Evandale Avenue and Whisman Road in the vicinity of SB-4. An A/A1 zone monitoring well is not proposed at this location because an existing A/A1 zone monitoring well (130A) is located on the east side of Whisman Road;
- An A/A1 zone monitoring well will be installed on Devonshire Avenue near Whisman Road, in the vicinity of CPT-01;
- As requested by EPA, two additional A/A1 zone monitoring wells will be installed: one on Berry Court in the vicinity of CPT-25 and one on Perimeter Road in the vicinity of SB-2;
- As requested by EPA, two additional B1/A2 zone monitoring wells will be installed: one on Berry Court in the vicinity of CPT-27 and one on Macon Drive in the vicinity of CPT-34; and,
- A B1/A2 zone monitoring well will be installed by NASA within the NASA area of responsibility near CPT-40 (NASA-6-A2, Figure 10).

² EPA will be notified if there is a need to revise a monitoring well location based on utilities and access agreements with property owners

A B2 zone monitoring well in the vicinity of CPT-39 is not being proposed because no permeable water bearing units were encountered at CPT-39, and groundwater modeling will be conducted for the B2 zone in this vicinity to evaluate vertical capture.

5.1 Pre-Field Activities

Prior to the start of field activities the following will be performed.

- Encroachment permits will be obtained from the City of Mountain View for work conducted in right-of-ways, access agreements for work conducted on private property, and drilling permits from the SCVWD;
- The site-specific HASP will be updated, as needed. The HASP will be available onsite during all field activities. Prior to the start of field activities, a safety tailgate meeting will be conducted; and
- USA will be contacted a minimum of 48 hours prior to commencement of drilling activities. Additionally, a private utility locator will perform a geophysical survey in each area to identify potential utilities, pipelines, or other subsurface obstructions.

5.2 Monitoring Well Installation

5.2.1 Drilling

Monitoring wells will be drilled and installed by a C-57 licensed drilling contractor using the hollow stem auger drilling method. Monitoring well pilot borings will be drilled using the sonic drilling method.

The pilot borings will be continuously cored for geologic logging by field staff under the direction of a California Professional Geologist using the Unified Soil Classification System. The soil will be field-screened using a photoionization detector (PID) and the readings recorded on the boring logs. All downhole equipment will be decontaminated prior to use.

Target screen intervals and boring depths are presented in Table 2. The screen interval selected for each well will be less than 20 feet long. The target screen intervals are based on the closest CPT logs and grab-groundwater sampling results and were selected to correlate with the most permeable water bearing zones and highest grab-groundwater sample TCE concentrations. The proposed monitoring well screen intervals and conditions observed at the time of drilling will be transmitted to EPA for review and

concurrency prior to well installation. The actual screen intervals will be based on the conditions encountered during drilling as follows:

- **Pilot boring:** For all wells, a pilot boring will be advanced and the soils logged to 25 feet for A/A1 wells and 75 feet for B1/A2 wells. Based on the soil log, a depth interval will be selected for the well(s).³ An adjacent borehole(s) will then be drilled for well installation(s).
- **A/A1 zone wells:** The A/A1 zone wells will be screened from the top of the shallowest saturated permeable unit to the bottom of the deepest permeable unit that starts above 25 ft bgs, with a maximum screen interval of 20 feet. If no permeable water bearing units are encountered above 25 ft bgs then an A/A1 zone monitoring well will not be set at that location.
- **B1/A2 zone wells:** The B1/A2 zone wells will be screened in the most permeable water bearing units located in the target screen interval zones (Table 2).

The monitoring wells will be constructed through the hollow stem auger casing. The monitoring well casing will consist of 2-inch nominal diameter, Schedule 40 PVC pipe, with 0.020-inch factory-cut, slotted well screen, flush-threaded joints and a bottom cap. The annular space between the borehole wall and well screen for each well will be filled with #3 filter pack sand to a depth of about 3 feet above the top of the well screen. Approximately 2 to 3 feet of bentonite chips or pellets will be placed above the sand pack and hydrated to provide a seal above the filter pack. The remainder of the borehole will be tremie filled with Portland cement to the ground surface in accordance with SCVWD requirements. The surface completions will consist of a flush-mount traffic-rated well box and the tops of the well casings will be fitted with locking expandable-gasket caps.

After installation, the locations and elevations of the new wells will be surveyed by a California licensed surveyor. The new monitoring wells will be surveyed using the same coordinate system and elevation datum as the existing MEW monitoring well network.

³ For well pair locations, a single pilot boring will be advanced for use in selecting both well screen depths.

5.2.2 Well Development

After a minimum of 48 hours following well installation, the new monitoring wells will be developed. Development will consist of a combination of bailing, surging, and pumping. Groundwater quality parameters (temperature, pH, specific conductance, and turbidity) will be measured during purging activities. As described in the QAPP, wells will be developed to remove the fine-grained materials inside the filter pack and casing, to stabilize the filter pack around the well screen, and to produce representative water samples from the water-bearing zone. The turbidity of the water purged from the well during well development will be measured and documented. Development will be continued until the well is judged to be adequately developed (EPA, 2001) and well parameters, such as pH, temperature, and conductivity have stabilized.

5.3 Investigation-Derived Waste

Water generated during the well installation and development activities will be treated and discharged through the North of 101 or South of 101 RGRP groundwater treatment systems. Soil cuttings will be temporarily stored at one of the treatment systems in 55-gallon drums or roll off bins pending analysis. Following waste profiling, soil cuttings will be disposed of in accordance with Federal and State requirements at an appropriate off-site facility.

5.4 Baseline Sampling

Groundwater samples will be collected from the new monitoring wells quarterly in 2013 using the same sampling methodology utilized for the MEW annual monitoring program.⁴ The groundwater samples will be collected using the HydraSleeve sampling method.

5.5 Reporting

Following installation, a monitoring well installation report will be prepared. The report will include documentation of the well installations, well development, monitoring well

⁴ EPA approved use of HydraSleeve sampling for RGRP wells (letter from Penny Reddy dated July 18, 2013) Based on an evaluation of passive diffusion bag (PDB) and HydraSleeve sampling methods conducted during the 2012 MEW annual monitoring event.

construction details, boring logs, survey data, and potentiometric surface maps for the B1/A2 zone in the vicinity of the western margin of the plume.

5.6 Monitoring Well Installation Schedule

The following schedule was developed based on the schedule provided in EPA's cover letter for their comments on Grab-Groundwater Assessment and Proposed Well Installation Report (EPA, 2013).

- Fourth Quarter 2013:
 - EPA approval of Final Work Plan.
 - Installation of new monitoring wells. As verbally agreed to with EPA, well installation activities will be completed within 90 days of EPA approval of the Final Work Plan, assuming access can be obtained.
- First Quarter 2014:
 - Prepare and submit monitoring well installation report.
- First Through Fourth Quarter 2014:
 - Quarterly sampling of new monitoring wells. Quarterly sampling results would be submitted in the 2014 Annual Progress Report for the RGRP.

6. MONITORING WELL ADDITIONS TO ANNUAL MONITORING PROGRAM

The existing monitoring wells located west of Whisman Road that are not currently monitored on an annual basis will be added to the RGRP annual monitoring program for future monitoring events. The six wells that will be added to the annual monitoring program are shown on Figure 11 and included in Table 3. These wells will be sampled annually in September/October.

7. EVANDALE AVENUE REMEDY

As described in Section 3, previously unidentified areas of relatively high TCE concentrations were identified on Evandale Avenue. The MEW RGRP has agreed to address the high concentrations of contaminants found along Evandale Avenue, even though the PRPs do not accept that these two areas are a result of their historic operations and, therefore, their current responsibility. A letter documenting the planned response actions for addressing the high TCE concentrations on Evandale Avenue was submitted on 15 August 2013 (Schlumberger, 2013). A Draft Pilot Study Design and Implementation Work Plan for an *in situ* chemical oxidation (ISCO) pilot study to address the high TCE concentrations on Evandale Avenue was submitted on 15 August 2013.

7.1 Schedule

Every effort will be made to accelerate the implementation of the response actions. The PRPs are looking to EPA for help in this process. The anticipated schedule for the pilot study design and implementation is as follows.

- August through September 2013: EPA review of the Draft Pilot Study Design and Implementation Work Plan.
- October 2013 through August 2014: Pilot study implementation.
- September through October 2014: Pilot study reporting.

8. REFERENCES

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TABLES

Table 1
Volatile Organic Compounds in Groundwater
Final Grab-Groundwater Assessment and Proposed Well Installations
MEW Regional Program
Mountain View, CA

CPT Identification	GPS Coordinates		Sample Depth (ft bgs) ¹	Sample Date	PCE ²	TCE ³	cis-DCE ⁴	trans-1,2-DCE	1,1-DCE	Vinyl Chloride	1,1,1-TCA ⁵	1,1,2-TCA	1,1-DCA ⁶	1,2-DCA	Benzene	Toluene	Ethylbenzene	Xylenes, Total	1,2-DCB ⁷	1,4-DCB	Freon 113	Other VOCs ⁸		
	Easting	Northing																						
CPT-19	1547296.249	333255.7417	22-25	12/17/2012	ND	14	0.78	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
CPT-20	1547207.818	333283.1396	17-21	12/18/2012	ND	6.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
CPT-21	1547010.429	333335.1756	19-23	12/18/2012	ND	4,000	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
CPT-22	1546943.673	333354.6977	18-22	12/18/2012	ND	4.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
CPT-23	1547125.516	335319.7127	22-26	12/19/2012	ND	3.5	0.57	ND	ND	ND	ND	ND	0.57	ND	ND	ND	ND	ND	ND	ND	ND	ND		
			39-42	12/19/2012	ND	ND	ND	ND	0.88	ND	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.6	ND	
			48-51	12/19/2012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.0	ND
CPT-24	1548560.65	333529.4171	16-20	12/19/2012	19	1,000	530	ND	20	ND	ND	23	ND	ND	ND	ND	ND	ND	14	ND	ND	ND		
			36-40	12/20/2012	1.1	760	310	5.4	8.2	1.6	6.6	ND	ND	6.6	ND	ND	ND	ND	ND	1.1	ND	3.6	ND	
			89-93	12/20/2012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CPT-25	1547127.917	334805.1103	20-24	12/20/2012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
			38-42	12/20/2012	ND	8.9	ND	ND	0.93	ND	0.54	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND
			44-48	12/20/2012	ND	99	6.7	0.51	2.0	ND	0.52	ND	0.54	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND
CPT-26	1546938.189	334884.9195	21-25	12/20/2012	ND	3.0	ND	ND	ND	ND	ND	ND	0.66	ND	ND	ND	ND	ND	ND	ND	ND	ND		
			29-32	12/20/2012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
			42-46	12/20/2012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			51-54	12/21/2012	ND	12	ND	ND	1.7	ND	0.62	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.4	ND
CPT-27	1546728.408	335026.3309	14-18	12/21/2012	ND	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
			21-24	12/21/2012	ND	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
			42-44	12/21/2012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CPT-28	1547777.868	333733.4976	17-20	12/21/2012	ND	52	21	0.91	2.9	0.60	1.1	ND	6.0	ND	ND	ND	ND	ND	ND	ND	ND	2.6	ND	
			26-30	12/21/2012	ND	84	290	2.0	3.7	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	ND	
			53-56	12/21/2012	0.63	1,800	35	1.4	6.9	ND	ND	3.6	ND	ND	3.6	ND	ND	ND	ND	ND	ND	ND	10	ND
CPT-29	1548266.045	333654.0844	22-25	12/26/2012	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
			34-38	12/26/2012	13	390	34	3.6	5.5	ND	ND	10	ND	ND	ND	ND	ND	ND	3.8	ND	0.70	ND	ND	
			50-54	12/26/2012	2.6	1,400	67	5.2	6.2	ND	1.4	3.6	ND	3.6	ND	ND	ND	ND	ND	2.9	ND	4.2	ND	
CPT-30	1548004.984	333672.3454	16-18	12/26/2012	ND	38	3.2	0.60	0.84	ND	ND	0.63	ND	ND	ND	ND	ND	ND	ND	ND	2.3	ND		
			26-28	12/26/2012	ND	510	55	40	4.2	0.58	ND	ND	3.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
			47-50	12/26/2012	ND	ND	ND	ND	0.71	ND	1.5	ND	ND	0.71	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CPT-31	1547737.926	333196.9112	19-21	12/27/2012	ND	7,300	400	3.7	3.1	2.6	ND	ND	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND		
			38-40	12/27/2012	1.0	650	24	1.4	2.7	ND	0.70	ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	1.5	ND	
			58-62	12/27/2012	ND	910	4.8	ND	2.1	ND	1.1	ND	0.81	ND	ND	ND	ND	ND	ND	ND	ND	3.7	ND	
			69-71	12/27/2012	1.1	64,000	ND	97	110	1.2	0.87	1.1	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.0	ND
CPT-32	1547817.579	333204.8551	14-16	12/27/2012	ND	39	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
			19-21	12/28/2012	ND	26	0.99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
			28-32	12/28/2012	ND	120	3.7	0.62	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			73-76	12/28/2012	ND	1,100	14	1.9	2.1	ND	0.93	ND	0.76	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.5	ND
CPT-33	1547835.229	333425.7844	12-16	12/28/2012	ND	31	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
			18-20	12/28/2012	ND	27	0.68	ND	0.54	ND	ND	0.55	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
			28-32	12/28/2012	ND	1,600	97	8.0	1.5	ND	ND	0.90	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			55-59	12/28/2012	ND	300	2,400	3.9	27	1.7	ND	ND	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CPT-34	1546611.464	334227.4185	16-20	1/2/2013	ND	2.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
			33-36	1/2/2013	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
			54-58	1/2/2013	ND	12	ND	ND	0.52	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.87	ND	
CPT-35	1547342.500	334020.8485	19-23	1/2/2013	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
			34-38	1/2/2013	ND	5.1	ND	ND	0.94	ND	ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.9	ND	
			54-58	1/2/2013	ND	290	3.4	ND	3.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.6	ND	
CPT-36	1547792.906	333310.3131	17-21	1/3/2013	ND	80	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
CPT-37	1547844.449	333292.7525	14-18	1/3/2013	ND	22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
CPT-38	1549683.938	335169.8639	22-26	1/3/2013	ND	43	5	ND	1.0	ND	ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND			
CPT-39	1549312.670	335019.9145	84-98	1/4/2013	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
CPT-40	1547873.666	338050.2459	28-32	1/4/2013	ND	ND	1.3	ND	ND	ND	ND	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
CPT-41	1547546.439	333169.7208	20-24	1/4/2013	ND	640	3.8	ND	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
SB-1	1546954.513	333249.9263	19-23	2/13/2013	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15	ND	ND	ND	ND	ND	ND	ND		
SB-2	1547477.533	333837.8689	16.5-20.5	2/13/2013	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.8	ND	ND	ND	ND	ND	ND	ND		
SB-3	1547876.318	333065.1884	15-19	2/14/2013	ND/ND	300/300	0.54/0.54	ND/ND	0.91/0.91	ND/ND	2.3/2.1	ND/ND	ND/ND	ND/ND	ND/ND	56/38	ND/ND	ND/ND	ND/ND	ND/ND	ND/ND	ND/ND		
			29-33	2/14/2013	ND	150	21	12	2.0	ND	ND	1.9	ND	ND	ND	9.1	ND	ND	ND	ND	ND	ND	ND	

Table 1
Volatile Organic Compounds in Groundwater
Final Grab-Groundwater Assessment and Proposed Well Installations
MEW Regional Program
Mountain View, CA

CPT Identification	GPS Coordinates		Sample Depth (ft bgs) ¹	Sample Date	PCE ²	TCE ³	cis-DCE ⁴	trans-1,2-DCE	1,1-DCE	Vinyl Chloride	1,1,1-TCA ⁵	1,1,2-TCA	1,1-DCA ⁶	1,2-DCA	Benzene	Toluene	Ethylbenzene	Xylenes, Total	1,2-DCB ⁷	1,4-DCB	Freon 113	Other VOCs ⁸
	Easting	Northing																				
SB-4	1548026.277	333027.9173	14-18	2/15/2013	1.6	77	0.69	ND	0.69	ND	1.2	ND	1.1	ND	ND	4.7	ND	ND	ND	ND	ND	ND
			38-42	2/15/2013	4.3	170	420	5.3	3.2	0.73	ND	ND	8.0	ND	ND	ND	1.7	ND	ND	2.5	ND	ND
SB-5	1546986.138	333344.4841	18-22	4/17/2013	ND	8.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SB-6	1547028.499	333331.4401	13-14.5	4/17/2013	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SB-8	1547167.895	333288.314	13.5-14.5	4/17/2013	ND	6.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SB-9	1547685.468	333152.2279	20-23	4/18/2013	ND	31,000	5,100	35	23	26	ND	ND	12	ND	ND	ND	ND	ND	ND	ND	ND	ND
			40-43	4/18/2013	ND	220	270	96	2.2	ND	ND	ND	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
SB-10	1547691.685	333173.7145	20.5-23	4/18/2013	ND	730	620	4.8	4.1	5.5	ND	ND	9.7	ND	ND	ND	ND	ND	ND	ND	ND	ND
			35.5-38.5	4/18/2013	ND	1,400	1,100	42	53	7.8	ND	ND	44	ND	ND	ND	ND	ND	ND	ND	ND	0.89

Notes

1. All samples analyzed by EPA Method 8260B
2. All units in micrograms per liter (µg/l)

Abbreviations

1. ft bgs = feet below ground surface
2. PCE = tetrachloroethene
3. TCE = trichloroethene
4. DCE = dichloroethene
5. TCA = trichloroethane
6. DCA = dichloroethane
7. DCB = dichlorobenzene
8. VOCs = volatile organic compounds
9. ND = not detected
10. / = sample result/duplicate sample result

Table 2
Proposed Monitoring Wells Target Depth Intervals
 Final Grab-Groundwater Assessment and Proposed Well Installations
 MEW Regional Program
 Mountain View, CA

Reference for Proposed Monitoring Well Location	Proposed Monitoring Well Location ¹	Aquifer	Target Screen Interval Depth ² (ft bgs)	Target Total Boring Depth	Well Material	Well Diameter (inches)
AK-1-A/B1	CPT-23-South Akron Road	A/A1	20-30	25	SCH 40 PVC	2
		B1/A2	40-60	75	SCH 40 PVC	2
BC-1-A	CPT-25 - Berry Court	A/A1	15-25	25	SCH 40 PVC	2
BC-2-B1	CPT-27 - Berry Court	B1/A2	40-60	75	SCH 40 PVC	2
PR-1-A	SB-2 - Parimeter Road	A/A1	15-25	25	SCH 40 PVC	2
MD-1-B1	CPT-34 - Macon Drive	B1/A2	55-70	75	SCH 40 PVC	2
FC-2-A	159 Fairchild Drive Property	A/A1	15-25	25	SCH 40 PVC	2
ED-3-B1	CPT-09-Evandale Avenue	B1/A2	40-50	75	SCH 40 PVC	2
DS-4-A	CPT-01-Devonshire Avenue	A/A1	15-25	25	SCH 40 PVC	2
ED-5-B1	SB-4-Evandale Avenue	B1/A2	55-75	75	SCH 40 PVC	2
NASA-6-A2 ³	CPT-40 -NASA	B1/A2	26-34	35	SCH 40 PVC	2

Notes

ft bgs = feet below ground surface

1. Proposed monitoring wells located within the treatment zone footprint for the Evandale Avenue high TCE concentration areas will be provided separately with the proposed remedy design.

2. The target screen intervals are based on the closest CPT logs and grab-groundwater sampling results and were selected to correlate with the most permeable water bearing zones and highest grab-groundwater sample TCE concentrations. The actual screen intervals will be based on the conditions encountered during drilling as follows:

- Pilot boring: For all wells, a pilot boring will be advanced and the soils logged to 25 feet for A/A1 wells and 75 feet for B1/A2 wells (except NASA-6-A2). Based on the soil log, a depth interval will be selected for the well(s). An adjacent borehole(s) will then be drilled for well installation(s).
- A/A1 zone wells: The A/A1 zone wells will be screened from the top of the shallowest saturated permeable unit to the bottom of the deepest permeable unit that starts above 25 ft bgs, with a maximum screen interval of 20 feet. If no permeable water bearing units are encountered above 25 ft bgs then an A/A1 zone monitoring well will not be set at that location.
- B1/A2 zone wells: The B1/A2 zone wells will be screened in the most permeable water bearing units located in the target screen interval zones, with a maximum screen interval of 20 feet.

Proposed screen intervals will be transmitted to EPA for review and concurrence prior to well installation.

3. At NASA-6-A2 the boring will only be advanced to 35 ft bgs.

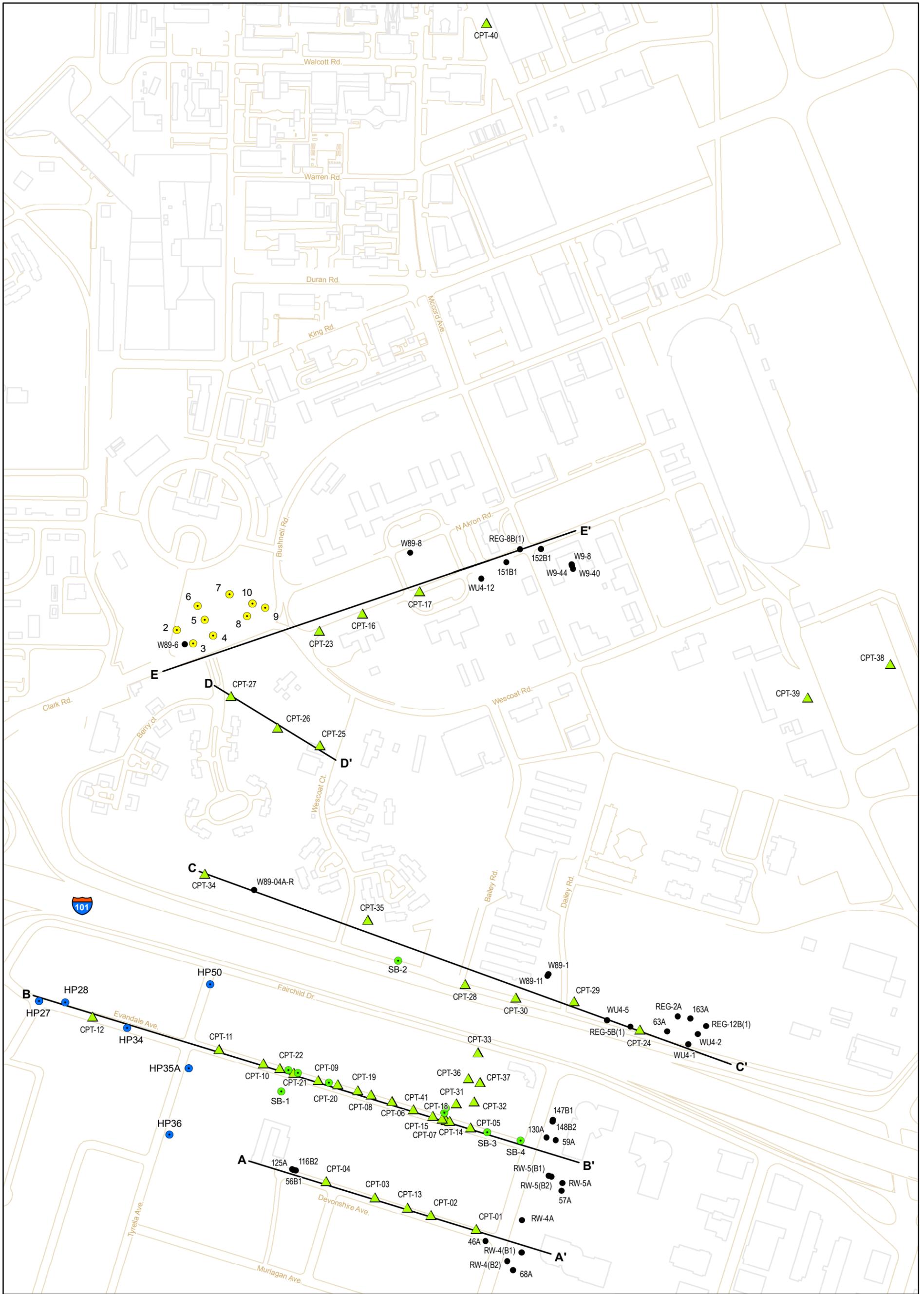
Table 3
Monitoring Well Additions to Annual Monitoring Program
 Grab-Groundwater Assessment and Proposed Well Installations
 MEW Regional Program
 Mountain View, CA

Well Name	Date Installed	Owner	TOC Elevation (ft MSL)	Diameter (inches)	Well Depth (ft bgs)	Screen Interval (ft bgs)
107A	7/7/1986	Fairchild	55.08	4	50	23-48
125A	9/9/1986	Fairchild	42.17	4	34	22-32
145A	12/12/1986	Fairchild	47.04	4	32	15-30
146A	11/11/1988	Fairchild	48.93		50	35-50
II9A	4/4/1982	Intel	71.28	2	45	32.5-42.5
R45A	2/2/1986	Raytheon	62.00	4	50	25-48

Notes

ft MSL = feet above mean sea level
 ft bgs = ft below ground surface
 TOC = top of casing

FIGURES



Legend

- CPT-01 ▲ CPT and Grab Groundwater Location (Geosyntec, 2012 / 2013)
- 68A ● Well Within 160 ft of Cross-Section
- SB-1 ● Grab Groundwater Sample (Geosyntec, 2013)
- HP27 ● Grab Groundwater Sample (EPA, 2011)
- 10 ● Grab Groundwater Sample (NASA, 2011)
- A—A' Cross-Section



Site Investigation Map
MEW Regional Groundwater Remediation Program
Mountain View, California

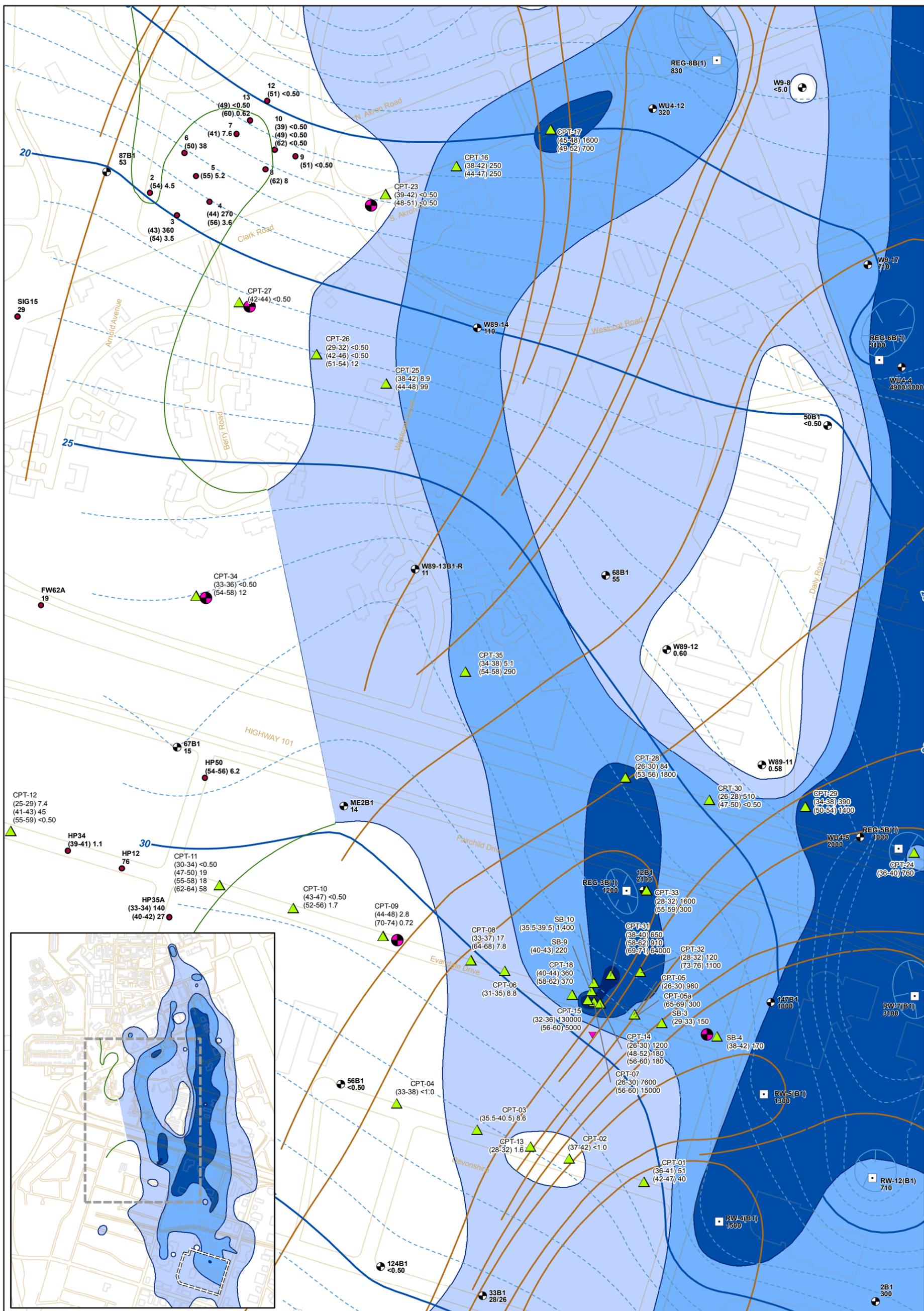
Geosyntec
consultants

Figure

1

Oakland

September 2013



Legend

- | | | | |
|---|---|---|--|
| <ul style="list-style-type: none"> □ Recovery Well On ⊠ Recovery Well Off ● Monitoring Well ▲ Grab Groundwater Sample ○ Well ID ○ TCE Concentration | <p>TCE Concentration</p> <ul style="list-style-type: none"> 5 - 100 ug/L 100 - 1,000 ug/L 1,000 - 10,000 ug/L Greater than 10,000 ug/L <p>Extent TCE Above 5 ug/L
West of MEW Plume based upon information collected by others</p> | <p>Groundwater Elevation Contours</p> <ul style="list-style-type: none"> 1 foot interval 5 foot interval <p>Estimated Capture Zone</p> <ul style="list-style-type: none"> Proposed New Wells Groundwater Samples Collected by Others | <ul style="list-style-type: none"> ==== Slurry Wall — Building — Road ▲ Proposed Grab Groundwater Sample |
|---|---|---|--|
- Notes:
 TCE = Trichloroethene
 ug/L = micrograms per liter
 (28-32) = Depth in feet below ground surface
 Figure shows only those wells sampled in 2012.

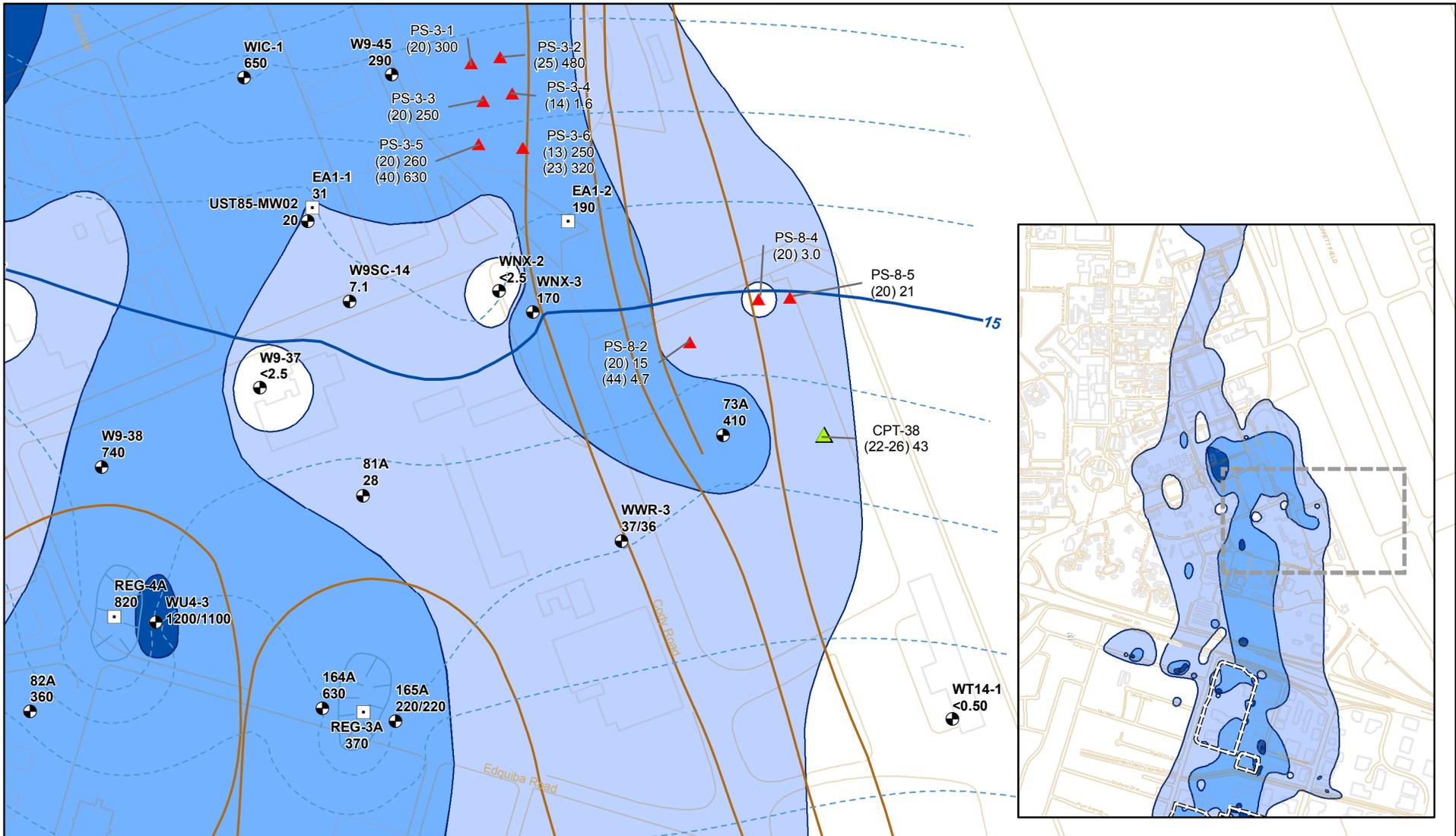
B1/A2 Zone TCE Concentrations
September/October 2012
MEW Regional Groundwater Remediation Program
Mountain View, California

Geosyntec
 consultants

250 125 0 250 Feet

Figure
3

Oakland
September 2013



Legend

□ Recovery Well On	TCE Concentration	==== Slurry Wall	▲ NASA CPT Location
⊠ Recovery Well Off	5 - 100 ug/L	— Building	
● Monitoring Well	100 - 1,000 ug/L	— Road	
▲ Grab Groundwater Sample	1,000 - 10,000 ug/L	— Estimated Capture Zone	
82A Well ID	Greater than 10,000 ug/L		
360 TCE Concentration			

Notes:
TCE = Trichloroethene
ug/L = micrograms per liter
(22-26) = Depth in feet below ground surface
Figure shows only those wells sampled in 2012.

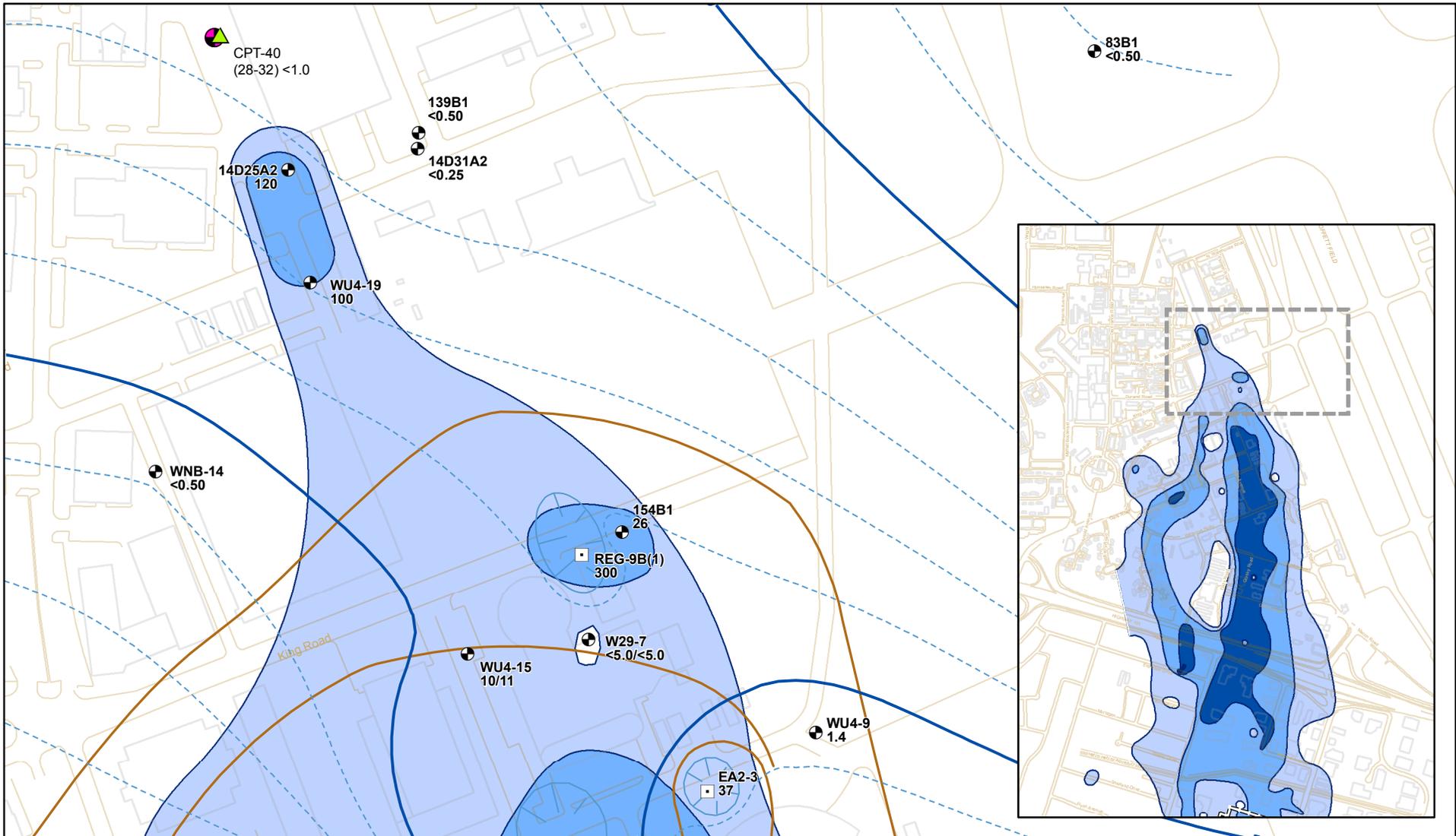
250 125 0 250 Feet

A/A1 Zone TCE Concentrations - Detail Eastern
September/October 2012
MEW Regional Groundwater Remediation Program
Mountain View, California



Figure
4

Oakland September 2013



Legend

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> □ Recovery Well On ⊠ Recovery Well Off ⊕ Monitoring Well ▲ Grab Groundwater Sample 124B1 <0.50 Well ID Notes: TCE Concentration TCE = Trichloroethene ug/L = micrograms per liter (28-32) = Depth in feet below ground surface Figure shows only those wells sampled in 2012. | <p>TCE Concentration</p> <ul style="list-style-type: none"> 5 - 100 ug/L 100 - 1,000 ug/L 1,000 - 10,000 ug/L Greater than 10,000 ug/L | <ul style="list-style-type: none"> ==== Slurry Wall — Building — Road — Estimated Capture Zone ⊕ Proposed New Wells |
|---|---|--|
- 250 125 0 250 Feet

B1/A2 Zone TCE Concentrations - Detail Northern
September/October 2012
 MEW Regional Groundwater Remediation Program
 Mountain View, California

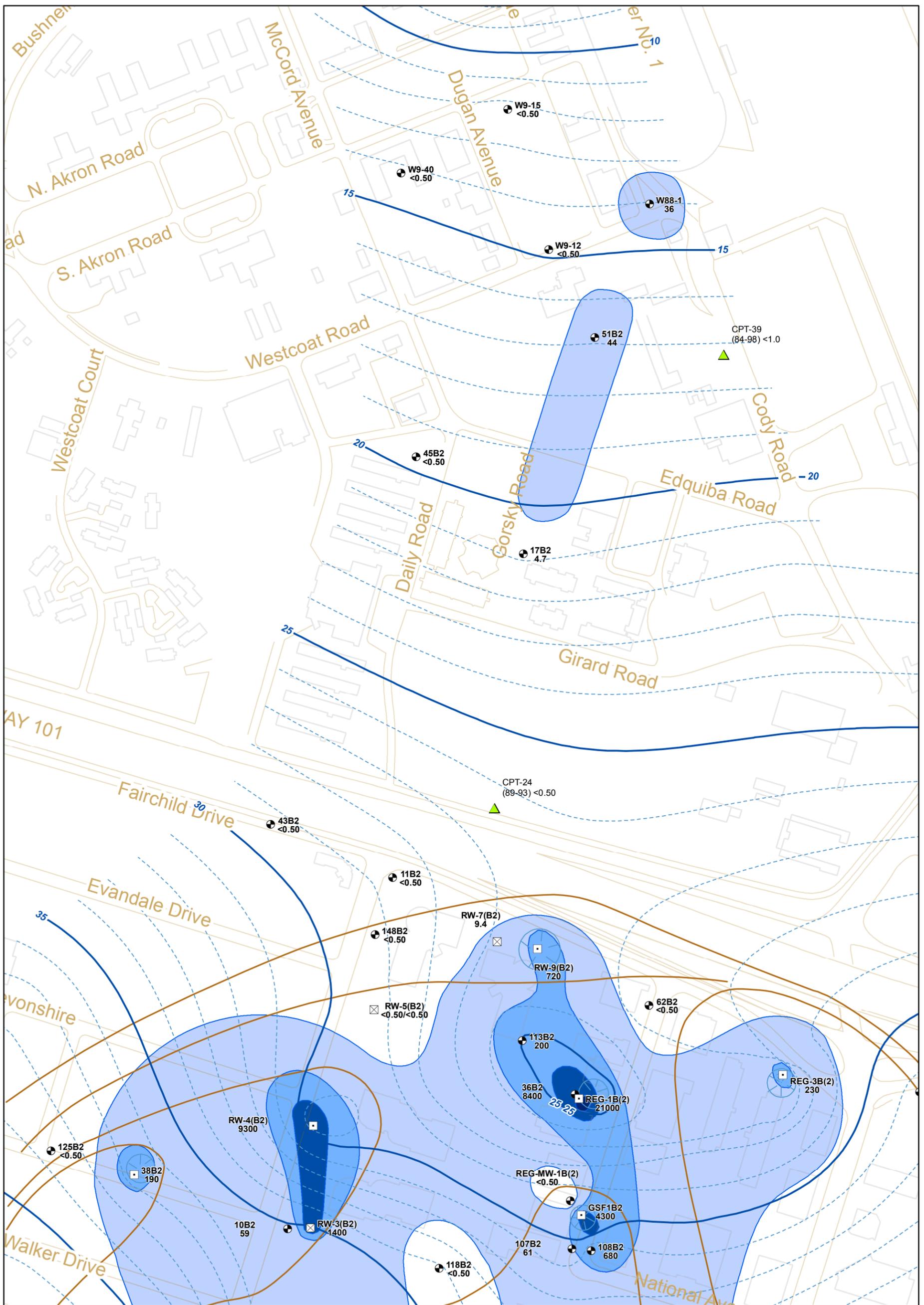
Geosyntec
 consultants

Figure

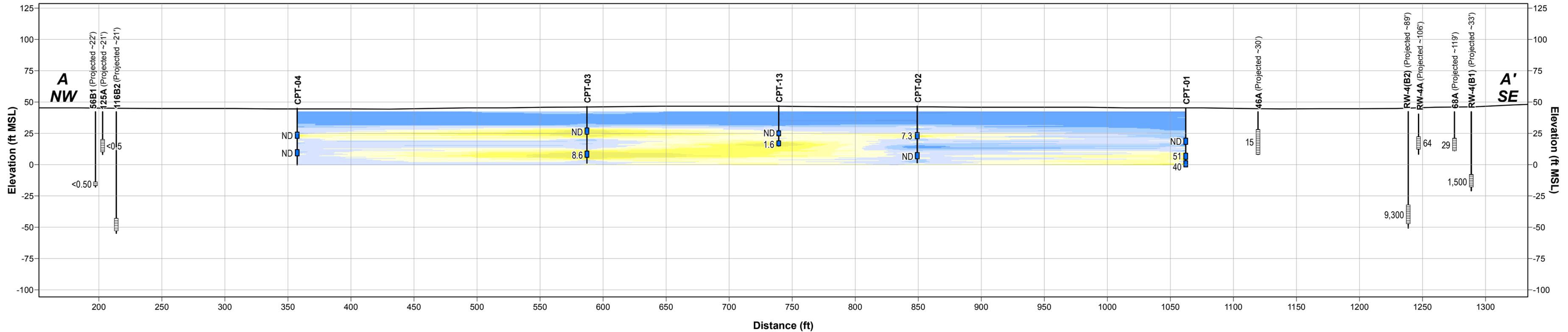
5

Oakland

September 2013

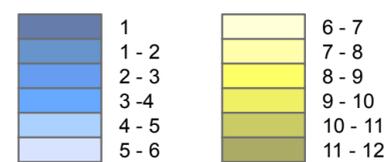


Legend <ul style="list-style-type: none"> ☐ Recovery Well On ☒ Recovery Well Off ● Monitoring Well ▲ Grab Groundwater Sample ▲ Well ID ▲ TCE Concentration 		TCE Concentration <ul style="list-style-type: none"> Light Blue: 5 - 100 ug/L Medium Blue: 100 - 1,000 ug/L Dark Blue: 1,000 - 10,000 ug/L Very Dark Blue: Greater than 10,000 ug/L 		<ul style="list-style-type: none"> ==== Slurry Wall — Building — Road 		 B2 TCE Concentrations September/October 2012 MEW Regional Groundwater Remediation Program Mountain View, California	
Groundwater Elevation Contours <ul style="list-style-type: none"> - - - - 1 foot interval — 5 foot interval 		<ul style="list-style-type: none"> — Estimated Capture Zone 					
<small>Notes: TCE = Trichloroethene ug/L = micrograms per liter (89-93) = Depth in feet below ground surface Figure shows only those wells sampled in 2012.</small>						Figure 6	
				Oakland		September 2013	

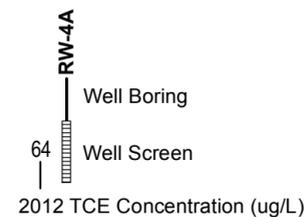
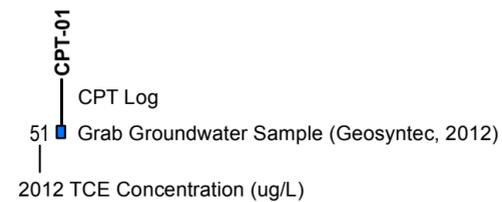


LEGEND

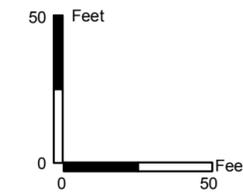
Interpolated SBT Value



The soil behavior type (SBT) was interpreted based on Robertson et al 1986. SBT value represents a measure of physical soil properties rather than grain size; however, between SBT values of 2 and 10, increasing SBT values generally represent a transition from properties associated with fine grain soils to properties associated with coarse grain soils.



Notes:
CPT = cone penetration test
TCE = trichloroethene
SBT = soil behavior type
ug/L = micrograms per liter
ft = feet
ft MSL = feet above mean sea level



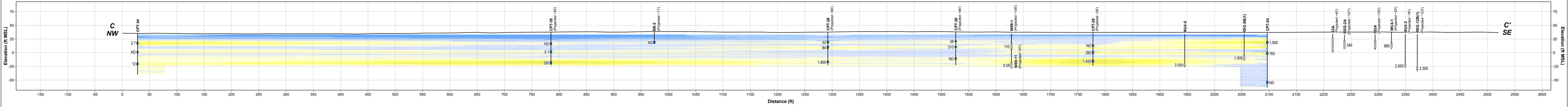
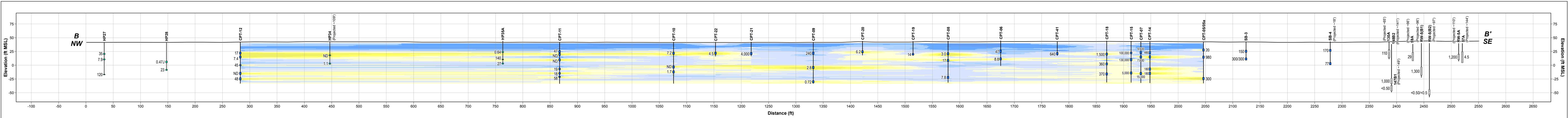
A-A' Cross-Section
Middlefield-Ellis-Whisman (MEW) Regional Study Area
Mountain View, California

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Oakland

September 2013

Figure
7



LEGEND

Interpolated SBT Value	
1	6 - 7
1 - 2	7 - 8
2 - 3	8 - 9
3 - 4	9 - 10
4 - 5	10 - 11
5 - 6	11 - 12

The soil behavior type (SBT) was interpreted based on Robertson et al 1986. SBT value represents a measure of physical soil properties rather than grain size; however, between SBT values of 2 and 10, increasing SBT values generally represent a transition from properties associated with fine grain soils to properties associated with coarse grain soils.

Notes:
 CPT = cone penetration test
 TCE = trichloroethene
 SBT = soil behavior type
 ug/L = micrograms per liter
 ft = feet
 ft MSL = feet above mean sea level

Legend Items:
 CPT-15: CPT or Boring Log
 HP28: Boring
 130A: Well Boring
 110: Well Screen
 100,000: Grab Groundwater Sample (Geosyntec, 2012/2013)
 0.47J: Grab Groundwater Sample (EPA, 2011)
 2011 TCE Concentration (ug/L)
 2012 TCE Concentration (ug/L)

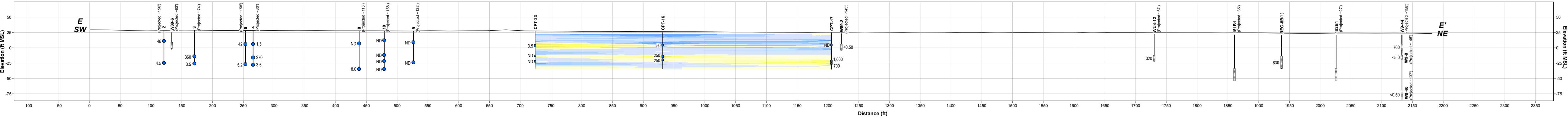
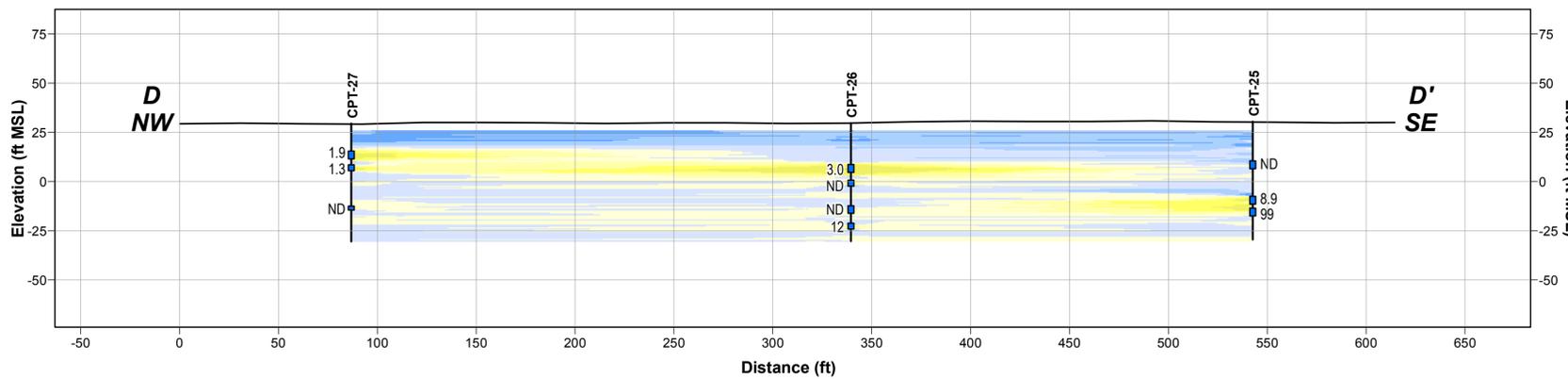
B-B' and C-C' Cross-Sections
 Middlefield-Ellis-Whisman (MEW) Regional Study Area
 Mountain View, California

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Oakland September 2013

Figure 8

P:\GIS\MEW\Project\Regional\2012_TechMemo\Fig08_SectionsB_C.mxd



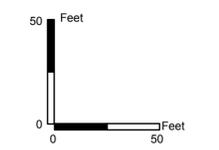
LEGEND

Interpolated SBT Value	
1	6 - 7
1 - 2	7 - 8
2 - 3	8 - 9
3 - 4	9 - 10
4 - 5	10 - 11
5 - 6	11 - 12

The soil behavior type (SBT) was interpreted based on Robertson et al 1986. SBT value represents a measure of physical soil properties rather than grain size; however, between SBT values of 2 and 10, increasing SBT values generally represent a transition from properties associated with fine grain soils to properties associated with coarse grain soils.

Notes:
 CPT = cone penetration test
 TCE = trichloroethene
 SBT = soil behavior type
 ug/L = micrograms per liter
 ft = feet
 ft MSL = feet above mean sea level

Other Legend Items:
 Boring
 Grab Groundwater Sample (NASA, 2011)
 2012 TCE Concentration (ug/L)
 Well Boring
 Well Screen
 2012 TCE Concentration (ug/L)

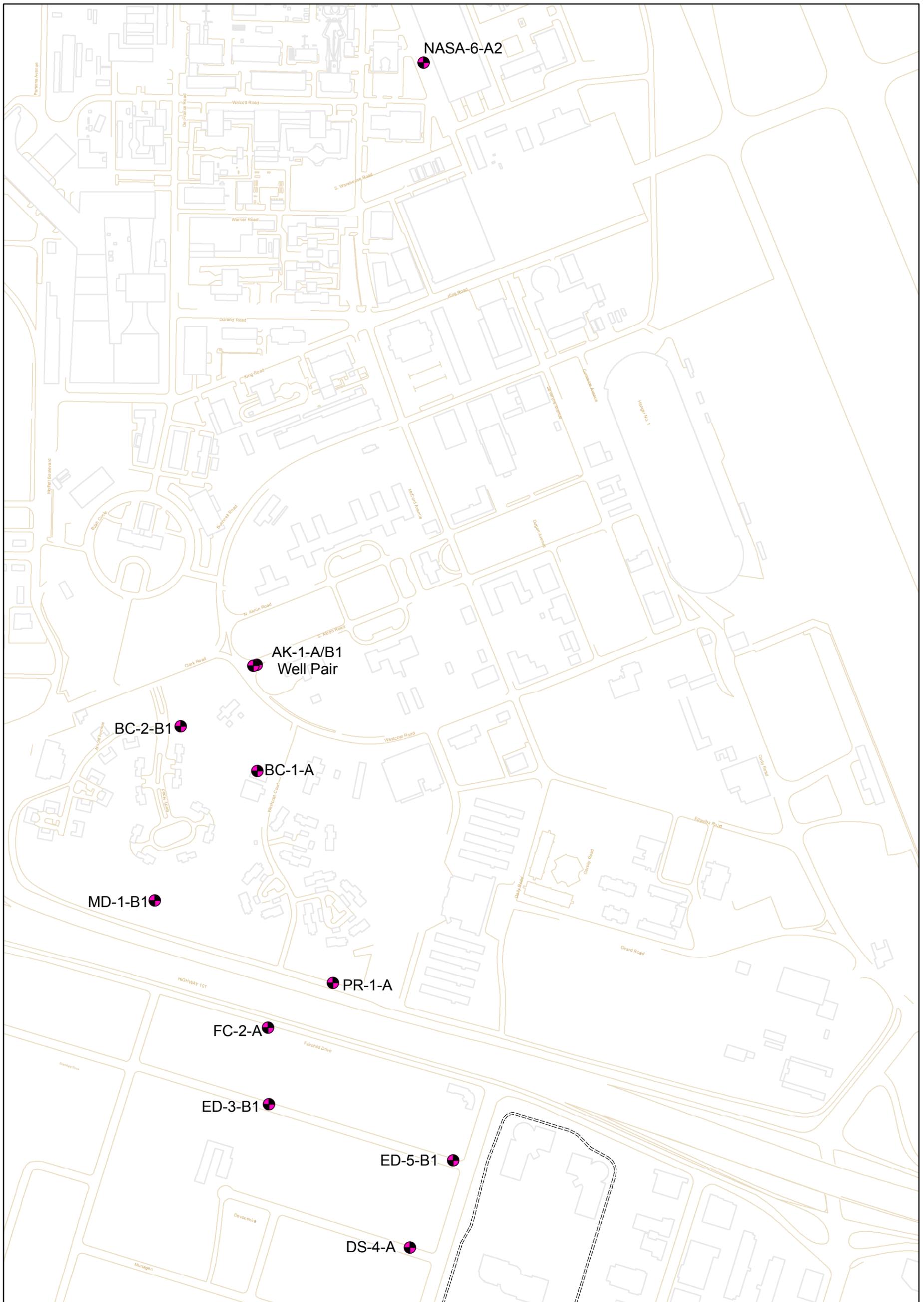


D-D' and E-E' Cross Sections
 Middlefield-Ellis-Whisman (MEW) Regional Study Area
 Mountain View, California

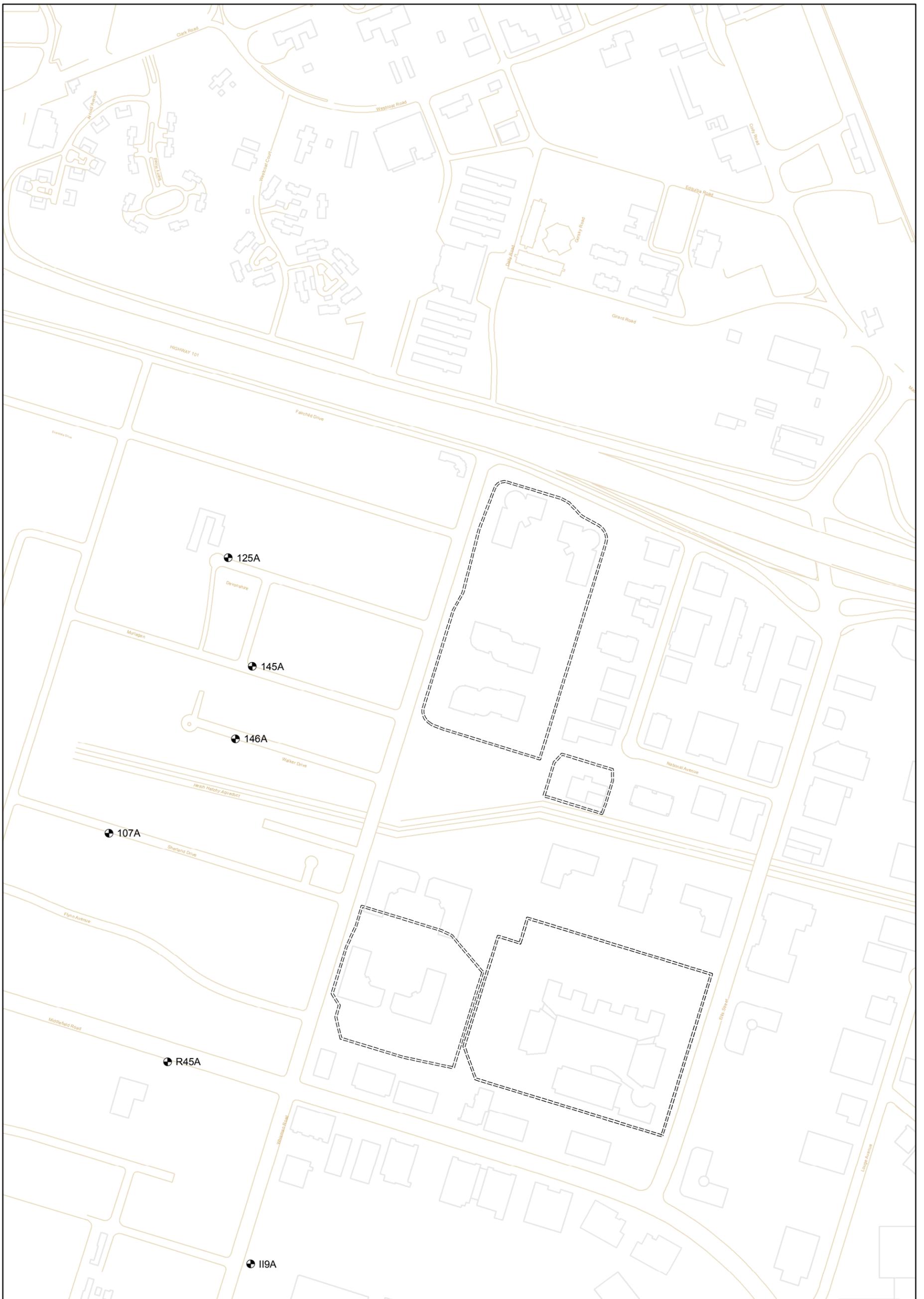
Geosyntec
 consultants

Oakland | September 2013

Figure 9



Legend Proposed Monitoring Well Location Slurry Wall Building Road		 N	
		Proposed Monitoring Well Locations MEW Regional Groundwater Remediation Program Mountain View, California	
		 Geosyntec consultants	
		250 125 0 250 Feet 	Figure 10
		Oakland	September 2013



Legend

● Wells Added to Annual Monitoring Program

==== Slurry Wall
 ——— Building
 ——— Road



Well Additions to Annual Monitoring Program

**MEW Regional Groundwater Remediation Program
 Mountain View, California**

Geosyntec
 consultants

Oakland

September 2013

Figure

11

APPENDIX A

Response to EPA Comments on 27 March
2013 Report

Subject: Response to 30 July 2013, EPA Comments on Grab-Groundwater Assessment and Proposed Well Installation Report and Next Steps for Evaluation of Hydraulic Containment Middlefield-Ellis-Whisman (MEW) Superfund Study Area Mountain View and Moffett Field, CA

Section 3 –Results and Discussion -Area identified on Evandale Avenue, Page 8.

EPA Comment: “The last sentence of page 8 states the following: “These significantly lower TCE concentrations between the newly identified area and the MEW plume demonstrate that these higher TCE concentration areas are not hydraulically connected to the MEW Plume.” The lower concentrations in these areas could suggest that the plume may not be hydraulically connected. However, the lower concentrations may also be the result of contamination, which has already migrated and there is no evidence of a hydraulic barrier. Please remove the sentence.”

Response to Comment: The sentence has been removed and replaced with the following sentence: “It is the MEW Parties’ position that the significantly lower TCE concentrations between the newly identified areas along Evandale and the MEW Plume demonstrate that these higher TCE concentration areas along Evandale are not hydraulically connected to the MEW plume”

Section 3 – Results and Discussion- Western Margin of Plume in the B1/A2 Zone, Page 8 and Figure 3.

EPA Comment: The plume boundary is not drawn on Figure 3 for the section of the plume north of Highway 101 in the B1/A2 Zone between Berry Court and Fairchild Drive. The figure should be revised to show the plume extending into the other area with a dashed line indicating that the boundary is not yet fully determined. At this point, the boundary of the MEW plume in this area has not been defined. While the report indicates that the VOCs may be the result of contamination commingled with another source, it has not been determined whether the VOCs are the result of another source or an extension of the MEW plume. The RGRP has one data point (CPT 34) in this area where TCE was detected in grab groundwater boring at concentrations of 12 ug/L (54 to 58 feet bgs) in the B1/A2 Aquifer. TCE was not detected in the shallower sample collected at 33 to 36 feet bgs. There is one data point collected further to the west by EPA that contained TCE at a concentration of 19 ug/L. EPA requests that the RGRP conduct additional work to assess the plume boundary in the B1/A2 Zone. The RGRP should prepare potentiometric surface maps using water level data from the proposed wells to be installed in the area to refine groundwater flow. Limited water level data is currently available and groundwater flow is shown to the north which does not necessarily indicate that there is a commingled source. Historical groundwater data and flow in the area should also be reviewed to evaluate the plume boundary.

Response to Comment: Figure 3 has been modified to show a contour representing the estimated extent of TCE concentrations above 5 µg/L in the B1/A2 Zone, west of the MEW plume based on information collected by other parties. The contour line is solid, rather than dashed, since the plume boundary in the area shown on Figure 3 can be determined based on information collected by other parties. Section 5.5 Reporting, page 15 has been modified to state the monitoring well installation report will include

potentiometric surface maps for the B1/A2 Zone in the vicinity of the western margin of the plume.

Section 4 -Supplemental Grab Groundwater Sampling Program

EPA Comment: Modify 1st sentence. “Supplemental grab groundwater sampling will be conducted to evaluate VOC concentrations upgradient of CPT-15 pending property owner access.”

There is limited data immediately downgradient of CPT 21. EPA understands the challenges with property access but please review if there is a property that could be sampled closer to the hot spot area.

Response to Comment: The first sentence of Section 4 has been revised to state: “Supplemental grab-groundwater sampling will be conducted to evaluate VOC concentrations upgradient of CPT-15, pending property owner access.”

We will continue to work with EPA on obtaining access to a property that could be sampled closer to the hot spot area.

Section 5 - Proposed Monitoring Well Installation, Page 11.

EPA Comment: This section indicates that proposed monitoring wells located within the treatment zone footprint for the Evandale Avenue will be provided separately with the remedy design. As indicated in the cover letter, additional shallow A/A1 wells will also necessary to monitor the performance of cleanup activities and to define the vapor intrusion study area boundary.

The information regarding the installation of NASA-6-A2 needs to be included in this report. This well is critical for demonstrating hydraulic containment.

Response to Comment:

Proposed temporary performance monitoring wells within the Evandale Avenue treatment zone footprint were provided in the Draft ISCO Work Plan, which was submitted to EPA on 15 August 2013.

Construction details for NASA-6-A2 have been included in Table 2. Section 5 has been modified to state “A B1/A2 zone monitoring well will be installed by NASA within the NASA area of responsibility near CPT-40 (NASA-6-A2, Figure 10).”

Section 5- Proposed Monitoring Well Installations Western Margins Shallow A/A1 Aquifer – North of Highway 101 and Figure 2

EPA Comment: In addition to the well proposed at S. Akron Road (near CPT 23), monitoring wells should also be proposed at locations CTP 25 and SB2 to provide plume delineation in the shallow aquifer and refine the vapor intrusion boundary.

Response to Comment: Section 5 has been revised to state “As requested by EPA, two additional A/A1 zone monitoring wells will be installed: one on Berry Court in the vicinity of CPT-25 and one on Perimeter Road in the vicinity of SB-2.” Figure 2 and Figure 10 have been revised to show the proposed well locations (BC-1-A and PR-1-A). Table 2 has been revised to include the proposed target depth intervals for the additional wells requested by EPA.

Section 5- Proposed Monitoring Well Installations - Western Margins B1/A2 and Figure 3

EPA Comment: Monitoring wells should be installed at CPT 27 and CPT 34. While CPT 34 appears to be in the area which may be comingled with contamination to the east, the boundary still needs to be monitored.

Response to Comment: Section 5 has been revised to state “As requested by EPA, two additional B1/A2 zone monitoring well will be installed: one on Berry Court in the vicinity of CPT-27 and one on Macon Drive in the vicinity of CPT-34” Figure 3 and Figure 10 have been revised to show the proposed well locations (BC-2-B1 and MD-1-B1). Table 2 has been revised to include the proposed target depth intervals for the additional wells requested by EPA.

Reporting

EPA Comment: Add that groundwater potentiometric surface maps will be included in the Monitoring Well Installation Report.

Response to Comment: Section 5.5 Reporting, page 15 has been modified to state the monitoring well installation report will include potentiometric surface maps for the B1/A2 zone in the vicinity of the western margin of the plume.

Sections 5.6 and 7.1 Schedules

EPA Comment: Please update schedules in these sections.

Response to Comment: The schedules in Section 5.6 and 7.1 have been updated

Section 7 Evandale Avenue Remedy

EPA Comment: At the end or first sentence under Section 7, delete “that do not appear to be connected to the MEW plume.” This has not been ascertained.

Response to Comment: The words “that do not appear to be connected to the MEW plume” have been deleted from the first sentence under Section 7, as requested by EPA. As previously stated it is the MEW Parties’ position that the significantly lower TCE concentrations between the identified areas along Evandale and the MEW Plume demonstrate that the higher concentrations along Evandale are not hydraulically connected to the MEW plume.

Table 1

EPA Comment: Table 1. Please add to Table 1 the additional data that have been collected since the work plan was submitted. For example, the data collected near the CPT 21 hotspot.

Response to Comment: Data obtained since the work plan was submitted as part of the remedy design data collection has been added to Table 1. In addition, Appendix G, which includes a summary of activities and results from the remedy design data collection work, has been added to the report.

Table 2.

EPA Comment: Table 2. The depths designated for the shallow aquifer A/A1 in the table should be consistent with the depth intervals specified in previous reports for the project. Otherwise, the rationale for modifying the depth intervals for the shallow A/A1 aquifer should be included.

Response to Comment: The well depths and the well designations in Table 2 are consistent with the depth intervals specified in previous reports for the project.

EPA Schedule: The table below lists the tasks to be completed and due dates for the well installation work to confirm hydraulic containment of the plume.

Task	Due Date
Submit Final Grab-Groundwater Assessment and Proposed Monitoring Well Report	45 days from receipt of letter
Install Monitoring Wells	45 days from EPA approval of the final report
Report summarizing well installation, initial sampling and evaluation of groundwater flow in B1/A2 Zone	60 days following completion of field work
Quarterly Sampling of Wells	Provide laboratory data once received

Response: As verbally discussed and agreed to with EPA, the monitoring well installations will be conducted within 90 days of EPA approval of the final report, assuming access can be obtained.

APPENDIX B

Santa Clara Valley Water District Boring Permits

Permit Issued: <u>12/19/12</u>	Expiration Date: <u>6/19/12</u>	District Permit No.: <u>12E00204</u>
Client (if different from property owner): Geosyntec Consultants	Property Owner: Bruce Panchal	Name of Business/Residence at Site: Bruce Panchal
Client's Address: 1111 Broadway, 6 th Floor City, State, Zip Oakland, CA 94607	Property Owner's Address: 277 Fairchild Drive City, State, Zip Mountain View, CA	Address of Site: 277 Fairchild Drive City, State, Zip Mountain View, CA
Telephone No.: 510.285.2700	Telephone No.: 650.400.9175	Assessor's Parcel No. of Site: Book <u>160</u> Page <u>07</u> Parcel <u>012</u>
Consulting Company Name: Geosyntec Consultants	Drilling Company Name: Gregg Drilling	
Address: 1111 Broadway, 6 th Floor City, State, Zip Oakland, CA 94703	Address: 950 Howe Road City, State, Zip Martinez, CA 94553	
Telephone No.: 510.285.2700	Telephone No.: 925.313.5800	C-57/C-61 License No.: 485165
<input type="checkbox"/> Check if address or phone number has changed	<input type="checkbox"/> Check if address or phone number has changed	

In space at right, sketch location of proposed boring(s) in sufficient detail to identify location. In addition to distances to nearest street and intersection, show distances to any existing structures, landmarks, or topographic features.

How many borings will be installed on parcel?
10

Proposed borings on District property/easement (See General Condition F, page 2.)

Within 50 feet of the top of a creek bank or District facility

Proposed depth of boring(s):

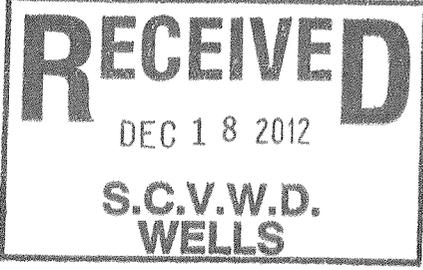
45 to 150 feet
 151 to 300 feet
 Over 300 feet

Type of boring(s):

Hollow stem
 Rotary
 CPT/Hydropunch
 Other: _____

NOTE: No permit is required for borings under 45 feet deep.

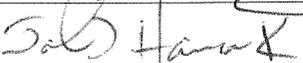
SITE PLAN
(Please draw accurately)





SIGNATURES

I understand and agree that all work associated with this permit is required to be done in accordance with Santa Clara Valley Water District (District) Well Ordinance 90-1, the District Well Standards, and conditions of this permit (see page 2). I certify that the information given in this permit is correct to the best of my knowledge and that the signature below, whether original, electronic, or photocopied, is authorized and valid, and is affixed with the intent to be enforceable. I also certify that a right of entry/encroachment agreement has been formalized between the well owner and property owner, if parties differ.

Signature of Property Owner/Agent: 	Print/Type Name: SUSANNA RAJ	Date: 12/16/12
Signature of Client/Agent: 	Print/Type Name: Nicole Gotberg	Date: 12/14/12
Signature of Driller/Agent: 	Print/Type Name: John D. Hancock	Date: 12-14-12
Signature of Consultant/Agent: 	Print/Type Name: Nicole Gotberg	Date: 12/14/12

IMPORTANT: A minimum 24-hour notice must be given to Santa Clara Valley Water District Well Inspection Department prior to installing the annular seal. Call (408) 265-2607, ext. 2660. Please allow 10 working days to process permit application.



GENERAL CONDITIONS

- A. **District** (telephone 408-265-2607, ext. 2660) **must be notified a minimum of one working day before the exploratory boring is backfilled.** An authorized District representative must be on site to witness the sealing operation. This requirement may be waived by an authorized District representative. If the District waives the inspection requirement, the District may request the permittee(s) to furnish certification under penalty of perjury that the seal was constructed in accordance with the District Well Standards.
- B. This permit is valid only for the purpose specified herein. Boring destruction methods authorized under this permit may not be changed except by written approval of an authorized District representative, and only if the District believes that such a change will result in equal or superior compliance with the District and State Well Standards (e.g., if the District representative finds that site conditions warrant such a change).
- C. This permit is only valid for the Assessor's Parcel No. indicated on it.
- D. This permit may be voided if it contains incorrect information.
- E. Borings shall be sealed within 24 hours following completion of testing or sampling activities. Borings shall not be left in such a condition as to allow for the introduction of surface waters or foreign materials into them. Borings shall be secured such that they do not endanger public health.
- F. If any work associated with this permit will take place on District property/easement, an encroachment or construction permit must be granted by the District's Community Projects Review Unit (telephone 408-265-2607, ext. 2350, 2217, or 2253).
- G. The permittee(s) shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend, and hold the District, its officers, agents, and employees, free and harmless from any and all expense, cost, and liability in connection with or resulting from the granting or exercise of this permit including, but not limited to, property damage, personal injury, and wrongful death.
- H. Permittees are required to be in full compliance with Cal/OSHA California Labor Code Section 6300.
- I. A current C-57 or C-61 Contractor's License is required for work associated with this permit.
- J. Permittee, permittee's contractors, consultants, or agents shall be responsible to assure that all materials or waters generated during drilling, boring destruction, and/or other activities associated with this permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on- or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where the work is being completed.
- K. The driller and consultants (if applicable) shall have an active copy of their Worker's Compensation Insurance on file with District.
- L. This permit shall expire if not exercised within 180 calendar days of its approval, unless an extension of the permit expiration date is granted by an authorized District representative.
- M. This permit shall be kept on site during all activities associated with it and shall immediately be presented to an authorized District representative upon request.

Permit Approved by:

Peter A. Thiemann

Date:

12/19/12

Please allow 10 working days to process this application.



APPLICATION TO DRILL EXPLORATORY BORINGS

Permit Issued: 12-4-12	Expiration Date: 6-4-13	District Permit No.: 12E00193
Client (if different from property owner): Geosyntec Consultants	Property Owner: National Aeronautics & Space Administration	Name of Business/Residence at Site: National Aeronautics & Space Administration
Client's Address: 1111 Broadway, 6 th Floor City, State, Zip Oakland, CA 94607	Property Owner's Address: M/S 237-14, Bld. N237, Room 102A City, State, Zip Moffett Field, CA 94035-1000	Address of Site: South Akron Road, Cody Road, Severys Ave City, State, Zip Mountain View, CA
Telephone No.: 510.285.2700	Telephone No.: 650.604.0237	Assessor's Parcel No. of Site: Book <u>116</u> Page <u>18</u> Parcel <u>012</u>
Consulting Company Name: Geosyntec Consultants	Drilling Company Name: Gregg Drilling	
Address: 1111 Broadway, 6 th Floor City, State, Zip Oakland, CA 94607	Address: 950 Howe Road City, State, Zip Martinez, CA 94553	
Telephone No.: 510.285.2700	Telephone No.: 925.313.5800	C-57/C-61 License No.: 485165
<input type="checkbox"/> Check if address or phone number has changed	<input type="checkbox"/> Check if address or phone number has changed	

In space at right, sketch location of proposed boring(s) in sufficient detail to identify location. In addition to distances to nearest street and intersection, show distances to any existing structures, landmarks, or topographic features.

SITE PLAN
(Please draw accurately)

How many borings will be installed on parcel?
30

- Proposed borings on District property/easement (See General Condition F, page 2.)
- Within 50 feet of the top of a creek bank or District facility

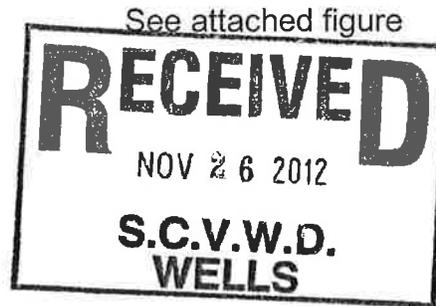
Proposed depth of boring(s):

- 45 to 150 feet
- 151 to 300 feet
- Over 300 feet

Type of boring(s):

- Hollow stem
- Rotary
- CPT/Hydropunch
- Other: _____

NOTE: No permit is required for borings under 45 feet deep.



SIGNATURES

I understand and agree that all work associated with this permit is required to be done in accordance with Santa Clara Valley Water District (District) Well Ordinance 90-1, the District Well Standards, and conditions of this permit (see page 2). I certify that the information given in this permit is correct to the best of my knowledge and that the signature below, whether original, electronic, or photocopied, is authorized and valid, and is affixed with the intent to be enforceable. I also certify that a right of entry/encroachment agreement has been formalized between the well owner and property owner, if parties differ.

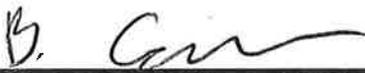
Signature of Property Owner/Agent: <i>Donald M. Chuck</i>	Print/Type Name: DONALD M. CHUCK	Date: 11/15/12
Signature of Client/Agent: <i>Morgan Fahlman</i>	Print/Type Name: Morgan Fahlman	Date: 11/7/12
Signature of Driller/Agent: <i>Marj Walden</i>	Print/Type Name: Marj Walden	Date: 11/7/12
Signature of Consultant/Agent: <i>Morgan Fahlman</i>	Print/Type Name: Morgan Fahlman	Date: 11/7/12

IMPORTANT: A minimum 24-hour notice must be given to Santa Clara Valley Water District Well Inspection Department prior to installing the annular seal. Call (408) 265-2607, ext. 2660. Please allow 10 working days to process permit application.



GENERAL CONDITIONS

- A. **District** (telephone 408-265-2607, ext. 2660) **must be notified a minimum of one working day before the exploratory boring is backfilled.** An authorized District representative must be on site to witness the sealing operation. This requirement may be waived by an authorized District representative. If the District waives the inspection requirement, the District may request the permittee(s) to furnish certification under penalty of perjury that the seal was constructed in accordance with the District Well Standards.
- B. This permit is valid only for the purpose specified herein. Boring destruction methods authorized under this permit may not be changed except by written approval of an authorized District representative, and only if the District believes that such a change will result in equal or superior compliance with the District and State Well Standards (e.g., if the District representative finds that site conditions warrant such a change).
- C. This permit is only valid for the Assessor's Parcel No. indicated on it.
- D. This permit may be voided if it contains incorrect information.
- E. Borings shall be sealed within 24 hours following completion of testing or sampling activities. Borings shall not be left in such a condition as to allow for the introduction of surface waters or foreign materials into them. Borings shall be secured such that they do not endanger public health.
- F. If any work associated with this permit will take place on District property/easement, an encroachment or construction permit must be granted by the District's Community Projects Review Unit (telephone 408-265-2607, ext. 2350, 2217, or 2253).
- G. The permittee(s) shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend, and hold the District, its officers, agents, and employees, free and harmless from any and all expense, cost, and liability in connection with or resulting from the granting or exercise of this permit including, but not limited to, property damage, personal injury, and wrongful death.
- H. Permittees are required to be in full compliance with Cal/OSHA California Labor Code Section 6300.
- I. A current C-57 or C-61 Contractor's License is required for work associated with this permit.
- J. Permittee, permittee's contractors, consultants, or agents shall be responsible to assure that all materials or waters generated during drilling, boring destruction, and/or other activities associated with this permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on- or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where the work is being completed.
- K. The driller and consultants (if applicable) shall have an active copy of their Worker's Compensation Insurance on file with District.
- L. This permit shall expire if not exercised within 180 calendar days of its approval, unless an extension of the permit expiration date is granted by an authorized District representative.
- M. This permit shall be kept on site during all activities associated with it and shall immediately be presented to an authorized District representative upon request.

Permit Approved by: 	Date: 12-4-12
--	------------------

Please allow 10 working days to process this application.

APPLICATION TO DRILL EXPLORATORY BORINGS

Date issued: <i>11-19-12</i>	Expiration Date: <i>5-19-13</i>	District Permit No.: <i>12E00186</i>
Client (if different from property owner): Geosyntec Consultants	Property Owner: City of Mountain View	Name of Business/Residence at Site: City of Mountain View
Client's Address: 1111 Broadway, 6 th Floor City, State, Zip Oakland, CA 94607	Property Owner's Address: 500 Castro St City, State, Zip Mountain View, CA 94039-7540	Address of Site: Fairchild Drive, Evansdale Drive, Devanshire City, State, Zip Mountain View, CA
Telephone No.: 510.285.2700	Telephone No.: 650.903.6311	Assessor's Parcel No. of Site: Book <i>40</i> Page <i>07</i> Parcel <i>500</i>

Consulting Company Name: Geosyntec Consultants Address: 1111 Broadway, 6 th Floor City, State, Zip Oakland, CA <i>94607</i> Telephone No.: 510.285.2700	Drilling Company Name: Grigg Drilling Address: 950 Howe Road City, State, Zip Martinez, CA 94553 Telephone No.: 925.313.5800	C-57/C-61 License No.: 485165
---	---	----------------------------------

Check if address or phone number has changed

In space at right, sketch location of proposed boring(s) in sufficient detail to identify location. In addition to distances to nearest street and intersection, show distances to any existing structures, landmarks, or topographic features.

How many borings will be installed on parcel?
30

Proposed borings on District property/easement (See General Condition F, page 2.)

Within 50 feet of the top of a creek bank or District facility

Proposed depth of boring(s):

46 to 160 feet

161 to 300 feet

Over 300 feet

Type of boring(s):

Hollow stem

Rotary

CPT/Hydropunch

Other: _____

SITE PLAN
(Please draw accurately)

See attached figure

RECEIVED

NOV 13 2012

S.C.V.W.D.
WELLS



NOTE: No permit is required for borings under 45 feet deep.

SIGNATURES

I understand and agree that all work associated with this permit is required to be done in accordance with Santa Clara Valley Water District (District) Well Ordinance 90-1, the District Well Standards, and conditions of this permit (see page 2). I certify that the information given in this permit is correct to the best of my knowledge and that the signature below, whether original, electronic, or photocopied, is authorized and valid, and is affixed with the intent to be enforceable. I also certify that a right of entry/encroachment agreement has been formalized between the well owner and property owner, if parties differ.

Signature of Property Owner/Agent: <i>[Signature]</i>	Print/Type Name: Robert Kagiyama	Date: <i>11/8/2012</i>
Signature of Client/Agent: <i>[Signature]</i>	Print/Type Name: Morgan Fahlman	Date: <i>11/7/12</i>
Signature of Driller/Agent: <i>[Signature]</i>	Print/Type Name: Mary Waiden	Date: <i>11/7/12</i>
Signature of Consultant/Agent: <i>[Signature]</i>	Print/Type Name: Morgan Fahlman	Date: <i>11/7/12</i>

IMPORTANT: A minimum 24-hour notice must be given to Santa Clara Valley Water District Well Inspection Department prior to installing the annular seal. Call (408) 265-2607, ext. 2660. Please allow 40 working days to process permit application.



GENERAL CONDITIONS

- A. **District** (telephone 408-265-2607, ext. 2660) **must be notified a minimum of one working day before the exploratory boring is backfilled.** An authorized District representative must be on site to witness the sealing operation. This requirement may be waived by an authorized District representative. If the District waives the inspection requirement, the District may request the permittee(s) to furnish certification under penalty of perjury that the seal was constructed in accordance with the District Well Standards.
- B. This permit is valid only for the purpose specified herein. Boring destruction methods authorized under this permit may not be changed except by written approval of an authorized District representative, and only if the District believes that such a change will result in equal or superior compliance with the District and State Well Standards (e.g., if the District representative finds that site conditions warrant such a change).
- C. This permit is only valid for the Assessor's Parcel No. indicated on it.
- D. This permit may be voided if it contains incorrect information.
- E. Borings shall be sealed within 24 hours following completion of testing or sampling activities. Borings shall not be left in such a condition as to allow for the introduction of surface waters or foreign materials into them. Borings shall be secured such that they do not endanger public health.
- F. If any work associated with this permit will take place on District property/easement, an encroachment or construction permit must be granted by the District's Community Projects Review Unit (telephone 408-265-2607, ext. 2350, 2217, or 2253).
- G. The permittee(s) shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend, and hold the District, its officers, agents, and employees, free and harmless from any and all expense, cost, and liability in connection with or resulting from the granting or exercise of this permit including, but not limited to, property damage, personal injury, and wrongful death.
- H. Permittees are required to be in full compliance with Cal/OSHA California Labor Code Section 6300.
- I. A current C-57 or C-61 Contractor's License is required for work associated with this permit.
- J. Permittee, permittee's contractors, consultants, or agents shall be responsible to assure that all materials or waters generated during drilling, boring destruction, and/or other activities associated with this permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on- or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where the work is being completed.
- K. The driller and consultants (if applicable) shall have an active copy of their Worker's Compensation Insurance on file with District.
- L. This permit shall expire if not exercised within 180 calendar days of its approval, unless an extension of the permit expiration date is granted by an authorized District representative.
- M. This permit shall be kept on site during all activities associated with it and shall immediately be presented to an authorized District representative upon request.

Permit Approved by:

Date:

11/19/12

Please allow 10 working days to process this application.



- id
- Boring Location
- Grab Groundwater Step-Out Area
- Building
- Road



1,000 500 0 1,000 Feet



Proposed Soil Boring Locations

Geosyntec[®]
consultants

Figure

1

Oakland

November 2012

Date Issued:	Expiration Date:	District Permit No.: 12E00202
Client (if different from property owner): Geosyntec Consultants	Property Owner: Clark Realty Capital	Name of Business/Residence at Site: The Villages at Moffett and Parks
Client's Address: 1111 Broadway, 6 th Floor City, State, Zip Oakland, CA 94607	Property Owner's Address: 3655 Nobel Drive, Suite 500 City, State, Zip San Diego, CA 92122	Address of Site: Berry Court City, State, Zip Mountain View, CA/Moffett Field, CA
Telephone No.: 510.285.2700	Telephone No.: 848.320.3904	Assessor's Parcel No. of Site: Book <u>116</u> Page <u>18</u> Parcel <u>011</u>
Consulting Company Name: Geosyntec Consultants	Drilling Company Name: Gregg Drilling	
Address: 1111 Broadway, 6 th Floor City, State, Zip Oakland, CA 94703	Address: 950 Howe Road City, State, Zip Martinez, CA 94553	
Telephone No.: 510.285.2700	Telephone No.: 925.313.5800	C-57/C-61 License No.: 485165
<input type="checkbox"/> Check if address or phone number has changed	<input type="checkbox"/> Check if address or phone number has changed	

In space at right, sketch location of proposed boring(s) in sufficient detail to identify location. In addition to distances to nearest street and intersection, show distances to any existing structures, landmarks, or topographic features.

How many borings will be installed on parcel?
5

Proposed borings on District property/easement (see General Condition F, page 2.)

Within 50 feet of the top of a creek bank or District facility

Proposed depth of boring(s):

45 to 150 feet

151 to 300 feet

Over 300 feet

Type of boring(s):

Hollow stem

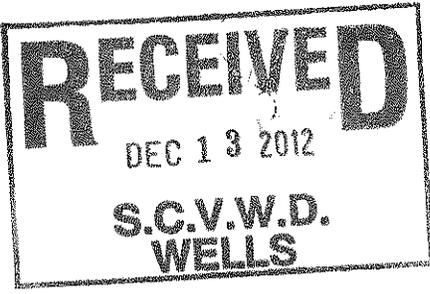
Rotary

CPT/Hydropunch

Other: _____

NOTE: No permit is required for borings under 45 feet deep.

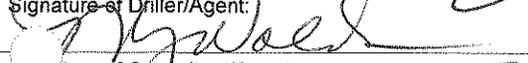
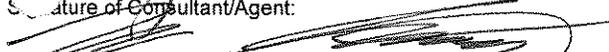
SITE PLAN
(Please draw accurately)





SIGNATURES

I understand and agree that all work associated with this permit is required to be done in accordance with Santa Clara Valley Water District (District) Well Ordinance 90-1, the District Well Standards, and conditions of this permit (see page 2). I certify that the information given in this permit is correct to the best of my knowledge and that the signature below, whether original, electronic, or photocopied, is authorized and valid, and is affixed with the intent to be enforceable. I also certify that a right of entry/encroachment agreement has been formalized between the well owner and property owner, if parties differ.

Signature of Property Owner/Agent: 	Print/Type Name: Jodi Winters	Date: 12/7/12
Signature of Client/Agent: 	Print/Type Name: Nicole Gotberg	Date: 12/15/2012
Signature of Driller/Agent: 	Print/Type Name: Mary Walden	Date: 12/15/12
Signature of Consultant/Agent: 	Print/Type Name: Nicole Gotberg	Date: 12/15/2012

IMPORTANT: A minimum 24-hour notice must be given to Santa Clara Valley Water District Well Inspection Department prior to installing the annular seal. Call (408) 265-2607, ext. 2660. Please allow 10 working days to process permit application.

GENERAL CONDITIONS

- A. District (telephone 408-265-2607, ext. 2660) **must be notified a minimum of one working day before the exploratory boring is backfilled.** An authorized District representative must be on site to witness the sealing operation. This requirement may be waived by an authorized District representative. If the District waives the inspection requirement, the District may request the permittee(s) to furnish certification under penalty of perjury that the seal was constructed in accordance with the District Well Standards.
- B. This permit is valid only for the purpose specified herein. Boring destruction methods authorized under this permit may not be changed except by written approval of an authorized District representative, and only if the District believes that such a change will result in equal or superior compliance with the District and State Well Standards (e.g., if the District representative finds that site conditions warrant such a change).
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- D. This permit may be voided if it contains incorrect information.
- E. Borings shall be sealed within 24 hours following completion of testing or sampling activities. Borings shall not be left in such a condition as to allow for the introduction of surface waters or foreign materials into them. Borings shall be secured such that they do not endanger public health.
- F. If any work associated with this permit will take place on District property/easement, an encroachment or construction permit must be granted by the District's Community Projects Review Unit (telephone 408-265-2607, ext. 2350, 2217, or 2253).
- G. The permittee(s) shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend, and hold the District, its officers, agents, and employees, free and harmless from any and all expense, cost, and liability in connection with or resulting from the granting or exercise of this permit including, but not limited to, property damage, personal injury, and wrongful death.
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- I. A current C-57 or C-61 Contractor's License is required for work associated with this permit.
- J. Permittee, permittee's contractors, consultants, or agents shall be responsible to assure that all materials or waters generated during drilling, boring destruction, and/or other activities associated with this permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on- or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where the work is being completed.
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- L. This permit shall expire if not exercised within 180 calendar days of its approval, unless an extension of the permit expiration date is granted by an authorized District representative.
- M. This permit shall be kept on site during all activities associated with it and shall immediately be presented to an authorized District representative upon request.

Permit Approved by:



Date:

12-18-12

Please allow 10 working days to process this application.

APPENDIX C

CPT Logs



GREGG DRILLING & TESTING, INC.
 GEOTECHNICAL AND ENVIRONMENTAL INVESTIGATION SERVICES

March 12, 2013

Geosyntec Consultants
 Attn: Eric Suchomel

Subject: CPT Site Investigation
 MEW, Devonshire & Evandale
 Mountain View, California
 GREGG Project Number: 12-162MA

Dear Mr. Suchomel:

The following report presents the results of GREGG Drilling & Testing's Cone Penetration Test investigation for the above referenced site. The following testing services were performed:

1	Cone Penetration Tests	(CPTU)	<input checked="" type="checkbox"/>
2	Pore Pressure Dissipation Tests	(PPD)	<input checked="" type="checkbox"/>
3	Seismic Cone Penetration Tests	(SCPTU)	<input type="checkbox"/>
4	UVOST Laser Induced Fluorescence	(UVOST)	<input type="checkbox"/>
5	Groundwater Sampling	(GWS)	<input checked="" type="checkbox"/>
6	Soil Sampling	(SS)	<input type="checkbox"/>
7	Vapor Sampling	(VS)	<input type="checkbox"/>
8	Pressuremeter Testing	(PMT)	<input type="checkbox"/>
9	Vane Shear Testing	(VST)	<input type="checkbox"/>
10	Dilatometer Testing	(DMT)	<input type="checkbox"/>

A list of reference papers providing additional background on the specific tests conducted is provided in the bibliography following the text of the report. If you would like a copy of any of these publications or should you have any questions or comments regarding the contents of this report, please do not hesitate to contact our office at (925) 313-5800.

Sincerely,
 GREGG Drilling & Testing, Inc.

Mary Walden
 Operations Manager



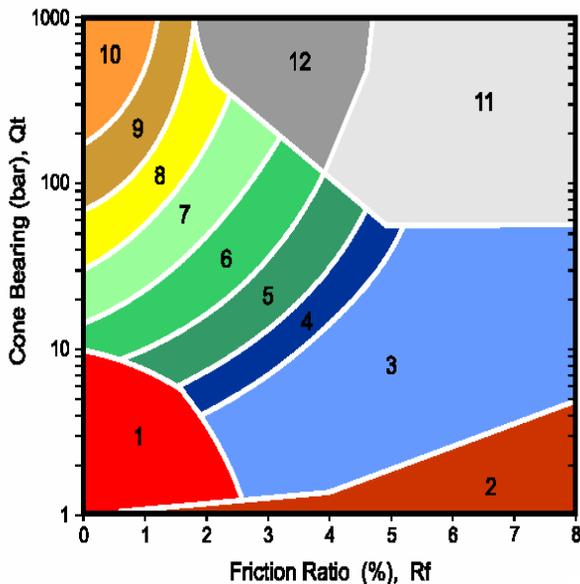
Cone Penetration Test Data & Interpretation

The Cone Penetration Test (CPT) data collected from your site are presented in graphical form in the attached report. The plots include interpreted Soil Behavior Type (SBT) based on the charts described by Robertson (1990). Typical plots display SBT based on the non-normalized charts of Robertson et al (1986). For CPT soundings extending greater than 50 feet, we recommend the use of the normalized charts of Robertson (1990) which can be displayed as SBTn, upon request. The report also includes spreadsheet output of computer calculations of basic interpretation in terms of SBT and SBTn and various geotechnical parameters using current published correlations based on the comprehensive review by Lunne, Robertson and Powell (1997), as well as recent updates by Professor Robertson. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed. Gregg Drilling & Testing Inc. do not warranty the correctness or the applicability of any of the geotechnical parameters interpreted by the software and do not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used in the software.

Some interpretation methods require input of the groundwater level to calculate vertical effective stress. An estimate of the in-situ groundwater level has been made based on field observations and/or CPT results, but should be verified by the user.

A summary of locations and depths is available in Table 1. Note that all penetration depths referenced in the data are with respect to the existing ground surface.

Note that it is not always possible to clearly identify a soil type based solely on q_t , f_s , and u_2 . In these situations, experience, judgment, and an assessment of the pore pressure dissipation data should be used to infer the correct soil behavior type.



(After Robertson, et al., 1986)

ZONE	SBT
1	Sensitive, fine grained
2	Organic materials
3	Clay
4	Silty clay to clay
5	Clayey silt to silty clay
6	Sandy silt to clayey silt
7	Silty sand to sandy silt
8	Sand to silty sand
9	Sand
10	Gravelly sand to sand
11	Very stiff fine grained*
12	Sand to clayey sand*

*over consolidated or cemented

Figure SBT



GREGG DRILLING & TESTING, INC.
GEOTECHNICAL AND ENVIRONMENTAL INVESTIGATION SERVICES

Cone Penetration Test Sounding Summary

-Table 1-

CPT Sounding Identification	Date	Termination Depth (feet)	Depth of Groundwater Samples (feet)	Depth of Soil Samples (feet)	Depth of Pore Pressure Dissipation Tests (feet)
CPT-01	11/26/12	45	29, 41, 47	-	-
CPT-02	11/26/12	45	26, 42	-	-
CPT-03	11/27/12	45	22, 40.5	-	42.7
CPT-04	11/27/12	45	24, 38	-	-
CPT-05	11/27/12	45	17, 30	-	-
CPT-06	11/28/12	45	21, 35	-	-
CPT-07	11/28/12	75	22, 30, 60	-	-
CPT-08	11/29/12	75	25, 37, 56NR, 68	-	-
CPT-09	11/30/12	75	22, 48, 74	-	-
CPT-10	11/30/12	75	22, 47, 56	-	-s
CPT-05a	12/13/12	75	69	-	-
CPT-11	12/10/12	75	19, 24, 34, 50, 58, 64	-	-
CPT-12	12/11/12	75	22, 29, 43, 59, 69	-	-
CPT-13	12/12/12	32	24, 32	-	-
CPT-14	12/12/12	75	22, 30, 52, 60	-	-
CPT-15	12/13/12	75	23, 36, 60	-	-
CPT-16	12/14/12	60	23, 42, 47	-	-
CPT-17	12/14/12	60	22, 48, 52	-	-
CPT-18	12/17/12	75	26, 34NR, 44, 62	-	-
CPT-19	12/17/12	25	20NR, 25	-	-
CPT-20	12/18/12	25	21	-	-
CPT-21	12/18/12	25	22	-	-
CPT-22a	12/18/12	25	23	-	-
CPT-23	12/19/12	61	26, 42, 51	-	-
CPT-24	12/19/12	100	20, 40, 93	-	-
CPT-25	12/20/12	60	24, 42, 48	-	-
CPT-26a	12/20/12	60	25, 32, 46, 54	-	-
CPT-27	12/21/12	60	18, 24, 44	-	-
CPT-28	12/21/12	60	20, 30, 56	-	-
CPT-29	12/26/12	60	25, 38, 54	-	-
CPT-30	12/26/12	60	18, 28, 50	-	-
CPT-31	12/27/12	75	21, 40, 62, 71	-	-



GREGG DRILLING & TESTING, INC.
GEOTECHNICAL AND ENVIRONMENTAL INVESTIGATION SERVICES

CPT-32	12/27/12	78	16, 21, 32, 76	-	-
CPT-33	12/28/12	75	16, 20, 32, 59	-	-
CPT-34	1/02/13	75	20, 36, 58	-	-
CPT-35	1/02/13	60	23, 38, 58	-	-
CPT-36	1/03/13	35	21	-	-
CPT-37	1/03/13	25	18	-	-
CPT-38	1/03/13	35	26	-	-
CPT-39	1/03/13	100	98	-	-
CPT-40	1/04/13	60	32	-	-
CPT-41	1/04/13	25	24	-	-



Bibliography

Lunne, T., Robertson, P.K. and Powell, J.J.M., "Cone Penetration Testing in Geotechnical Practice"
E & FN Spon. ISBN 0 419 23750, 1997

Roberston, P.K., "Soil Classification using the Cone Penetration Test", Canadian Geotechnical Journal, Vol. 27,
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Robertson, P.K., T. Lunne and J.J.M. Powell, "Geo-Environmental Application of Penetration Testing", Geotechnical
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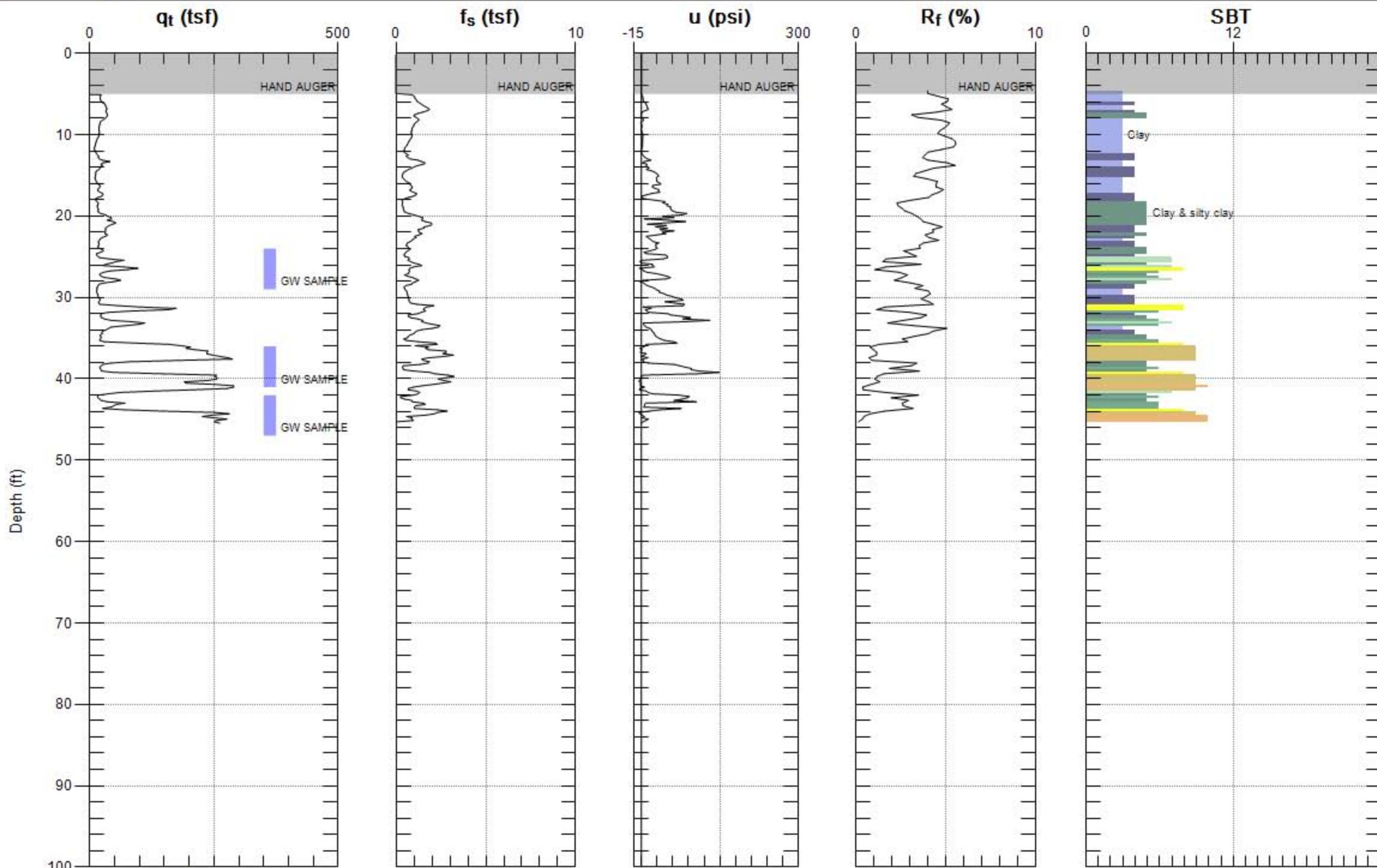
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DeGroot, D.J. and A.J. Lutenegeger, "Reliability of Soil Gas Sampling and Characterization Techniques", International
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Woeller, D.J., P.K. Robertson, T.J. Boyd and Dave Thomas, "Detection of Polyaromatic Hydrocarbon Contaminants
Using the UVIF-CPT", 53rd Canadian Geotechnical Conference Montreal, QC October pp. 733-739, 2000.

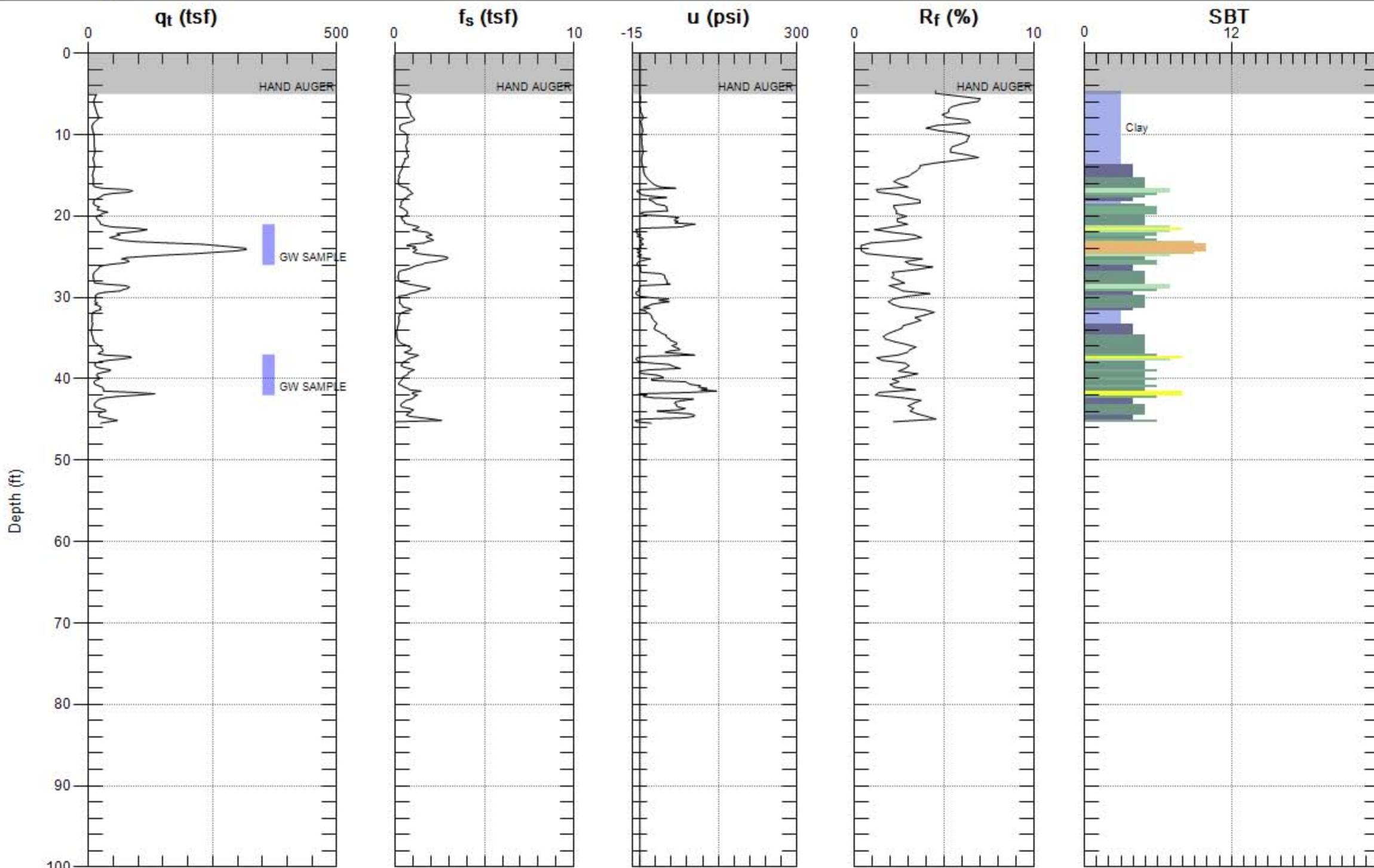
Zemo, D.A., T.A. Delfino, J.D. Gallinatti, V.A. Baker and L.R. Hilpert, "Field Comparison of Analytical Results from
Discrete-Depth Groundwater Samplers" BAT EnviroProbe and QED HydroPunch, Sixth national Outdoor Action
Conference, Las Vegas, Nevada Proceedings, 1992, pp 299-312.

Copies of ASTM Standards are available through www.astm.org



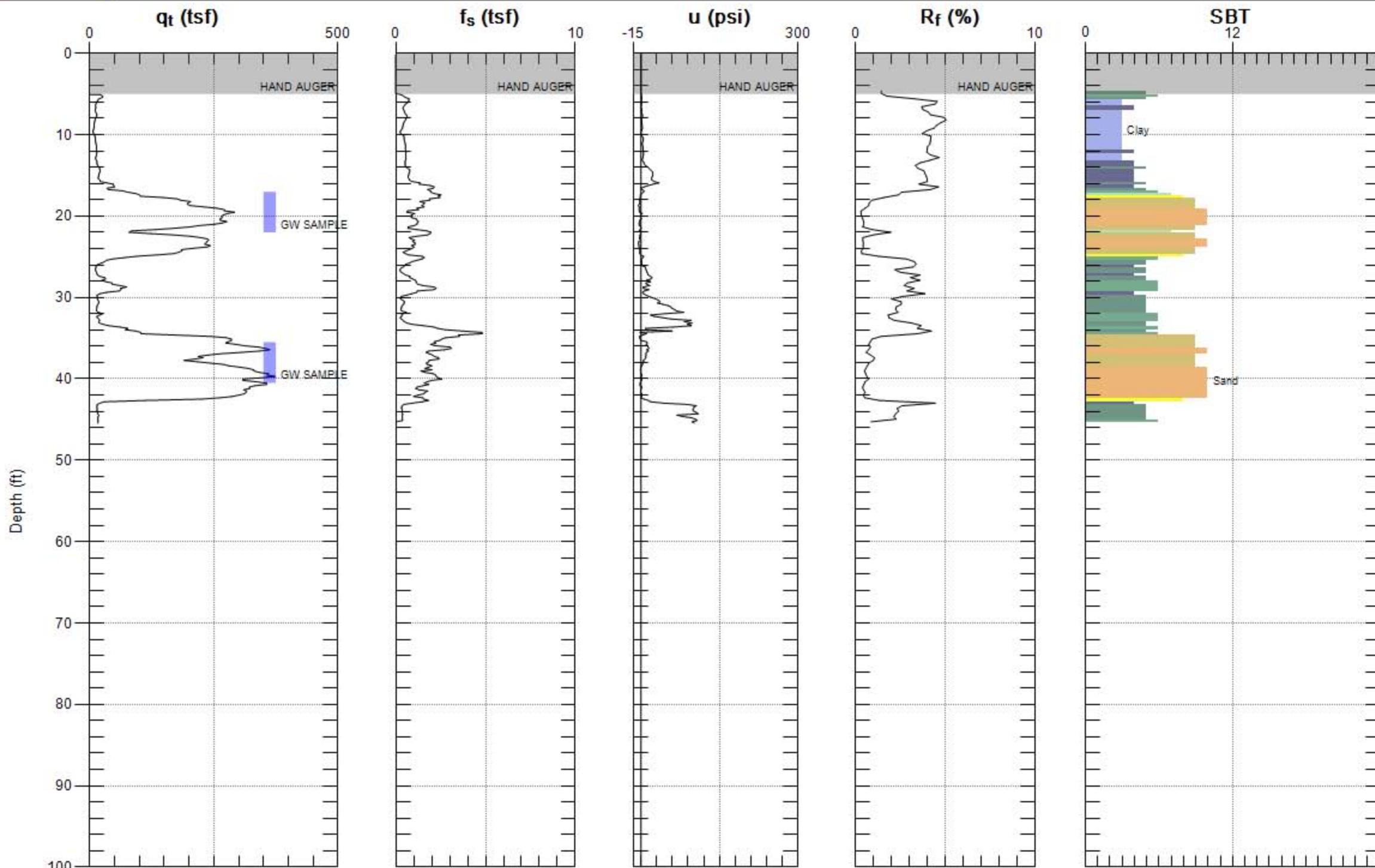
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Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



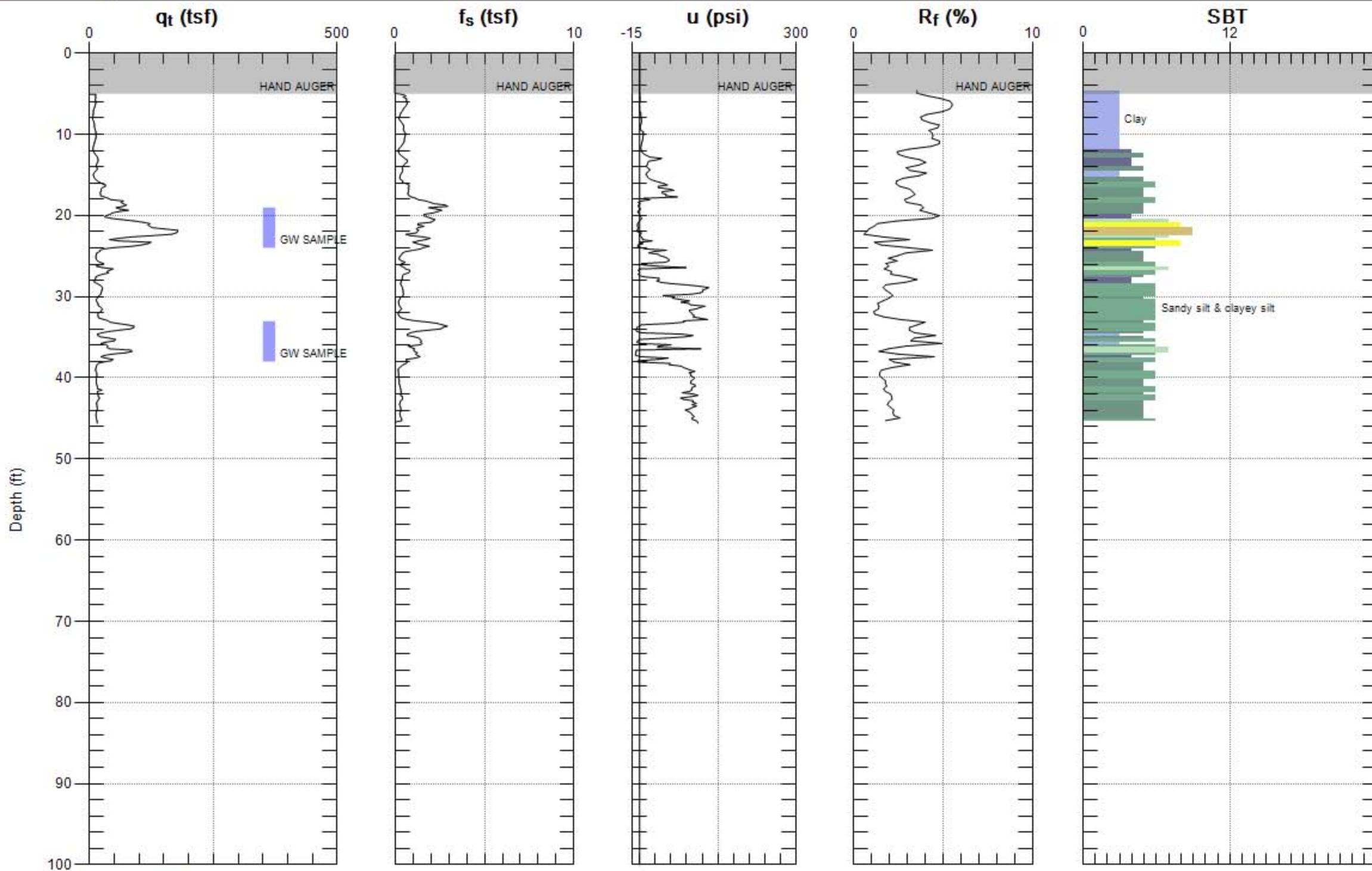
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SBT: Soil Behavior Type (Robertson 1990)



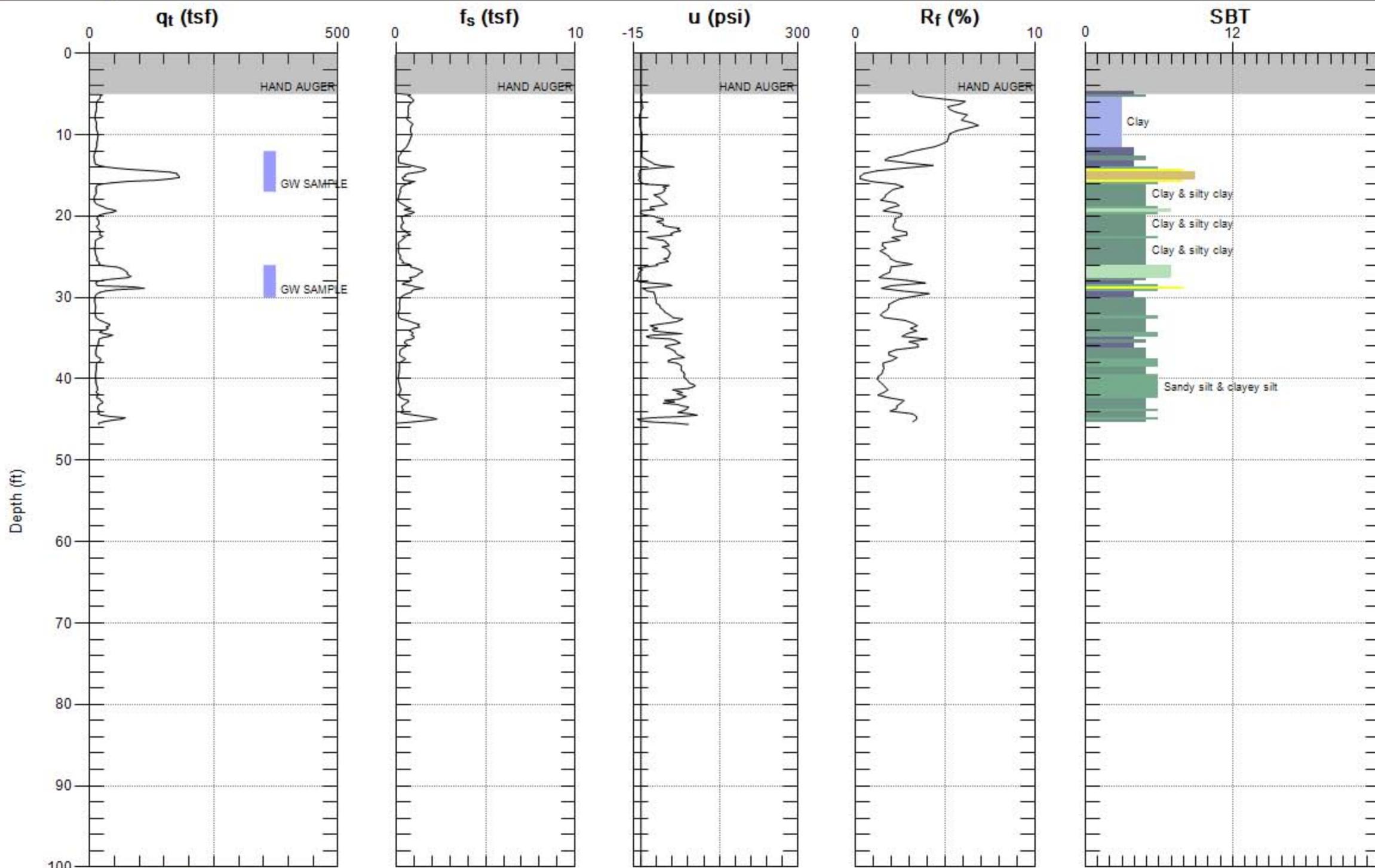
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SBT: Soil Behavior Type (Robertson 1990)



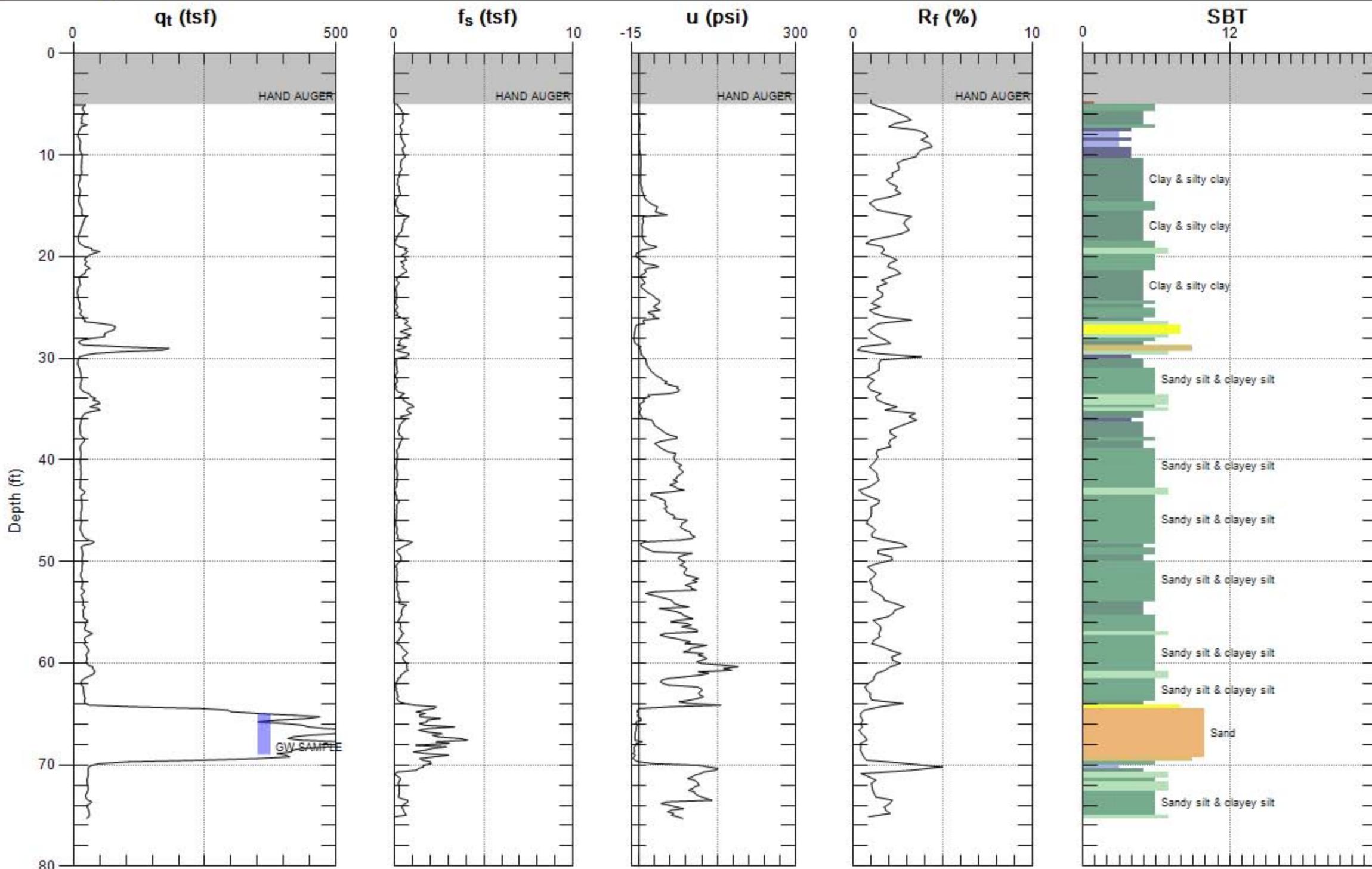
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SBT: Soil Behavior Type (Robertson 1990)



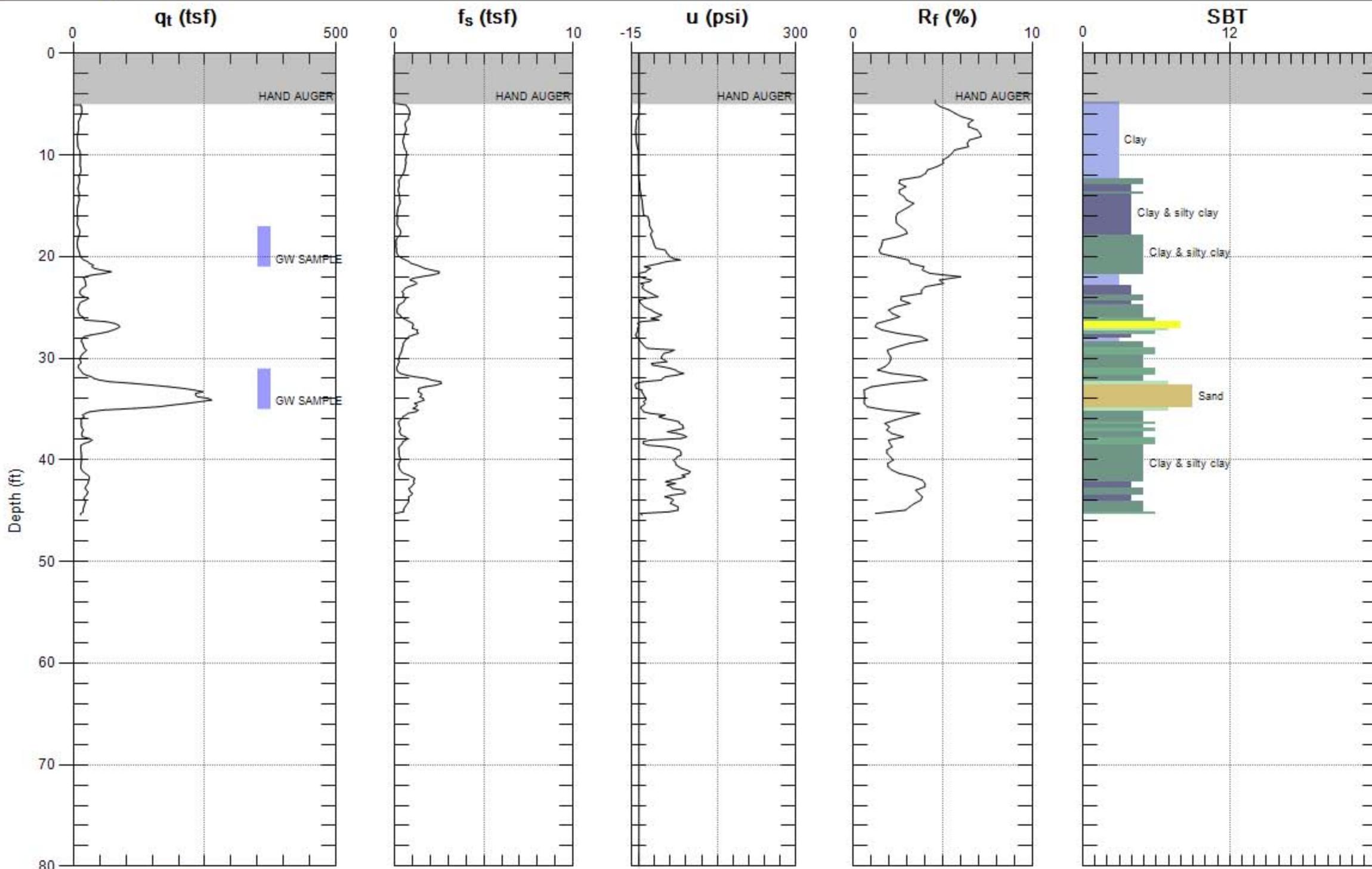
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SBT: Soil Behavior Type (Robertson 1990)



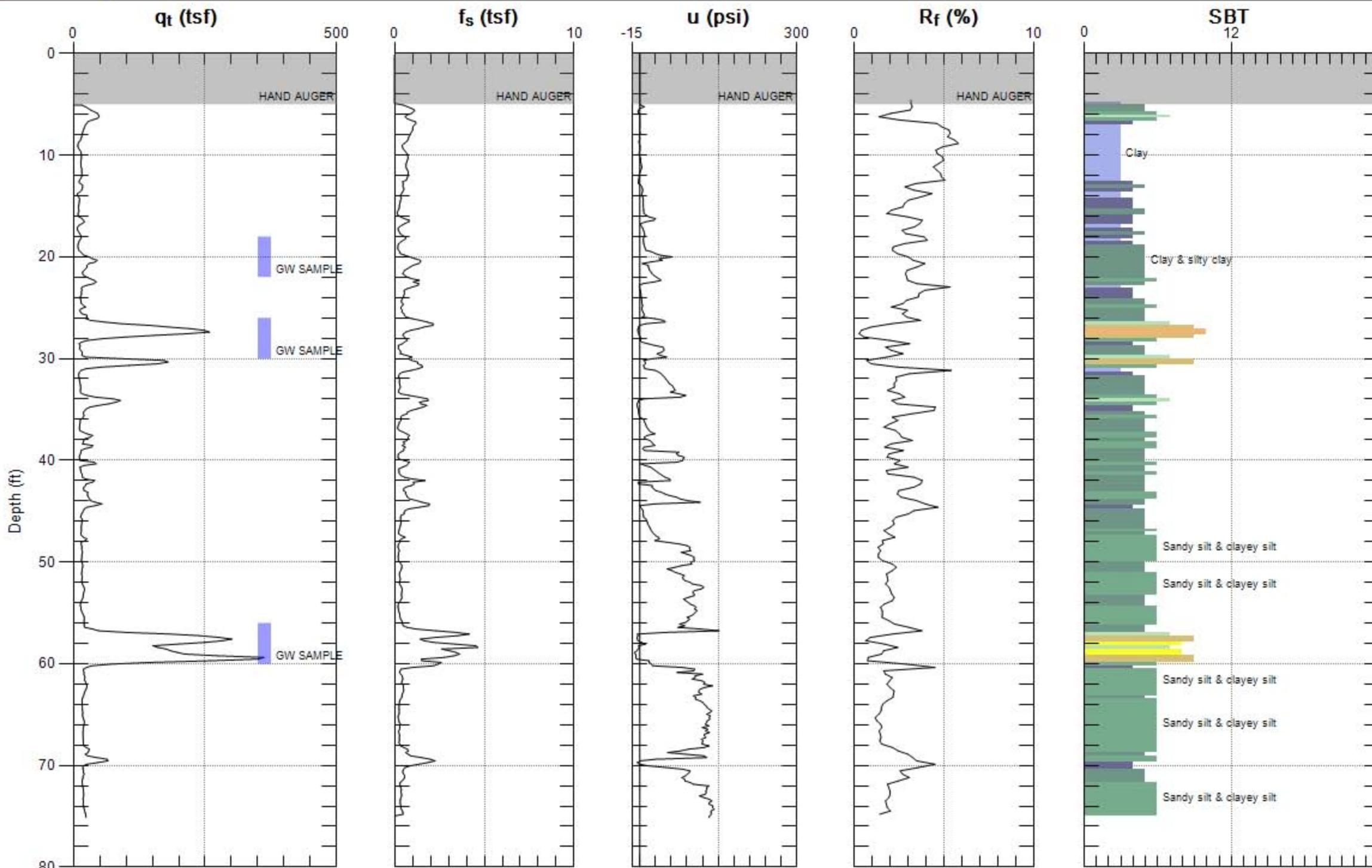
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SBT: Soil Behavior Type (Robertson 1990)



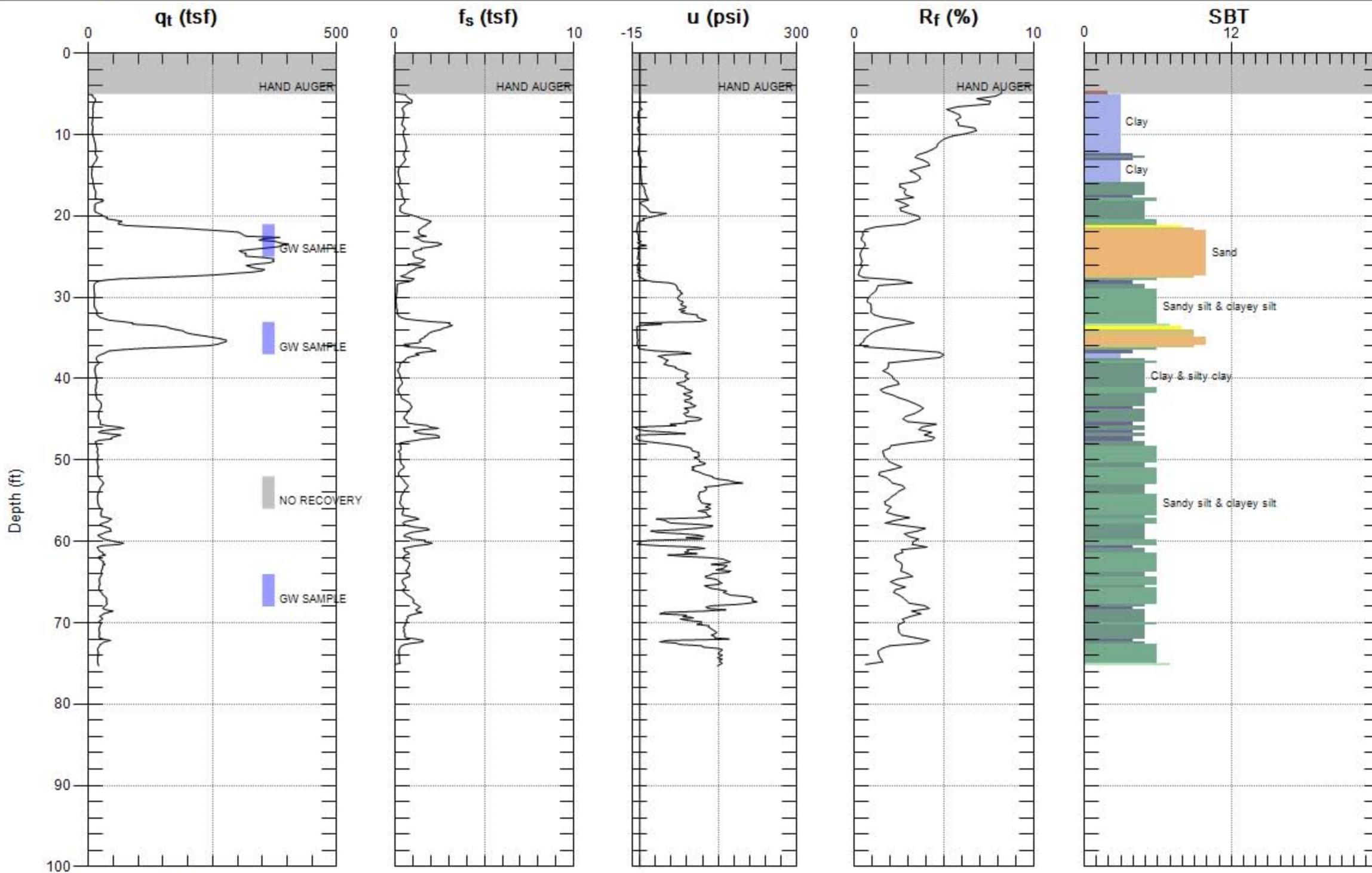
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SBT: Soil Behavior Type (Robertson 1990)



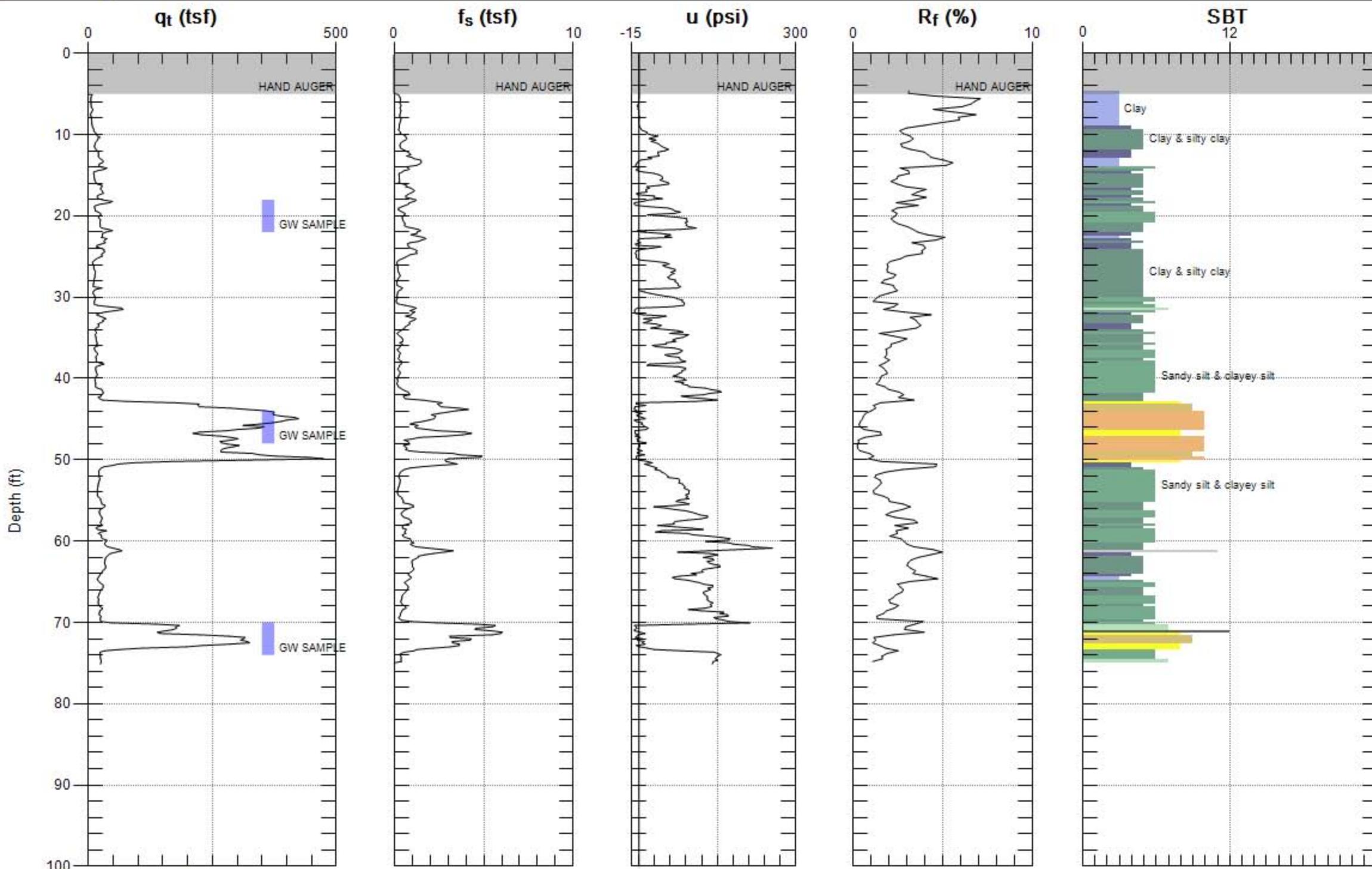
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SBT: Soil Behavior Type (Robertson 1990)



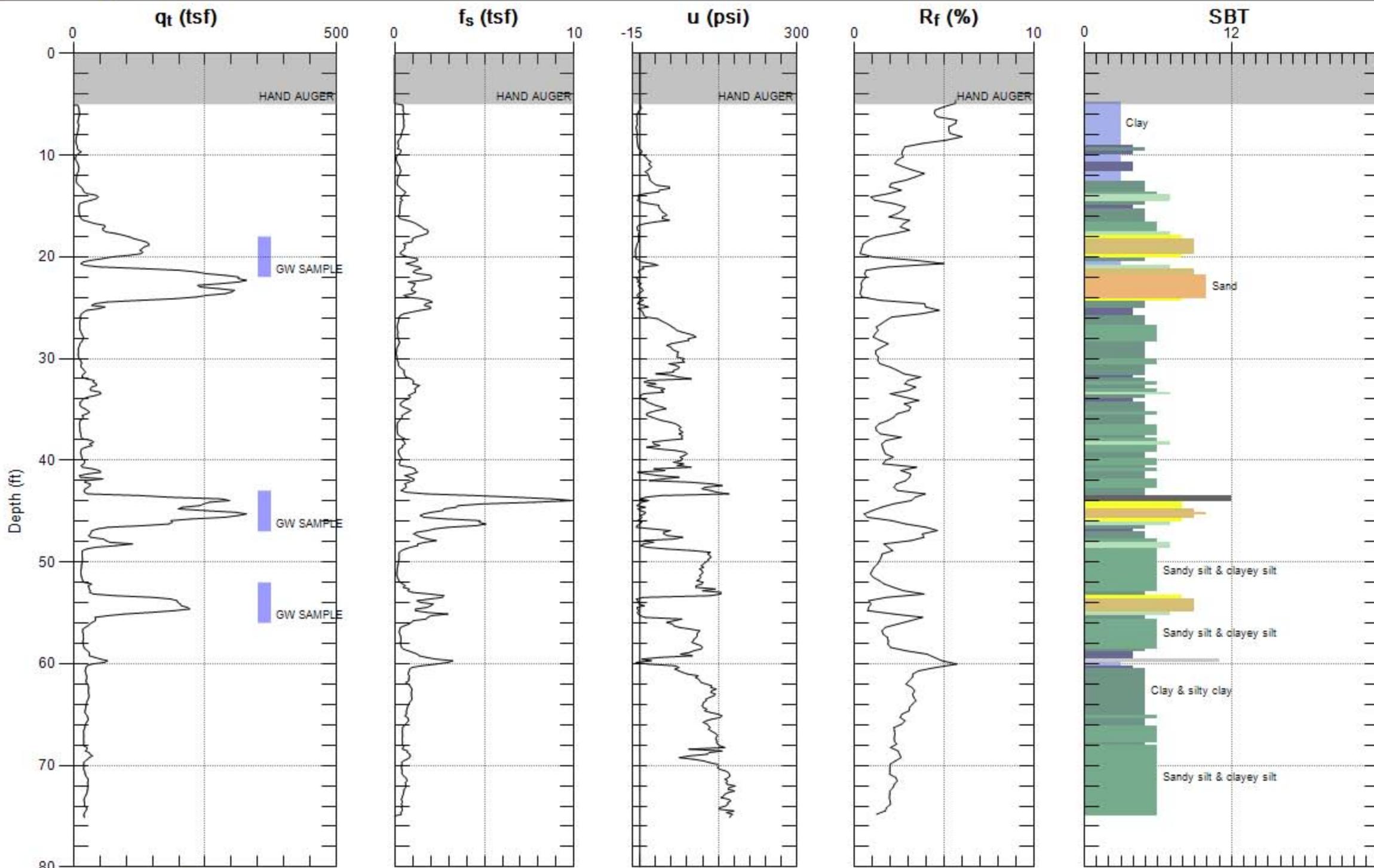
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SBT: Soil Behavior Type (Robertson 1990)



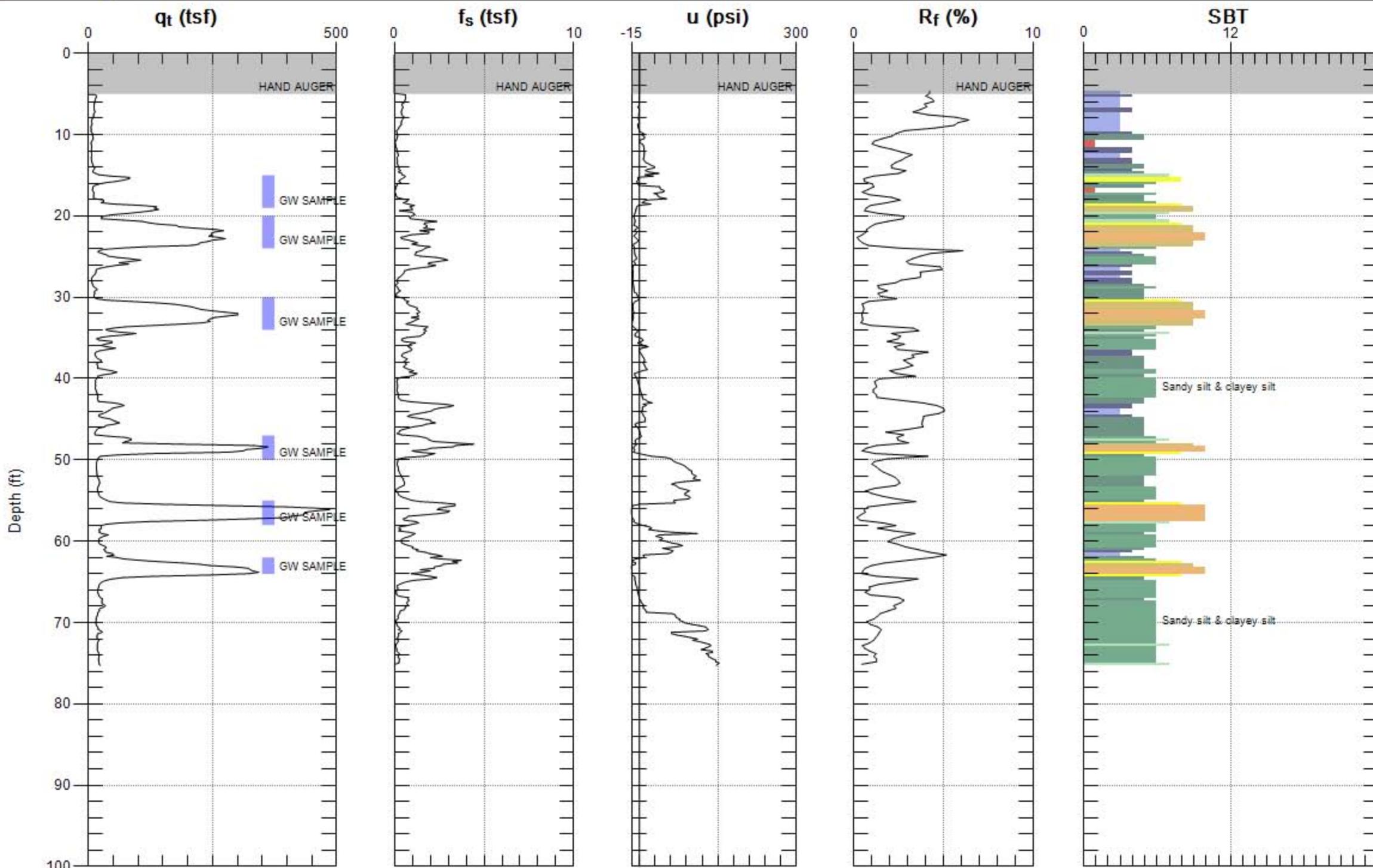
Max. Depth: 75.131 (ft)
 Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



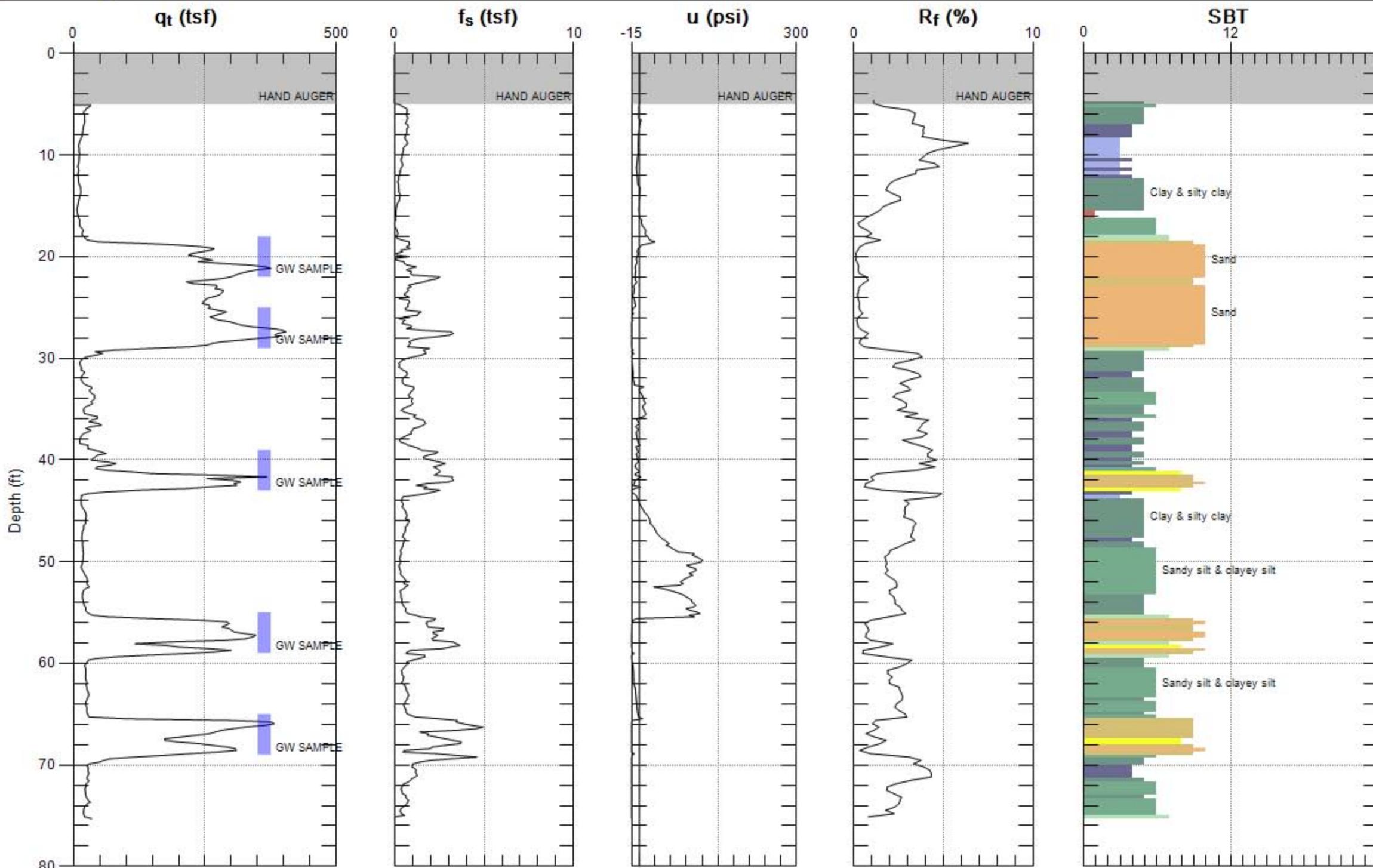
Max. Depth: 75.131 (ft)
 Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



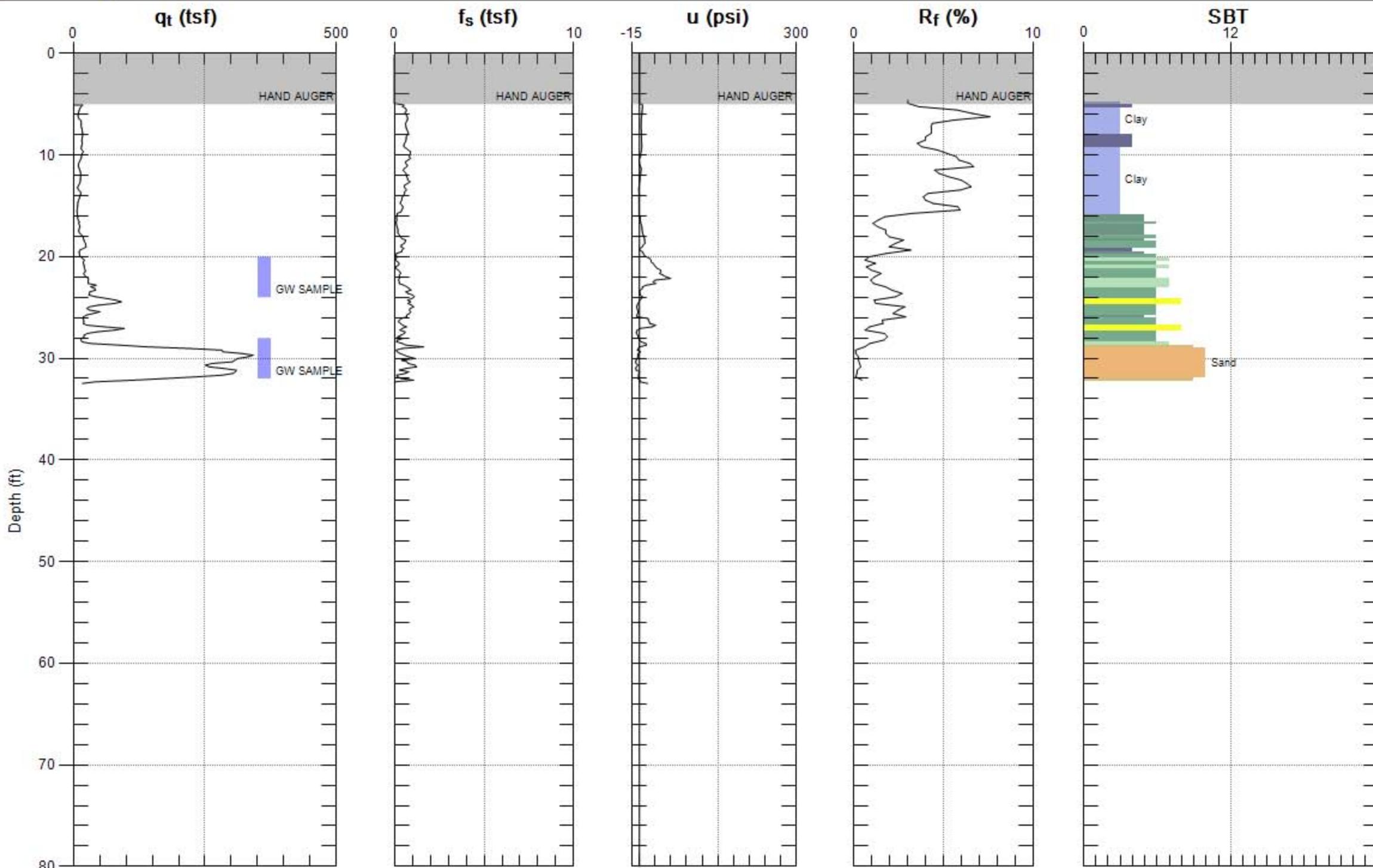
Max. Depth: 75.295 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



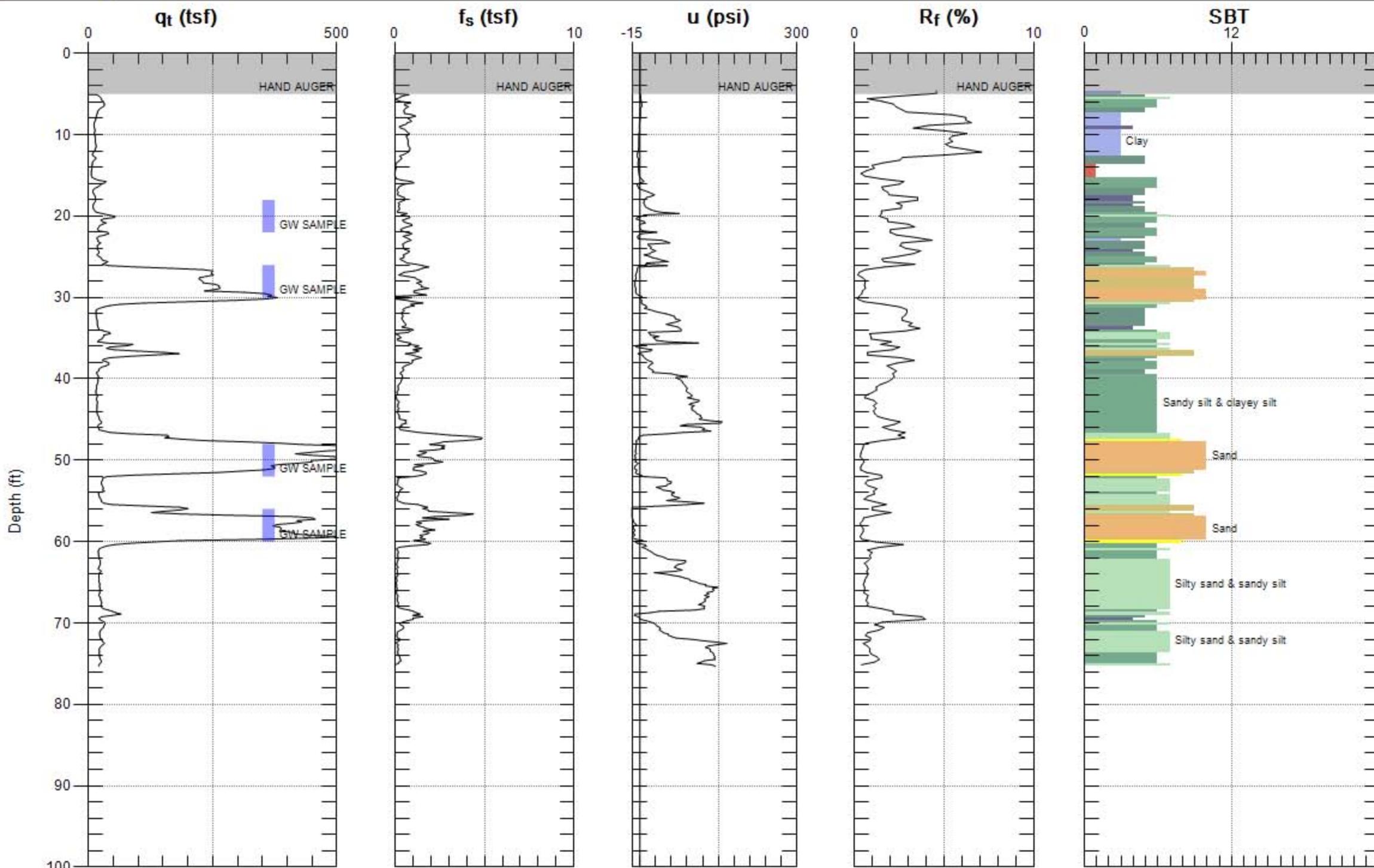
Max. Depth: 75.295 (ft)
 Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



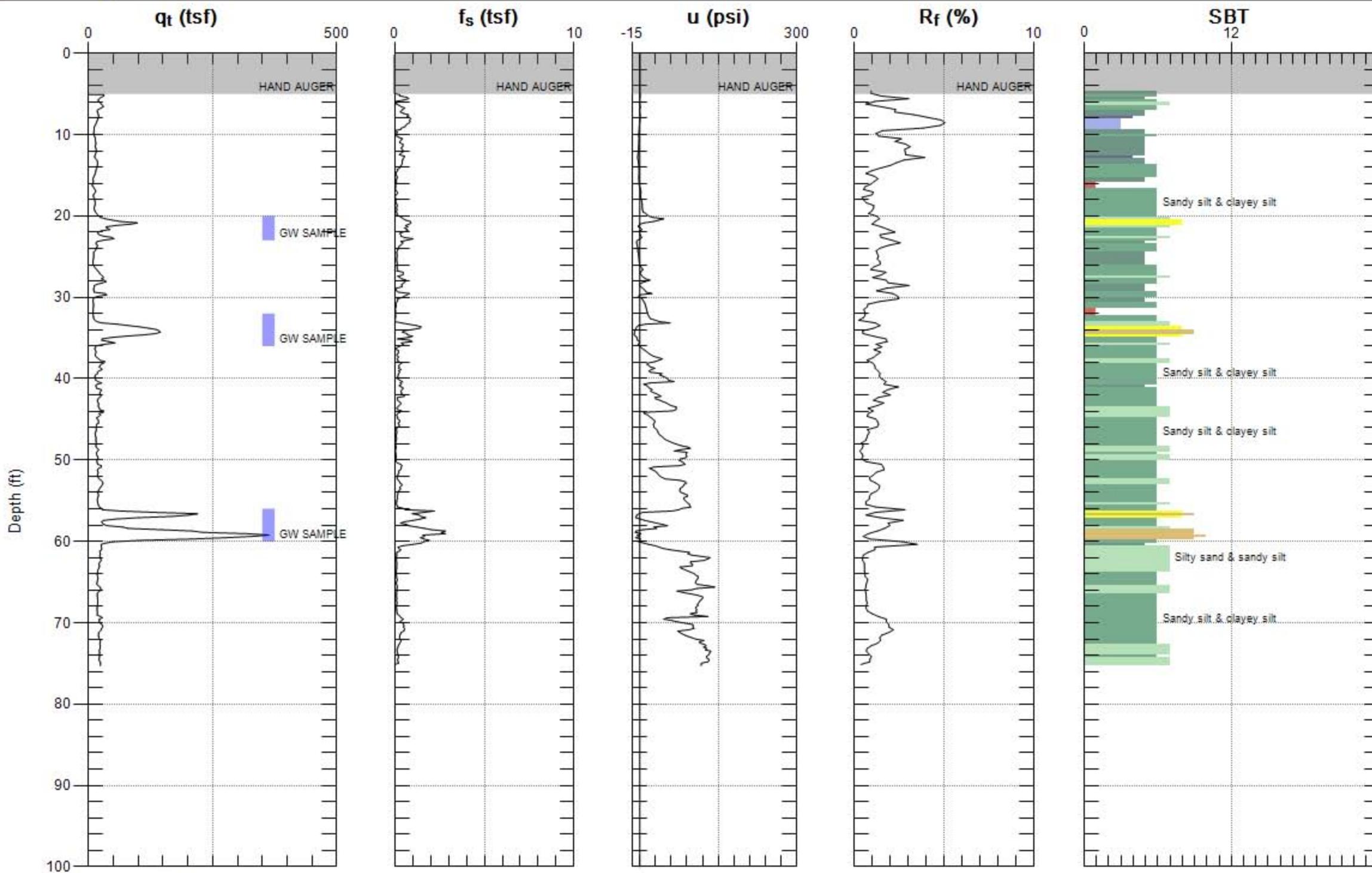
Max. Depth: 32.480 (ft)
 Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



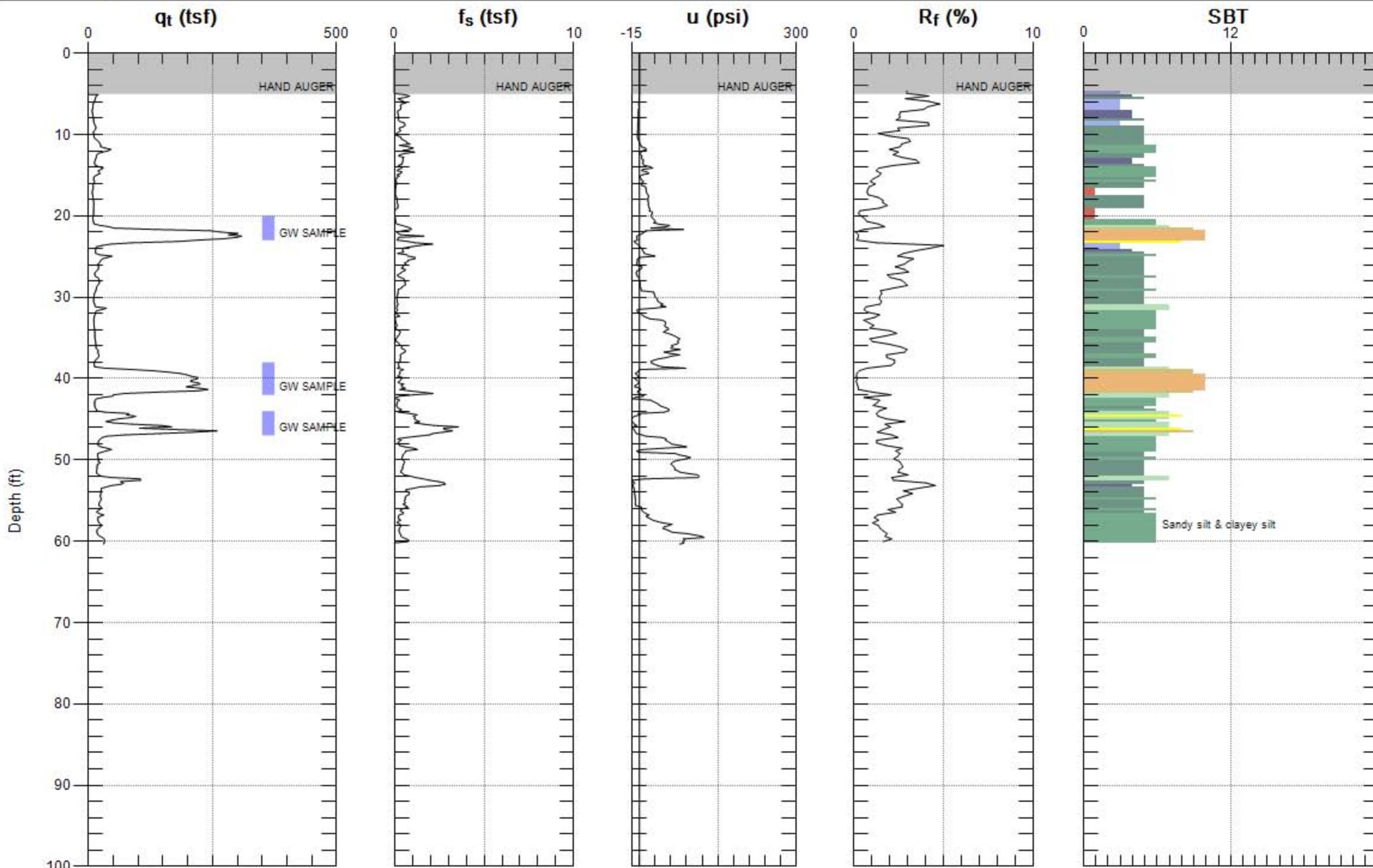
Max. Depth: 75.295 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



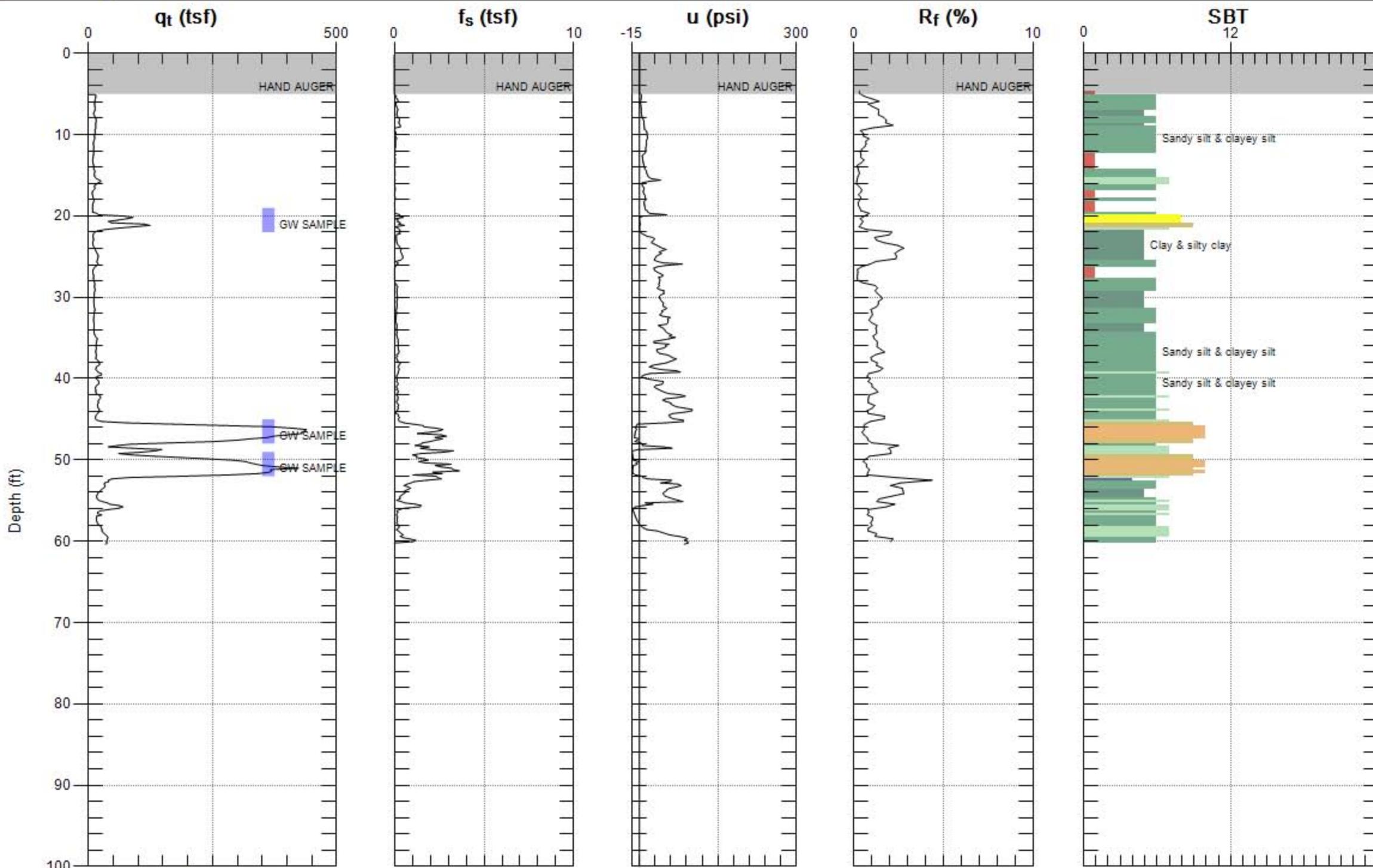
Max. Depth: 75.295 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



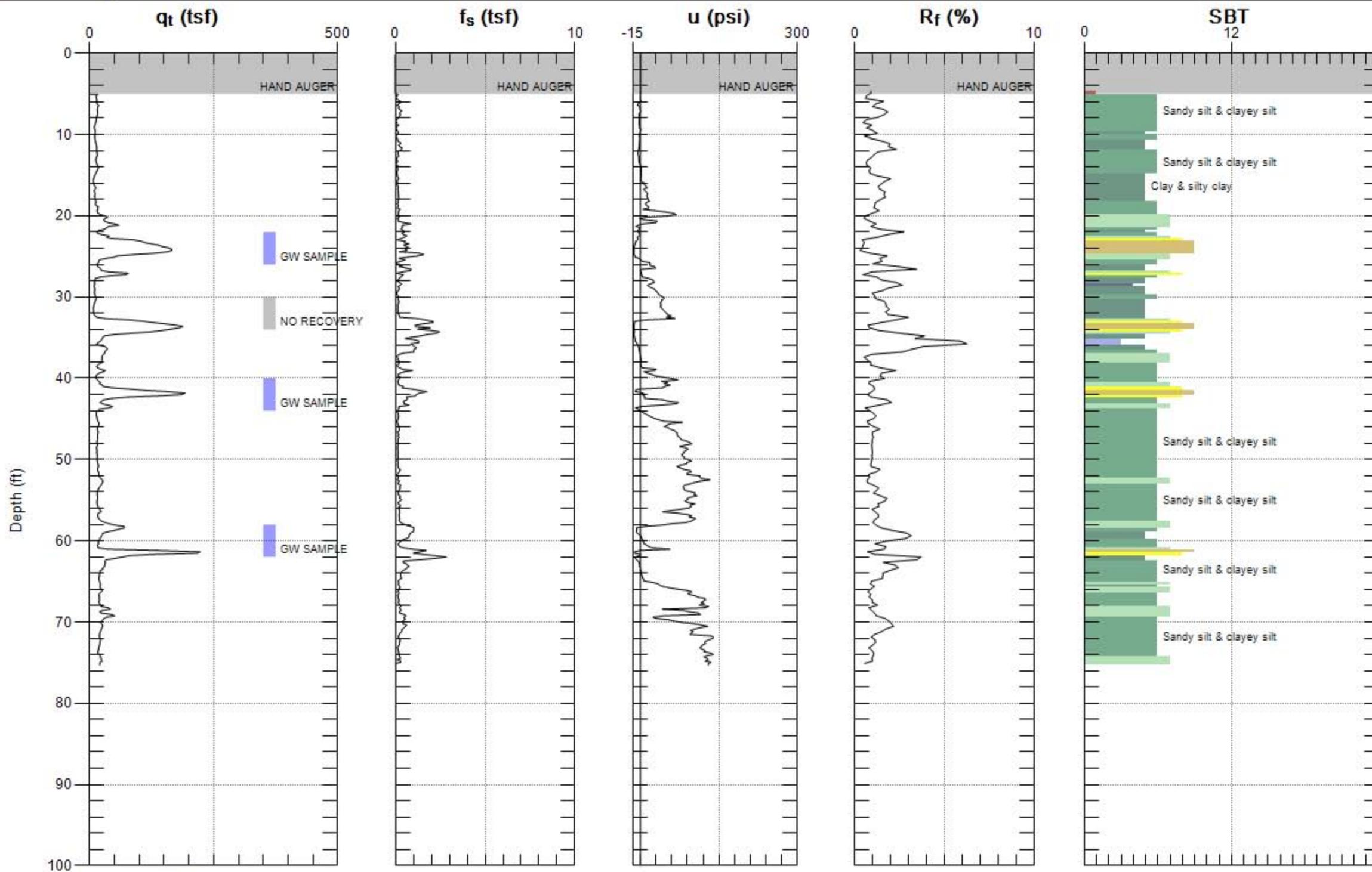
Max. Depth: 60.367 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



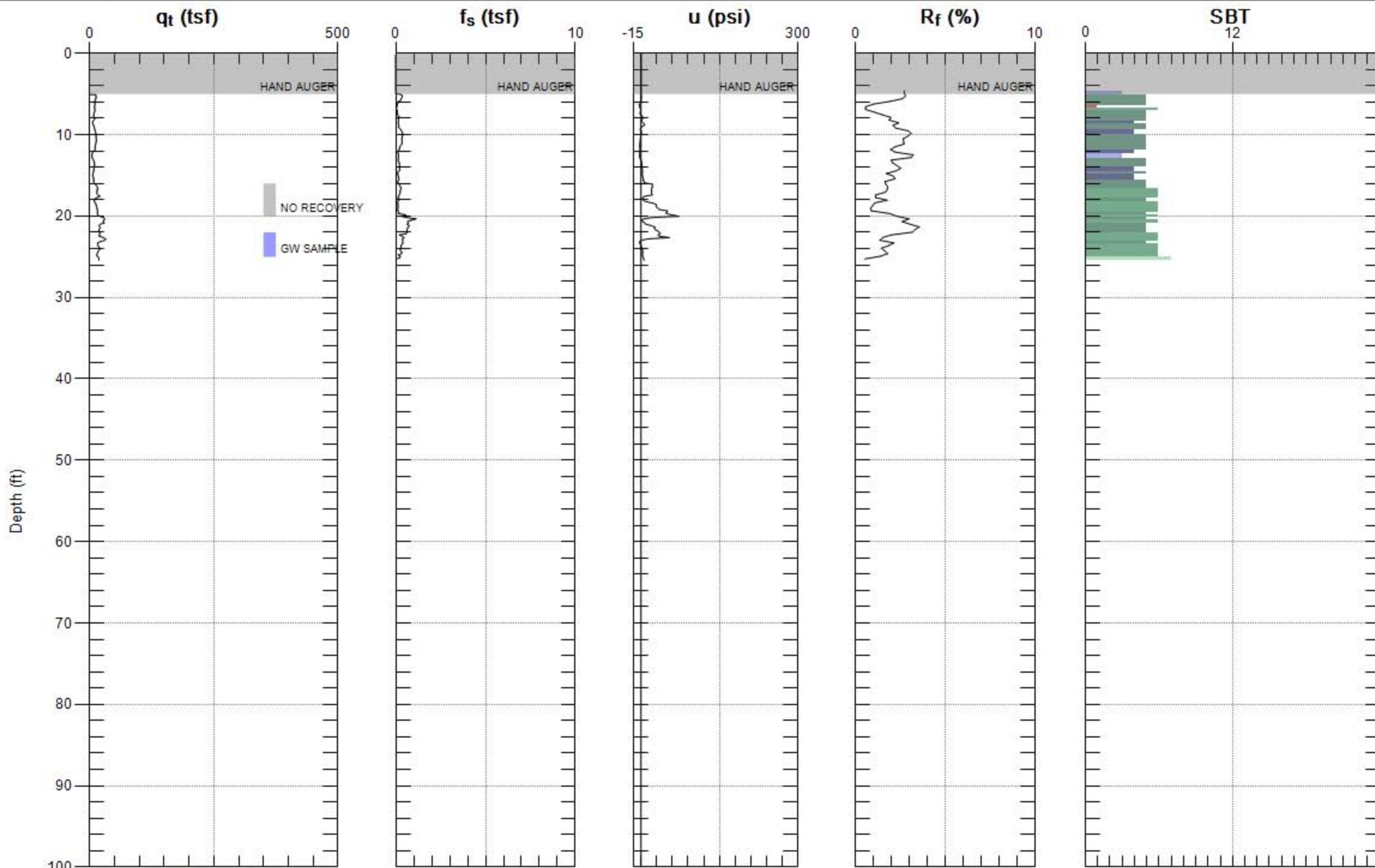
Max. Depth: 60.367 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



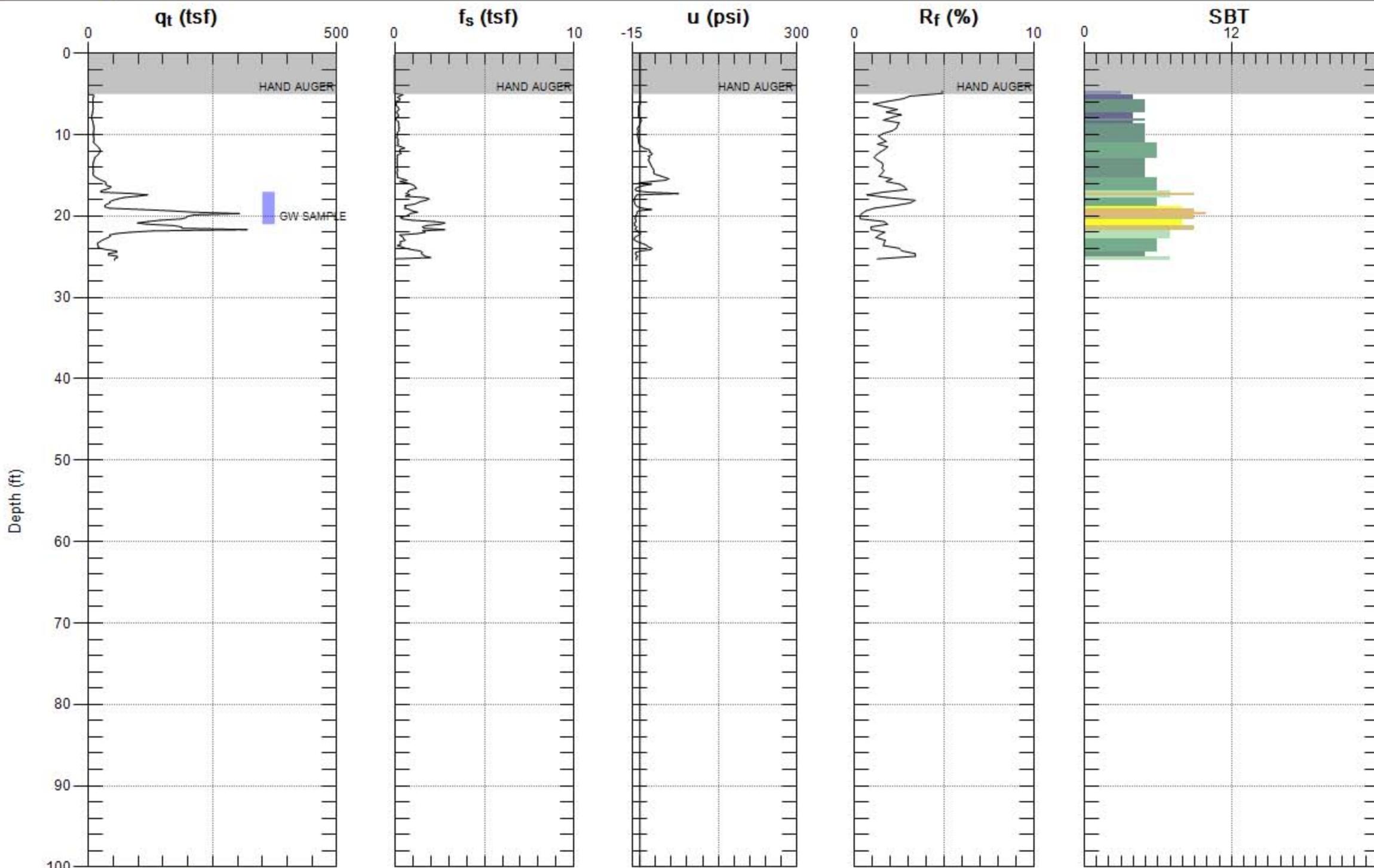
Max. Depth: 75.295 (ft)
 Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



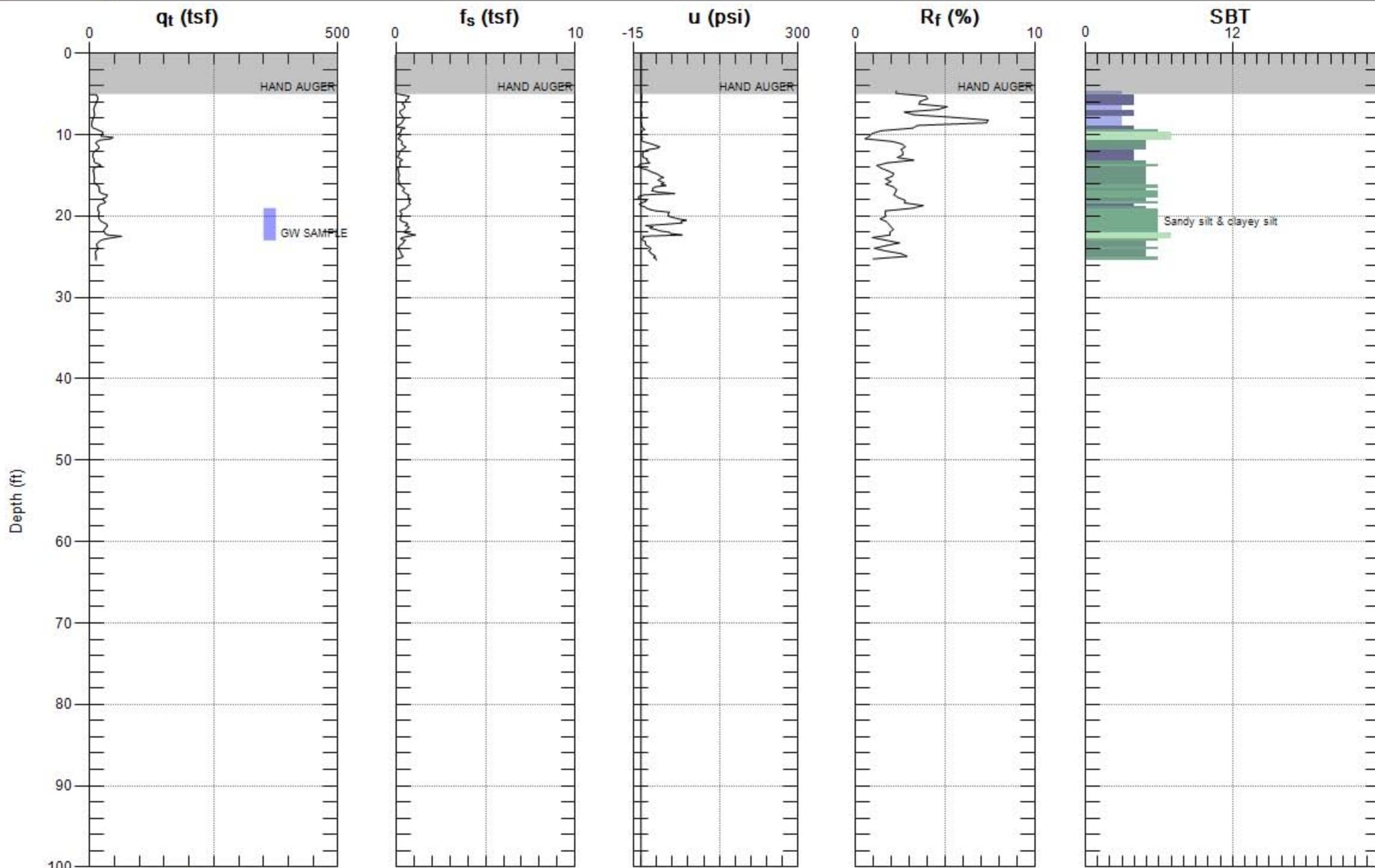
Max. Depth: 25.427 (ft)
 Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



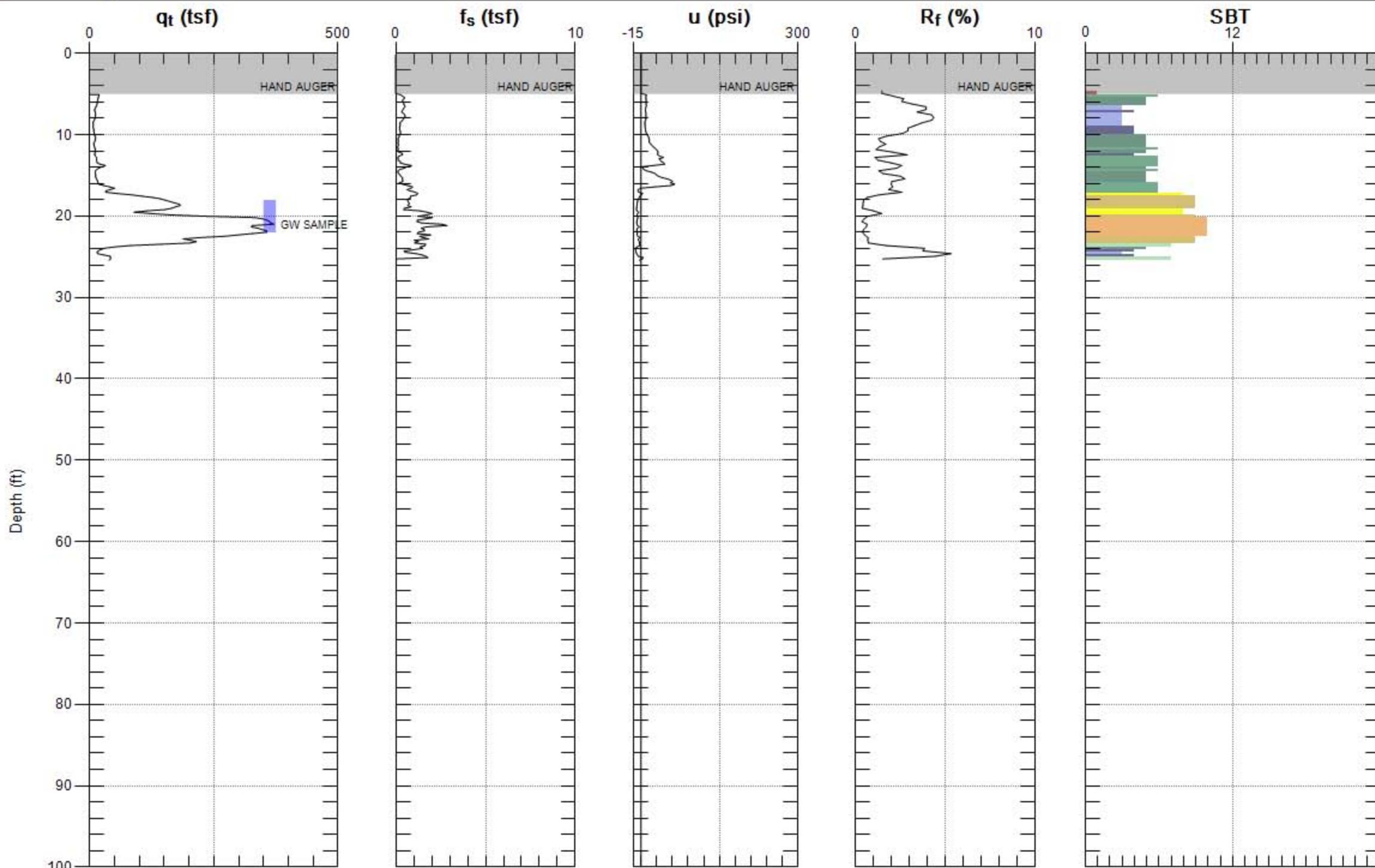
Max. Depth: 25.427 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



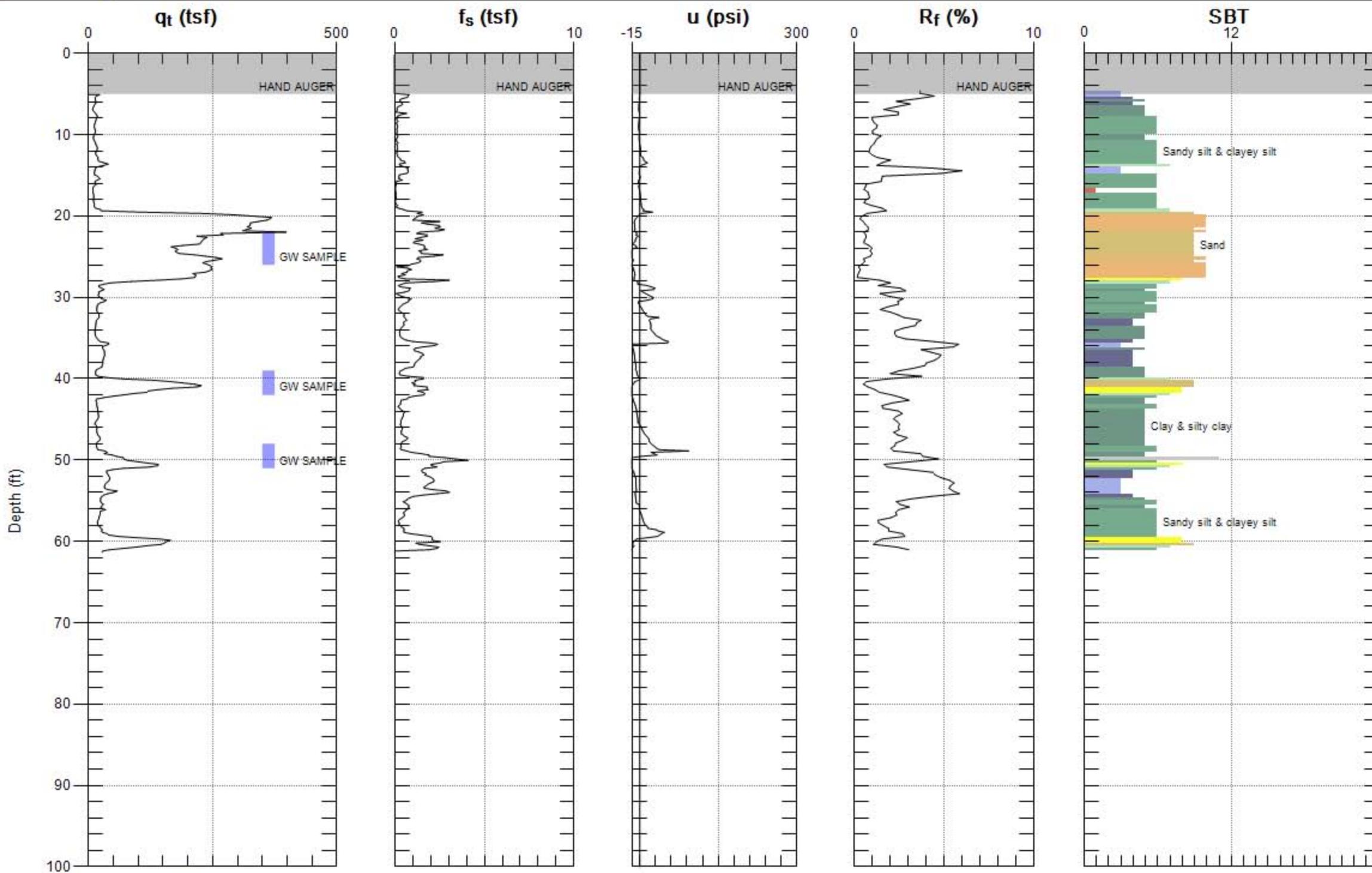
Max. Depth: 25.427 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



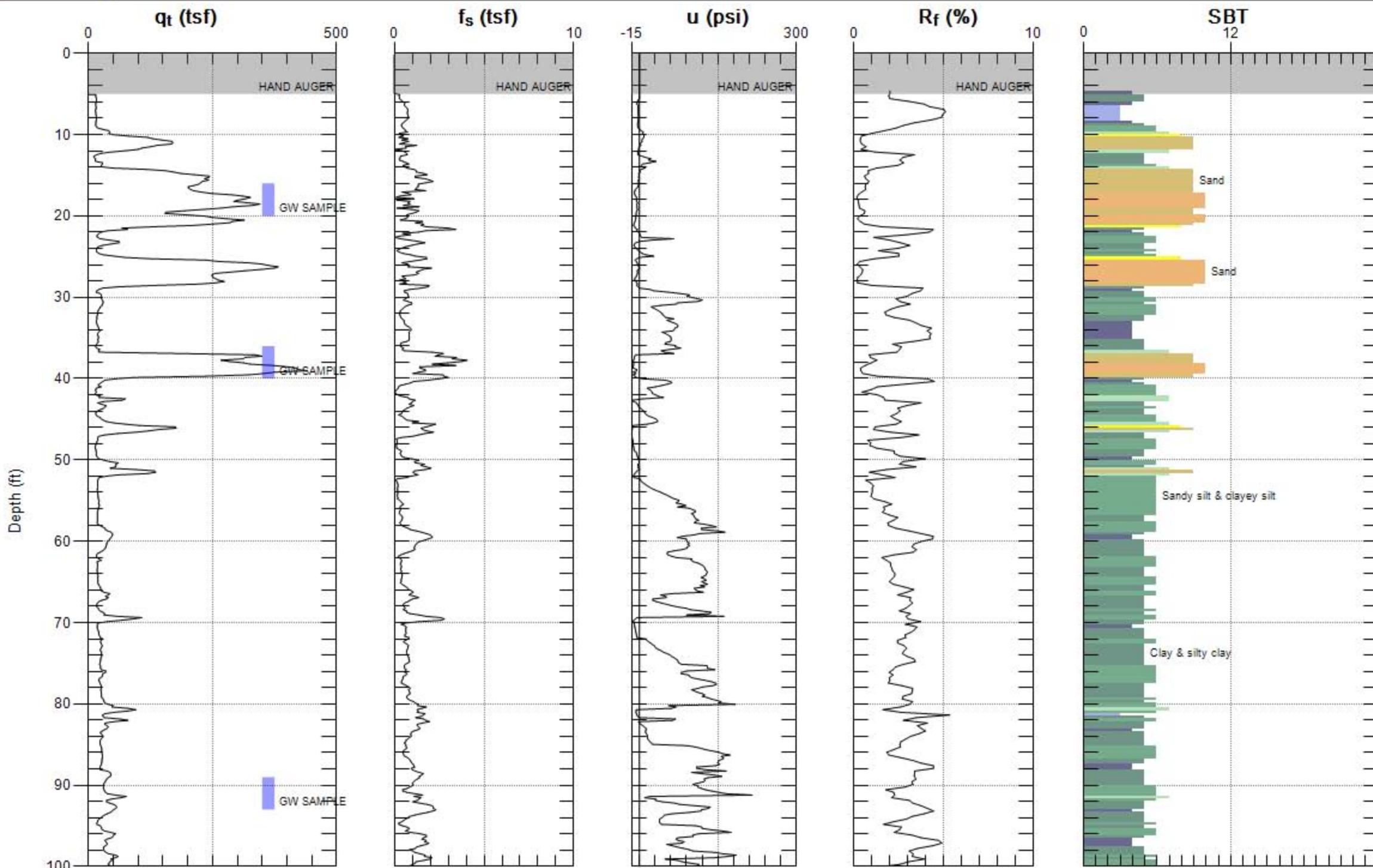
Max. Depth: 25.427 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



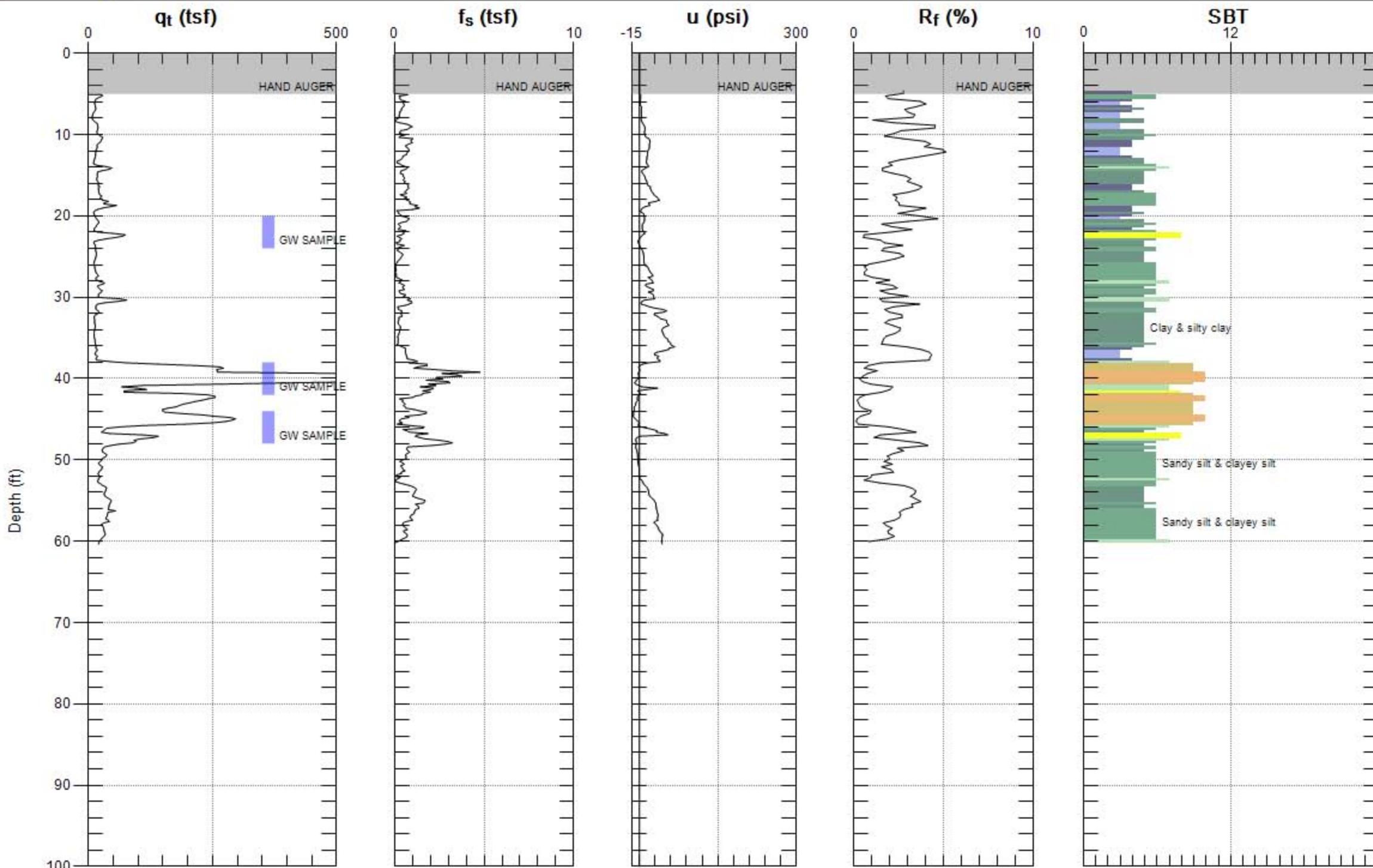
Max. Depth: 61.352 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



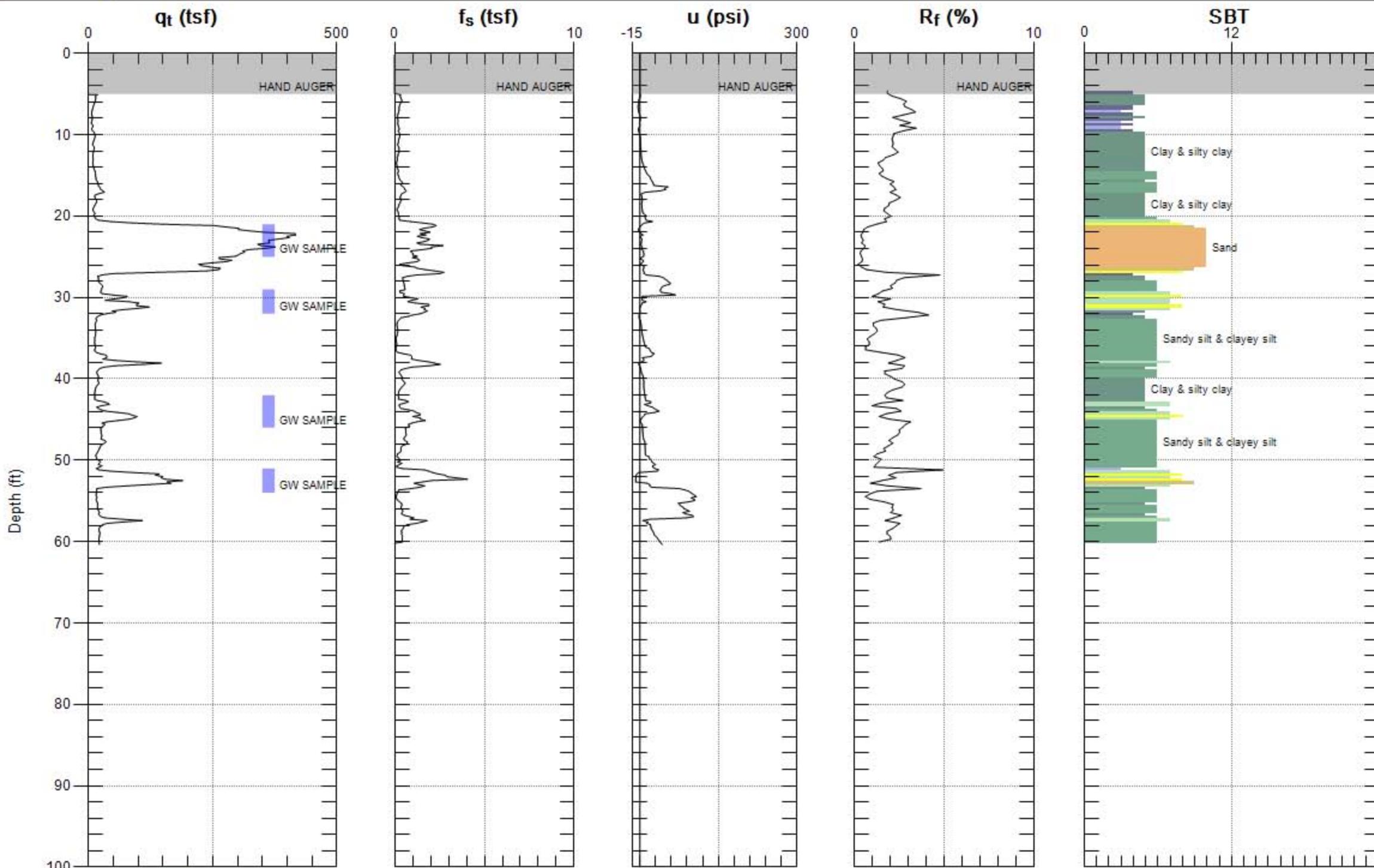
Max. Depth: 100.394 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



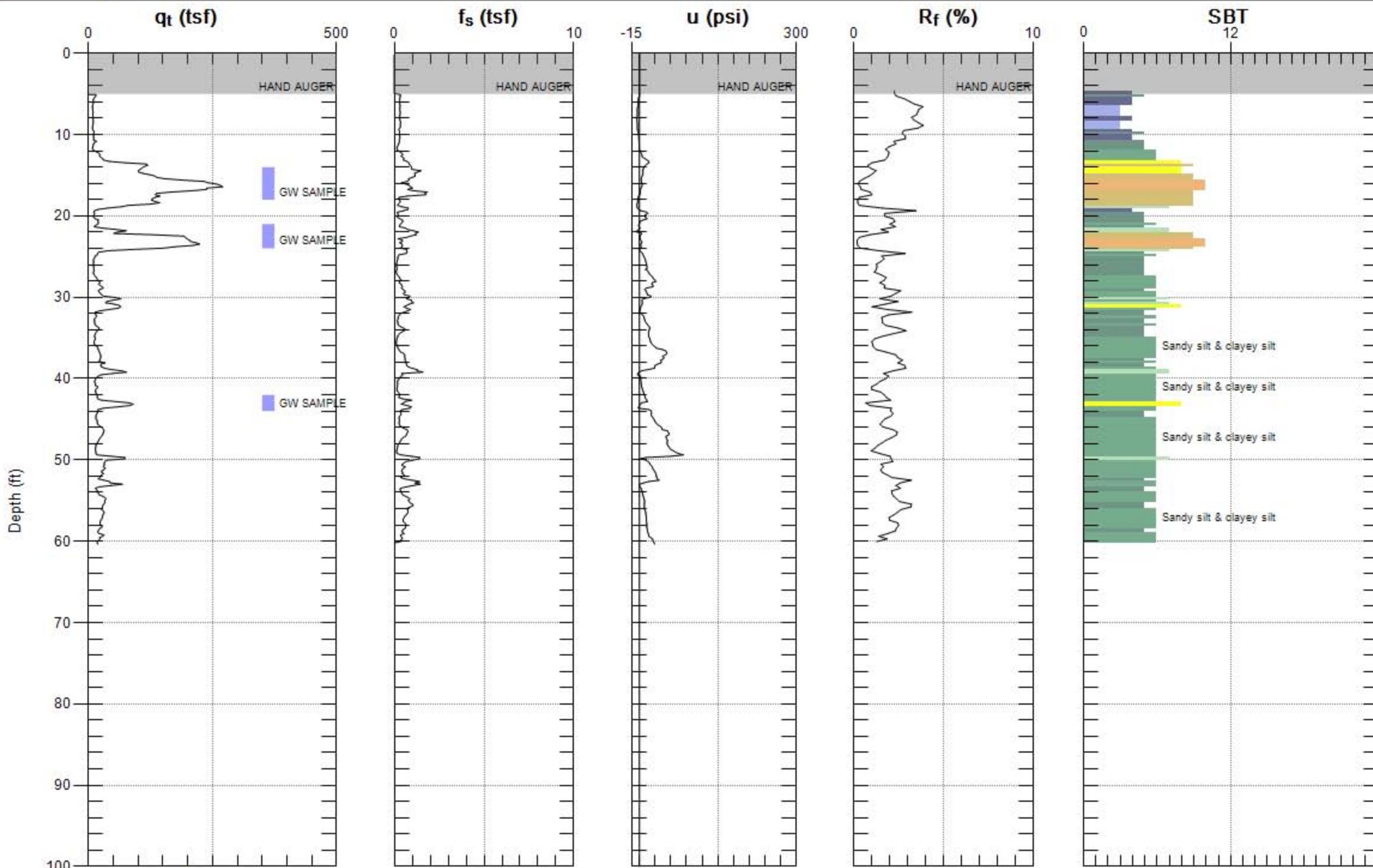
Max. Depth: 60.367 (ft)
 Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



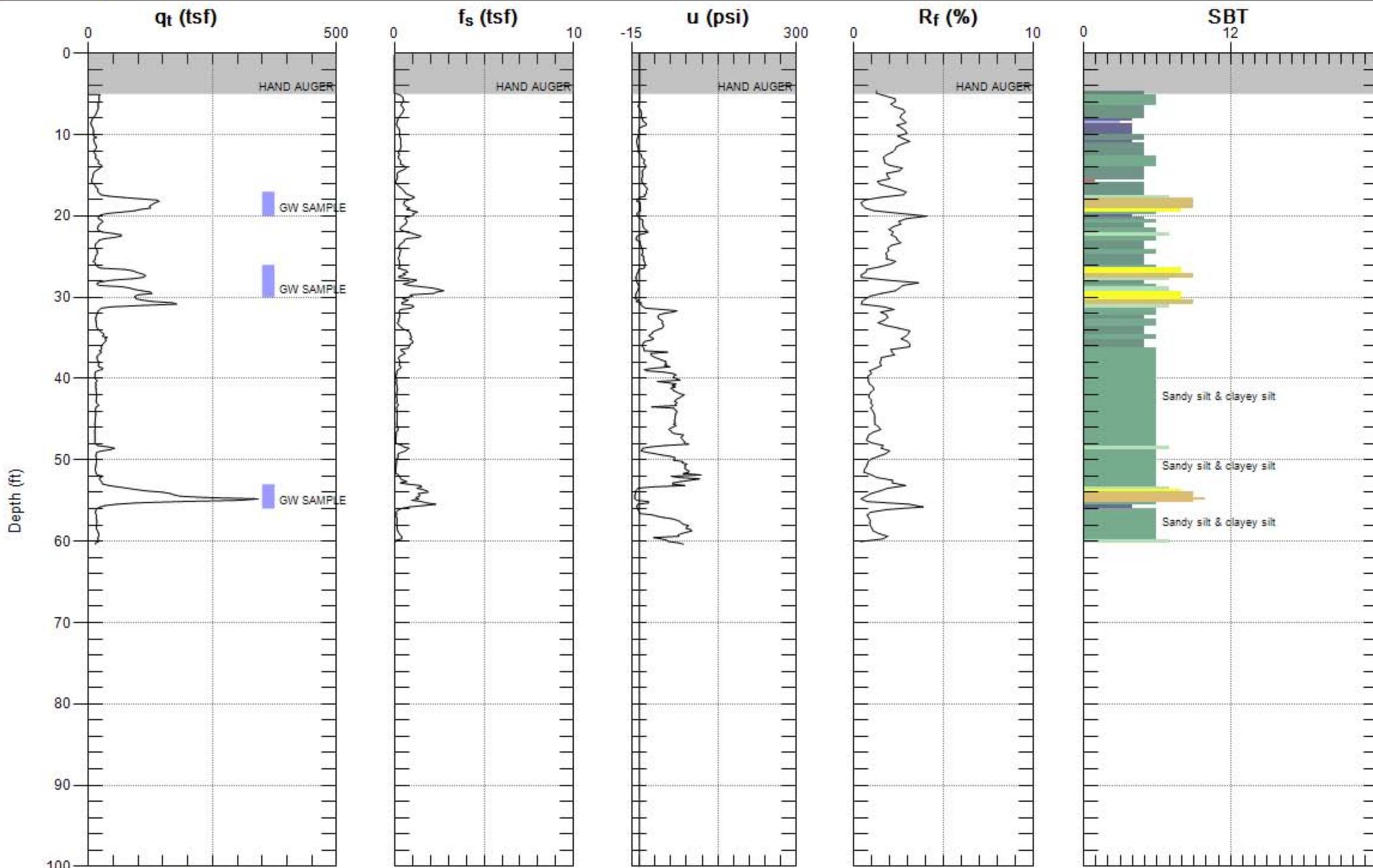
Max. Depth: 60.367 (ft)
 Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



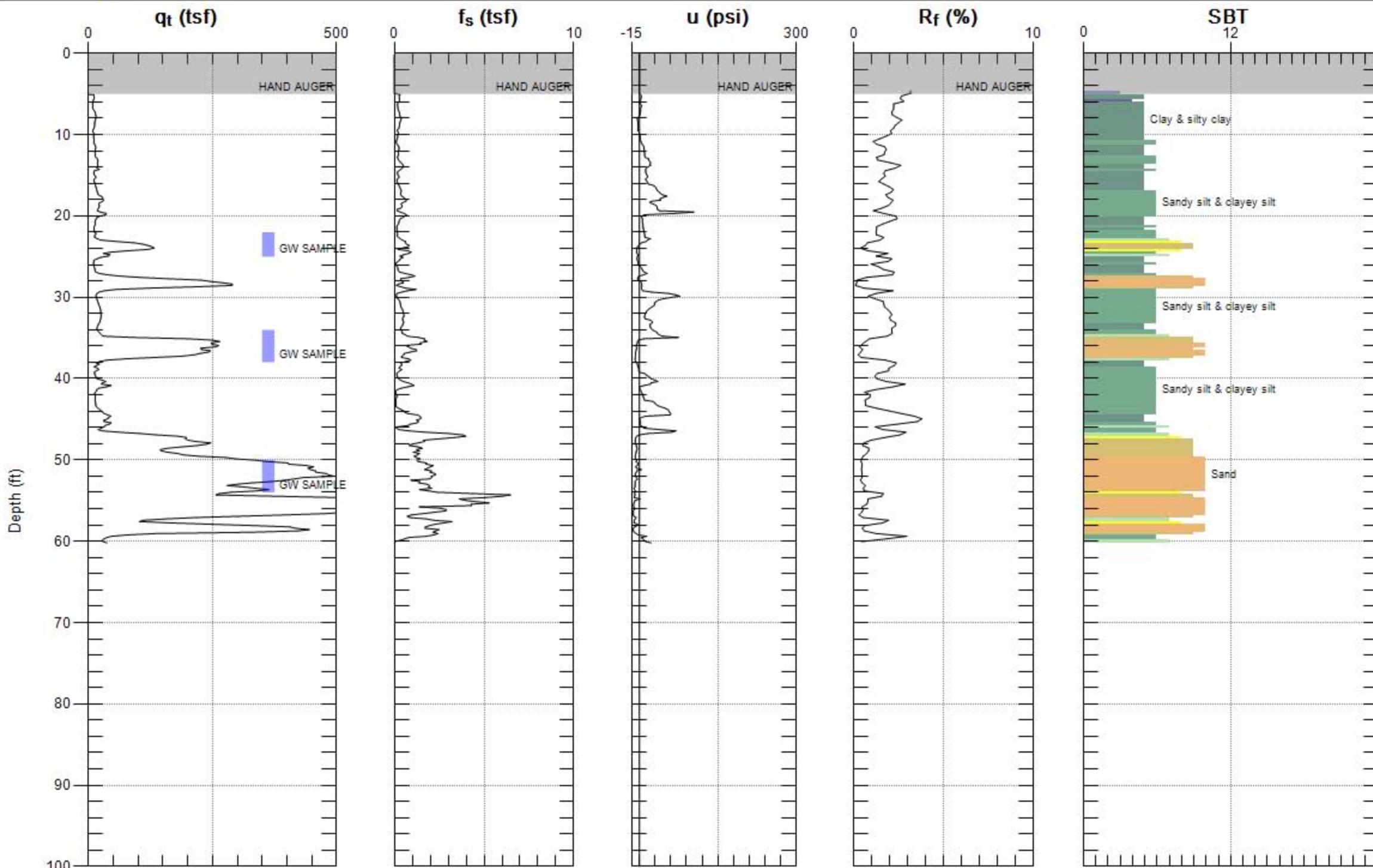
Max. Depth: 60.367 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



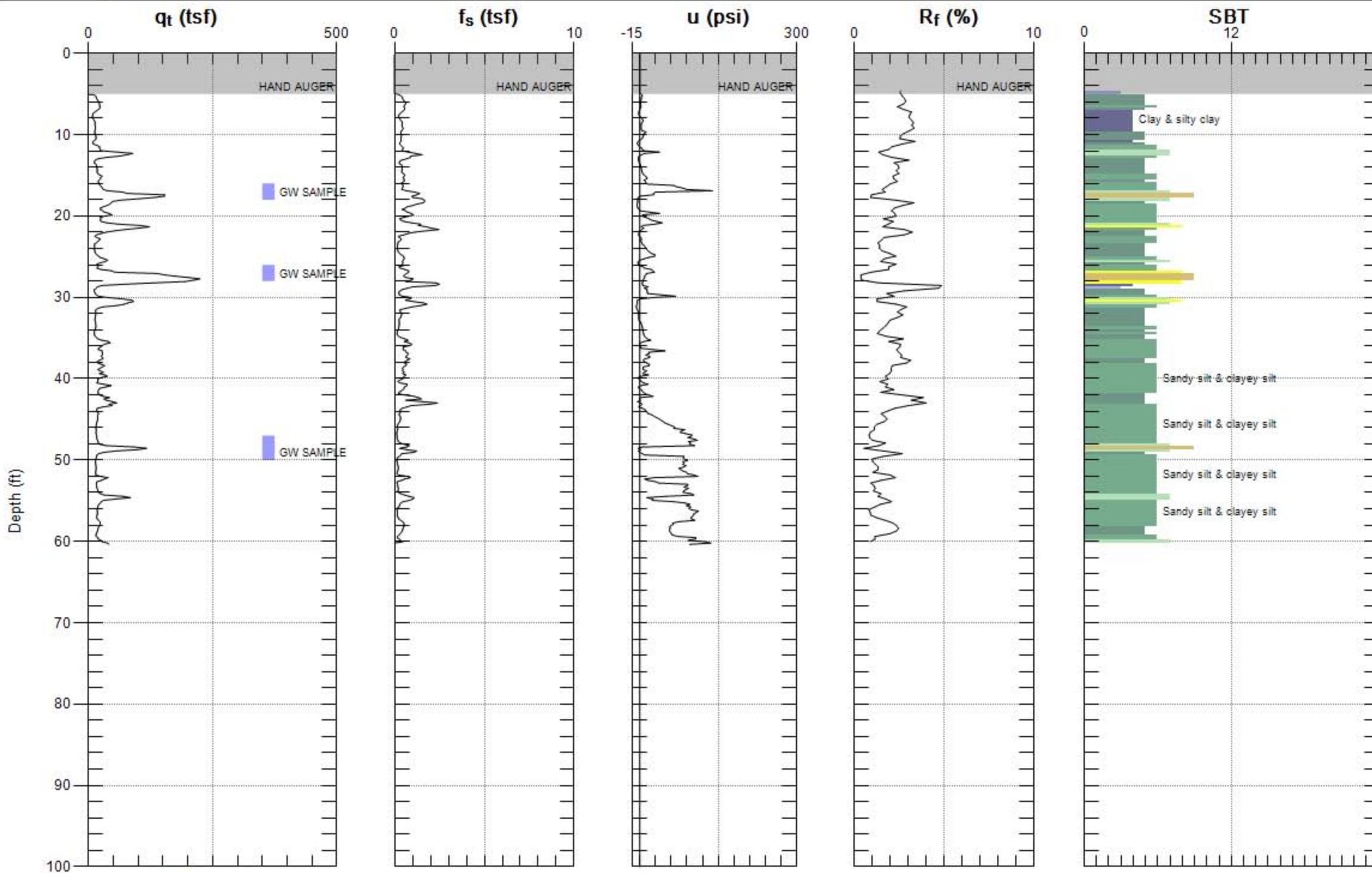
Max. Depth: 60.367 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



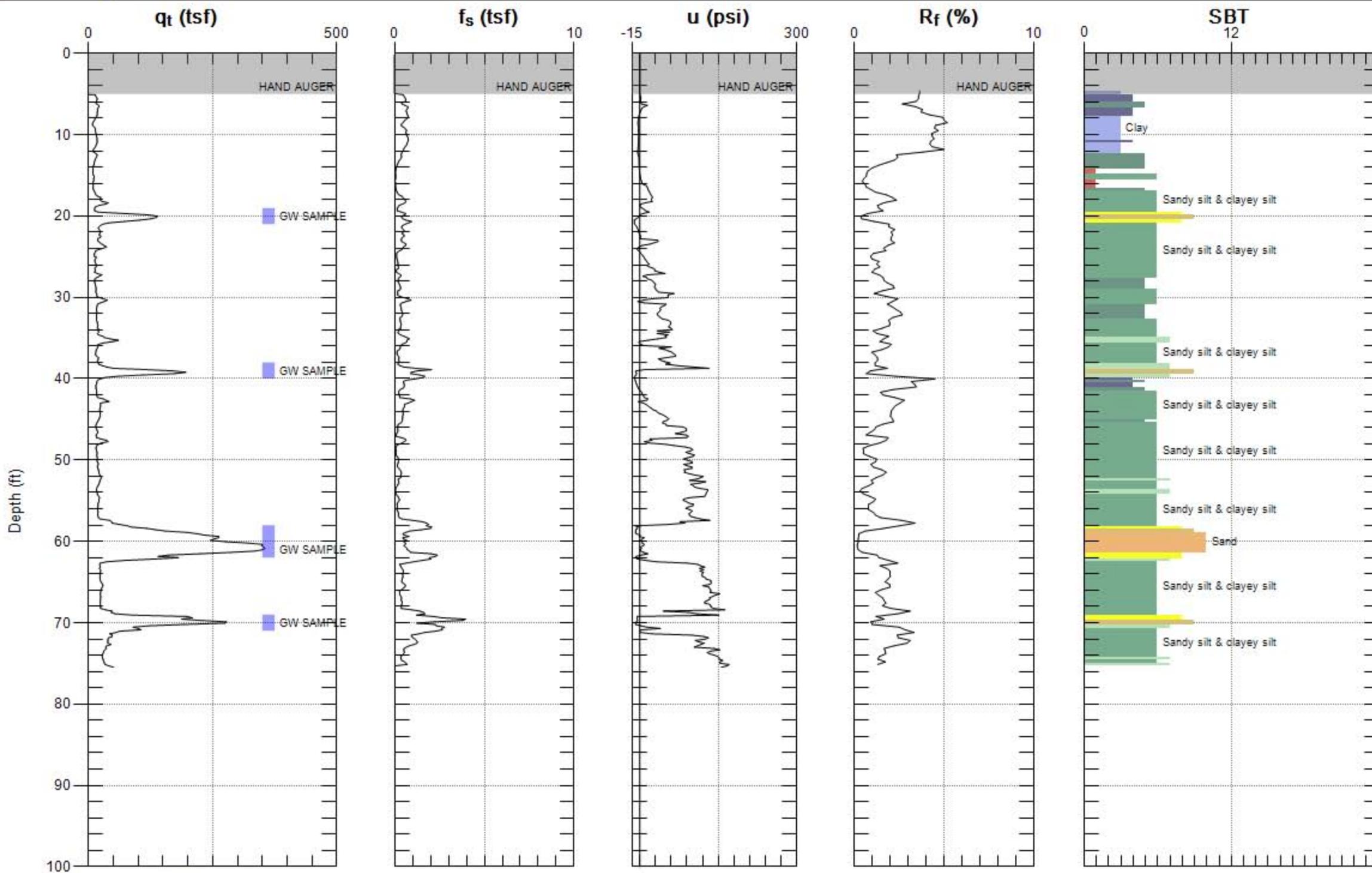
Max. Depth: 60.203 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



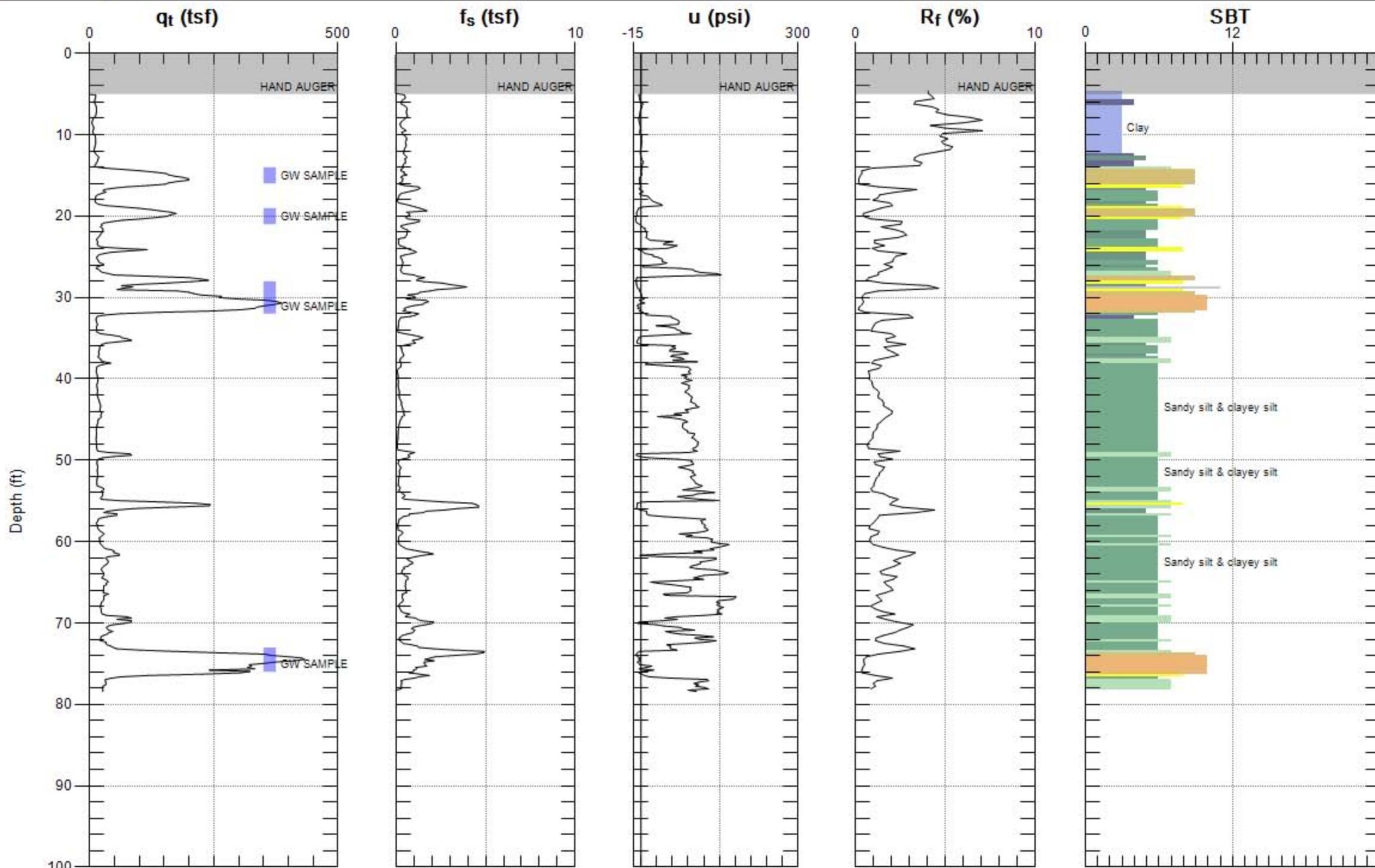
Max. Depth: 60.367 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



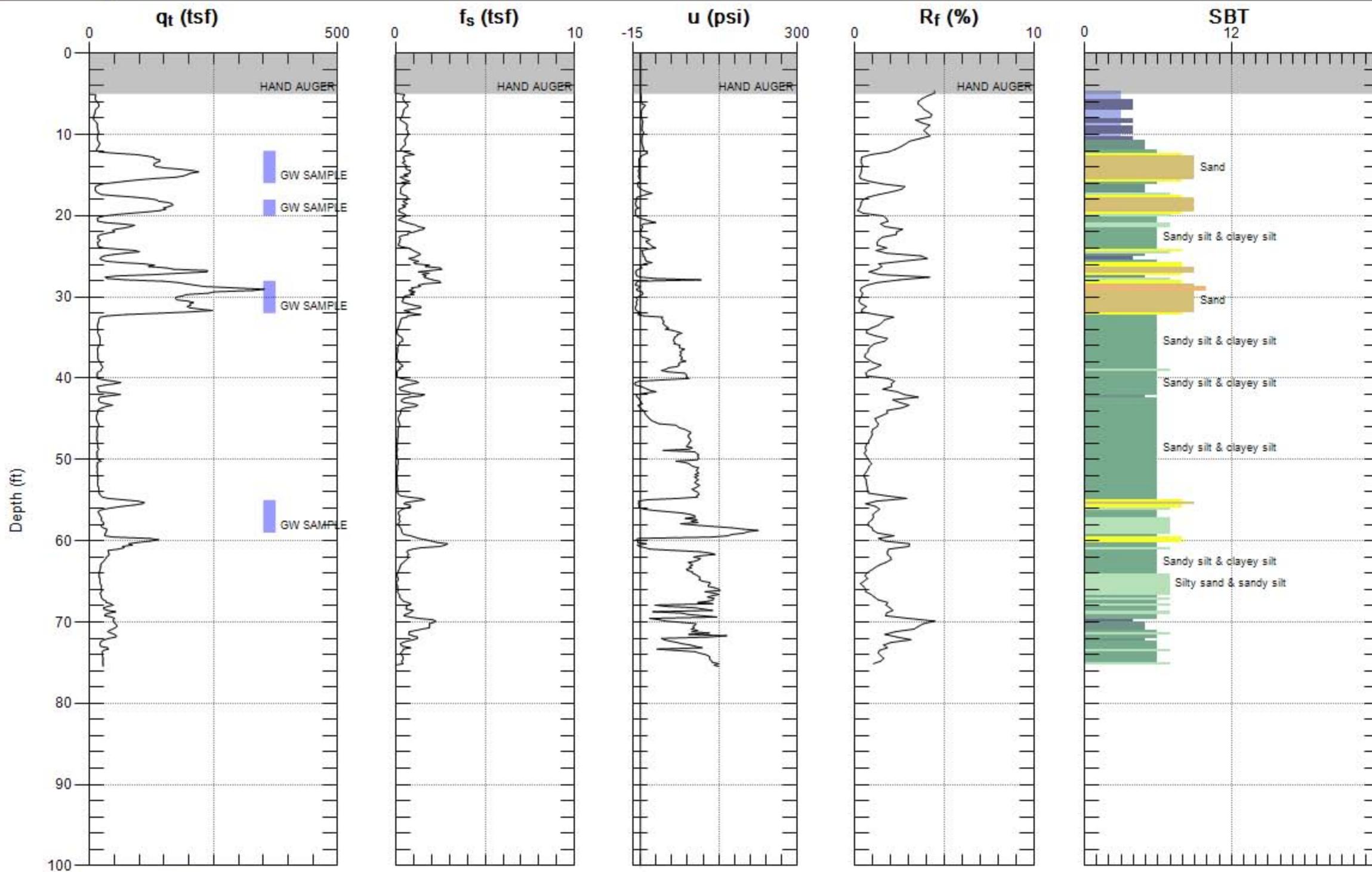
Max. Depth: 75.459 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



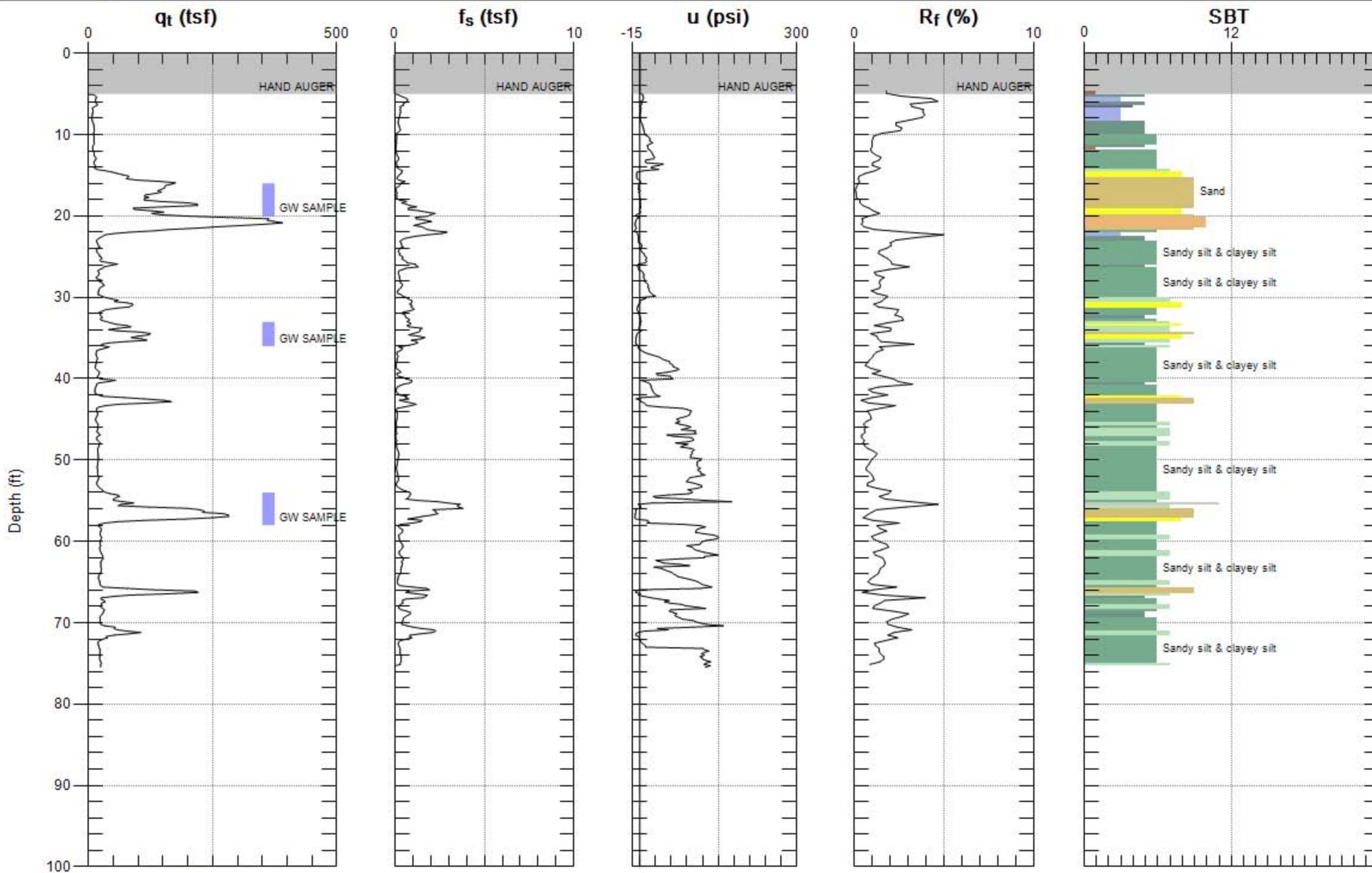
Max. Depth: 78.412 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



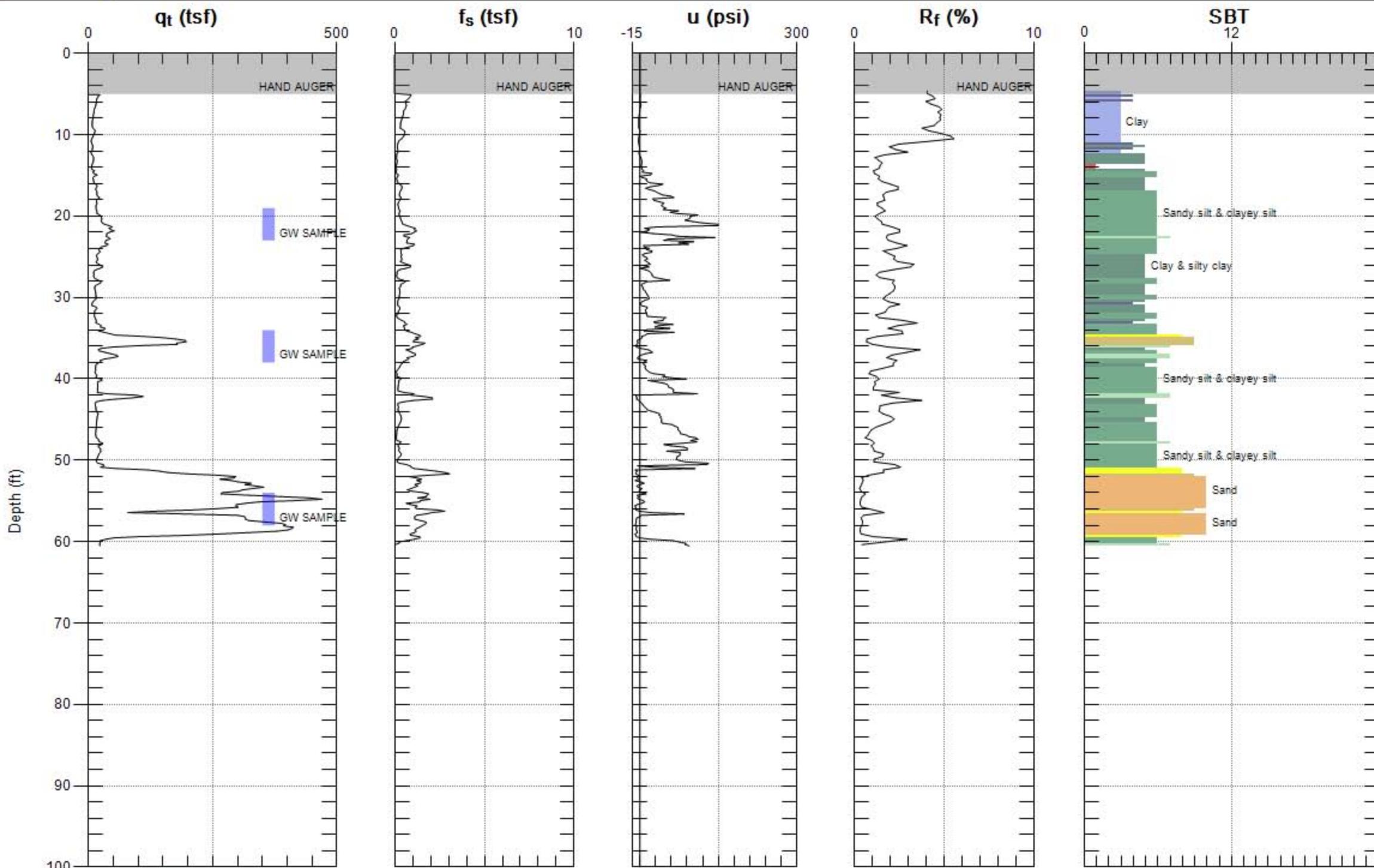
Max. Depth: 75.459 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



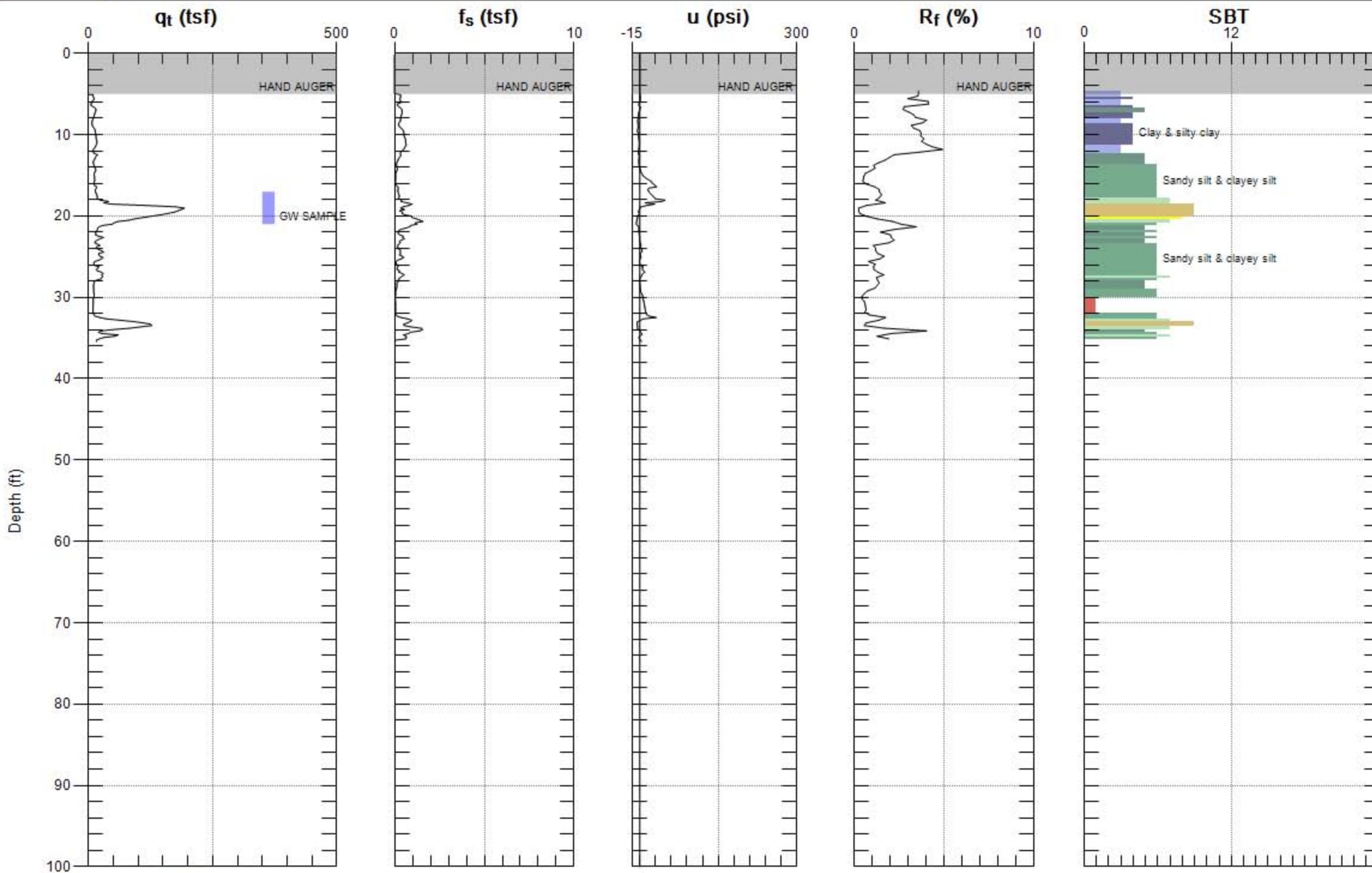
Max. Depth: 75.459 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



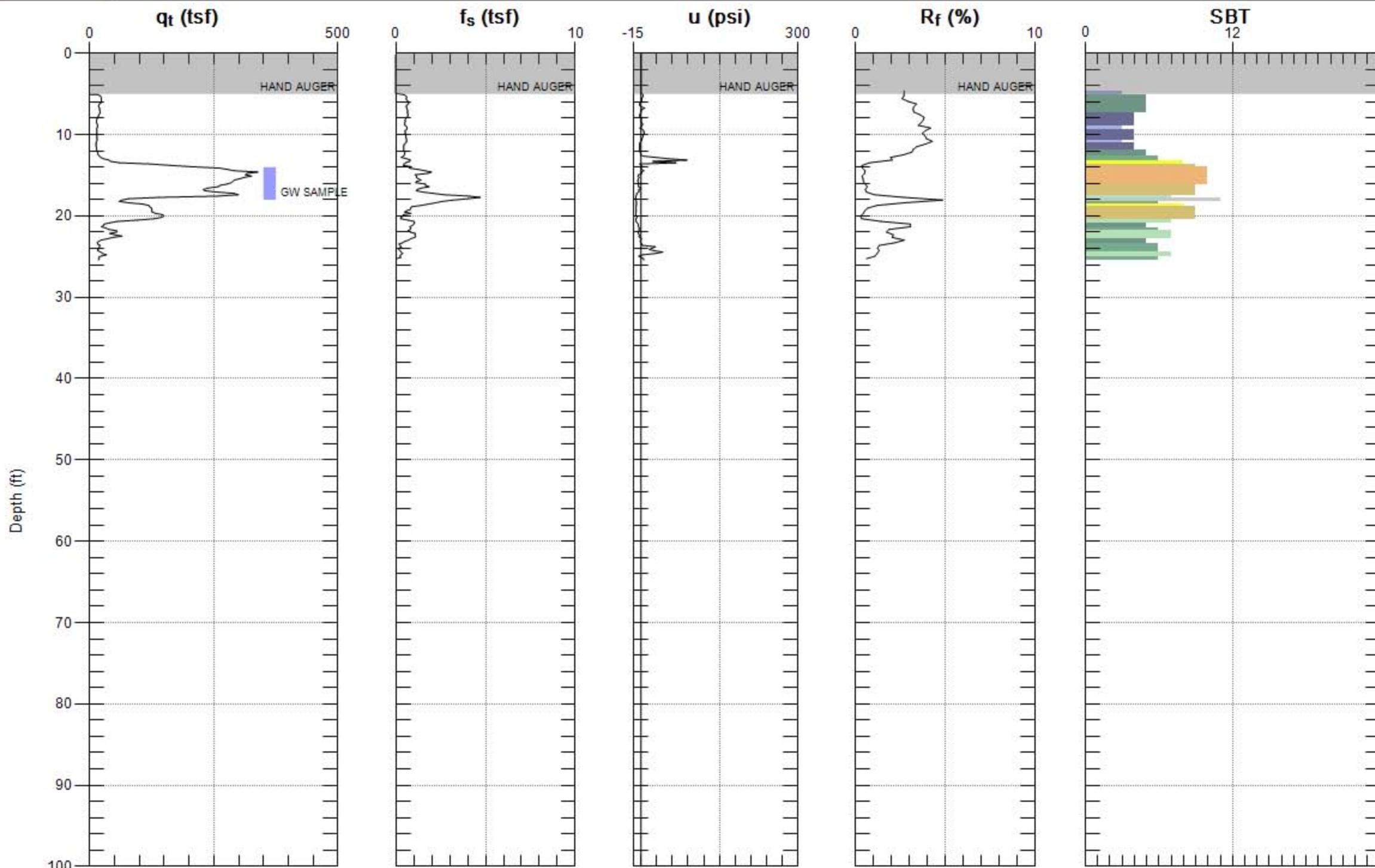
Max. Depth: 60.531 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



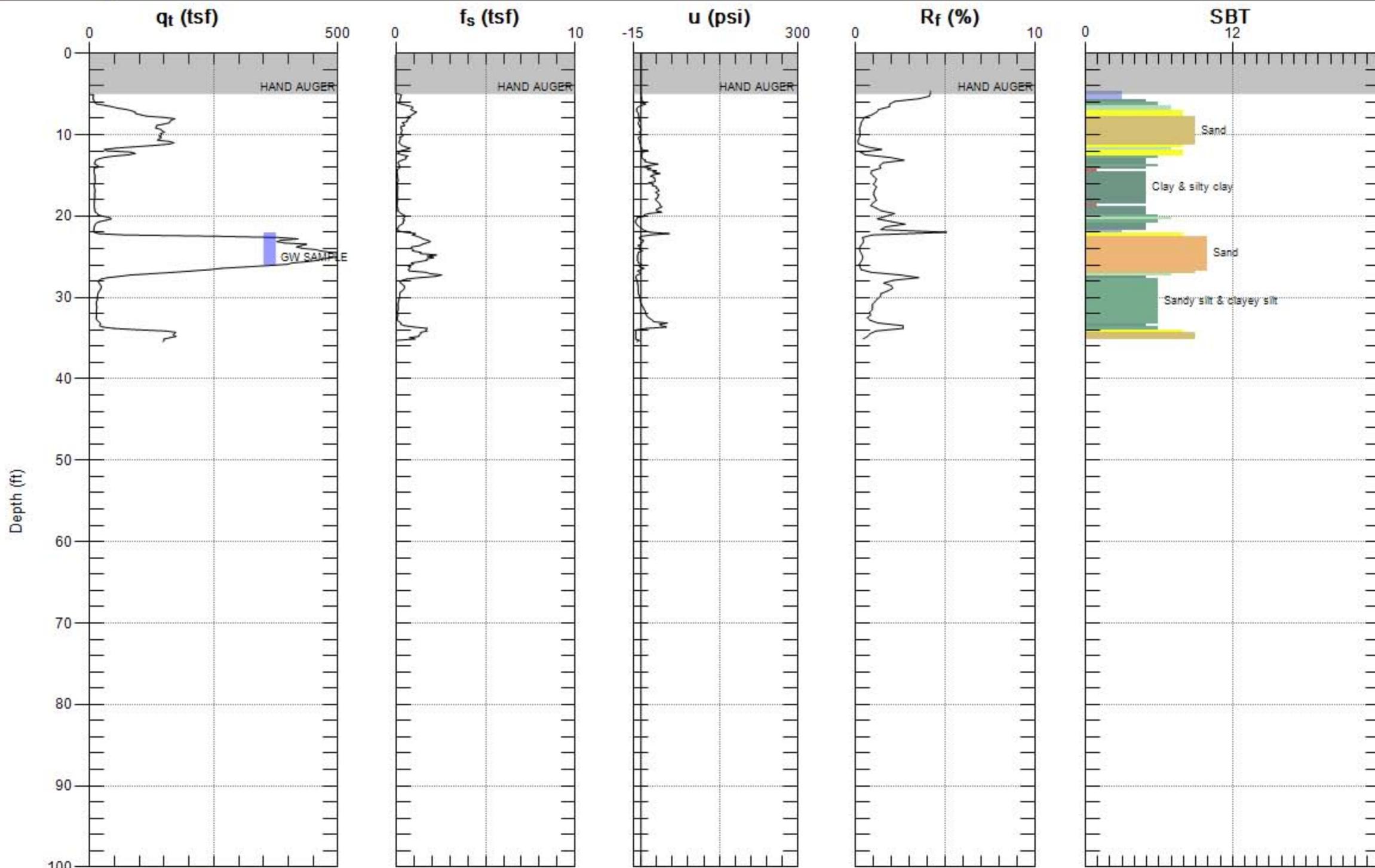
Max. Depth: 35.433 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



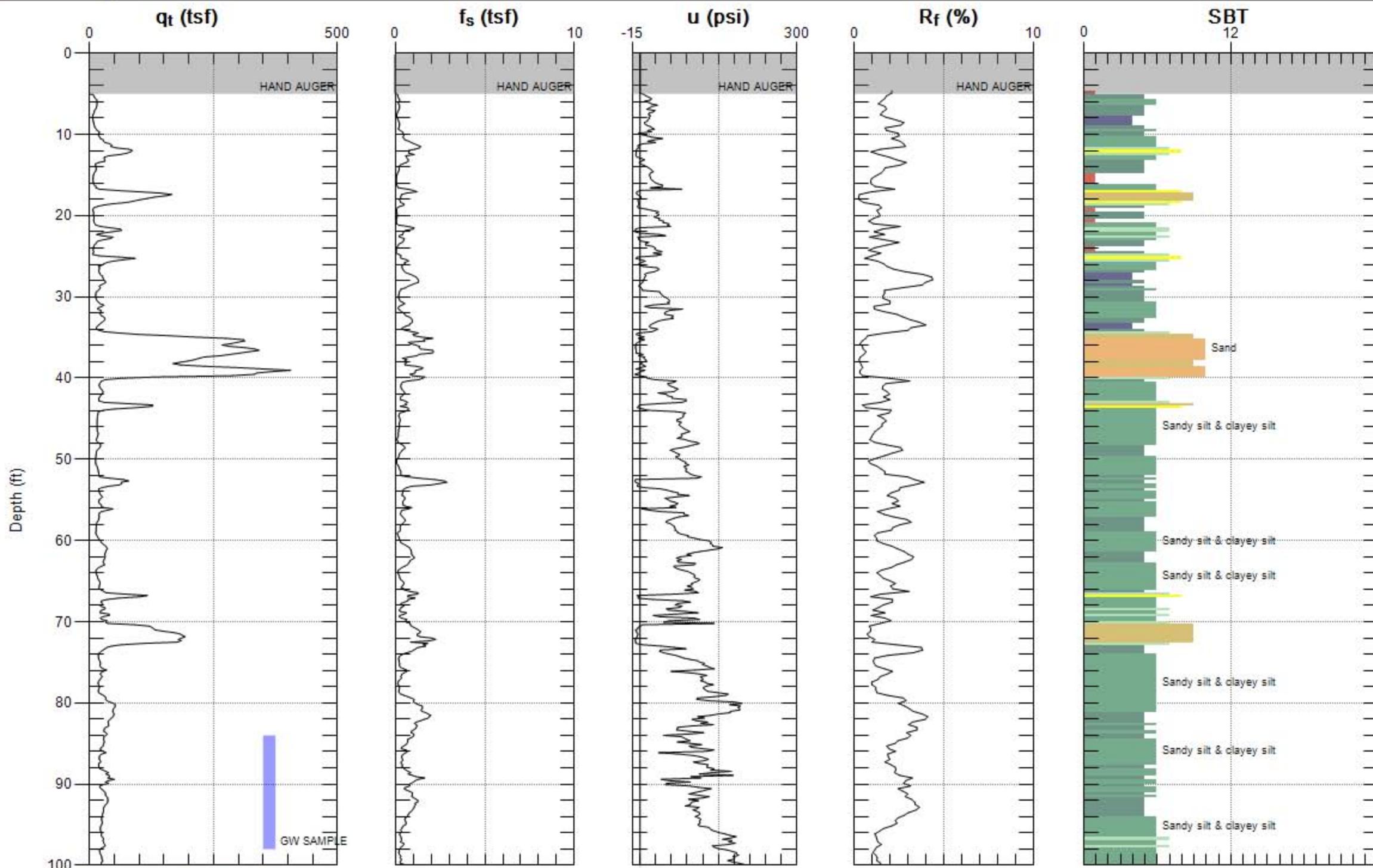
Max. Depth: 25.427 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



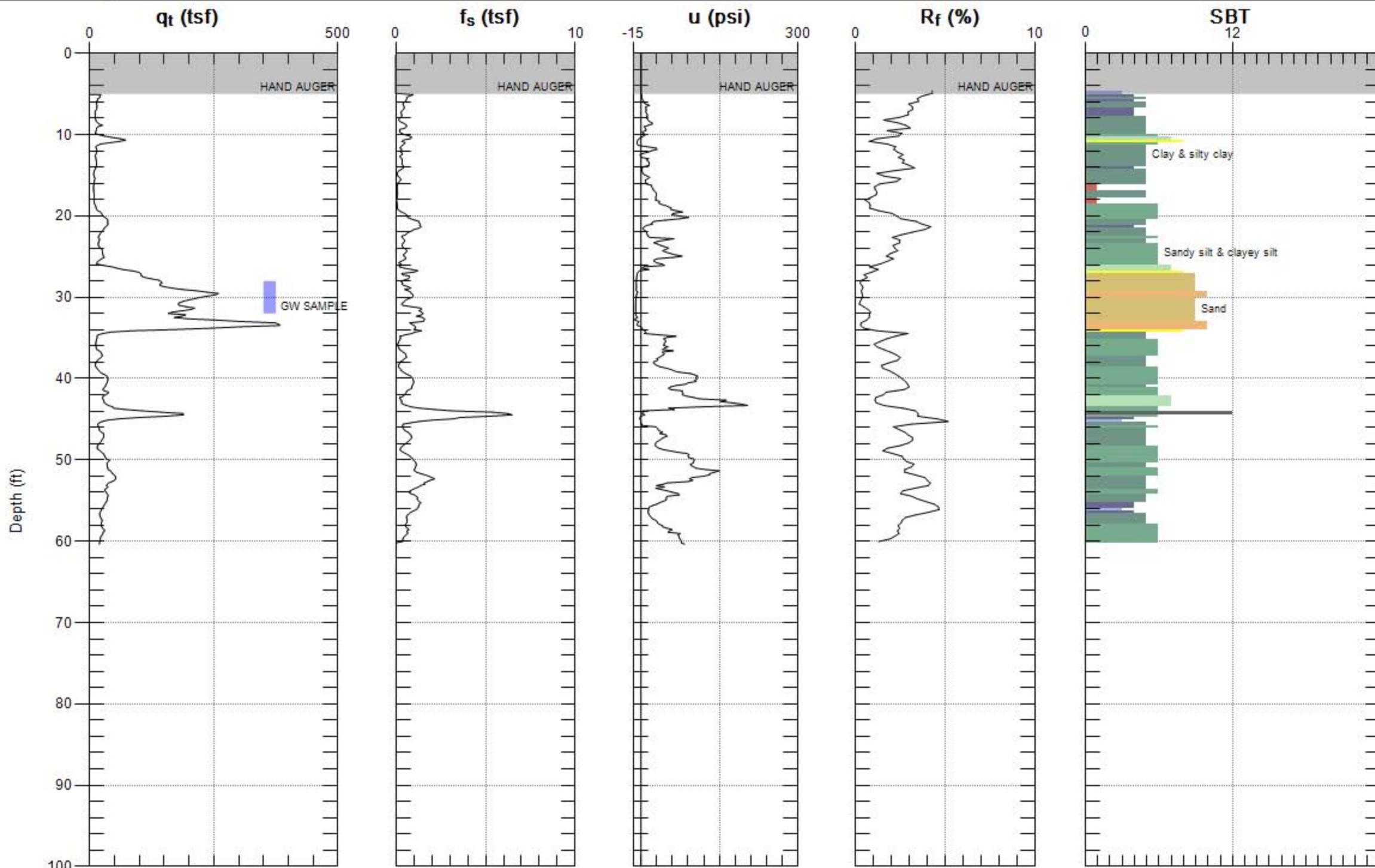
Max. Depth: 35.433 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



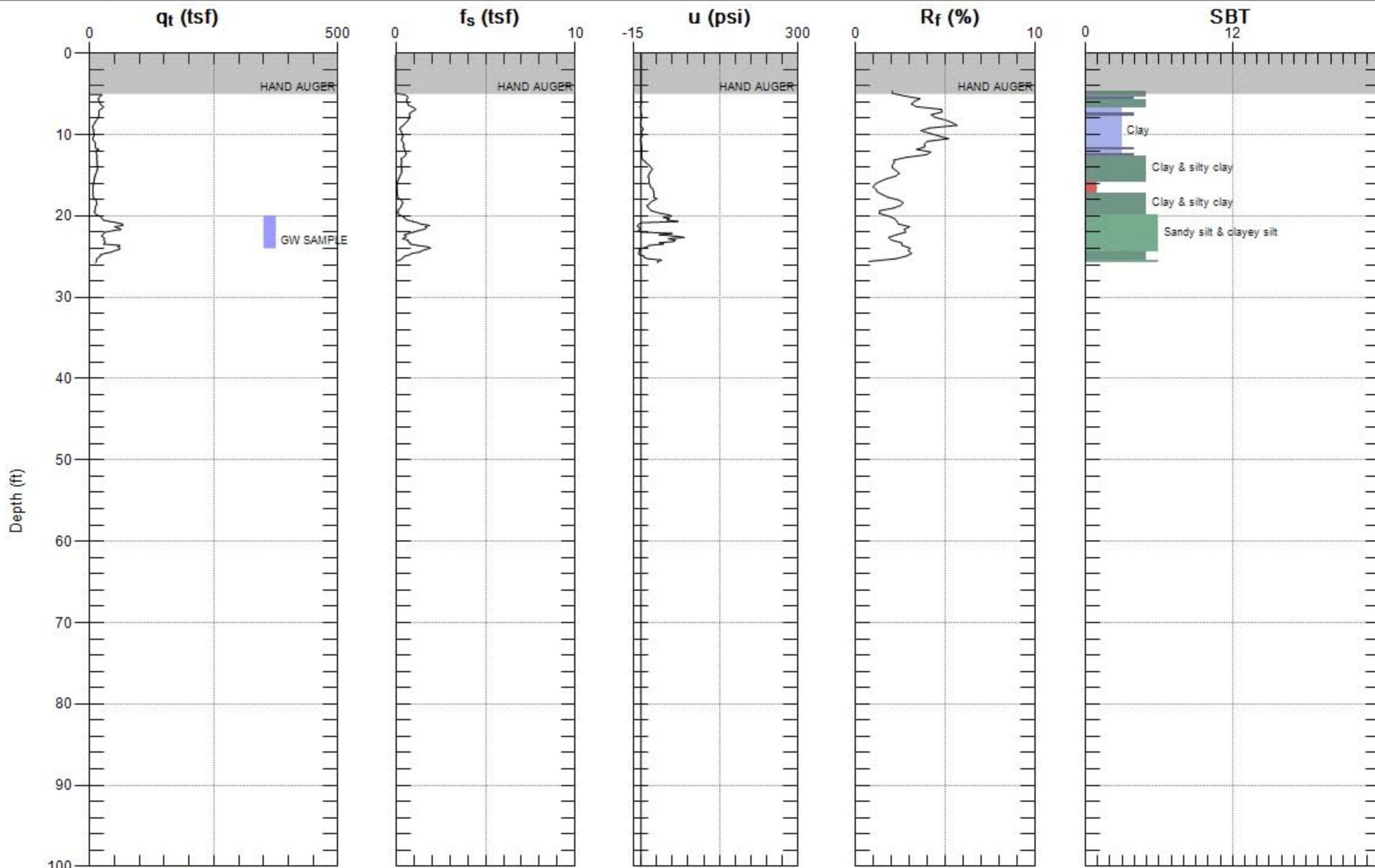
Max. Depth: 100.394 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



Max. Depth: 60.367 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



Max. Depth: 25.755 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

APPENDIX D

Geologic Logs

GS FORM:
OAKLAND

LOG OF SB-1

DEPTH (ft)	MATERIAL DESCRIPTION <small>SOIL NAME (USCS SYMBOL): Color, Moisture, Grain Size and Percentage, Plasticity, Consistency/Density, Other (Odor, Dry Strength, Mineral Content)</small>	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES				TIME	COMMENTS
				NUMBER	TYPE	RECOVERY (%)	PID READING (ppm)		
	Fat CLAY (CH): very dark brown (10YR 2/2), moist, fines [0, 0, 100], high plasticity, medium stiff.								Hand augered 0-5'
	Lean CLAY (CL): brown (10YR 4/8), moist, fines [0, 0, 100], medium plasticity, soft.								
5	Medium stiff at 6'					0.0	9:20		
	Fat CLAY (CH): dark grey (10YR 4/1), moist, fines with trace coarse sand [0, tr, 100], medium to high plasticity, medium stiff.					0.0	9:31		
10	Sandy CLAY (CL): grayish brown (10YR 5/2), wet, fines with fine sand, trace of coarse sand [0, 45, 55], medium plasticity, very soft.					0.0	9:38		▽ Depth to groundwater = 10 ft
	5% coarse grained sand at 12'								
	Trace of coarse grained sand at 13'								
15	Sandy CLAY (CL): grayish brown (10YR 5/2), wet, fine gravel, fine and coarse sand, fines [5, 40, 55], medium plasticity, very soft.						9:43		
	Silty SAND (SM): grayish brown (10YR 5/2), wet, fine to coarse sand [0, 60, 40].								
20	Poorly-graded SAND (SP): dark gray (10YR 4/1), wet, medium to coarse sand [0, 95, 5].					0.0	10:10		
	Poorly-graded SAND (SP): dark grayish brown (10YR 4/2), wet, fine to coarse gravel, medium to coarse sand [30, 70, tr].								
	1" of clay with gravel at 22'								
	Trace of gravel.					0.0	10:20		
25	Total depth = 25' bgs								

BORING LOG NO. WELL (OAKLAND) MEW.GPJ GEOSNTEC.GDT 3/27/13

CONTRACTOR Gregg
EQUIPMENT MARO 5T
DRILL MTHD Direct Push
DIAMETER (in) 2"
LOGGER JC

NORTHING EASTING
ANGLE Vertical
BEARING -----
PRINTED 03/27/13

REVIEWER NKG

REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

GS FORM:
OAKLAND

LOG OF SB-2

DEPTH (ft)	MATERIAL DESCRIPTION <small>SOIL NAME (USCS SYMBOL): Color, Moisture, Grain Size and Percentage, Plasticity, Consistency/Density, Other (Odor, Dry Strength, Mineral Content)</small>	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES				TIME	COMMENTS
				NUMBER	TYPE	RECOVERY (%)	PID READING (ppm)		
	Asphalt and fill.						0.2	13:51	Hand augered 0-5'
	Lean CLAY (CL): very dark brown (10YR 2/2), moist, fines [0, 0, 100], medium plasticity, stiff.								
5	Lean CLAY (CL): very dark gray (10YR 3/1) with yellowish brown mottling (10YR 5/6), moist, fines [0, 0, 100], medium plasticity, medium stiff.						0.4		
	Clayey SAND (SC): grayish brown (10YR 5/2), wet, fine sand, low plasticity fines [0, 60, 40].								
	SILT (ML): dark yellowish brown (10 YR 3/4), moist, fines [0, 0, 100], non-plastic, stiff, 10% black staining.						0.2		
10	Fat CLAY (CH): very dark grey (10YR 3/1), moist, fines [0, 0, 100], high plasticity, stiff.								
	Lean CLAY (CL): gray (2.5Y 5/1), wet, fine sand, fines [0, 10, 90], medium plasticity, medium stiff.						0.3		∇ Depth to water = 12'
	Clayey SAND/Sandy CLAY (SC-CL): gray (2.5Y 5/1), wet, fine sand, fines [0, 50, 50], medium plasticity, very soft.								
15	Sandy CLAY (CL): dark gray (10YR 4/1), wet, fine sand and coarse sand, fines [0, 40, 60], medium plasticity, medium stiff, 10% iron oxidation.						0.1		
	Poorly graded SAND (SP): olive gray (5Y 4/2), wet, fine sand [0, 95, 5].								
	Silty SAND (SM): dark grayish brown (10YR 4/2), wet, fine sand [0, 60, 40].								
20	Gravelly SAND (SW): dark gray (10YR 4/1), wet, fine to medium gravel, medium to coarse sand [45, 55, tr].						0.2		
25	SILT (ML): very dark grayish brown (2.5Y 3/2) with very dark greenish gray mottling (10GY 3/1), fines [0, 0, 100], low to medium plasticity, soft.								
Total Depth = 25 ft									

BORING LOG NO WELL (OAKLAND) MEW.GPJ GEOSNTEC.GDT 2/25/13

CONTRACTOR Gregg
EQUIPMENT MARO 5T
DRILL MTHD Direct Push
DIAMETER (in) 2"
LOGGER JC

NORTHING
EASTING
ANGLE Vertical
BEARING -----
PRINTED 02/25/13

REVIEWER NKG

REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

GS FORM:
OAKLAND

LOG OF SB-3

DEPTH (ft)	MATERIAL DESCRIPTION SOIL NAME (USCS SYMBOL): Color, Moisture, Grain Size and Percentage, Plasticity, Consistency/Density, Other (Odor, Dry Strength, Mineral Content)	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES				TIME	COMMENTS
				NUMBER	TYPE	RECOVERY (%)	PID READING (ppm)		
	Asphalt and fill.								Hand augered 0-5'
5	Lean CLAY (CL): dark grayish brown (2.5Y 4/8), moist, fines [0, 0, 100], low plasticity, medium stiff.					0.1	08:43		
	Medium plasticity, soft at 8'					0.2	08:47		
10						0.2	08:49		
						0.0	08:55		
15	Lean CLAY (CL): greenish gray (10Y 5/1), moist, fine to coarse sand, fines [0, 5, 95], medium plasticity, medium stiff.								Depth to water = 15' ∇
	Clayey SAND (SC): greenish gray (10Y 5/1), moist, fine to coarse sand, medium plasticity fines [0, 60, 40].								
	Well graded SAND (SW): greenish gray (10Y 5/1), wet, small gravel, fine to coarse sand, medium plasticity fines [5, 90, 5].					0.2	09:05		
	Clayey SAND (SC): olive brown (2.5Y 4/4), wet, fine sand, high plasticity fines [0, 70, 30].								
20	Poorly graded SAND (SP): very dark gray (10YR 3/1), wet, small gravel, medium to coarse sand [15, 80, 5].					0.0	09:15		
	Clayey SAND (SC): gray (10YR 3/1), wet, fine sand, high plasticity fines [0, 55, 45].								
25	Poorly graded SAND (SP): very dark grayish brown (2.5Y 3/2), wet, fine to medium sand [0, 95, 5].					0.0	09:35		
	Fat CLAY (CH): dark greenish gray (10Y 10Y 4/1), wet, fines [0, 0, 100], high plasticity.								
	Well graded SAND with clay (SW-SC): greenish gray (10Y 3/1), wet, fine to coarse sand, high plasticity fines [0, 85, 15].					0.0	09:50		
30	Well graded SAND with silt (SW-SM): dark greenish gray (5GY 4/1), wet, fine to coarse sand, high plasticity fines [0, 90, 10].					0.0	11:05		
	Well graded SAND (SW): dark greenish gray (5GY 4/1), wet, small gravel, fine to coarse sand [15, 80, 5].								

BORING LOG NO WELL (OAKLAND) MEW.GPJ GEOSNTEC.GDT 3/27/13

CONTRACTOR Gregg
EQUIPMENT M 2.5 DP
DRILL MTHD Direct Push
DIAMETER (in) 2"
LOGGER JC

NORTHING
EASTING
ANGLE Vertical
BEARING -----
PRINTED 03/27/13

REVIEWER NKG

REMARKS:Refusal at 36'

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

GS FORM:
OAKLAND

LOG OF SB-3

DEPTH (ft)	MATERIAL DESCRIPTION SOIL NAME (USCS SYMBOL): Color, Moisture, Grain Size and Percentage, Plasticity, Consistency/Density, Other (Odor, Dry Strength, Mineral Content)	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES				TIME	COMMENTS
				NUMBER	TYPE	RECOVERY (%)	PID READING (ppm)		
35	Lean CLAY (CL): dark greenish gray (5GY 4/1), moist, fine to medium sand, fines [0, 10, 90], medium plasticity, stiff.						0.0	11:20	Refusal at 36'
	Fat CLAY (CL): dark greenish gray (5GY 4/1), moist, fine to medium sand, fines [0, 15, 85], high plasticity, soft.								
	Total Depth = 25 ft								

BORING LOG NO WELL (OAKLAND) MEW.GPJ GEOSNTEC.GDT 3/27/13

CONTRACTOR **Gregg** **NORTHING**
EQUIPMENT **M 2.5 DP** **EASTING**
DRILL MTHD **Direct Push** **ANGLE Vertical**
DIAMETER (in) **2"** **BEARING -----**
LOGGER **JC** REVIEWER **NKG** PRINTED **03/27/13**

REMARKS: Refusal at 36'

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

GS FORM:
OAKLAND

LOG OF SB-4

DEPTH (ft)	MATERIAL DESCRIPTION <small>SOIL NAME (USCS SYMBOL): Color, Moisture, Grain Size and Percentage, Plasticity, Consistency/Density, Other (Odor, Dry Strength, Mineral Content)</small>	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES				TIME	COMMENTS
				NUMBER	TYPE	RECOVERY (%)	PID READING (ppm)		
	Asphalt (7") and fill.						0.0		Hand augered 0-5'
	Lean CLAY (CL): very dark brown (10YR 2/2), moist, medium to coarse sand, fines [0, 5, 95], medium plasticity, stiff to medium stiff.								
5	Lean CLAY (CL): yellowish brown (10YR 5/6) with yellowish brown mottling (10YR 5/8), trace fine to medium sand, fines [0, tr, 100], low to medium plasticity, stiff.						0.0	14:02	
							0.0	14:07	
10	Lean CLAY (CL): dark yellowish brown (10YR 4/4), moist, trace fine to medium sand, fines [0, tr, 100], medium plasticity, stiff.						0.0	14:10	
	Lean CLAY (CL): olive gray (5Y 5/3), moist, fine to coarse sand [0, 10, 90], medium plasticity, soft.						0.0	14:10	
15	Poorly graded SAND (SP): olive brown (2.5Y 4/3), wet, fine to medium sand, medium plasticity fines [0, 90, 10].								∇ Depth to water = 14'
	Well graded SAND (SW): dark grayish brown (10YR 4/2), wet, fine to coarse sand [0, 95, 5].								
	Clayey SAND (SC): yellowish brown (10YR 5/4), wet, fine sand, high plasticity fines [0, 60, 40].						0.0	14:14	
	Clayey SAND (SC): olive brown (2.5Y 4/4), wet, fine sand, high plasticity fines [0, 70, 30].								
20	Well graded SAND with silt (SW-SM): grayish brown (2.5Y 4/2), wet, fine to coarse sand [0, 95, 5].						0.0	14:20	
	Sandy lean CLAY (CL): dark black brown (10YR 4/4), wet, fine sand, fines [0, 45, 55], high plasticity, medium stiff.								
	Clayey SAND (SC): dark gray (G1 4/N), wet, fine to coarse sand, medium plasticity fines [0, 60, 40].						0.0	14:30	
25	Poorly graded SAND (SP): very dark gray (G1 4/N), wet, fine sand [0, 95, 5].								
	Fat CLAY (CL): very dark greenish gray (10Y 3/1), wet, fines [0, 0, 100], high plasticity, very soft.							14:40	
30	Poorly graded SAND (SP): greenish gray (10Y 3/1), wet, fine sand [0, 90, 10].								
	Clayey SAND (SC): dark greenish gray (10Y 4/1), wet, fine and medium sand, high plasticity fines [0, 55, 45].								
	33' - 34' [0, 70, 30] (SW-SC).								

BORING LOG NO WELL (OAKLAND) MEW.GPJ GEOSNTEC.GDT 3/27/13

CONTRACTOR Gregg
EQUIPMENT M 2.5 DP
DRILL MTHD Direct Push
DIAMETER (in) 2"
LOGGER JC

NORTHING
EASTING
ANGLE Vertical
BEARING -----
PRINTED 03/27/13

REVIEWER NKG

REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

GS FORM:
OAKLAND

LOG OF SB-4

DEPTH (ft)	MATERIAL DESCRIPTION <small>SOIL NAME (USCS SYMBOL): Color, Moisture, Grain Size and Percentage, Plasticity, Consistency/Density, Other (Odor, Dry Strength, Mineral Content)</small>	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES				TIME	COMMENTS
				NUMBER	TYPE	RECOVERY (%)	PID READING (ppm)		
35	Well graded SAND with CLAY (SW-SC): dark gray (G1 4/N), wet, fine to coarse sand, low plasticity fines [0, 85, 15].					0.0	14:50		
	Lean CLAY with sand (CL): dark greenish gray (10GY 4/1), wet, fine sand [0, 40, 60], medium plasticity, stiff.						15:00		
40	Well graded SAND with CLAY (SW-SC): greenish gray (10Y 4/1), wet, fine to coarse sand, high plasticity fines [0, 90, 10].					0.1	15:22		
	Poorly graded SAND (SP): dark greenish gray (10Y 3/1), wet, fine sand [0, 100, 0].								
	Poorly graded SAND with clay (SP-SC): gray (G1 5G4/1), wet, fine to medium sand, high plasticity fines [0, 90, 10].								
45	Clayey SAND (SC): dark greenish gray (5GY 4/1), wet, fine to coarse sand, high plasticity fines [0, 75, 25].					0.0	15:33		
	Poorly graded SAND (SP): dark greenish gray (5GY 4/1), wet, fine sand [0, 95, 5].								
	Poorly graded SAND with clay (SW-SC): greenish gray (10GY 4/1), wet, fine sand, high plasticity fines [0, 85, 15].								
	Well graded SAND with clay (SW-SC): greenish gray (10GY 4/1), wet, fine to coarse sand, high plasticity fines [0, 90, 10].								
Total Depth = 48 ft									

BORING LOG NO WELL (OAKLAND) MEW.GPJ GEOSNTEC.GDT 3/27/13

CONTRACTOR Gregg
EQUIPMENT M 2.5 DP
DRILL MTHD Direct Push
DIAMETER (in) 2"
LOGGER JC

NORTHING
EASTING
ANGLE Vertical
BEARING -----
PRINTED 03/27/13

REVIEWER NKG

REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

APPENDIX E

Laboratory Analytical Data

(This Appendix is being submitted as a
separate file)

APPENDIX F
Data Validation

Memorandum

Date: 28 February 2013
To: Eric Suchomel, Geosyntec San Francisco
From: Mary Tyler, Geosyntec Knoxville
CC: Julia Caprio, Geosyntec Knoxville
Subject: **Tier II Data Validation – Volatile Organic Compounds by EPA Method 8260B. Level II Data Deliverables – TestAmerica Pleasanton Job IDs: 720-46239-1, 720-46298-1, 720-46359-1, 720-46560-1, 720-46586-1, 720-46634-1, 720-46646-1, 720-46669-1, 720-46703-1, 720-46704-1, 720-46725-1, 720-46753-1, 720-46781-1, 720-46792-1, 720-46820-1, 720-46828-1, 720-46875-1, 720-46894-1, 720-46912-1, 720-46929-1, 720-46948-1, 720-47764-1, 720-47793-1 and 720-47818-1**

SITE: Middlefield-Ellis-Whisman (MEW) Regional Groundwater Remediation Program

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of one hundred (100) water samples, one field duplicate sample, one field blank, one equipment blank and twenty (20) trip blanks collected from 28 November 2012 to 15 February 2013 as part of the grab-groundwater sampling activities for the MEW Regional Groundwater Remediation Program (RGRP) in Mountain View, California. TestAmerica Pleasanton (TAP), California analyzed the samples. The samples were analyzed for the following test:

- EPA Method 8260B - Volatile Organic Compounds (VOCs)

All sampling was performed in general accordance with the 5 November 2012 Amendment to the Work Plan for Hydraulic Containment of Groundwater Plume. The Amendment to the Work Plan was approved by EPA in a letter dated 15 November 2012

EXECUTIVE SUMMARY

The samples were handled, prepared, and measured in the same manner under similar prescribed conditions.

Overall, based on this Stage 2A data validation covering the quality control (QC) parameters listed below, the data as qualified are usable for meeting project objectives. Qualified data are usable for meeting project objectives within the limitations of the qualification.

The organic data were reviewed based on USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008 (USEPA-540-R-08-01), the Quality Assurance Project Plan MEW, Mountain View, California - Revision 1, August 1991 (QAPP), as well as by the pertinent methods referenced by the data package and professional judgment.

The results were reported in twenty-four (24) TAP reports. The samples reported in each TAP job ID are listed in the table below.

TAP Job ID	Date of Report	Samples
720-46239-1	11/29/12	CPT-05-12'-17', CPT-05-26'-30', CPT-06-17'-21', CPT-06-31'-35', TAL-SF-TB and CPT-07-18'-22'
720-46298-1	12/04/12	TAL-SF-TB, CPT-07-26'-30', CPT-07-56'-40', CPT-08-21'-25', CPT-08-33'-37' and CPT-08-64'-68'
720-46359-1	12/06/12	CPT-10-18'-22', CPT-10-43'-47', CPT-10-52'-56', CPT-09-18'-22', CPT-09-44'-48' and TAL-SF-TB
720-46560-1	12/17/12	CPT-11-15'-19', CPT-11-20'-24', CPT-11-30'-34', CPT-11-47'-50', CPT-11-55'-58', CPT-11-62'-64' and TAL-SF-TB
720-46586-1	12/18/12	CPT-12-18-22', CPT-12-25-29', CPT-12-41-43', CPT-12-55-59', CPT-12-65-69', CPT-9-70-74' and TB-110912
720-46634-1	12/12/12	CPT-14-18'-22', CPT-14-26'-30', CPT-14-48'-52', CPT-14-56'-60' and TAL-SF-TB
720-46646-1	12/19/12	TAL-SF-TB, CPT-13-20'-24 and CPT-13-28'-32'
720-46669-1	12/14/12	TB-1, CPT-15-20-23, CPT-15-30-36, CPT-15-56-60 and CPT-5A-65-69
720-46703-1	12/17/12	14D25A2
720-46704-1	12/18/12	CPT-16-20-23, CPT-16-38-42, CPT-16-44-47, CPT-17-19-22, CPT-17-45-48, CPT-17-49-52 and TB-1
720-46725-1	12/18/12	CPT-18-22-26, CPT-18-40-44, CPT-18-58-62, TB-1 and CPT-19-22-25
720-46753-1	12/19/12	CPT-20-17'-21', TAL-SF-TB, CPT-21-19'-23' and CPT-22-18'-22'

TAP Job ID	Date of Report	Samples
720-46781-1	12/26/12	CPT-24-16'-20'
720-46792-1	12/21/12	CPT-23-22'-26', CPT-23-39'-42' and CPT-23-48'-51'
720-46820-1	12/21/12	CPT-24-89'-93'
720-46828-1	12/28/12	CPT-24-36'-40', TAL-SF-TB, CPT-25-20-24, CPT-25-38-42, CPT-25-44-48 and CPT-26-21-25
720-46875-1	01/02/13	CPT-26-29-32, CPT-26-42-46, TAL-SF-TB, CPT-27-14-18, CPT-27-21-24, CPT-27-42-44, CPT-26-51-54, CPT-28-17-20, CPT-28-26-30 and CPT-28-53-56
720-46894-1	01/03/13	TAL-SF-TB, CPT-29-22-25, CPT-29-34-38, CPT-29-50-54, CPT-30-16'-18', CPT-30-26'-28' and CPT-30-47'-50'
720-46912-1	12/28/12	CPT-31-19'-21', TAL-SF-TB, CPT-31-38'-40', CPT-31-58'-62', CPT-31-69'-71' and CPT-32-14'-16'
72046929-1	12/31/12	CPT-32-19'-21', CPT-32-28'-32', CPT-32-73'-76', TAL-SF-TB, CPT-33-12'-16', CPT-33-18'-20', CPT-33-28'-32' and CPT-33-55'-59'
720-46948-1	01/04/13	CPT-34-16'-20', CPT-34-33'-36', CPT-34-54'-58', CPT-35-19'-23', CPT-35-34'-38', CPT-35-54'-58' and TAL-SF-TB
720-47764-1	02/20/13	EB-1, FB-1, SB-1-19-23, SB-2-16.5-20.5 and TB-1
720-47793-1	02/19/13	SB-3-15-19, SB-3-15-19-FD, SB-3-29-33 and TB-2
720-47818-1	02/20/13	SB-4-14-18, SB-4-38-42 and TB-2

The samples were received at the laboratory at temperatures less than 6°C. The following sample preservation issues were noted by the laboratory.

The samples listed below were received at the laboratory with pH values greater than 2.

Job ID	Samples
720-46781-1	CPT-24-16'-20'
720-46792-1	CPT-23-39'-42'
720-46875-1	CPT-27-14-18 and CPT-27-42-44
720-46894-1	CPT-29-22-25
720-46929-1	CPT-33-12'-16'

The samples with pH great than 2, with the exceptions of samples CPT-27-14-18 and CPT-27-42-44, were analyzed within the 7 day hold time requirement for unpreserved samples; therefore

no qualifications were applied to the data. Samples CPT-27-14-18 and CPT-27-42-44 were not analyzed within the 7 day hold time for unpreserved samples; therefore, qualifications were applied to the data. See section 1.2 Holding Time, below.

Incorrect error corrections were noted on the chains of custody (COC) instead of the correct procedure of a single line through, initials of the person making the correction and the date of correction. In addition, sample container types were missing from the COCs, with the exception of job ID 720-46634-1. This did not affect the quality of the data.

For Job ID 720-46298-1, the sample ID on the container label for sample 720-46298-1 did not match the sample ID on the COC. The label indicated the sample ID as CPT-07-56'-60'; the sample was logged in according to the ID on the COC, CPT-07-56'-40'.

For Job IDs 720-46646-1 and 720-46669-1, incorrect batch numbers were reported in the report narratives. The narratives both indicated that the QC results in preparation batch 127017 (instead of 127019) exceeded the control limits for relative percent difference (RPD) between the laboratory control sample (LCS) and the LCS duplicate (LCSD).

For Job ID 720-46703-1, the first sample transfer was described by a note on the COC, without being relinquished by signatures and date.

For Job ID 720-46704-1, the sample ID on the container label for sample 720-46704-7 did not match the sample ID on the COC. The label indicated the sample ID as TP-1; the sample was logged in according to the ID on the COC, TB-1.

For Job ID 720-46725-1, the narrative discussed the recovery of vinyl acetate as high and outside the upper control limit in the continuing calibration verification standard (CCV) for batch 127275. Since vinyl acetate was not detected in the associated samples, no qualifications were applied to the data.

For Job ID 720-46753-1, the sample ID on the container label for sample 720-46753-3 did not match the sample ID on the COC. The label indicated the sample ID as CPT-20-19'-23'; the sample was logged in according to the ID on the COC, CPT-21-19'-23'.

For Job ID 720-46792-1, a trip blank was listed on the COC, but was not received by laboratory.

For Job ID 720-46875-1, the narrative noted that the recoveries for 1,1,1-trichloroethane and 2,2-dichloropropane were high and above the upper control limit in the CCV for batch #127939. Since 1,1,1-trichloroethane and 2,2-dichloropropane were not detected in the associated samples, no qualifications were applied to the data.

For Job ID 720-46894-1, the narrative noted that the recovery for vinyl acetate was high and above the upper control limit in the CCV for batch 127764. Since vinyl acetate was not detected in the associated samples, no qualifications were applied to the data.

For Job ID 720-47764-1, the collection time on two of the three container labels for sample 720-47764-4 did not match the collection time on the COC. The labels indicated the collection time as 15:30; the sample was logged in according to the collection time on the COC, 15:35.

For Job ID 720-47818-1, the sample ID on the containers for the trip blank did not match the ID on the COC. The labels listed the ID as TB-3; the sample was logged in according to the ID on the COC, TB-2.

1.0 VOLATILE ORGANIC COMPOUND ANALYSIS (VOCs)

One hundred water samples, one field duplicate sample, one equipment blank, one field blank and twenty trip blanks were analyzed for VOCs per EPA Method 8260B.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ⊗ Holding Time
- ✓ Method Blank
- ⊗ Matrix Spike/Matrix Spike Duplicate
- ⊗ Laboratory Control Sample
- ✓ Surrogates
- ⊗ Field Blank
- ⊗ Equipment Blank
- ⊗ Trip Blank
- ⊗ Field Duplicate
- ⊗ Sensitivity
- ⊗ Electronic Data Deliverables Review

1.1 Overall Assessment

The VOC data reported in this package are considered to be usable for meeting project objectives. The results are considered to be valid; the analytical completeness, defined as the

ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for analysis, for the project is 100%.

1.2 Holding Time

The holding time for a preserved water sample is 14 days from collection to analysis. The holding time for an unpreserved sample is 7 days from collection to analysis. The holding times were met for the sample analyses with the following exceptions.

For job ID 720-46875-1, samples CPT-27-14-18 and CPT-27-42-44 were received at the laboratory at pH greater than 2 and were analyzed 10 days after collection, outside the 7 day holding time. Therefore, the non-detect values of VOCs in samples CPT-27-14-18 and CPT-27-42-44 were UJ qualified as estimated less than reporting limits (RLs) and the detected concentrations were J qualified as estimated.

Sample ID	Compound	Laboratory Result (µg/L)	Laboratory Flag	Validation Result (µg/L)	Validation Qualifier*	Validation Reason Code**
CPT-27-14-18	Acetone	50	U	50	UJ	2
CPT-27-14-18	Chlorodibromomethane	0.50	U	0.50	UJ	2
CPT-27-14-18	Bromobenzene	1.0	U	1.0	UJ	2
CPT-27-14-18	Chlorobromomethane	1.0	U	1.0	UJ	2
CPT-27-14-18	Bromomethane	1.0	U	1.0	UJ	2
CPT-27-14-18	n-Butylbenzene	1.0	U	1.0	UJ	2
CPT-27-14-18	sec-Butylbenzene	1.0	U	1.0	UJ	2
CPT-27-14-18	tert-Butylbenzene	1.0	U	1.0	UJ	2
CPT-27-14-18	Toluene	0.50	U	0.50	UJ	2
CPT-27-14-18	Ethylbenzene	0.50	U	0.50	UJ	2
CPT-27-14-18	Carbon disulfide	5.0	U	5.0	UJ	2
CPT-27-14-18	Chlorobenzene	0.50	U	0.50	UJ	2
CPT-27-14-18	2-Chlorotoluene	0.50	U	0.50	UJ	2
CPT-27-14-18	4-Chlorotoluene	0.50	U	0.50	UJ	2
CPT-27-14-18	Chloroethane	1.0	U	1.0	UJ	2
CPT-27-14-18	Chloromethane	1.0	U	1.0	UJ	2
CPT-27-14-18	Carbon tetrachloride	0.50	U	0.50	UJ	2
CPT-27-14-18	Bromoform	1.0	U	1.0	UJ	2

Sample ID	Compound	Laboratory Result (µg/L)	Laboratory Flag	Validation Result (µg/L)	Validation Qualifier*	Validation Reason Code**
CPT-27-14-18	Dichlorobromo-methane	0.50	U	0.50	UJ	2
CPT-27-14-18	Chloroform	1.0	U	1.0	UJ	2
CPT-27-14-18	1,1,2,2-Tetrachloroethane	0.50	U	0.50	UJ	2
CPT-27-14-18	1,1-Dichloroethane	0.50	U	0.50	UJ	2
CPT-27-14-18	1,2-Dichloroethane	0.50	U	0.50	UJ	2
CPT-27-14-18	1,2-Dichlorobenzene	0.50	U	0.50	UJ	2
CPT-27-14-18	1,3-Dichlorobenzene	0.50	U	0.50	UJ	2
CPT-27-14-18	1,4-Dichlorobenzene	0.50	U	0.50	UJ	2
CPT-27-14-18	1,1-Dichloroethene	0.50	U	0.50	UJ	2
CPT-27-14-18	cis-1,2-Dichloroethene	0.50	U	0.50	UJ	2
CPT-27-14-18	trans-1,2-Dichloroethene	0.50	U	0.50	UJ	2
CPT-27-14-18	1,1-Dichloropropene	0.50	U	0.50	UJ	2
CPT-27-14-18	cis-1,3-Dichloropropene	0.50	U	0.50	UJ	2
CPT-27-14-18	trans-1,3-Dichloropropene	0.50	U	0.50	UJ	2
CPT-27-14-18	1,2-Dichloropropane	0.50	U	0.50	UJ	2
CPT-27-14-18	1,3-Dichloropropane	1.0	U	1.0	UJ	2
CPT-27-14-18	2,2-Dichloropropane	0.50	U	0.50	UJ	2
CPT-27-14-18	Ethylbenzene	0.50	U	0.50	UJ	2
CPT-27-14-18	Ethylene Dibromide	0.50	U	0.50	UJ	2
CPT-27-14-18	Trichlorofluoro-methane	1.0	U	1.0	UJ	2
CPT-27-14-18	1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	0.50	UJ	2
CPT-27-14-18	Dichlorodifluoro-methane	0.50	U	0.50	UJ	2
CPT-27-14-18	Hexachloro-butadiene	1.0	U	1.0	UJ	2

Sample ID	Compound	Laboratory Result (µg/L)	Laboratory Flag	Validation Result (µg/L)	Validation Qualifier*	Validation Reason Code**
CPT-27-14-18	2-Hexanone	50	U	50	UJ	2
CPT-27-14-18	Isopropylbenzene	0.50	U	0.50	UJ	2
CPT-27-14-18	2-Butanone (MEK)	50	U	50	UJ	2
CPT-27-14-18	4-Methyl-2-pentanone (MIBK)	50	U	50	UJ	2
CPT-27-14-18	Methyl tert butyl ether	0.50	U	0.50	UJ	2
CPT-27-14-18	Methylene Chloride	5.0	U	5.0	UJ	2
CPT-27-14-18	Naphthalene	1.0	U	1.0	UJ	2
CPT-27-14-18	4-Isopropyl-toluene	1.0	U	1.0	UJ	2
CPT-27-14-18	Dibromomethane	0.50	U	0.50	UJ	2
CPT-27-14-18	Tetrachloroethene	0.50	U	0.50	UJ	2
CPT-27-14-18	Styrene	0.50	U	0.50	UJ	2
CPT-27-14-18	1,2-Dibromo-3-Chloropropane	1.0	U	1.0	UJ	2
CPT-27-14-18	1,1,1,2-Tetrachloroethane	0.50	U	0.50	UJ	2
CPT-27-14-18	1,1,1-Trichloroethane	0.50	U	0.50	UJ	2
CPT-27-14-18	1,1,2-Trichloroethane	0.50	U	0.50	UJ	2
CPT-27-14-18	1,2,3-Trichlorobenzene	1.0	U	1.0	UJ	2
CPT-27-14-18	1,2,4-Trichlorobenzene	1.0	U	1.0	UJ	2
CPT-27-14-18	Trichloroethene	1.9	NA	1.9	J	2
CPT-27-14-18	n-Propylbenzene	1.0	U	1.0	UJ	2
CPT-27-14-18	1,2,3-Trichloropropane	0.50	U	0.50	UJ	2
CPT-27-14-18	1,2,4-Trimethylbenzene	0.50	U	0.50	UJ	2
CPT-27-14-18	1,3,5-Trimethylbenzene	0.50	U	0.50	UJ	2
CPT-27-14-18	Vinyl acetate	10	U	10	UJ	2
CPT-27-14-18	Vinyl chloride	0.50	U	0.50	UJ	2

Sample ID	Compound	Laboratory Result (µg/L)	Laboratory Flag	Validation Result (µg/L)	Validation Qualifier*	Validation Reason Code**
CPT-27-14-18	Xylenes	1.0	U	1.0	UJ	2
CPT-27-42-44	Acetone	50	U	50	UJ	2
CPT-27-42-44	Chlorodibromo-methane	0.50	U	0.50	UJ	2
CPT-27-42-44	Bromobenzene	1.0	U	1.0	UJ	2
CPT-27-42-44	Chlorobromo-methane	1.0	U	1.0	UJ	2
CPT-27-42-44	Bromomethane	1.0	U	1.0	UJ	2
CPT-27-42-44	n-Butylbenzene	1.0	U	1.0	UJ	2
CPT-27-42-44	sec-Butylbenzene	1.0	U	1.0	UJ	2
CPT-27-42-44	tert-Butylbenzene	1.0	U	1.0	UJ	2
CPT-27-42-44	Benzene	0.50	U	0.50	UJ	2
CPT-27-42-44	Toluene	0.50	U	0.50	UJ	2
CPT-27-42-44	Carbon disulfide	5.0	U	5.0	UJ	2
CPT-27-42-44	Chlorobenzene	0.50	U	0.50	UJ	2
CPT-27-42-44	2-Chlorotoluene	0.50	U	0.50	UJ	2
CPT-27-42-44	4-Chlorotoluene	0.50	U	0.50	UJ	2
CPT-27-42-44	Chloroethane	1.0	U	1.0	UJ	2
CPT-27-42-44	Chloromethane	1.0	U	1.0	UJ	2
CPT-27-42-44	Carbon tetrachloride	0.50	U	0.50	UJ	2
CPT-27-42-44	Bromoform	1.0	U	1.0	UJ	2
CPT-27-42-44	Dichlorobromo-methane	0.50	U	0.50	UJ	2
CPT-27-42-44	Chloroform	1.0	U	1.0	UJ	2
CPT-27-42-44	1,1,2,2-Tetrachloroethane	0.50	U	0.50	UJ	2
CPT-27-42-44	1,1-Dichloroethane	0.50	U	0.50	UJ	2
CPT-27-42-44	1,2-Dichloroethane	0.50	U	0.50	UJ	2
CPT-27-42-44	1,2-Dichlorobenzene	0.50	U	0.50	UJ	2
CPT-27-42-44	1,3-Dichlorobenzene	0.50	U	0.50	UJ	2
CPT-27-42-44	1,4-Dichlorobenzene	0.50	U	0.50	UJ	2
CPT-27-42-44	1,1-Dichloroethene	0.50	U	0.50	UJ	2
CPT-27-42-44	cis-1,2-Dichloroethene	0.50	U	0.50	UJ	2

Sample ID	Compound	Laboratory Result (µg/L)	Laboratory Flag	Validation Result (µg/L)	Validation Qualifier*	Validation Reason Code**
CPT-27-42-44	trans-1,2-Dichloroethene	0.50	U	0.50	UJ	2
CPT-27-42-44	1,1-Dichloropropene	0.50	U	0.50	UJ	2
CPT-27-42-44	cis-1,3-Dichloropropene	0.50	U	0.50	UJ	2
CPT-27-42-44	trans-1,3-Dichloropropene	0.50	U	0.50	UJ	2
CPT-27-42-44	1,2-Dichloropropane	0.50	U	0.50	UJ	2
CPT-27-42-44	1,3-Dichloropropane	1.0	U	1.0	UJ	2
CPT-27-42-44	2,2-Dichloropropane	0.50	U	0.50	UJ	2
CPT-27-42-44	Ethylbenzene	0.50	U	0.50	UJ	2
CPT-27-42-44	Ethylene Dibromide	0.50	U	0.50	UJ	2
CPT-27-42-44	Trichlorofluoromethane	1.0	U	1.0	UJ	2
CPT-27-42-44	1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	0.50	UJ	2
CPT-27-42-44	Dichlorodifluoromethane	0.50	U	0.50	UJ	2
CPT-27-42-44	Hexachlorobutadiene	1.0	U	1.0	UJ	2
CPT-27-42-44	2-Hexanone	50	U	50	UJ	2
CPT-27-42-44	Isopropylbenzene	0.50	U	0.50	UJ	2
CPT-27-42-44	2-Butanone (MEK)	50	U	50	UJ	2
CPT-27-42-44	4-Methyl-2-pentanone (MIBK)	50	U	50	UJ	2
CPT-27-42-44	Methyl tert butyl ether	0.50	U	0.50	UJ	2
CPT-27-42-44	Methylene Chloride	5.0	U	5.0	UJ	2
CPT-27-42-44	Naphthalene	1.0	U	1.0	UJ	2
CPT-27-42-44	4-Isopropyltoluene	1.0	U	1.0	UJ	2
CPT-27-42-44	Dibromomethane	0.50	U	0.50	UJ	2
CPT-27-42-44	Tetrachloroethene	0.50	U	0.50	UJ	2
CPT-27-42-44	Styrene	0.50	U	0.50	UJ	2

Sample ID	Compound	Laboratory Result (µg/L)	Laboratory Flag	Validation Result (µg/L)	Validation Qualifier*	Validation Reason Code**
CPT-27-42-44	1,2-Dibromo-3-Chloropropane	1.0	U	1.0	UJ	2
CPT-27-42-44	1,1,1,2-Tetrachloroethane	0.50	U	0.50	UJ	2
CPT-27-42-44	1,1,1-Trichloroethane	0.50	U	0.50	UJ	2
CPT-27-42-44	1,1,2-Trichloroethane	0.50	U	0.50	UJ	2
CPT-27-42-44	1,2,3-Trichlorobenzene	1.0	U	1.0	UJ	2
CPT-27-42-44	1,2,4-Trichlorobenzene	1.0	U	1.0	UJ	2
CPT-27-42-44	Trichloroethene	0.50	U	0.50	UJ	2
CPT-27-42-44	n-Isopropylbenzene	1.0	U	1	UJ	2
CPT-27-42-44	1,2,3-Trichloropropane	0.50	U	0.50	UJ	2
CPT-27-42-44	1,2,4-Trimethylbenzene	0.50	U	0.50	UJ	2
CPT-27-42-44	1,3,5-Trimethylbenzene	0.50	U	0.50	UJ	2
CPT-27-42-44	Vinyl acetate	10	U	10	UJ	2
CPT-27-42-44	Vinyl chloride	0.50	U	0.50	UJ	2
CPT-27-42-44	Xylenes	1.0	U	1.0	UJ	2

U-not detected at or above the RL

NA-not applicable

*Validation qualifiers are defined in Attachment 1 at the end of this report

**Reason codes are defined in Attachment 2 at the end of this report

1.3 Method Blanks

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Method blanks were reported with each data set. VOCs were not detected in the method blanks above the RLs.

1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSD pairs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Batch MS/MSD pairs were verified via the laboratory run logs. The results of the batch MS/MSD pairs had no impact on the data set.

The QAPP specified that an MS/MSD pair would be requested for 5% of the field samples collected and analyzed. No requests for MS/MSD analyses were indicated on the COCs. Three sample set specific MS/MSD pairs were reported for the 100 field samples collected (at a frequency of 3%), using samples CPT-07-18'-22' from Job ID 720-46239-1, CPT-9-70'-74' from Job ID 720-46586-1 and CPT-30-47'-50' from Job ID 720-46894-1. For the MS/MSD pair using sample CPT-30-47'-50' from job ID 720-46894-1, only trichloroethene was reported for the batch; therefore, only trichloroethene RPD and recoveries were reported with the data set. The results from the other sample specific MS/MSD pairs met the laboratory specified acceptance criteria for recovery and RPD, with the following exception.

In the MS/MSD pair using sample CPT-07-18'-22' from job ID 720-46239-1, the recoveries for trichloroethene were low and below the laboratory specified acceptance criteria. Because of the concentration of trichloroethene in the original sample relative to the spiked amount, no qualifications were applied to the data, based on professional judgment.

1.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). LCS/LCSD pairs were reported. The recoveries for the LCS/LCSD pairs were compared to the QAPP specified acceptance criteria found in Table 11 for the “indicator chemicals” and “primary chemicals of concern”; the recoveries and RPDs for all other compounds were compared to the laboratory specified acceptance criteria. Recoveries and RPDs met their respective criteria, with the following exceptions.

For job ID 720-46298-1, the recoveries of vinyl chloride were low and below the QAPP specified acceptance criteria in the LCS/LCSD in batch 126189. Therefore, the non-detect values of vinyl chloride in the associated samples were UJ qualified as estimated less than the RLs and the detected concentrations were J qualified as estimated.

For job ID 720-46560-1, the LCS recovery of vinyl chloride was low and below the QAPP specified acceptance criteria in batch 126434. Therefore, the non-detect values for vinyl chloride in the associated samples were UJ qualified as estimated less than the RLs.

For job ID 720-46586-1, the LCS recovery of vinyl chloride was low and below the QAPP specified acceptance criteria in batch 126864. Therefore, the non-detect values of vinyl chloride in the associated samples were UJ qualified as estimated less than the RL.

For job ID 720-46634-1, the LCS/LCSD recoveries of 1,1,1-trichloroethane were high and above the QAPP specified acceptance criteria in batch 126934. Therefore, the concentration of 1,1,1-

trichloroethane in the associated samples were J qualified as estimated. Since the recovery was biased high, the non-detect values of 1,1,1-trichloroethane in the associated samples were not affected.

For job IDs 720-46646-1, 720-46703-1 and 720-46704-1, the LCS/LCSD recoveries of vinyl chloride were low and below the QAPP specified acceptance criteria in batch 127095. Therefore, the non-detect values of vinyl chloride in the associated samples were UJ qualified as estimated less than the RL and the detected values were J qualified as estimated.

For job IDs 720-46646-1 and 720-46669-1, the RPD for vinyl acetate was high and above the laboratory specified acceptance criteria in the LCS/LCSD pair in batch 127019. Since vinyl acetate was not detected in the associated samples, no qualifications were applied to the data set.

For job ID 720-46704-1, the LCSD recovery of vinyl acetate was high and above the laboratory specified acceptance criteria in batch 127170. Since vinyl acetate was not detected in the associated samples, no qualifications were applied to the data set.

For job ID 720-46781-1, the LCS/LCSD recoveries of vinyl chloride were low and below the QAPP specified acceptance criteria in batch 127408. Therefore, the non-detect values of vinyl chloride in the associated samples were UJ qualified as estimated less than the RL.

For job ID 720-46820-1, the LCS recovery of vinyl chloride was low and below the QAPP specified acceptance criteria in batch 127535. Therefore, non-detect values of vinyl chloride in the associated samples were UJ qualified as estimated less than the RL.

For job ID 720-46828-1, the LCS/LCSD recoveries for vinyl chloride were low and below the QAPP specified acceptance criteria in batch 127609. Therefore, non-detect values of vinyl chloride in the associated samples were UJ qualified as estimated less than the RL and the detected concentrations were J qualified as estimated. In addition, the RPDs for bromomethane and chloroethane in the LCS/LCSD pair in batch 127700 were high and above the laboratory specified acceptance criteria. Since bromomethane and chloroethane were not detected in the associated samples, no qualifications were applied to the data set.

For job ID 720-46875-1, the LCS/LCSD recoveries of 2,2-dichloropropane and 1,1,1-trichloroethene were high and above the laboratory specified acceptance criteria in batch 127939. Since 2,2-dichloropropane and 1,1,1-trichloroethene were not detected in the associated samples, no qualifications were applied to the data set.

For job IDs 720-46894-1 and 720-46929-1, the LCS recovery of hexachlorobutadiene was low and below the laboratory specified acceptance criteria in batch 127937. Therefore, the non-detect

values of hexachlorobutadiene in the associated samples were UJ qualified as estimated less than the RL.

For job ID 720-46948-1, the LCS/LCSD recoveries of vinyl chloride were low and below the QAPP specified acceptance criteria in batch 128124. Therefore, the non-detect values of vinyl chloride in the associated samples were UJ qualified as estimated less than the RL.

For job ID 720-47818-1, the LCSD recoveries of vinyl chloride were low and below the QAPP specified acceptance criteria in batches 130733 and 130875. Therefore, the concentration of vinyl chloride in the associated sample was J qualified as estimated and the non-detect values of vinyl chloride in the associated samples were UJ qualified as estimated less than the RL.

Sample ID	Compound	Laboratory Result (µg/L)	Laboratory Flag	Validation Result (µg/L)	Validation Qualifier	Validation Reason Code
Job ID 720-46298-1						
TAL-SF-TB	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-07-26'-30'	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-07-56'-40'	Vinyl chloride	0.51	NA	0.51	J	5
CPT-08-21'-25'	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-08-33'-37'	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-08-64'-68'	Vinyl chloride	0.50	U	0.50	UJ	5
Job ID 720-46560-1						
CP-11-15'-19'	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-11-20'-24'	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-11-30'-34'	Vinyl chloride	0.50	U	0.50	UJ	5
720-46586-1						
CPT-12-18-22'	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-12-25-29'	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-12-41-43'	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-12-55-59'	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-12-65-69'	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-9-70-74'	Vinyl chloride	0.50	U	0.50	UJ	5
TB-110912	Vinyl chloride	0.50	U	0.50	UJ	5
720-46634-1						
CPT-14-48'-52'	1,1,1-Trichloroethane	1.1	NA	1.1	J	5
CPT-14-56'-60'	1,1,1-Trichloroethane	1.1	NA	1.1	J	5
Job ID 720-46646-1						
TAL-SF-TB	Vinyl chloride	0.50	U	0.50	UJ	5

Sample ID	Compound	Laboratory Result (µg/L)	Laboratory Flag	Validation Result (µg/L)	Validation Qualifier	Validation Reason Code
Job ID 720-46703-1						
14D25A2	Vinyl chloride	0.97	NA	0.97	J	5
Job ID 720-46704-1						
CPT-17-45-48	Vinyl chloride	50	U	50	UJ	5
TB-1	Vinyl chloride	0.50	U	0.50	UJ	5
Job ID 720-46781-1						
CPT-24-16'-20'	Vinyl chloride	10	U	10	UJ	5
Job ID 720-46820-1						
CPT-24-89'-93'	Vinyl chloride	0.50	U	0.50	UJ	5
Job ID 720-46828-1						
CPT-24-36-40	Vinyl chloride	1.7	NA	1.7	J	5
TAL-SF-TB	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-25-20-24	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-25-38-42	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-25-44-48	Vinyl chloride	0.50	U	0.50	UJ	5
720-46894-1						
CPT-29-22-25	Hexachloro-butadiene	1.0	U	1.0	UJ	5
CPT-29-34-38	Hexachloro-butadiene	1.0	U	1.0	UJ	5
CPT-29-50-54	Hexachloro-butadiene	1.0	U	1.0	UJ	5
CPT-30-16-18	Hexachloro-butadiene	1.0	U	1.0	UJ	5
CPT-30-26-28	Hexachloro-butadiene	1.0	U	1.0	UJ	5
CPT-30-47-50	Hexachloro-butadiene	1.0	U	1.0	UJ	5
TAL-SF-TB	Hexachloro-butadiene	1.0	U	1.0	UJ	5
Job ID 720-46929-1						
CPT-32-19'-21'	Hexachloro-butadiene	1.0	U	1.0	UJ	5
CPT-32-28'-32'	Hexachloro-butadiene	1.0	U	1.0	UJ	5
CPT-32-73'-76'	Hexachloro-butadiene	1.0	U	1.0	UJ	5
TAL-SF-TB	Hexachloro-butadiene	1.0	U	1.0	UJ	5
CPT-33-12'-16'	Hexachloro-butadiene	1.0	U	1.0	UJ	5

Sample ID	Compound	Laboratory Result (µg/L)	Laboratory Flag	Validation Result (µg/L)	Validation Qualifier	Validation Reason Code
CPT-33-18'-20'	Hexachloro-butadiene	1.0	U	1.0	UJ	5
CPT-33-28'-32'	Hexachloro-butadiene	1.0	U	1.0	UJ	5
CPT-33-55'-59'	Hexachloro-butadiene	1.0	U	1.0	UJ	5
Job ID 720-46948-1						
CPT-34-16'-20'	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-34-33'-36'	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-34-54'-58'	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-35-19'-23'	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-35-34'-38'	Vinyl chloride	0.50	U	0.50	UJ	5
CPT-35-54'-58'	Vinyl chloride	2.5	U	2.5	UJ	5
TAL-SF-TB	Vinyl chloride	0.50	U	0.50	UJ	5
Job ID 720-47818-1						
SB-4-38-42	Vinyl chloride	0.73	NA	0.73	J	5
SB-4-14-18	Vinyl chloride	0.50	U	0.50	UJ	5
TB-2	Vinyl chloride	0.50	U	0.50	UJ	5

U-not detected at or above the RL
 NA-not applicable

1.6 Surrogates

Acceptable surrogate recoveries were reported for the sample analyses.

1.7 Field Blank

The QAPP specified that field blanks would be submitted and analyzed for every twenty water samples collected for VOC analysis. As specified in the approved work plan, field blanks were not collected during sampling. However, one field blank was submitted with 720-47764-1. VOCs were not detected in the field blank reported in 720-47764-1 above the RLs

1.8 Equipment Blank

The QAPP specified that equipment blanks would be submitted and analyzed for every twenty water samples collected for VOC analysis. As specified in the approved work plan, equipment blanks were not collected during sampling. However, one equipment blank was submitted with 720-47764-1. VOCs were not detected in the equipment blank reported in 720-47764-1 above the RLs.

1.9 Trip Blanks

The QAPP specified that trip blanks would be submitted in each shipping container for VOC analysis. Trip blanks were included in each shipping container, with the exceptions of job IDs 720-46703-1, 72046781-1, 720-46792-1 and 720-46820-1. VOCs were not detected in the trip blanks above the RLs.

1.10 Field Duplicates

The QAPP specified that field duplicate samples would be collected and submitted to the laboratory for every twenty field samples. As specified in the approved work plan, field duplicates were not collected during sampling. However, one field duplicate was submitted 720-47793-1.

One field duplicate sample, SB-3-15-19-FD, was collected with the sample set reported in 720-47793-1. Acceptable precision (RPD <30%) was demonstrated between the field duplicate and the original sample, SB-3-15-19, with the following exception. The RPD for toluene was greater than 30%; therefore, based on professional judgment, the concentrations of toluene were J qualified as estimated in the duplicate pair.

Sample ID	Compound	Laboratory Concentration (µg/L)	Laboratory Flag	RPD (%)	Validation Concentration (µg/L)	Validation Qualification	Reason Code
SB-3-15-19	1,1,1-Trichloroethane	2.3	NA	9	NA	NA	NA
SB-3-15-19-FD	1,1,1-Trichloroethane	2.1	NA		NA	NA	NA
SB-3-15-19	1,1-Dichloroethene	0.91	NA	0	NA	NA	NA
SB-3-15-19-FD	1,1-Dichloroethene	0.91	NA		NA	NA	NA
SB-3-15-19	cis-1,2-Dichloroethene	0.54	NA	0	NA	NA	NA
SB-3-15-19-FD	cis-1,2-Dichloroethene	0.54	NA		NA	NA	NA
SB-3-15-19	Toluene	56	NA	38	56	J	7
SB-3-15-19-FD	Toluene	38	NA		38	J	7
SB-3-15-19	Trichloroethene	300	NA	0	NA	NA	NA
SB-3-15-19-FD	Trichloroethene	300	NA		NA	NA	NA
SB-3-15-19	The other VOCs	ND	NA	0	NA	NA	NA
SB-3-15-19-FD	The other VOCs	ND	NA		NA	NA	NA

NA-not applicable

ND- not detected at or above the RL

1.11 Sensitivity

The RL for chloroform did not meet the 0.50 µg/L detection limit requirement specified in table 1 of the QAPP (detection limits for water samples, primary chemicals of concern).

Non-detected values were reported to the RLs, with the following exceptions.

For job ID 720-46298-1, sample CPT-07-26'-30' had an elevated non-detect value reported for tetrachloroethene due to sample dilution.

For job ID 720-46704-1, elevated non-detect results were reported for samples CPT-16-38-42, CPT-17-19-22, CPT-17-45-48, CP-17-49-52 and CPT-16-44-7 due to sample dilutions.

For job ID 720-46725-1, elevated non-detect results were reported for samples CPT-18-22-26, CPT-18-40-44, and CPT-18-58-62 due to sample dilutions.

For job ID 720-46753-1, elevated non-detect results were reported for sample CPT-21-19'-23' due to sample dilution.

For job ID 720-46781-1, elevated non-detect results were reported for sample CPT-24-16'-20' due to sample dilution.

For job ID 720-46828-1, an elevated non-detect result was reported for sample CPT-24-36-40 for toluene due to sample dilution.

For job ID 720-46875-9, elevated non-detect results were reported for samples CPT-28-26-30 and CPT-28-53-56 for 1,1,1-trichloroethene due to sample dilution.

For job ID 720-46912-1, an elevated non-detect result was reported for sample CPT-31-69'-71' for cis-1,2-dichloroethene due to sample dilution.

For job ID 720-46948-1, elevated non-detect results were reported for sample CPT-35-54'-58' due to sample dilution.

1.12 Electronic Data Deliverables (EDD) Review

Results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. It was noted that the samples were reported to the RLs in the hardcopy laboratory report and EDD; both the RLs and the method detection limits (MDLs) were listed in the EDDs. No other discrepancies were identified between the level II report and the EDD.

* * * * *

ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.
- J- The analyte was positively identified; however, the associated numerical value is likely to be lower than the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team

Valid Value	Description
1	Preservation requirement not met
2	Analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS recovery or RPD outside limits (LCS/LCSD)
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other

RPD-relative percent difference

APPENDIX G

Remedy Design Data Collection Report

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I -1. INTRODUCTION

This appendix has been prepared to document supplemental soil and grab-groundwater sampling that was conducted to collect site-specific data used to design the groundwater remedy for the CPT-15 and CPT-21 areas located along Evandale Avenue west of the Middlefield-Ellis-Whisman (MEW) Study Area (Figure A1). The work described in this appendix is consistent with the scope of work proposed in the *Final Work Plan for Remedy Design Data Collection*¹.

I -2. SOIL AND GRAB-GROUNDWATER SAMPLING PROGRAM

Supplemental soil and grab-groundwater sampling was conducted on 17 and 18 April 2013. The supplemental sampling boring locations are presented in Figure A1.

I -2.1 Pre-Field Activities

Prior to beginning work, an Excavation Permit was obtained from the City of Mountain View. Boring permits were not required from the Santa Clara Valley Water District due to the depth of the borings.

The supplemental sampling boring locations were marked with white paint and Underground Service Alert (USA) was notified of the work more than 48 hours prior to the start of field activities. Additionally, a private utility location survey was conducted at the proposed boring locations to identify subsurface utilities or other obstructions. Some boring locations were modified slightly from those proposed in the work plan if the presence of subsurface or overhead utilities prevented safe operation of the direct-push drilling rig.

All field activities were performed in accordance with the site-specific health and safety plan (HASP). A safety tailgate meeting was held each day prior to the start of field activities and all on-site field personnel signed the HASP acknowledging the discussion of potential hazards.

¹ Geosyntec 2013, Final Work Plan for Remedy Design Data Collection, Middlefield-Ellis-Whisman Regional Groundwater Remediation Program, Mountain View, California. 12 April.

I -2.2 Sample Depths and Locations

The following section summarizes the location and soil and grab-groundwater sampling depths of the supplemental sampling borings.

CPT-21 Area

Samples were collected from three supplemental boring locations on Evandale Avenue in the CPT-21 area:

- Two soil samples and one grab-groundwater sample were collected from boring SB-5, located 22 feet west of CPT-21;
- Two soil samples and one grab-groundwater sample were collected from boring SB-6, located 25 feet east of CPT-21; and,
- One grab-groundwater sample was collected from boring SB-8, located 161 feet east of CPT-21, 48 feet east of CPT-9, and 43 feet west of CPT-20.

Soil and grab-groundwater samples were collected in the A/A1 zone between the first encountered groundwater and 25 feet below ground surface (bgs). The sample depth intervals for grab-groundwater samples are included in Table A1.

CPT-15 Area

Samples were collected from two supplemental boring locations in the CPT-15 area as follows:

- Four soil and two grab-groundwater samples were collected from boring SB-9, located 28 feet north of CPT-15 on the 228 Evandale Avenue property; and
- Two grab-groundwater samples were collected from boring SB-10, located 46 feet north of CPT-15 on the 228 Evandale Avenue property (SB-10).

Soil and grab-groundwater samples were collected in the A/A1 and B1/A2 zones in the CPT-15 remedy area². Samples were collected between the first encountered groundwater and 45 feet bgs³.

² The transition from the A/A1 to B1/A2 zone is considered to occur at 25 feet bgs.

³ Samples have been previously collected on Evandale Avenue to define the extent of the B1/A2 zone plume in this area.

I -2.3 Direct-Push Borings

All supplemental sampling borings were advanced using a direct-push drill rig. At each location, direct-push drill rods were fitted with vinyl acetate sleeve liners and advanced to the target total boring depth for collection of continuous core samples. The soil cores were logged by field staff under the direction of a California Professional Geologist using the Unified Soil Classification System. The soil was field-screened for the presence of volatile organic compounds (VOCs) using a photoionization detector (PID) and the readings recorded on the boring logs. Geologic logs for the direct-push borings are included in Attachment A1.

The boring logs were used to select soil and grab-groundwater sample depth intervals. The proposed depth intervals were transmitted to EPA prior to collection of samples.

I -2.4 Soil Sampling

Soil samples were collected for permanganate soil oxidant demand (PSOD) bench-scale testing to provide information regarding the rate and extent of oxidant consumption by site soil and groundwater when dosed with permanganate.

The soil sample depth intervals were selected based on geologic logging. Samples were collected from borings SB-5, SB-6, and SB-9 at depth intervals that were representative of the more permeable soil types present in the CPT-15 and CPT-21 areas. Soil samples from the less permeable soil types (silt/clay) present in the CPT-15 area were also collected at SB-9.

Soil samples from the selected intervals were collected by transferring soil from the acetate sleeves into laboratory-provided glass jars. The samples were labeled, placed on ice, and shipped under standard chain-of-custody procedures to the bench-scale testing laboratory.

I -2.5 Grab-Groundwater Sampling

Grab-groundwater samples were collected from borings advanced adjacent to each direct-push boring location. At each location, hollow steel direct-push rods equipped with a disposable tip and a section of slotted polyvinyl chloride (PVC) screen was advanced to the sampling depth interval that was selected based on the geologic logs. Once the bottom of the sampling depth was reached, the rods were retracted approximately 1 to 4 feet, exposing the slotted PVC screen while the disposable tip remained stationary. In locations where samples were collected from multiple depth intervals the shallowest sample was collected first. The rods were then decontaminated

using a steam cleaner in accordance with the MEW Quality Assurance Project Plan (QAPP)⁴ before being driven to the next sample depth interval in the boring. This process was repeated between every sample collection depth.

Groundwater samples were collected with a peristaltic pump into laboratory-supplied containers. New polyethylene tubing was used for each groundwater sample. The samples were labeled and placed in coolers with ice, and shipped to the analytical laboratory under chain-of-custody procedures. All samples were analyzed for halogenated VOCs (HVOCs) by EPA Method 8260B. In addition five samples were analyzed for 1,4-dioxane by EPA Method 8270C, and total dissolved solids by SM 2540C, and four samples were analyzed for chromium VI by EPA Method 7199. As part of quality assurance/quality control protocol (QA/QC), a trip blank was included and analyzed for VOCs.

Following advancement of the direct-push borings and grab-groundwater sampling, the boreholes were grouted to the surface with a cement mix using a tremie pipe in accordance with SCVWD requirements. Boreholes were completed to match the surrounding surface, and roadways were repaired in accordance with City of Mountain View requirements.

A Trimble GeoXH handheld global positioning system (GPS) unit was used to record the locations of the borings.

I -2.6 Quality Assurance/Quality Control (QA/QC)

QA/QC of all laboratory data was conducted. One trip blank was submitted to the laboratory for analysis. No analytes were detected above the laboratory reporting limits. The laboratory followed media preparation procedures and sample analysis. Based on the results of the QA/QC review, the data are of acceptable quality for analytical parameters.

⁴ Canonie Environmental Services Corp. 1991. Quality Assurance Project Plan, Middlefield-Ellis-Whisman Site, Mountain View, California.

I -3. RESULTS

Table 1 presents a summary of the grab-groundwater sample results. Laboratory analytical reports are included in Attachment A2.

PSOD and grab-groundwater sampling results are discussed in the main body of the Treatability Study Design and Implementation Work Plan and are not repeated in this appendix.

TABLES

Table I .1
Supplemental Sampling Analytical Results in Groundwater
Grab-Groundwater Assessment and Proposed Well Installations
MEW Regional Program
Mountain View, CA

CPT Identification	GPS Coordinates		Sample Depth (ft bgs) ¹	Sample Date	TCE ²	cis-DCE ³	trans-1,2-DCE	1,1-DCE	Vinyl Chloride	1,1-DCA ⁴	Freon 113	Other VOCs ⁵	1,4-Dioxane	Total Dissolved Solids	Chromium VI	Other VOCs ⁸
	Easting	Northing														
SB-5	1546986.138	333344.4841	18-22	4/17/2013	8.1	ND	ND	ND	ND	ND	ND	ND	ND	700	ND	ND
SB-6	1547028.499	333331.4401	13-14.5	4/17/2013	ND	ND	ND	ND	ND	ND	ND	ND	--	640	--	ND
SB-8	1547167.895	333288.314	13.5-14.5	4/17/2013	6.1	ND	ND	ND	ND	ND	ND	ND	--	--	--	ND
SB-9	1547685.468	333152.2279	20-23	4/18/2013	31,000	5,100	35	23	26	12	ND	ND	4.7	910	ND	ND
			40-43	4/18/2013	220	270	96	2.2	ND	1.5	ND	ND	ND	--	--	ND
SB-10	1547691.685	333173.7145	20.5-23	4/18/2013	730	620	4.8	4.1	5.5	9.7	ND	ND	6.6	810	ND	ND
			35.5-38.5	4/18/2013	1,400	1,100	42	53	7.8	44	0.89	ND	ND	6.8	690	ND

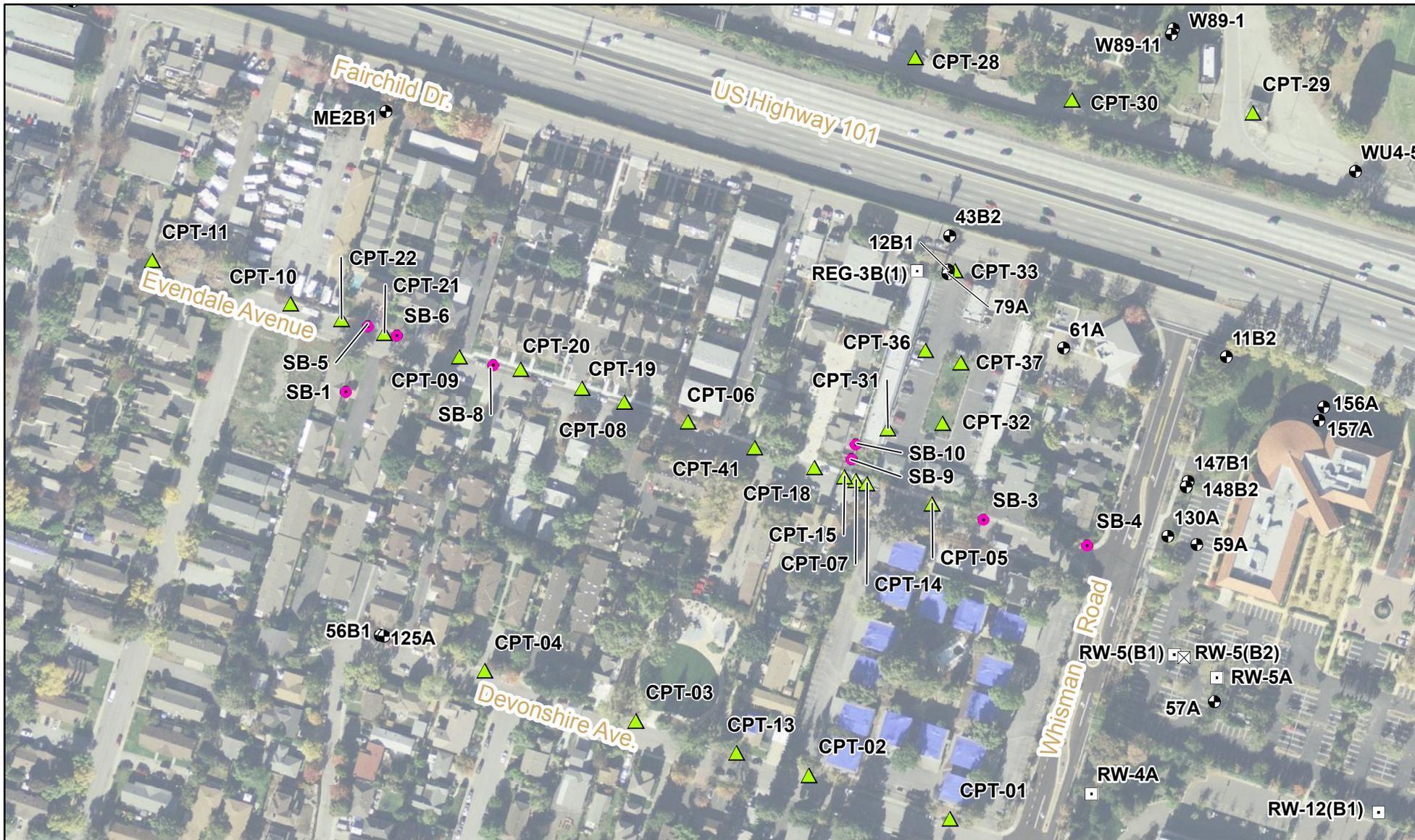
Notes

1. All VOC samples were analyzed by EPA Method 8260B, 1,4 Dioxane by EPA Method 8270C, total dissolved solids by SM 2540C, and Chromium VI by EPA Method 7199.
- 2 All units in micrograms per liter (µg/L) except total dissolved solids units in milligrams per liter (mg/L).

Abbreviations

1. ft bgs = feet below ground surface
2. TCE = trichloroethene
3. DCE = dichloroethene
4. DCA = dichloroethane
5. VOCs = volatile organic compounds
6. ND = not detected
7. -- = not analyzed

FIGURES



Legend

- Recovery Well On
- ⊠ Recovery Well Off
- Monitoring Well
- ▲ CPT and Grab-Groundwater Location (Geosyntec, 2013)
- Soil Boring and Grab-Groundwater Location (Geosyntec, 2013)

Aerial Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



Site Investigation Map

MEW Regional Groundwater Remediation Program
Mountain View, California

Geosyntec
consultants

Figure
G1

Oakland

September 2013

ATTACHMENT G1

Geologic Logs

GS FORM:
 OAKLAND

LOG OF SB-5

DEPTH (ft)	MATERIAL DESCRIPTION <small>SOIL NAME (USCS SYMBOL): Color, Moisture, Grain Size and Percentage, Plasticity, Consistency/Density, Other (Odor, Dry Strength, Mineral Content)</small>	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES				TIME	COMMENTS
				NUMBER	TYPE	RECOVERY (%)	PID READING (ppm)		
0	Hand Augered.								
5									
10	Sandy SILT (ML); black (10YR 2/1); moist; fine sand, silt [0,30,70]; medium stiff.					20			
15	Poorly graded SAND with gravel (SP); dark grayish brown (10YR 4/2); wet; small gravel, fine to medium sand, fines [15, 80, 5].					100	2.9		Wet at 13'
15	Sandy SILT (ML); dark brown (10 YR 3/4); moist; small gravel, fine to medium sand, silt [10, 40, 50].					2.5			
20	Poorly graded SAND with gravel (SP); dark grayish brown (10YR 4/2); wet; small gravel, fine to medium sand, fines [15, 80, 5].					100	2.9		
20	Well graded SAND with gravel (SW); black (10YR 2/1); wet; small gravel, coarse sand [20, 80, 0].								
25	Sandy SILT (ML); dark brown (10 YR 3/4); moist; small gravel, fine to medium sand, silt [10, 40, 50].					100	7.8		
25	Poorly graded SAND with gravel (SP); dark grayish brown (10YR 4/2); wet; small gravel, fine to medium sand, fines [15, 80, 5].								
25	Lean CLAY (CL), greenish black (10GY 2.5/1), moist, clay [0, 0, 100], high plasticity, medium stiff. Total Depth = 25'								

BORING LOG NO WELL (OAKLAND) MEW - SB-5 - SB-10.GPJ GEOSYNTEC.GDT 6/10/13

CONTRACTOR Vironex
EQUIPMENT
DRILL MTHD Direct Push
DIAMETER (in) 2"
LOGGER MF
REVIEWER NKG
NORTHING
EASTING
ANGLE Vertical
BEARING -----
PRINTED 06/10/13

REMARKS:

COORDINATE SYSTEM:
 SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

GS FORM:
OAKLAND

LOG OF SB-6

DEPTH (ft)	MATERIAL DESCRIPTION <small>SOIL NAME (USCS SYMBOL): Color, Moisture, Grain Size and Percentage, Plasticity, Consistency/Density, Other (Odor, Dry Strength, Mineral Content)</small>	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES				TIME	COMMENTS
				NUMBER	TYPE	RECOVERY (%)	PID READING (ppm)		
	Hand Augered.								
5									
	Sandy SILT (ML); black (10YR 2/1); moist; fine sand, silt [0, 30, 70]; medium stiff.					100			
10	Well graded SAND (SW); black (10YR 2/1); moist; medium to coarse sand [0, 100, 0].								
	SILT (ML); brown (10YR 4/3); moist; fine sand, silt [0, 15, 85]; very hard.						1.4		
	Poorly graded SAND with gravel (SP); dark grayish brown (10 YR 4/2); wet; small gravel, medium sand, fines [15, 80, 5].					100	0.7		Wet at 13'
15	SILT (ML); brown (10YR 4/3); moist; fine sand, silt [0, 15, 85]; very hard.						1.6		
	Sandy SILT (ML); brown (10YR 4/3); moist; fine sand, silt [0, 40, 60]; stiff.						1.3		
	Poorly graded SAND with gravel (SP); dark grayish brown (10 YR 4/2); wet; small gravel, medium sand, fines [15, 80, 5].					100	2.9		
20	SILT with sand (ML); brown (10YR 4/3); wet; small gravel, fine to medium sand, silt [15, 30, 55]; low plasticity; stiff.						1.4		
	Poorly graded SAND with gravel (SP); dark grayish brown (10 YR 4/2); wet; small gravel, medium sand, fines [15, 80, 5].						2.3		
	Sandy SILT (ML); brown (10YR 4/3); moist; fine sand, silt [0, 40, 60]; stiff.								
	No recovery.					0	2.9		
25	Total Depth = 25'								

BORING LOG NO WELL (OAKLAND) MEW - SB-5 - SB-10.GPJ GEOSYNTEC.GDT 6/10/13

CONTRACTOR Vironex
EQUIPMENT
DRILL MTHD Direct Push
DIAMETER (in) 2"
LOGGER MF REVIEWER NKG

NORTHING
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ANGLE Vertical
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REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

GS FORM:
OAKLAND

LOG OF SB-8

DEPTH (ft)	MATERIAL DESCRIPTION <small>SOIL NAME (USCS SYMBOL): Color, Moisture, Grain Size and Percentage, Plasticity, Consistency/Density, Other (Odor, Dry Strength, Mineral Content)</small>	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES				TIME	COMMENTS
				NUMBER	TYPE	RECOVERY (%)	PID READING (ppm)		
	Hand Augered.								
5									
	Sandy SILT (ML); black (10YR 2/1); moist; fine sand, silt, [0, 30, 70]; medium dense.					100	3.7		
10	Color change to dark gray (10YR 4/4); sand, silt [0, 45, 55].						2.2		
	Sandy SILT with gravel (ML); dark gray (10YR 4/4); moist; small gravel, fine sand, silt [15, 35, 50]; medium stiff.						3.8		
	Poorly graded SAND with silt (SP-SM); dark grayish brown (10YR 4/2); wet; fine sand, silt [0, 80, 20].						3.5		
15	Well graded GRAVEL with silt (GW-GM); dark gray (10YR 4/1); wet; small gravel, fine sand, silt [85, 5, 10].					100	4.1		▽ Wet at 13.5'
	Sandy SILT with gravel (ML); dark gray (10YR 4/4); moist; small gravel, fine sand, silt [15, 35, 50]; medium stiff.						4.3		
	Poorly graded SAND with silt (SP-SM); dark brown (10YR 3/3); moist; fine sand, silt [0, 90, 10].						5.4		
20	Poorly graded SAND with silt and gravel (SP-SM); dark brown (10YR 3/3); wet; small gravel, fine sand, silt [15, 70, 15].					100	4.7		
	Poorly graded SAND with silt (SP-SM); dark brown (10YR 3/3); moist; fine sand, silt [0, 90, 10].						6.3		
	Poorly graded SAND with silt and gravel (SP-SM); dark brown (10YR 3/3); wet; small gravel, fine sand, silt [15, 70, 15].						6.2		
25	Lean CLAY (CL); greenish black (10GY 2.5/1); dry; clay [0, 0, 100]; high plasticity; medium stiff.						6.9		
	Total Depth = 25'						5.5		
							7.2		

BORING LOG NO WELL (OAKLAND) MEW - SB-5 - SB-10.GPJ GEOSYNTEC.GDT 6/10/13

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EQUIPMENT
DRILL MTHD Direct Push
DIAMETER (in) 2"
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ANGLE Vertical
BEARING -----
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REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

GS FORM:
OAKLAND

LOG OF SB-9

DEPTH (ft)	MATERIAL DESCRIPTION SOIL NAME (USCS SYMBOL): Color, Moisture, Grain Size and Percentage, Plasticity, Consistency/Density, Other (Odor, Dry Strength, Mineral Content)	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES				TIME	COMMENTS
				NUMBER	TYPE	RECOVERY (%)	PID READING (ppm)		
	Hand Augered.								
5									
10	Lean CLAY (ML); grayish brown (10YR 5/2); moist; clay [0, 0, 100]; medium plasticity; medium stiff.						0.2 0.5 1.4 1.4		
15	Clayey SAND (SM); olive gray (5Y 5/2); wet; fine sand, clay [0, 70, 30].					20	0.2		Wet at 18'
20	Lean CLAY (CL); very dark gray (5Y 4/2); moist; fine sand, clay [0, 20, 80]; medium plasticity; soft.						0.5		▽
	Clayey SAND (SM); very dark gray (5Y 4/2); wet; small gravel, fine sand, clay [5, 60, 35]; white (5Y 8/1) color globules, 0.2 to 1.5 cm diameter, 10% throughout.					100	15.4		
	Lean CLAY (ML); dark brown (10YR 3/3); moist; clay [0, 0, 100]; medium plasticity; stiff.						1.6 2.9		
25	Lean CLAY (CL); very dark gray (5Y 4/2); moist; fine sand, clay [0, 20, 80]; medium plasticity; soft.					100			
	Silty SAND (SM); dark olive gray (5Y 3/2); wet; small gravel, fine sand, silt [5, 75, 20].								
30	Clayey SAND (SM); olive gray (5Y 5/2); moist; fine sand, clay [0, 70, 30].								
	Silty SAND (SM); dark olive gray (5Y 3/2); wet; small gravel, fine sand, silt [5, 75, 20].					100	4.0		

BORING LOG NO WELL (OAKLAND) MEW - SB-5 - SB-5 - SB-10.GPJ GEOSYNTEC.GDT 6/10/13

CONTRACTOR Vironex
EQUIPMENT
DRILL MTHD Direct Push
DIAMETER (in) 2"
LOGGER MF **REVIEWER** NKG

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EASTING
ANGLE Vertical
BEARING -----
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REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

GS FORM:
OAKLAND

LOG OF SB-9

DEPTH (ft)	MATERIAL DESCRIPTION <small>SOIL NAME (USCS SYMBOL): Color, Moisture, Grain Size and Percentage, Plasticity, Consistency/Density, Other (Odor, Dry Strength, Mineral Content)</small>	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES				TIME	COMMENTS
				NUMBER	TYPE	RECOVERY (%)	PID READING (ppm)		
	Becomes moist at 32.5'								
	Lean CLAY (CL); greenish black (10GY 2.5/1); moist; clay [0, 0, 100]; medium plasticity; stiff.								
35	Silty SAND (SM); greenish black (10GY 2.5/1); wet; fine sand, silt [0, 70, 30].					100			
	Lean CLAY (CL); greenish black (10GY 2.5/1); moist; clay [0, 0, 100]; medium plasticity; stiff.								
40	Silty SAND (SM); greenish black (10GY 2.5/1); wet; fine sand, silt [0, 70, 30].					100			
	Lean CLAY (CL); greenish black (10GY 2.5/1); dry; clay [0, 0, 100]; medium plasticity; stiff.								
45	Total Depth = 45'								

BORING LOG NO WELL (OAKLAND) MEW - SB-5 - SB-10.GPJ GEOSYNTEC.GDT 6/10/13

CONTRACTOR Vironex
EQUIPMENT
DRILL MTHD Direct Push
DIAMETER (in) 2"
LOGGER MF REVIEWER NKG
NORTHING
EASTING
ANGLE Vertical
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REMARKS:

COORDINATE SYSTEM:
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GS FORM:
OAKLAND

LOG OF SB-10

DEPTH (ft)	MATERIAL DESCRIPTION <small>SOIL NAME (USCS SYMBOL): Color, Moisture, Grain Size and Percentage, Plasticity, Consistency/Density, Other (Odor, Dry Strength, Mineral Content)</small>	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES				TIME	COMMENTS
				NUMBER	TYPE	RECOVERY (%)	PID READING (ppm)		
	Bentonite fill.								
5	Lean CLAY (CL); brown (10YR 4/3); dry; clay [0, 0, 100]; medium plasticity; very stiff.					100			
10	Well graded GRAVEL with sand (GW); light gray (10Y 7/); dry; small gravel; fine sand [60, 40, 0].					100			
15	Lean CLAY (CL); dark grayish brown (10YR 4/2); moist; small gravel, fine sand, clay [5, 5, 90]; medium plasticity; medium stiff.					100			
20	Well graded GRAVEL with sand (GW); light gray (10Y 7/); dry; small gravel, fine sand [60, 40, 0].					100			
20	Sandy lean CLAY (CL); dark grayish brown (25Y 4/2); moist; fine sand, clay [0, 40, 60]; medium plasticity; medium stiff.					100			
20.5	Clayey SAND (SC); dark grayish brown (2.5Y 4/2); wet; fine sand, clay [0, 80, 20]; 20.5' to 21.5' 20% white and yellow globules with 0.1 - 1.2 cm diameter, medium plasticity.					100			Wet at 20.5'. 20.5' to 21.5'
21.5	Silty SAND (SM); dark grayish brown (2.5Y 4/2); wet; fine sand, clay [0, 80, 20].					100			
25	Clayey SAND (SC); dark grayish brown (2.5Y 4/2); wet; fine sand, clay [0, 80, 20].					100			
25	Poorly graded SAND with silt (SW-SM); dark gray (2.5Y 4/1); wet; fine sand, silt [0,90,10].					100			
30	Lean CLAY (CL); dark gray (N 4); moist; clay [0,0,100], medium plasticity; stiff.					100			
30	Poorly graded SAND with silt (SW-SM); dark gray (2.5Y 4/1); wet; fine sand, silt [0,90,10].					100			

BORING LOG NO WELL (OAKLAND) MEW - SB-5 - SB-10.GPJ GEOSYNTEC.GDT 6/10/13

CONTRACTOR Vironex
EQUIPMENT
DRILL MTHD Direct Push
DIAMETER (in) 2"
LOGGER MF

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REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

GS FORM:
OAKLAND

LOG OF SB-10

DEPTH (ft)	MATERIAL DESCRIPTION <small>SOIL NAME (USCS SYMBOL): Color, Moisture, Grain Size and Percentage, Plasticity, Consistency/Density, Other (Odor, Dry Strength, Mineral Content)</small>	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES				TIME	COMMENTS
				NUMBER	TYPE	RECOVERY (%)	PID READING (ppm)		
35	Lean CLAY (CL); dark gray (N 4); moist; clay [0,0,100], medium plasticity; stiff.					100			
	Poorly graded SAND with silt (SW-SM); dark gray (2.5Y 4/1); wet; fine sand, silt [0,90,10].								
40	Lean CLAY (CL); dark gray (N 4); moist; clay [0,0,100], medium plasticity; stiff.					100			
	Well graded SAND with silt (SW-SM); very dark gray (N 3); wet; fine sand, silt [0, 80, 20].								
45	Lean CLAY (CL); very dark gray (N 3); dry; clay [0, 0, 100]; medium plasticity; very stiff					100			
	Total Depth = 45'								

BORING LOG NO WELL (OAKLAND) MEW - SB-5 - SB-10.GPJ - GEOSYNTEC.GDT 6/10/13

CONTRACTOR Vironex
EQUIPMENT
DRILL MTHD Direct Push
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REMARKS:

COORDINATE SYSTEM:
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

ATTACHMENT G2
Laboratory Analytical Reports

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-49202-1
Client Project/Site: Regional MEW

For:
Geosyntec Consultants, Inc.
1111 Broadway
6th Floor
Oakland, California 94612

Attn: Mr. Eric Suchomel



Authorized for release by:
4/24/2013 4:22:12 PM

Micah Smith
Project Manager I
micah.smith@testamericainc.com

LINKS

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results through
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Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

- 1
- 2
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- 11
- 12
- 13
- 14



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Method Summary	20
Sample Summary	21
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Definitions/Glossary

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Job ID: 720-49202-1

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative 720-49202-1

Comments

No additional comments.

Receipt

The samples were received on 4/17/2013 5:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.9° C.

GC/MS VOA

Method(s) 8260B: The following sample submitted for volatiles analysis was received with insufficient preservation (pH >2): SB-5 (720-49202-3).

No other analytical or quality issues were noted.

GC/MS Semi VOA

Method(s) 8270C LL: The only surrogate that will be reported for these samples will be 2-Fluorobiphenyl, which is associated to the only target compound, 1,4-Dioxane. The other surrogates requested are either not needed and/or not extracted.

No other analytical or quality issues were noted.

Metals

No analytical or quality issues were noted.

General Chemistry

No analytical or quality issues were noted.

Organic Prep

Method(s) 3520C: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 170520,3520_Base(8270C LL). The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No other analytical or quality issues were noted.

Detection Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Client Sample ID: SB-8

Lab Sample ID: 720-49202-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	6.1		0.50		ug/L	1		8260B	Total/NA

Client Sample ID: SB-6

Lab Sample ID: 720-49202-2

No Detections.

Client Sample ID: SB-5

Lab Sample ID: 720-49202-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	8.1		0.50		ug/L	1		8260B	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	700		10		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: SB-8

Date Collected: 04/17/13 11:15

Date Received: 04/17/13 17:30

Lab Sample ID: 720-49202-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50		ug/L			04/20/13 04:00	1
1,1-Dichloroethane	ND		0.50		ug/L			04/20/13 04:00	1
Dichlorodifluoromethane	ND		0.50		ug/L			04/20/13 04:00	1
Vinyl chloride	ND		0.50		ug/L			04/20/13 04:00	1
Chloroethane	ND		1.0		ug/L			04/20/13 04:00	1
Trichlorofluoromethane	ND		1.0		ug/L			04/20/13 04:00	1
Methylene Chloride	ND		5.0		ug/L			04/20/13 04:00	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/20/13 04:00	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/20/13 04:00	1
Chloroform	ND		1.0		ug/L			04/20/13 04:00	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/20/13 04:00	1
Carbon tetrachloride	ND		0.50		ug/L			04/20/13 04:00	1
1,2-Dichloroethane	ND		0.50		ug/L			04/20/13 04:00	1
Trichloroethene	6.1		0.50		ug/L			04/20/13 04:00	1
1,2-Dichloropropane	ND		0.50		ug/L			04/20/13 04:00	1
Dichlorobromomethane	ND		0.50		ug/L			04/20/13 04:00	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/20/13 04:00	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/20/13 04:00	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/20/13 04:00	1
Tetrachloroethene	ND		0.50		ug/L			04/20/13 04:00	1
Chlorodibromomethane	ND		0.50		ug/L			04/20/13 04:00	1
Chlorobenzene	ND		0.50		ug/L			04/20/13 04:00	1
Bromoform	ND		1.0		ug/L			04/20/13 04:00	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/20/13 04:00	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/20/13 04:00	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/20/13 04:00	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/20/13 04:00	1
Chloromethane	ND		1.0		ug/L			04/20/13 04:00	1
Bromomethane	ND		1.0		ug/L			04/20/13 04:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			04/20/13 04:00	1
EDB	ND		0.50		ug/L			04/20/13 04:00	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/20/13 04:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	95		70 - 130		04/20/13 04:00	1
<i>4-Bromofluorobenzene</i>	88		67 - 130		04/20/13 04:00	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	96		75 - 138		04/20/13 04:00	1

Client Sample ID: SB-6

Date Collected: 04/17/13 13:45

Date Received: 04/17/13 17:30

Lab Sample ID: 720-49202-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50		ug/L			04/20/13 04:31	1
1,1-Dichloroethane	ND		0.50		ug/L			04/20/13 04:31	1
Dichlorodifluoromethane	ND		0.50		ug/L			04/20/13 04:31	1
Vinyl chloride	ND		0.50		ug/L			04/20/13 04:31	1
Chloroethane	ND		1.0		ug/L			04/20/13 04:31	1
Trichlorofluoromethane	ND		1.0		ug/L			04/20/13 04:31	1
Methylene Chloride	ND		5.0		ug/L			04/20/13 04:31	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/20/13 04:31	1

TestAmerica Pleasanton

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: SB-6
Date Collected: 04/17/13 13:45
Date Received: 04/17/13 17:30

Lab Sample ID: 720-49202-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/20/13 04:31	1
Chloroform	ND		1.0		ug/L			04/20/13 04:31	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/20/13 04:31	1
Carbon tetrachloride	ND		0.50		ug/L			04/20/13 04:31	1
1,2-Dichloroethane	ND		0.50		ug/L			04/20/13 04:31	1
Trichloroethene	ND		0.50		ug/L			04/20/13 04:31	1
1,2-Dichloropropane	ND		0.50		ug/L			04/20/13 04:31	1
Dichlorobromomethane	ND		0.50		ug/L			04/20/13 04:31	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/20/13 04:31	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/20/13 04:31	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/20/13 04:31	1
Tetrachloroethene	ND		0.50		ug/L			04/20/13 04:31	1
Chlorodibromomethane	ND		0.50		ug/L			04/20/13 04:31	1
Chlorobenzene	ND		0.50		ug/L			04/20/13 04:31	1
Bromoform	ND		1.0		ug/L			04/20/13 04:31	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/20/13 04:31	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/20/13 04:31	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/20/13 04:31	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/20/13 04:31	1
Chloromethane	ND		1.0		ug/L			04/20/13 04:31	1
Bromomethane	ND		1.0		ug/L			04/20/13 04:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			04/20/13 04:31	1
EDB	ND		0.50		ug/L			04/20/13 04:31	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/20/13 04:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130		04/20/13 04:31	1
4-Bromofluorobenzene	96		67 - 130		04/20/13 04:31	1
1,2-Dichloroethane-d4 (Surr)	96		75 - 138		04/20/13 04:31	1

Client Sample ID: SB-5
Date Collected: 04/17/13 15:40
Date Received: 04/17/13 17:30

Lab Sample ID: 720-49202-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50		ug/L			04/20/13 05:04	1
1,1-Dichloroethane	ND		0.50		ug/L			04/20/13 05:04	1
Dichlorodifluoromethane	ND		0.50		ug/L			04/20/13 05:04	1
Vinyl chloride	ND		0.50		ug/L			04/20/13 05:04	1
Chloroethane	ND		1.0		ug/L			04/20/13 05:04	1
Trichlorofluoromethane	ND		1.0		ug/L			04/20/13 05:04	1
Methylene Chloride	ND		5.0		ug/L			04/20/13 05:04	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/20/13 05:04	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/20/13 05:04	1
Chloroform	ND		1.0		ug/L			04/20/13 05:04	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/20/13 05:04	1
Carbon tetrachloride	ND		0.50		ug/L			04/20/13 05:04	1
1,2-Dichloroethane	ND		0.50		ug/L			04/20/13 05:04	1
Trichloroethene	8.1		0.50		ug/L			04/20/13 05:04	1
1,2-Dichloropropane	ND		0.50		ug/L			04/20/13 05:04	1
Dichlorobromomethane	ND		0.50		ug/L			04/20/13 05:04	1

TestAmerica Pleasanton

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: SB-5
Date Collected: 04/17/13 15:40
Date Received: 04/17/13 17:30

Lab Sample ID: 720-49202-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/20/13 05:04	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/20/13 05:04	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/20/13 05:04	1
Tetrachloroethene	ND		0.50		ug/L			04/20/13 05:04	1
Chlorodibromomethane	ND		0.50		ug/L			04/20/13 05:04	1
Chlorobenzene	ND		0.50		ug/L			04/20/13 05:04	1
Bromoform	ND		1.0		ug/L			04/20/13 05:04	1
1,1,1,2-Tetrachloroethane	ND		0.50		ug/L			04/20/13 05:04	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/20/13 05:04	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/20/13 05:04	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/20/13 05:04	1
Chloromethane	ND		1.0		ug/L			04/20/13 05:04	1
Bromomethane	ND		1.0		ug/L			04/20/13 05:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			04/20/13 05:04	1
EDB	ND		0.50		ug/L			04/20/13 05:04	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/20/13 05:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		70 - 130					04/20/13 05:04	1
4-Bromofluorobenzene	88		67 - 130					04/20/13 05:04	1
1,2-Dichloroethane-d4 (Surr)	97		75 - 138					04/20/13 05:04	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Client Sample ID: SB-5
Date Collected: 04/17/13 15:40
Date Received: 04/17/13 17:30

Lab Sample ID: 720-49202-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.1		ug/L		04/21/13 11:20	04/23/13 14:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	68		57 - 120				04/21/13 11:20	04/23/13 14:03	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

General Chemistry

Client Sample ID: SB-5
Date Collected: 04/17/13 15:40
Date Received: 04/17/13 17:30

Lab Sample ID: 720-49202-3
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	700		10		mg/L			04/19/13 16:46	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

General Chemistry - Dissolved

Client Sample ID: SB-5
Date Collected: 04/17/13 15:40
Date Received: 04/17/13 17:30

Lab Sample ID: 720-49202-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.50		ug/L			04/17/13 19:41	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 720-134813/3

Matrix: Water

Analysis Batch: 134813

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50		ug/L			04/19/13 19:15	1
1,1-Dichloroethane	ND		0.50		ug/L			04/19/13 19:15	1
Dichlorodifluoromethane	ND		0.50		ug/L			04/19/13 19:15	1
Vinyl chloride	ND		0.50		ug/L			04/19/13 19:15	1
Chloroethane	ND		1.0		ug/L			04/19/13 19:15	1
Trichlorofluoromethane	ND		1.0		ug/L			04/19/13 19:15	1
Methylene Chloride	ND		5.0		ug/L			04/19/13 19:15	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/19/13 19:15	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/19/13 19:15	1
Chloroform	ND		1.0		ug/L			04/19/13 19:15	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/19/13 19:15	1
Carbon tetrachloride	ND		0.50		ug/L			04/19/13 19:15	1
1,2-Dichloroethane	ND		0.50		ug/L			04/19/13 19:15	1
Trichloroethene	ND		0.50		ug/L			04/19/13 19:15	1
1,2-Dichloropropane	ND		0.50		ug/L			04/19/13 19:15	1
Dichlorobromomethane	ND		0.50		ug/L			04/19/13 19:15	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/19/13 19:15	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/19/13 19:15	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/19/13 19:15	1
Tetrachloroethene	ND		0.50		ug/L			04/19/13 19:15	1
Chlorodibromomethane	ND		0.50		ug/L			04/19/13 19:15	1
Chlorobenzene	ND		0.50		ug/L			04/19/13 19:15	1
Bromoform	ND		1.0		ug/L			04/19/13 19:15	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/19/13 19:15	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/19/13 19:15	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/19/13 19:15	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/19/13 19:15	1
Chloromethane	ND		1.0		ug/L			04/19/13 19:15	1
Bromomethane	ND		1.0		ug/L			04/19/13 19:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			04/19/13 19:15	1
EDB	ND		0.50		ug/L			04/19/13 19:15	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/19/13 19:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		70 - 130		04/19/13 19:15	1
4-Bromofluorobenzene	105		67 - 130		04/19/13 19:15	1
1,2-Dichloroethane-d4 (Surr)	87		75 - 138		04/19/13 19:15	1

Lab Sample ID: LCS 720-134813/4

Matrix: Water

Analysis Batch: 134813

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	25.0	23.5		ug/L		94	64 - 128
1,1-Dichloroethane	25.0	23.5		ug/L		94	70 - 130
Dichlorodifluoromethane	25.0	19.6		ug/L		79	34 - 132
Vinyl chloride	25.0	24.1		ug/L		97	54 - 135
Chloroethane	25.0	24.9		ug/L		100	62 - 138

TestAmerica Pleasanton

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 720-134813/4

Matrix: Water

Analysis Batch: 134813

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	25.0	24.5		ug/L		98	66 - 132
Methylene Chloride	25.0	22.6		ug/L		90	70 - 147
trans-1,2-Dichloroethene	25.0	24.3		ug/L		97	68 - 130
cis-1,2-Dichloroethene	25.0	25.0		ug/L		100	70 - 130
Chloroform	25.0	23.0		ug/L		92	70 - 130
1,1,1-Trichloroethane	25.0	23.7		ug/L		95	70 - 130
Carbon tetrachloride	25.0	23.5		ug/L		94	70 - 146
1,2-Dichloroethane	25.0	23.4		ug/L		94	61 - 132
Trichloroethene	25.0	25.1		ug/L		100	70 - 130
1,2-Dichloropropane	25.0	25.1		ug/L		100	70 - 130
Dichlorobromomethane	25.0	24.9		ug/L		99	70 - 130
trans-1,3-Dichloropropene	25.0	20.2		ug/L		81	70 - 140
cis-1,3-Dichloropropene	25.0	22.2		ug/L		89	70 - 130
1,1,2-Trichloroethane	25.0	25.9		ug/L		104	70 - 130
Tetrachloroethene	25.0	25.3		ug/L		101	70 - 130
Chlorodibromomethane	25.0	23.6		ug/L		94	70 - 145
Chlorobenzene	25.0	24.3		ug/L		97	70 - 130
Bromoform	25.0	25.8		ug/L		103	68 - 136
1,1,2,2-Tetrachloroethane	25.0	24.2		ug/L		97	70 - 130
1,3-Dichlorobenzene	25.0	26.0		ug/L		104	70 - 130
1,4-Dichlorobenzene	25.0	24.1		ug/L		96	70 - 130
1,2-Dichlorobenzene	25.0	24.8		ug/L		99	70 - 130
Chloromethane	25.0	21.9		ug/L		88	52 - 175
Bromomethane	25.0	24.6		ug/L		98	43 - 151
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	24.2		ug/L		97	42 - 162
EDB	25.0	24.4		ug/L		98	70 - 130
1,2,4-Trichlorobenzene	25.0	26.6		ug/L		107	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	125		70 - 130
4-Bromofluorobenzene	115		67 - 130
1,2-Dichloroethane-d4 (Surr)	84		75 - 138

Lab Sample ID: LCSD 720-134813/5

Matrix: Water

Analysis Batch: 134813

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
1,1-Dichloroethene	25.0	23.8		ug/L		95	64 - 128	1	20
1,1-Dichloroethane	25.0	24.4		ug/L		98	70 - 130	4	20
Dichlorodifluoromethane	25.0	19.7		ug/L		79	34 - 132	0	20
Vinyl chloride	25.0	23.5		ug/L		94	54 - 135	3	20
Chloroethane	25.0	24.9		ug/L		100	62 - 138	0	20
Trichlorofluoromethane	25.0	23.4		ug/L		93	66 - 132	5	20
Methylene Chloride	25.0	23.4		ug/L		94	70 - 147	4	20
trans-1,2-Dichloroethene	25.0	25.0		ug/L		100	68 - 130	3	20
cis-1,2-Dichloroethene	25.0	25.9		ug/L		104	70 - 130	4	20

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QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 720-134813/5

Matrix: Water

Analysis Batch: 134813

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD	
							RPD	Limit	RPD	Limit
Chloroform	25.0	23.8		ug/L		95	70 - 130	4	20	
1,1,1-Trichloroethane	25.0	24.0		ug/L		96	70 - 130	1	20	
Carbon tetrachloride	25.0	23.6		ug/L		95	70 - 146	1	20	
1,2-Dichloroethane	25.0	25.2		ug/L		101	61 - 132	7	20	
Trichloroethene	25.0	26.5		ug/L		106	70 - 130	6	20	
1,2-Dichloropropane	25.0	27.9		ug/L		112	70 - 130	10	20	
Dichlorobromomethane	25.0	27.0		ug/L		108	70 - 130	8	20	
trans-1,3-Dichloropropene	25.0	24.4		ug/L		98	70 - 140	19	20	
cis-1,3-Dichloropropene	25.0	26.5		ug/L		106	70 - 130	18	20	
1,1,2-Trichloroethane	25.0	29.5		ug/L		118	70 - 130	13	20	
Tetrachloroethene	25.0	26.9		ug/L		108	70 - 130	6	20	
Chlorodibromomethane	25.0	26.5		ug/L		106	70 - 145	12	20	
Chlorobenzene	25.0	26.2		ug/L		105	70 - 130	8	20	
Bromoform	25.0	27.2		ug/L		109	68 - 136	5	20	
1,1,2,2-Tetrachloroethane	25.0	26.2		ug/L		105	70 - 130	8	20	
1,3-Dichlorobenzene	25.0	28.1		ug/L		112	70 - 130	8	20	
1,4-Dichlorobenzene	25.0	26.4		ug/L		106	70 - 130	9	20	
1,2-Dichlorobenzene	25.0	26.4		ug/L		106	70 - 130	6	20	
Chloromethane	25.0	24.3		ug/L		97	52 - 175	10	20	
Bromomethane	25.0	24.3		ug/L		97	43 - 151	1	20	
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	24.1		ug/L		96	42 - 162	0	20	
EDB	25.0	28.6		ug/L		114	70 - 130	16	20	
1,2,4-Trichlorobenzene	25.0	28.5		ug/L		114	70 - 130	7	20	

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	127		70 - 130
4-Bromofluorobenzene	113		67 - 130
1,2-Dichloroethane-d4 (Surr)	84		75 - 138

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Lab Sample ID: MB 280-170520/1-A

Matrix: Water

Analysis Batch: 170843

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 170520

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	ND		1.0		ug/L		04/21/13 11:20	04/23/13 12:25	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2-Fluorobiphenyl	81		57 - 120	04/21/13 11:20	04/23/13 12:25	1

Lab Sample ID: LCS 280-170520/2-A

Matrix: Water

Analysis Batch: 170843

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 170520

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
							RPD	Limit
1,4-Dioxane	10.0	5.24		ug/L		52	38 - 120	

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QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: LCS 280-170520/2-A
Matrix: Water
Analysis Batch: 170843

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 170520

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	85		57 - 120

Lab Sample ID: LCSD 280-170520/3-A
Matrix: Water
Analysis Batch: 170843

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 170520

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	10.0	5.67		ug/L		57	38 - 120	8	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl	80		57 - 120

Method: 7199 - Chromium, Hexavalent (IC)

Lab Sample ID: MB 720-135039/1-A
Matrix: Water
Analysis Batch: 134594

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.50		ug/L			04/17/13 16:59	1

Lab Sample ID: LCS 720-135039/2-A
Matrix: Water
Analysis Batch: 134594

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	2.00	1.88		ug/L		94	90 - 110

Lab Sample ID: LCSD 720-135039/3-A
Matrix: Water
Analysis Batch: 134594

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cr (VI)	2.00	1.90		ug/L		95	90 - 110	2	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 720-134805/2
Matrix: Water
Analysis Batch: 134805

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			04/19/13 16:46	1

TestAmerica Pleasanton

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 720-134805/1
Matrix: Water
Analysis Batch: 134805

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	1030		mg/L		103	85 - 115

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QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

GC/MS VOA

Analysis Batch: 134813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49202-1	SB-8	Total/NA	Water	8260B	
720-49202-2	SB-6	Total/NA	Water	8260B	
720-49202-3	SB-5	Total/NA	Water	8260B	
LCS 720-134813/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 720-134813/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 720-134813/3	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 170520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49202-3	SB-5	Total/NA	Water	3520C	
LCS 280-170520/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 280-170520/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 280-170520/1-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 170843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49202-3	SB-5	Total/NA	Water	8270C LL	170520
LCS 280-170520/2-A	Lab Control Sample	Total/NA	Water	8270C LL	170520
LCSD 280-170520/3-A	Lab Control Sample Dup	Total/NA	Water	8270C LL	170520
MB 280-170520/1-A	Method Blank	Total/NA	Water	8270C LL	170520

General Chemistry

Analysis Batch: 134594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49202-3	SB-5	Dissolved	Water	7199	
LCS 720-135039/2-A	Lab Control Sample	Dissolved	Water	7199	
LCSD 720-135039/3-A	Lab Control Sample Dup	Dissolved	Water	7199	
MB 720-135039/1-A	Method Blank	Dissolved	Water	7199	

Analysis Batch: 134805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49202-3	SB-5	Total/NA	Water	SM 2540C	
LCS 720-134805/1	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 720-134805/2	Method Blank	Total/NA	Water	SM 2540C	

TestAmerica Pleasanton

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Client Sample ID: SB-8

Date Collected: 04/17/13 11:15

Date Received: 04/17/13 17:30

Lab Sample ID: 720-49202-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	134813	04/20/13 04:00	LL	TAL PLS

Client Sample ID: SB-6

Date Collected: 04/17/13 13:45

Date Received: 04/17/13 17:30

Lab Sample ID: 720-49202-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	134813	04/20/13 04:31	LL	TAL PLS

Client Sample ID: SB-5

Date Collected: 04/17/13 15:40

Date Received: 04/17/13 17:30

Lab Sample ID: 720-49202-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	134813	04/20/13 05:04	LL	TAL PLS
Total/NA	Prep	3520C			170520	04/21/13 11:20	CDC	TAL DEN
Total/NA	Analysis	8270C LL		1	170843	04/23/13 14:03	KGV	TAL DEN
Dissolved	Analysis	7199		1	134594	04/17/13 19:41	EYT	TAL PLS
Total/NA	Analysis	SM 2540C		1	134805	04/19/13 16:46	EYT	TAL PLS

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Certification Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Laboratory: TestAmerica Pleasanton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-14

Laboratory: TestAmerica Denver

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-13
A2LA	ISO/IEC 17025		2907.01	10-31-13
Alaska (UST)	State Program	10	UST-30	04-05-14
Arizona	State Program	9	AZ0713	12-19-13
Arkansas DEQ	State Program	6	88-0687	06-01-13
California	State Program	9	2513	08-31-14
Colorado	State Program	8	N/A	09-30-13
Connecticut	State Program	1	PH-0686	09-30-14
Florida	NELAP	4	E87667	06-30-13
Idaho	State Program	10	CO00026	09-30-13
Illinois	NELAP	5	200017	04-30-13
Iowa	State Program	7	370	12-01-14
Kansas	NELAP	7	E-10166	04-30-13
Louisiana	NELAP	6	30785	06-30-13
Maine	State Program	1	CO0002	03-03-15
Maryland	State Program	3	268	03-31-14
Minnesota	NELAP	5	8-999-405	12-31-13
Nevada	State Program	9	CO0026	07-30-13
New Hampshire	NELAP	1	205310	04-28-13
New Jersey	NELAP	2	CO004	06-30-13
New Mexico	State Program	6	CO00026	06-30-13
New York	NELAP	2	11964	04-01-14
North Carolina DENR	State Program	4	358	12-31-13
North Dakota	State Program	8	R-034	06-30-13
Oklahoma	State Program	6	8614	08-31-13
Oregon	NELAP	10	CO200001	01-16-14
Pennsylvania	NELAP	3	68-00664	07-31-13
South Carolina	State Program	4	72002	06-30-13
Texas	NELAP	6	T104704183-08-TX	09-30-13
USDA	Federal		P330-08-00036	02-08-14
Utah	NELAP	8	QUAN5	06-30-13
Virginia	NELAP	3	460232	06-14-13
Washington	State Program	10	C583	08-03-13
West Virginia DEP	State Program	3	354	11-30-13
Wisconsin	State Program	5	999615430	08-31-13
Wyoming (UST)	A2LA	8		10-31-13

Method Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PLS
8270C LL	Semivolatile Organic Compounds by GCMS - Low Levels	SW846	TAL DEN
7199	Chromium, Hexavalent (IC)	SW846	TAL PLS
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PLS

Protocol References:

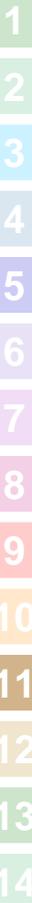
SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919



Sample Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-49202-1	SB-8	Water	04/17/13 11:15	04/17/13 17:30
720-49202-2	SB-6	Water	04/17/13 13:45	04/17/13 17:30
720-49202-3	SB-5	Water	04/17/13 15:40	04/17/13 17:30

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Chain of Custody Record

TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
phone 925.484.1919 fax 925.600.3002

Regulatory Program: DW NPDES RCRA Other:

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
145475

Client Contact: Geosyntec Consultants
1111 Broadway, 6th Floor
Oakland, CA 94607
Phone: 510.285.2700 FAX: 510.836.3114
Project Name: MEND
Site: MEND, MAJUMBARIA VIEW, CA
P O #: WR128A

Project Manager: Eric S. Schmel
Tel/Fax: 925.285.2700 / 925.836.3114
Analysis Turnaround Time: CALENDAR DAYS WORKING DAYS
TAT if different from Below: 2 weeks 1 week 2 days 1 day

Site Contact: Morgan Feldman
Lab Contact: Nicholas Smith
Carrier:
Date: 17 April 2013

COG No:
of
COCs

For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.: WR128A
Sampler: Morgan Feldman
Sample Specific Notes:

Sample Identification	Sample Date	Sample Time	Sample Type (G-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Analysis
SB-8	4/12/13	11:15	W	W	3			X
SB-4	4/12/13	13:45	W	W	4			X
SB-5	4/12/13	15:40	W	W	8			X X X X X

720-49202 Chain of Custody

Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

Non-Hazard Flammable Skin Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments:
O.P.C.

Return to Client Disposal by Lab Archive for _____ Months

Custody Seals Intact: Yes No
Custody Seal No.:
Relinquished by:
Company: Geosyntec
Date/Time: 4/12/13 16:15
Relinquished by:
Company: TASF
Date/Time: 04/17/13 17:30
Received in Laboratory by:
Company:
Date/Time: 4-17-13 17:30

Code/Temp. (°C): Obs'd:
Therm ID No.:
Cor'd:
Company: TASF
Date/Time: 04/11/13 @ 16:15

Salimpour, Afsaneh

From: Nicole Gotberg [NGotberg@Geosyntec.com]
Sent: Friday, April 19, 2013 11:06 AM
To: Salimpour, Afsaneh; Eric Suchomel
Cc: Morgan Fahlman; John Gallinatti
Subject: RE: Sample Login Confirmation for 720-49233, MEW
Afsaneh,

Per our conversation please make the following revisions to the requested analysis for 720-49233 and 720-49202.

1. Remove the SVOC 8270C analysis, we would only like to run 1,4 Dioxane by 8270C
2. For 8260B only run the halogenated VOC (HVOC) list
3. For the trip blank only run the HVOC analysis

I will have Morgan revise and initial changes on the Chain of Custody forms to be included with the lab reports.

Thanks,
Nicole

Nicole K. Gotberg, P.G.
Professional Geologist

1111 Broadway, 6th Floor
Oakland, CA 94607
Main Phone: 510.836.3034, ext. 2771
Direct Phone: 510.285.2771
Fax: 510.836.3036
www.geosyntec.com

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720-49202 Chain of Custody

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10:41 AM

To: Eric Suchomel; Nicole Gotberg
Subject: Sample Login Confirmation for 720-49233, MEW

Insufficient sample volume was provided for the following sample(s) for the 8270C; 1,4-Dioxane analysis: TAL SF TB. Received 2-40ml Hcl voa vials, can only run for 8260B.

AFSANEH SALIMPOUR

TestAmerica Pleasanton
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 925.484.1919
www.testamericainc.com

Reference: [128017]
Attachments: 3

4/19/2013

Page 23 of 26

4/24/2013

TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
phone 925.484.1919 fax 925.600.3002

720-49202 - REV

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
1454775
TestAmerica Laboratories, Inc.

Client Contact: **Geosyntec Consultants**
1111 Broadway, 6th Floor
Oakland, CA 94607
Phone: 510.285.2700 FAX: 510.836.3114
Project Name: **WETUS**
Site: **MENU MADONNA VIEW, CA**
P.O.#: **WRL28A**

Project Manager: **Eric Schonefeld**
Tel/Fax: **510-285-2400 / 510-936-3114**
Analysis Turnaround Time: CALENDAR DAYS WORKING DAYS
TAT if different from below: 2 weeks 1 week 2 days 1 day

Site Contact: **Maryann Fakhour** Date: **17 April 2013**
Lab Contact: **M. C. Smith**
Carrier: **17 April 2013**

COC No. **1** of **1** COCS
For Lab Use Only:
Walk-in Client: **17 April 2013**
Lab Sampling: **17 April 2013**
Job / SDG No.: **WRL28A**
Sampler: **Maryann Fakhour**

Sample Identification	Sample Date	Sample Time	Sample Type (G-cont, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Sample Specific Notes:
SB-8	4/17/13	11:15	W	W	3	X	X	
SB-4	4/17/13	13:45	W	W	4	X	X	HOLD 250ml container
SB-5	4/17/13	15:40	W	W	8	X	X	



Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section. If the lab is to dispose of the sample
 No-Hazard Flammable Non Flammable Poison B Unknown
 Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/OC Requirements & Comments:
0.9°C

Custody Seal Intact: Yes No
 Custody Seal No.: _____
 Corrid: _____
 Term ID No.: _____

Relinquished by: **Eric Schonefeld** Company: **Geosyntec** Date/Time: **4/17/13 16:15**
 Relinquished by: **Eric Schonefeld** Company: **Geosyntec** Date/Time: **4/17/13 17:30**

Received by: **Eric Schonefeld** Company: **Geosyntec** Date/Time: **4/17/13 16:15**
 Received in Laboratory by: **Eric Schonefeld** Company: **Geosyntec** Date/Time: **4/17/13 17:30**

Login Sample Receipt Checklist

Client: Geosyntec Consultants, Inc.

Job Number: 720-49202-1

Login Number: 49202

List Number: 1

Creator: Bullock, Tracy

List Source: TestAmerica Pleasanton

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Geosyntec Consultants, Inc.

Job Number: 720-49202-1

Login Number: 49202

List Number: 1

Creator: Sanders, Stephanie

List Source: TestAmerica Denver

List Creation: 04/19/13 03:18 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-49202-2
Client Project/Site: Regional MEW

For:
Geosyntec Consultants, Inc.
1111 Broadway
6th Floor
Oakland, California 94612

Attn: Mr. Eric Suchomel



Authorized for release by:
4/30/2013 3:59:21 PM

Micah Smith
Project Manager I
micah.smith@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-2

Job ID: 720-49202-2

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative
720-49202-2

Comments

No additional comments.

Receipt

The samples were received on 4/17/2013 5:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.9° C.

General Chemistry

No analytical or quality issues were noted.

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Detection Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-2

Client Sample ID: SB-6

Lab Sample ID: 720-49202-2

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	640		10		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

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Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-2

General Chemistry

Client Sample ID: SB-6
Date Collected: 04/17/13 13:45
Date Received: 04/17/13 17:30

Lab Sample ID: 720-49202-2
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	640		10		mg/L			04/23/13 18:54	1

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QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-2

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 720-135058/2
Matrix: Water
Analysis Batch: 135058

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			04/23/13 18:54	1

Lab Sample ID: LCS 720-135058/1
Matrix: Water
Analysis Batch: 135058

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	1020		mg/L		102	85 - 115

Lab Sample ID: 720-49202-2 DU
Matrix: Water
Analysis Batch: 135058

Client Sample ID: SB-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	640		660		mg/L		4	10

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-2

General Chemistry

Analysis Batch: 135058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49202-2	SB-6	Total/NA	Water	SM 2540C	
720-49202-2 DU	SB-6	Total/NA	Water	SM 2540C	
LCS 720-135058/1	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 720-135058/2	Method Blank	Total/NA	Water	SM 2540C	

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Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-2

Client Sample ID: SB-6

Lab Sample ID: 720-49202-2

Date Collected: 04/17/13 13:45

Matrix: Water

Date Received: 04/17/13 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	135058	04/23/13 18:54	EYT	TAL PLS

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

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Certification Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-2

Laboratory: TestAmerica Pleasanton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-14

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Method Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-2

Method	Method Description	Protocol	Laboratory
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PLS

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

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Sample Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Regional MEW

TestAmerica Job ID: 720-49202-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-49202-2	SB-6	Water	04/17/13 13:45	04/17/13 17:30

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Chain of Custody Record

TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
phone 925.484.1919 fax 925.600.3002

Regulatory Program: DW NPDES RCRA Other:

COG No. _____ of _____ COCs

Client Contact: Geosyntec Consultants
1111 Broadway, 6th Floor
Oakland, CA 94607
Phone: 510.285.2700 FAX: 510.836.3114
Project Name: MEND
Site: MEND, MAJUMBARIA VIEW, CA
P O #: WR128A

Project Manager: Eric S. Schmel
Tel/Fax: 925.285.2700 / 925.836.3114
Analysis Turnaround Time: CALENDAR DAYS WORKING DAYS
TAT if different from Below: 2 weeks 1 week 2 days 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (G-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)
SB-8	4/12/13	11:15	W	W	3		X
SB-4	4/12/13	13:45	W	W	4		X
SB-5	4/12/13	15:40	W	W	8		X X X X X

For Lab Use Only:
Walk-in Client: _____
Lab Sampling: _____
Job / SDG No.: WR128A
Sampler: Margaret Feldman
Sample Specific Notes: _____



Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

Special Instructions/QC Requirements & Comments: O.P.C.
 Non-Hazard Flammable Skin Irritant Poison B Unknown
 Return to Client Disposal by Lab Archive for _____ Months

Custody Seals Intact: Yes No
Custody Seal No.: _____
Corder Temp. (°C): Obs'd: _____
Therm ID No.: _____

Relinquished by: [Signature]
Company: Geosyntec
Date/Time: 4/12/13 16:15

Relinquished by: [Signature]
Company: TASF
Date/Time: 04/12/13 17:30

720-49202-2

Smith, Micah

From: Morgan Fahlman [MFahlman@Geosyntec.com]
Sent: Tuesday, April 23, 2013 1:03 PM
To: Smith, Micah
Subject: RE: Sample Login Confirmation for 720-49202, Regional MEW

Thank you, Micah. We would like to run TDS.

Morgan

Morgan Fahlman
Staff Scientist

1111 Broadway
6th Floor
Oakland, CA 94607
Phone: 510.285.2763
Fax: 510.836.3114
www.Geosyntec.com



Empowering Environmental Professionals

From: Smith, Micah [mailto:Micah.Smith@testamericainc.com]
Sent: Tuesday, April 23, 2013 12:59 PM
To: Morgan Fahlman
Subject: RE: Sample Login Confirmation for 720-49202, Regional MEW

No. TDS is 7 days. Hexavalent Cr is 1 day

MICAH SMITH
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

1220 Quarry Lane
Pleasanton, CA 94566
TEL 925.484.1919 ext. 137 | Fax 925.600.3002
micah.smith@testamericainc.com

From: Morgan Fahlman [mailto:MFahlman@Geosyntec.com]
Sent: Tuesday, April 23, 2013 12:56 PM
To: Smith, Micah
Subject: RE: Sample Login Confirmation for 720-49202, Regional MEW

Would it be out of hold time if we ran TDS?

Thank you,

Morgan Fahlman
Staff Scientist

1111 Broadway
6th Floor
Oakland, CA 94607
Phone: 510.285.2763
Fax: 510.836.3114
www.Geosyntec.com



Empowering Environmental Professionals



720-49202 Chain of Custody

From: Smith, Micah [mailto:Micah.Smith@testamericainc.com]
Sent: Tuesday, April 23, 2013 12:52 PM
To: Morgan Fahlman
Subject: RE: Sample Login Confirmation for 720-49202, Regional MEW

We can run this sample but it will be out of holding time. Would you like to proceed?
Thanks

MICAH SMITH
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

1220 Quarry Lane
Pleasanton, CA 94566

4/23/2013



TEL 925.484.1919 ext. 137 | Fax 925.600.3002
micah.smith@testamericainc.com

From: Salimpour, Afsaneh
Sent: Tuesday, April 23, 2013 12:15 PM
To: Smith, Micah
Subject: FW: Sample Login Confirmation for 720-49202, Regional MEW

From: Morgan Fahiman [<mailto:MFahiman@Geosyntec.com>]
Sent: Tuesday, April 23, 2013 12:08 PM
To: Salimpour, Afsaneh
Subject: RE: Sample Login Confirmation for 720-49202, Regional MEW

Hi Afsaneh,

Please run sample SB-6 from 720-49202 for Chromium VI.

Thank you,

Morgan Fahiman
Staff Scientist

1111 Broadway
6th Floor
Oakland, CA 94607
Phone 510.285.2763
Fax: 510.836.3114
www.Geosyntec.com



an environmental science & technology company

From: Nicole Gotberg
Sent: Friday, April 19, 2013 11:07 AM
To: Morgan Fahiman
Subject: FW: Sample Login Confirmation for 720-49202, Regional MEW

Nicole K. Gotberg, P.G.
Professional Geologist

1111 Broadway, 6th Floor
Oakland, CA 94607
Main Phone 510.836.3034, ext. 2771
Direct Phone 510.285.2771
Fax: 510.836.3036
www.geosyntec.com



an environmental science & technology company

From: Salimpour, Afsaneh
[<mailto:afsanah.salimpour@testamericainc.com>]

Sent: Friday, April 19, 2013 10:21 AM
To: Eric Suchomel; Nicole Gotberg
Subject: Sample Login Confirmation for 720-49202, Regional MEW

This electronic mail message contains information that (a) is or may be LEGALLY PRIVILEGED, CONFIDENTIAL, PROPRIETARY IN NATURE, OR OTHERWISE PROTECTED BY LAW FROM DISCLOSURE, and (b) is intended only for the use of the Addressee(s) named herein. If you are not the intended recipient, an addressee, or the person responsible for delivering this to an addressee, you are hereby notified that reading, using, copying, or distributing any part of this message is strictly prohibited. If you have received this electronic mail message in error, please contact us immediately and take the steps necessary to delete the message completely from your computer system.

AFSANEH SALIMPOUR

TestAmerica Pleasanton
THE LEADER IN ENVIRONMENTAL TESTING

Tel 925.484.1919
www.testamericainc.com

Reference: {128013}
Attachments: 3



Login Sample Receipt Checklist

Client: Geosyntec Consultants, Inc.

Job Number: 720-49202-2

Login Number: 49202

List Number: 1

Creator: Bullock, Tracy

List Source: TestAmerica Pleasanton

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-49233-1
Client Project/Site: MEW

For:
Geosyntec Consultants, Inc.
1111 Broadway
6th Floor
Oakland, California 94612

Attn: Mr. Eric Suchomel



Authorized for release by:
4/25/2013 4:17:31 PM

Micah Smith
Project Manager I
micah.smith@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Job ID: 720-49233-1

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative
720-49233-1

Comments

No additional comments.

Receipt

The samples were received on 4/18/2013 7:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.9° C.

GC/MS VOA

No analytical or quality issues were noted.

GC/MS Semi VOA

Method(s) 8270C LL: The only surrogate that will be reported for these samples will be 2-Fluorobiphenyl, which is associated to the only target compound, 1,4-Dioxane. The other surrogates requested are either not needed and/or not extracted.

No other analytical or quality issues were noted.

Metals

No analytical or quality issues were noted.

General Chemistry

No analytical or quality issues were noted.

Organic Prep

Method(s) 3520C: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 170520, 3520_Base(8270CLL). The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 3520C: Batch 170520, 3520_Base. These samples contained noticeable amounts of sediment in the container jar.

No other analytical or quality issues were noted.

Detection Summary

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Client Sample ID: SB-9-20-23

Lab Sample ID: 720-49233-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	23		0.50		ug/L	1		8260B	Total/NA
1,1-Dichloroethane	12		0.50		ug/L	1		8260B	Total/NA
Vinyl chloride	26		0.50		ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	35		0.50		ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	5100		250		ug/L	500		8260B	Total/NA
Trichloroethene	31000		250		ug/L	500		8260B	Total/NA
1,4-Dioxane	4.7		1.1		ug/L	1		8270C LL	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	910		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: SB-9-40-43

Lab Sample ID: 720-49233-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	2.2		0.50		ug/L	1		8260B	Total/NA
1,1-Dichloroethane	1.5		0.50		ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	96		0.50		ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	270		2.5		ug/L	5		8260B	Total/NA
Trichloroethene	220		2.5		ug/L	5		8260B	Total/NA

Client Sample ID: SB-10-20.5-23

Lab Sample ID: 720-49233-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	4.1		0.50		ug/L	1		8260B	Total/NA
1,1-Dichloroethane	9.7		0.50		ug/L	1		8260B	Total/NA
Vinyl chloride	5.5		0.50		ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	4.8		0.50		ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	620		5.0		ug/L	10		8260B	Total/NA
Trichloroethene	730		5.0		ug/L	10		8260B	Total/NA
1,4-Dioxane	6.6		1.2		ug/L	1		8270C LL	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	810		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: SB-10-35.5-38.5

Lab Sample ID: 720-49233-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	53		0.50		ug/L	1		8260B	Total/NA
1,1-Dichloroethane	44		0.50		ug/L	1		8260B	Total/NA
Vinyl chloride	7.8		0.50		ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	42		0.50		ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1100		25		ug/L	50		8260B	Total/NA
Trichloroethene	1400		25		ug/L	50		8260B	Total/NA
1,1,2-Trichloro-1,2,2-trifluoroethane	0.89		0.50		ug/L	1		8260B	Total/NA
1,4-Dioxane	6.8		1.2		ug/L	1		8270C LL	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	690		10		mg/L	1		SM 2540C	Total/NA

Client Sample ID: TAL SF TB

Lab Sample ID: 720-49233-5

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: SB-9-20-23

Date Collected: 04/18/13 10:45

Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	23		0.50		ug/L			04/19/13 17:43	1
1,1-Dichloroethane	12		0.50		ug/L			04/19/13 17:43	1
Dichlorodifluoromethane	ND		0.50		ug/L			04/19/13 17:43	1
Vinyl chloride	26		0.50		ug/L			04/19/13 17:43	1
Chloroethane	ND		1.0		ug/L			04/19/13 17:43	1
Trichlorofluoromethane	ND		1.0		ug/L			04/19/13 17:43	1
Methylene Chloride	ND		5.0		ug/L			04/19/13 17:43	1
trans-1,2-Dichloroethene	35		0.50		ug/L			04/19/13 17:43	1
cis-1,2-Dichloroethene	5100		250		ug/L			04/20/13 19:11	500
Chloroform	ND		1.0		ug/L			04/19/13 17:43	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/19/13 17:43	1
Carbon tetrachloride	ND		0.50		ug/L			04/19/13 17:43	1
1,2-Dichloroethane	ND		0.50		ug/L			04/19/13 17:43	1
Trichloroethene	31000		250		ug/L			04/20/13 19:11	500
1,2-Dichloropropane	ND		0.50		ug/L			04/19/13 17:43	1
Dichlorobromomethane	ND		0.50		ug/L			04/19/13 17:43	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/19/13 17:43	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/19/13 17:43	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/19/13 17:43	1
Tetrachloroethene	ND		0.50		ug/L			04/19/13 17:43	1
Chlorodibromomethane	ND		0.50		ug/L			04/19/13 17:43	1
Chlorobenzene	ND		0.50		ug/L			04/19/13 17:43	1
Bromoform	ND		1.0		ug/L			04/19/13 17:43	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/19/13 17:43	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/19/13 17:43	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/19/13 17:43	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/19/13 17:43	1
Chloromethane	ND		1.0		ug/L			04/19/13 17:43	1
Bromomethane	ND		1.0		ug/L			04/19/13 17:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			04/19/13 17:43	1
EDB	ND		0.50		ug/L			04/19/13 17:43	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/19/13 17:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	96		70 - 130		04/19/13 17:43	1
<i>Toluene-d8 (Surr)</i>	95		70 - 130		04/20/13 19:11	500
<i>4-Bromofluorobenzene</i>	104		67 - 130		04/19/13 17:43	1
<i>4-Bromofluorobenzene</i>	91		67 - 130		04/20/13 19:11	500
<i>1,2-Dichloroethane-d4 (Surr)</i>	104		75 - 138		04/19/13 17:43	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	107		75 - 138		04/20/13 19:11	500

Client Sample ID: SB-9-40-43

Date Collected: 04/18/13 12:05

Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.2		0.50		ug/L			04/19/13 18:11	1
1,1-Dichloroethane	1.5		0.50		ug/L			04/19/13 18:11	1
Dichlorodifluoromethane	ND		0.50		ug/L			04/19/13 18:11	1
Vinyl chloride	ND		0.50		ug/L			04/19/13 18:11	1
Chloroethane	ND		1.0		ug/L			04/19/13 18:11	1

TestAmerica Pleasanton

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: SB-9-40-43
Date Collected: 04/18/13 12:05
Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	ND		1.0		ug/L			04/19/13 18:11	1
Methylene Chloride	ND		5.0		ug/L			04/19/13 18:11	1
trans-1,2-Dichloroethene	96		0.50		ug/L			04/19/13 18:11	1
cis-1,2-Dichloroethene	270		2.5		ug/L			04/20/13 18:44	5
Chloroform	ND		1.0		ug/L			04/19/13 18:11	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/19/13 18:11	1
Carbon tetrachloride	ND		0.50		ug/L			04/19/13 18:11	1
1,2-Dichloroethane	ND		0.50		ug/L			04/19/13 18:11	1
Trichloroethene	220		2.5		ug/L			04/20/13 18:44	5
1,2-Dichloropropane	ND		0.50		ug/L			04/19/13 18:11	1
Dichlorobromomethane	ND		0.50		ug/L			04/19/13 18:11	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/19/13 18:11	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/19/13 18:11	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/19/13 18:11	1
Tetrachloroethene	ND		0.50		ug/L			04/19/13 18:11	1
Chlorodibromomethane	ND		0.50		ug/L			04/19/13 18:11	1
Chlorobenzene	ND		0.50		ug/L			04/19/13 18:11	1
Bromoform	ND		1.0		ug/L			04/19/13 18:11	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/19/13 18:11	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/19/13 18:11	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/19/13 18:11	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/19/13 18:11	1
Chloromethane	ND		1.0		ug/L			04/19/13 18:11	1
Bromomethane	ND		1.0		ug/L			04/19/13 18:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			04/19/13 18:11	1
EDB	ND		0.50		ug/L			04/19/13 18:11	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/19/13 18:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	101		70 - 130		04/19/13 18:11	1
<i>Toluene-d8 (Surr)</i>	100		70 - 130		04/20/13 18:44	5
<i>4-Bromofluorobenzene</i>	104		67 - 130		04/19/13 18:11	1
<i>4-Bromofluorobenzene</i>	97		67 - 130		04/20/13 18:44	5
<i>1,2-Dichloroethane-d4 (Surr)</i>	105		75 - 138		04/19/13 18:11	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	102		75 - 138		04/20/13 18:44	5

Client Sample ID: SB-10-20.5-23
Date Collected: 04/18/13 14:45
Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	4.1		0.50		ug/L			04/19/13 18:40	1
1,1-Dichloroethane	9.7		0.50		ug/L			04/19/13 18:40	1
Dichlorodifluoromethane	ND		0.50		ug/L			04/19/13 18:40	1
Vinyl chloride	5.5		0.50		ug/L			04/19/13 18:40	1
Chloroethane	ND		1.0		ug/L			04/19/13 18:40	1
Trichlorofluoromethane	ND		1.0		ug/L			04/19/13 18:40	1
Methylene Chloride	ND		5.0		ug/L			04/19/13 18:40	1
trans-1,2-Dichloroethene	4.8		0.50		ug/L			04/19/13 18:40	1
cis-1,2-Dichloroethene	620		5.0		ug/L			04/20/13 19:13	10
Chloroform	ND		1.0		ug/L			04/19/13 18:40	1

TestAmerica Pleasanton

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: SB-10-20.5-23

Date Collected: 04/18/13 14:45

Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50		ug/L			04/19/13 18:40	1
Carbon tetrachloride	ND		0.50		ug/L			04/19/13 18:40	1
1,2-Dichloroethane	ND		0.50		ug/L			04/19/13 18:40	1
Trichloroethene	730		5.0		ug/L			04/20/13 19:13	10
1,2-Dichloropropane	ND		0.50		ug/L			04/19/13 18:40	1
Dichlorobromomethane	ND		0.50		ug/L			04/19/13 18:40	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/19/13 18:40	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/19/13 18:40	1
1,1,1,2-Trichloroethane	ND		0.50		ug/L			04/19/13 18:40	1
Tetrachloroethene	ND		0.50		ug/L			04/19/13 18:40	1
Chlorodibromomethane	ND		0.50		ug/L			04/19/13 18:40	1
Chlorobenzene	ND		0.50		ug/L			04/19/13 18:40	1
Bromoform	ND		1.0		ug/L			04/19/13 18:40	1
1,1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/19/13 18:40	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/19/13 18:40	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/19/13 18:40	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/19/13 18:40	1
Chloromethane	ND		1.0		ug/L			04/19/13 18:40	1
Bromomethane	ND		1.0		ug/L			04/19/13 18:40	1
1,1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			04/19/13 18:40	1
EDB	ND		0.50		ug/L			04/19/13 18:40	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/19/13 18:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	101		70 - 130		04/19/13 18:40	1
<i>Toluene-d8 (Surr)</i>	100		70 - 130		04/20/13 19:13	10
<i>4-Bromofluorobenzene</i>	104		67 - 130		04/19/13 18:40	1
<i>4-Bromofluorobenzene</i>	98		67 - 130		04/20/13 19:13	10
<i>1,2-Dichloroethane-d4 (Surr)</i>	105		75 - 138		04/19/13 18:40	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	101		75 - 138		04/20/13 19:13	10

Client Sample ID: SB-10-35.5-38.5

Date Collected: 04/18/13 15:40

Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	53		0.50		ug/L			04/19/13 19:09	1
1,1-Dichloroethane	44		0.50		ug/L			04/19/13 19:09	1
Dichlorodifluoromethane	ND		0.50		ug/L			04/19/13 19:09	1
Vinyl chloride	7.8		0.50		ug/L			04/19/13 19:09	1
Chloroethane	ND		1.0		ug/L			04/19/13 19:09	1
Trichlorofluoromethane	ND		1.0		ug/L			04/19/13 19:09	1
Methylene Chloride	ND		5.0		ug/L			04/19/13 19:09	1
trans-1,2-Dichloroethene	42		0.50		ug/L			04/19/13 19:09	1
cis-1,2-Dichloroethene	1100		25		ug/L			04/22/13 13:46	50
Chloroform	ND		1.0		ug/L			04/19/13 19:09	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/19/13 19:09	1
Carbon tetrachloride	ND		0.50		ug/L			04/19/13 19:09	1
1,2-Dichloroethane	ND		0.50		ug/L			04/19/13 19:09	1
Trichloroethene	1400		25		ug/L			04/22/13 13:46	50
1,2-Dichloropropane	ND		0.50		ug/L			04/19/13 19:09	1

TestAmerica Pleasanton

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: SB-10-35.5-38.5

Date Collected: 04/18/13 15:40

Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		0.50		ug/L			04/19/13 19:09	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/19/13 19:09	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/19/13 19:09	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/19/13 19:09	1
Tetrachloroethene	ND		0.50		ug/L			04/19/13 19:09	1
Chlorodibromomethane	ND		0.50		ug/L			04/19/13 19:09	1
Chlorobenzene	ND		0.50		ug/L			04/19/13 19:09	1
Bromoform	ND		1.0		ug/L			04/19/13 19:09	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/19/13 19:09	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/19/13 19:09	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/19/13 19:09	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/19/13 19:09	1
Chloromethane	ND		1.0		ug/L			04/19/13 19:09	1
Bromomethane	ND		1.0		ug/L			04/19/13 19:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.89		0.50		ug/L			04/19/13 19:09	1
EDB	ND		0.50		ug/L			04/19/13 19:09	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/19/13 19:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	101		70 - 130		04/19/13 19:09	1
<i>Toluene-d8 (Surr)</i>	97		70 - 130		04/22/13 13:46	50
<i>4-Bromofluorobenzene</i>	105		67 - 130		04/19/13 19:09	1
<i>4-Bromofluorobenzene</i>	94		67 - 130		04/22/13 13:46	50
<i>1,2-Dichloroethane-d4 (Surr)</i>	104		75 - 138		04/19/13 19:09	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	99		75 - 138		04/22/13 13:46	50

Client Sample ID: TAL SF TB

Date Collected: 04/18/13 00:00

Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-5

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50		ug/L			04/20/13 14:59	1
1,1-Dichloroethane	ND		0.50		ug/L			04/20/13 14:59	1
Dichlorodifluoromethane	ND		0.50		ug/L			04/20/13 14:59	1
Vinyl chloride	ND		0.50		ug/L			04/20/13 14:59	1
Chloroethane	ND		1.0		ug/L			04/20/13 14:59	1
Trichlorofluoromethane	ND		1.0		ug/L			04/20/13 14:59	1
Methylene Chloride	ND		5.0		ug/L			04/20/13 14:59	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/20/13 14:59	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/20/13 14:59	1
Chloroform	ND		1.0		ug/L			04/20/13 14:59	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/20/13 14:59	1
Carbon tetrachloride	ND		0.50		ug/L			04/20/13 14:59	1
1,2-Dichloroethane	ND		0.50		ug/L			04/20/13 14:59	1
Trichloroethene	ND		0.50		ug/L			04/20/13 14:59	1
1,2-Dichloropropane	ND		0.50		ug/L			04/20/13 14:59	1
Dichlorobromomethane	ND		0.50		ug/L			04/20/13 14:59	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/20/13 14:59	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/20/13 14:59	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/20/13 14:59	1

TestAmerica Pleasanton

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TAL SF TB
Date Collected: 04/18/13 00:00
Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		0.50		ug/L			04/20/13 14:59	1
Chlorodibromomethane	ND		0.50		ug/L			04/20/13 14:59	1
Chlorobenzene	ND		0.50		ug/L			04/20/13 14:59	1
Bromoform	ND		1.0		ug/L			04/20/13 14:59	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/20/13 14:59	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/20/13 14:59	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/20/13 14:59	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/20/13 14:59	1
Chloromethane	ND		1.0		ug/L			04/20/13 14:59	1
Bromomethane	ND		1.0		ug/L			04/20/13 14:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			04/20/13 14:59	1
EDB	ND		0.50		ug/L			04/20/13 14:59	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/20/13 14:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	96		70 - 130					04/20/13 14:59	1
<i>4-Bromofluorobenzene</i>	93		67 - 130					04/20/13 14:59	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	97		75 - 138					04/20/13 14:59	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Client Sample ID: SB-9-20-23

Date Collected: 04/18/13 10:45

Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.7		1.1		ug/L		04/21/13 11:20	04/23/13 14:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	76		57 - 120				04/21/13 11:20	04/23/13 14:36	1

Client Sample ID: SB-9-40-43

Date Collected: 04/18/13 12:05

Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.1		ug/L		04/21/13 11:20	04/23/13 15:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	75		57 - 120				04/21/13 11:20	04/23/13 15:09	1

Client Sample ID: SB-10-20.5-23

Date Collected: 04/18/13 14:45

Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	6.6		1.2		ug/L		04/21/13 11:20	04/23/13 15:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	83		57 - 120				04/21/13 11:20	04/23/13 15:42	1

Client Sample ID: SB-10-35.5-38.5

Date Collected: 04/18/13 15:40

Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	6.8		1.2		ug/L		04/21/13 11:20	04/23/13 16:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	76		57 - 120				04/21/13 11:20	04/23/13 16:15	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

General Chemistry

Client Sample ID: SB-9-20-23
Date Collected: 04/18/13 10:45
Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	910		10		mg/L			04/19/13 16:46	1

Client Sample ID: SB-10-20.5-23
Date Collected: 04/18/13 14:45
Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-3
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	810		10		mg/L			04/19/13 16:46	1

Client Sample ID: SB-10-35.5-38.5
Date Collected: 04/18/13 15:40
Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-4
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	690		10		mg/L			04/19/13 16:46	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

General Chemistry - Dissolved

Client Sample ID: SB-9-20-23
Date Collected: 04/18/13 10:45
Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.50		ug/L			04/18/13 21:46	1

Client Sample ID: SB-10-20.5-23
Date Collected: 04/18/13 14:45
Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.50		ug/L			04/18/13 21:58	1

Client Sample ID: SB-10-35.5-38.5
Date Collected: 04/18/13 15:40
Date Received: 04/18/13 19:10

Lab Sample ID: 720-49233-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.50		ug/L			04/18/13 22:09	1

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 720-134740/4

Matrix: Water

Analysis Batch: 134740

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50		ug/L			04/19/13 10:03	1
1,1-Dichloroethane	ND		0.50		ug/L			04/19/13 10:03	1
Dichlorodifluoromethane	ND		0.50		ug/L			04/19/13 10:03	1
Vinyl chloride	ND		0.50		ug/L			04/19/13 10:03	1
Chloroethane	ND		1.0		ug/L			04/19/13 10:03	1
Trichlorofluoromethane	ND		1.0		ug/L			04/19/13 10:03	1
Methylene Chloride	ND		5.0		ug/L			04/19/13 10:03	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/19/13 10:03	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/19/13 10:03	1
Chloroform	ND		1.0		ug/L			04/19/13 10:03	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/19/13 10:03	1
Carbon tetrachloride	ND		0.50		ug/L			04/19/13 10:03	1
1,2-Dichloroethane	ND		0.50		ug/L			04/19/13 10:03	1
Trichloroethene	ND		0.50		ug/L			04/19/13 10:03	1
1,2-Dichloropropane	ND		0.50		ug/L			04/19/13 10:03	1
Dichlorobromomethane	ND		0.50		ug/L			04/19/13 10:03	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/19/13 10:03	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/19/13 10:03	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/19/13 10:03	1
Tetrachloroethene	ND		0.50		ug/L			04/19/13 10:03	1
Chlorodibromomethane	ND		0.50		ug/L			04/19/13 10:03	1
Chlorobenzene	ND		0.50		ug/L			04/19/13 10:03	1
Bromoform	ND		1.0		ug/L			04/19/13 10:03	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/19/13 10:03	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/19/13 10:03	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/19/13 10:03	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/19/13 10:03	1
Chloromethane	ND		1.0		ug/L			04/19/13 10:03	1
Bromomethane	ND		1.0		ug/L			04/19/13 10:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			04/19/13 10:03	1
EDB	ND		0.50		ug/L			04/19/13 10:03	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/19/13 10:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		70 - 130		04/19/13 10:03	1
4-Bromofluorobenzene	103		67 - 130		04/19/13 10:03	1
1,2-Dichloroethane-d4 (Surr)	103		75 - 138		04/19/13 10:03	1

Lab Sample ID: LCS 720-134740/5

Matrix: Water

Analysis Batch: 134740

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	25.0	22.6		ug/L		90	64 - 128
1,1-Dichloroethane	25.0	24.7		ug/L		99	70 - 130
Dichlorodifluoromethane	25.0	16.3		ug/L		65	34 - 132
Vinyl chloride	25.0	20.9		ug/L		84	54 - 135
Chloroethane	25.0	23.0		ug/L		92	62 - 138

TestAmerica Pleasanton

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 720-134740/5

Matrix: Water

Analysis Batch: 134740

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	25.0	23.7		ug/L		95	66 - 132
Methylene Chloride	25.0	23.0		ug/L		92	70 - 147
trans-1,2-Dichloroethene	25.0	24.4		ug/L		98	68 - 130
cis-1,2-Dichloroethene	25.0	25.3		ug/L		101	70 - 130
Chloroform	25.0	24.7		ug/L		99	70 - 130
1,1,1-Trichloroethane	25.0	24.6		ug/L		98	70 - 130
Carbon tetrachloride	25.0	25.4		ug/L		102	70 - 146
1,2-Dichloroethane	25.0	25.2		ug/L		101	61 - 132
Trichloroethene	25.0	25.4		ug/L		101	70 - 130
1,2-Dichloropropane	25.0	25.1		ug/L		100	70 - 130
Dichlorobromomethane	25.0	26.5		ug/L		106	70 - 130
trans-1,3-Dichloropropene	25.0	27.6		ug/L		110	70 - 140
cis-1,3-Dichloropropene	25.0	28.7		ug/L		115	70 - 130
1,1,2-Trichloroethane	25.0	25.8		ug/L		103	70 - 130
Tetrachloroethene	25.0	24.6		ug/L		99	70 - 130
Chlorodibromomethane	25.0	27.5		ug/L		110	70 - 145
Chlorobenzene	25.0	24.6		ug/L		98	70 - 130
Bromoform	25.0	27.9		ug/L		112	68 - 136
1,1,2,2-Tetrachloroethane	25.0	25.5		ug/L		102	70 - 130
1,3-Dichlorobenzene	25.0	25.1		ug/L		100	70 - 130
1,4-Dichlorobenzene	25.0	25.0		ug/L		100	70 - 130
1,2-Dichlorobenzene	25.0	25.2		ug/L		101	70 - 130
Chloromethane	25.0	20.8		ug/L		83	52 - 175
Bromomethane	25.0	22.9		ug/L		92	43 - 151
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	25.1		ug/L		100	42 - 162
EDB	25.0	26.8		ug/L		107	70 - 130
1,2,4-Trichlorobenzene	25.0	26.5		ug/L		106	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	102		70 - 130
4-Bromofluorobenzene	96		67 - 130
1,2-Dichloroethane-d4 (Surr)	99		75 - 138

Lab Sample ID: LCSD 720-134740/6

Matrix: Water

Analysis Batch: 134740

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	25.0	23.7		ug/L		95	64 - 128	5	20
1,1-Dichloroethane	25.0	24.7		ug/L		99	70 - 130	0	20
Dichlorodifluoromethane	25.0	17.6		ug/L		71	34 - 132	8	20
Vinyl chloride	25.0	21.8		ug/L		87	54 - 135	4	20
Chloroethane	25.0	25.2		ug/L		101	62 - 138	9	20
Trichlorofluoromethane	25.0	25.0		ug/L		100	66 - 132	5	20
Methylene Chloride	25.0	23.9		ug/L		96	70 - 147	4	20
trans-1,2-Dichloroethene	25.0	24.4		ug/L		97	68 - 130	0	20
cis-1,2-Dichloroethene	25.0	25.3		ug/L		101	70 - 130	0	20

TestAmerica Pleasanton

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 720-134740/6

Matrix: Water

Analysis Batch: 134740

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD	
							RPD	Limit		
Chloroform	25.0	24.8		ug/L		99	70 - 130	1	20	
1,1,1-Trichloroethane	25.0	25.1		ug/L		100	70 - 130	2	20	
Carbon tetrachloride	25.0	26.0		ug/L		104	70 - 146	2	20	
1,2-Dichloroethane	25.0	25.4		ug/L		101	61 - 132	1	20	
Trichloroethene	25.0	25.6		ug/L		102	70 - 130	1	20	
1,2-Dichloropropane	25.0	25.3		ug/L		101	70 - 130	1	20	
Dichlorobromomethane	25.0	26.9		ug/L		108	70 - 130	2	20	
trans-1,3-Dichloropropene	25.0	28.3		ug/L		113	70 - 140	3	20	
cis-1,3-Dichloropropene	25.0	29.1		ug/L		116	70 - 130	1	20	
1,1,2-Trichloroethane	25.0	26.6		ug/L		106	70 - 130	3	20	
Tetrachloroethene	25.0	25.2		ug/L		101	70 - 130	2	20	
Chlorodibromomethane	25.0	28.5		ug/L		114	70 - 145	4	20	
Chlorobenzene	25.0	24.8		ug/L		99	70 - 130	1	20	
Bromoform	25.0	28.8		ug/L		115	68 - 136	3	20	
1,1,2,2-Tetrachloroethane	25.0	26.4		ug/L		106	70 - 130	3	20	
1,3-Dichlorobenzene	25.0	25.0		ug/L		100	70 - 130	0	20	
1,4-Dichlorobenzene	25.0	25.1		ug/L		101	70 - 130	1	20	
1,2-Dichlorobenzene	25.0	25.2		ug/L		101	70 - 130	0	20	
Chloromethane	25.0	22.2		ug/L		89	52 - 175	6	20	
Bromomethane	25.0	25.0		ug/L		100	43 - 151	9	20	
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	26.9		ug/L		108	42 - 162	7	20	
EDB	25.0	28.5		ug/L		114	70 - 130	6	20	
1,2,4-Trichlorobenzene	25.0	26.9		ug/L		108	70 - 130	2	20	

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	103		70 - 130
4-Bromofluorobenzene	101		67 - 130
1,2-Dichloroethane-d4 (Surr)	102		75 - 138

Lab Sample ID: MB 720-134846/4

Matrix: Water

Analysis Batch: 134846

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	ND		0.50		ug/L			04/20/13 09:50	1
1,1-Dichloroethane	ND		0.50		ug/L			04/20/13 09:50	1
Dichlorodifluoromethane	ND		0.50		ug/L			04/20/13 09:50	1
Vinyl chloride	ND		0.50		ug/L			04/20/13 09:50	1
Chloroethane	ND		1.0		ug/L			04/20/13 09:50	1
Trichlorofluoromethane	ND		1.0		ug/L			04/20/13 09:50	1
Methylene Chloride	ND		5.0		ug/L			04/20/13 09:50	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/20/13 09:50	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/20/13 09:50	1
Chloroform	ND		1.0		ug/L			04/20/13 09:50	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/20/13 09:50	1
Carbon tetrachloride	ND		0.50		ug/L			04/20/13 09:50	1
1,2-Dichloroethane	ND		0.50		ug/L			04/20/13 09:50	1

TestAmerica Pleasanton

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 720-134846/4

Matrix: Water

Analysis Batch: 134846

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Trichloroethene	ND		0.50		ug/L			04/20/13 09:50	1
1,2-Dichloropropane	ND		0.50		ug/L			04/20/13 09:50	1
Dichlorobromomethane	ND		0.50		ug/L			04/20/13 09:50	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/20/13 09:50	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/20/13 09:50	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/20/13 09:50	1
Tetrachloroethene	ND		0.50		ug/L			04/20/13 09:50	1
Chlorodibromomethane	ND		0.50		ug/L			04/20/13 09:50	1
Chlorobenzene	ND		0.50		ug/L			04/20/13 09:50	1
Bromoform	ND		1.0		ug/L			04/20/13 09:50	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/20/13 09:50	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/20/13 09:50	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/20/13 09:50	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/20/13 09:50	1
Chloromethane	ND		1.0		ug/L			04/20/13 09:50	1
Bromomethane	ND		1.0		ug/L			04/20/13 09:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			04/20/13 09:50	1
EDB	ND		0.50		ug/L			04/20/13 09:50	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/20/13 09:50	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	101		70 - 130		04/20/13 09:50	1
4-Bromofluorobenzene	101		67 - 130		04/20/13 09:50	1
1,2-Dichloroethane-d4 (Surr)	103		75 - 138		04/20/13 09:50	1

Lab Sample ID: LCS 720-134846/5

Matrix: Water

Analysis Batch: 134846

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1-Dichloroethene	25.0	24.2		ug/L		97	64 - 128
1,1-Dichloroethane	25.0	25.0		ug/L		100	70 - 130
Dichlorodifluoromethane	25.0	20.1		ug/L		80	34 - 132
Vinyl chloride	25.0	24.0		ug/L		96	54 - 135
Chloroethane	25.0	26.9		ug/L		108	62 - 138
Trichlorofluoromethane	25.0	25.7		ug/L		103	66 - 132
Methylene Chloride	25.0	23.9		ug/L		96	70 - 147
trans-1,2-Dichloroethene	25.0	24.6		ug/L		98	68 - 130
cis-1,2-Dichloroethene	25.0	25.8		ug/L		103	70 - 130
Chloroform	25.0	25.2		ug/L		101	70 - 130
1,1,1-Trichloroethane	25.0	25.0		ug/L		100	70 - 130
Carbon tetrachloride	25.0	26.2		ug/L		105	70 - 146
1,2-Dichloroethane	25.0	26.0		ug/L		104	61 - 132
Trichloroethene	25.0	25.8		ug/L		103	70 - 130
1,2-Dichloropropane	25.0	25.7		ug/L		103	70 - 130
Dichlorobromomethane	25.0	27.1		ug/L		108	70 - 130
trans-1,3-Dichloropropene	25.0	28.9		ug/L		116	70 - 140
cis-1,3-Dichloropropene	25.0	29.8		ug/L		119	70 - 130

TestAmerica Pleasanton

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 720-134846/5

Matrix: Water

Analysis Batch: 134846

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloroethane	25.0	27.6		ug/L		110	70 - 130
Tetrachloroethene	25.0	25.4		ug/L		102	70 - 130
Chlorodibromomethane	25.0	29.1		ug/L		117	70 - 145
Chlorobenzene	25.0	25.5		ug/L		102	70 - 130
Bromoform	25.0	31.1		ug/L		124	68 - 136
1,1,2,2-Tetrachloroethane	25.0	27.7		ug/L		111	70 - 130
1,3-Dichlorobenzene	25.0	25.2		ug/L		101	70 - 130
1,4-Dichlorobenzene	25.0	25.0		ug/L		100	70 - 130
1,2-Dichlorobenzene	25.0	25.1		ug/L		100	70 - 130
Chloromethane	25.0	24.7		ug/L		99	52 - 175
Bromomethane	25.0	27.4		ug/L		110	43 - 151
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	27.4		ug/L		110	42 - 162
EDB	25.0	29.3		ug/L		117	70 - 130
1,2,4-Trichlorobenzene	25.0	26.3		ug/L		105	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	103		70 - 130
4-Bromofluorobenzene	105		67 - 130
1,2-Dichloroethane-d4 (Surr)	103		75 - 138

Lab Sample ID: LCSD 720-134846/6

Matrix: Water

Analysis Batch: 134846

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethane	25.0	24.2		ug/L		97	64 - 128	0	20
1,1-Dichloroethane	25.0	25.1		ug/L		100	70 - 130	0	20
Dichlorodifluoromethane	25.0	20.4		ug/L		82	34 - 132	1	20
Vinyl chloride	25.0	24.0		ug/L		96	54 - 135	0	20
Chloroethane	25.0	26.4		ug/L		105	62 - 138	2	20
Trichlorofluoromethane	25.0	26.0		ug/L		104	66 - 132	1	20
Methylene Chloride	25.0	23.7		ug/L		95	70 - 147	1	20
trans-1,2-Dichloroethene	25.0	24.8		ug/L		99	68 - 130	1	20
cis-1,2-Dichloroethene	25.0	25.6		ug/L		102	70 - 130	1	20
Chloroform	25.0	25.2		ug/L		101	70 - 130	0	20
1,1,1-Trichloroethane	25.0	25.4		ug/L		101	70 - 130	1	20
Carbon tetrachloride	25.0	26.2		ug/L		105	70 - 146	0	20
1,2-Dichloroethane	25.0	25.5		ug/L		102	61 - 132	2	20
Trichloroethene	25.0	25.7		ug/L		103	70 - 130	1	20
1,2-Dichloropropane	25.0	25.6		ug/L		102	70 - 130	0	20
Dichlorobromomethane	25.0	27.1		ug/L		109	70 - 130	0	20
trans-1,3-Dichloropropene	25.0	28.5		ug/L		114	70 - 140	1	20
cis-1,3-Dichloropropene	25.0	29.5		ug/L		118	70 - 130	1	20
1,1,2-Trichloroethane	25.0	26.9		ug/L		107	70 - 130	3	20
Tetrachloroethene	25.0	25.4		ug/L		102	70 - 130	0	20
Chlorodibromomethane	25.0	28.3		ug/L		113	70 - 145	3	20
Chlorobenzene	25.0	25.6		ug/L		102	70 - 130	0	20

TestAmerica Pleasanton

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 720-134846/6

Matrix: Water

Analysis Batch: 134846

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromoform	25.0	29.9		ug/L		120	68 - 136	4	20
1,1,2,2-Tetrachloroethane	25.0	26.7		ug/L		107	70 - 130	4	20
1,3-Dichlorobenzene	25.0	25.3		ug/L		101	70 - 130	1	20
1,4-Dichlorobenzene	25.0	25.3		ug/L		101	70 - 130	2	20
1,2-Dichlorobenzene	25.0	25.4		ug/L		102	70 - 130	1	20
Chloromethane	25.0	24.3		ug/L		97	52 - 175	2	20
Bromomethane	25.0	26.6		ug/L		107	43 - 151	3	20
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	27.6		ug/L		110	42 - 162	1	20
EDB	25.0	28.6		ug/L		114	70 - 130	2	20
1,2,4-Trichlorobenzene	25.0	26.9		ug/L		108	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	102		70 - 130
4-Bromofluorobenzene	104		67 - 130
1,2-Dichloroethane-d4 (Surr)	102		75 - 138

Lab Sample ID: MB 720-134847/4

Matrix: Water

Analysis Batch: 134847

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50		ug/L			04/20/13 09:47	1
1,1-Dichloroethane	ND		0.50		ug/L			04/20/13 09:47	1
Dichlorodifluoromethane	ND		0.50		ug/L			04/20/13 09:47	1
Vinyl chloride	ND		0.50		ug/L			04/20/13 09:47	1
Chloroethane	ND		1.0		ug/L			04/20/13 09:47	1
Trichlorofluoromethane	ND		1.0		ug/L			04/20/13 09:47	1
Methylene Chloride	ND		5.0		ug/L			04/20/13 09:47	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/20/13 09:47	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/20/13 09:47	1
Chloroform	ND		1.0		ug/L			04/20/13 09:47	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/20/13 09:47	1
Carbon tetrachloride	ND		0.50		ug/L			04/20/13 09:47	1
1,2-Dichloroethane	ND		0.50		ug/L			04/20/13 09:47	1
Trichloroethene	ND		0.50		ug/L			04/20/13 09:47	1
1,2-Dichloropropane	ND		0.50		ug/L			04/20/13 09:47	1
Dichlorobromomethane	ND		0.50		ug/L			04/20/13 09:47	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/20/13 09:47	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/20/13 09:47	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/20/13 09:47	1
Tetrachloroethene	ND		0.50		ug/L			04/20/13 09:47	1
Chlorodibromomethane	ND		0.50		ug/L			04/20/13 09:47	1
Chlorobenzene	ND		0.50		ug/L			04/20/13 09:47	1
Bromoform	ND		1.0		ug/L			04/20/13 09:47	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/20/13 09:47	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/20/13 09:47	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/20/13 09:47	1

TestAmerica Pleasanton

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 720-134847/4

Matrix: Water

Analysis Batch: 134847

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		0.50		ug/L			04/20/13 09:47	1
Chloromethane	ND		1.0		ug/L			04/20/13 09:47	1
Bromomethane	ND		1.0		ug/L			04/20/13 09:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			04/20/13 09:47	1
EDB	ND		0.50		ug/L			04/20/13 09:47	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/20/13 09:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		70 - 130		04/20/13 09:47	1
4-Bromofluorobenzene	92		67 - 130		04/20/13 09:47	1
1,2-Dichloroethane-d4 (Surr)	99		75 - 138		04/20/13 09:47	1

Lab Sample ID: LCS 720-134847/5

Matrix: Water

Analysis Batch: 134847

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	25.0	21.5		ug/L		86	64 - 128
1,1-Dichloroethane	25.0	22.2		ug/L		89	70 - 130
Dichlorodifluoromethane	25.0	17.2		ug/L		69	34 - 132
Vinyl chloride	25.0	20.6		ug/L		82	54 - 135
Chloroethane	25.0	20.7		ug/L		83	62 - 138
Trichlorofluoromethane	25.0	22.1		ug/L		89	66 - 132
Methylene Chloride	25.0	22.0		ug/L		88	70 - 147
trans-1,2-Dichloroethene	25.0	22.4		ug/L		90	68 - 130
cis-1,2-Dichloroethene	25.0	22.9		ug/L		92	70 - 130
Chloroform	25.0	22.7		ug/L		91	70 - 130
1,1,1-Trichloroethane	25.0	21.6		ug/L		87	70 - 130
Carbon tetrachloride	25.0	23.3		ug/L		93	70 - 146
1,2-Dichloroethane	25.0	22.7		ug/L		91	61 - 132
Trichloroethene	25.0	21.9		ug/L		88	70 - 130
1,2-Dichloropropane	25.0	22.8		ug/L		91	70 - 130
Dichlorobromomethane	25.0	23.9		ug/L		96	70 - 130
trans-1,3-Dichloropropene	25.0	26.1		ug/L		104	70 - 140
cis-1,3-Dichloropropene	25.0	27.5		ug/L		110	70 - 130
1,1,2-Trichloroethane	25.0	22.8		ug/L		91	70 - 130
Tetrachloroethene	25.0	22.7		ug/L		91	70 - 130
Chlorodibromomethane	25.0	24.5		ug/L		98	70 - 145
Chlorobenzene	25.0	22.0		ug/L		88	70 - 130
Bromoform	25.0	24.7		ug/L		99	68 - 136
1,1,2,2-Tetrachloroethane	25.0	21.8		ug/L		87	70 - 130
1,3-Dichlorobenzene	25.0	22.2		ug/L		89	70 - 130
1,4-Dichlorobenzene	25.0	22.4		ug/L		90	70 - 130
1,2-Dichlorobenzene	25.0	22.6		ug/L		90	70 - 130
Chloromethane	25.0	21.1		ug/L		85	52 - 175
Bromomethane	25.0	24.6		ug/L		98	43 - 151
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	22.8		ug/L		91	42 - 162

TestAmerica Pleasanton

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 720-134847/5

Matrix: Water

Analysis Batch: 134847

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
EDB	25.0	23.4		ug/L		94	70 - 130
1,2,4-Trichlorobenzene	25.0	22.4		ug/L		90	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	99		70 - 130
4-Bromofluorobenzene	96		67 - 130
1,2-Dichloroethane-d4 (Surr)	95		75 - 138

Lab Sample ID: LCSD 720-134847/6

Matrix: Water

Analysis Batch: 134847

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	25.0	21.7		ug/L		87	64 - 128	1	20
1,1-Dichloroethane	25.0	22.5		ug/L		90	70 - 130	1	20
Dichlorodifluoromethane	25.0	17.0		ug/L		68	34 - 132	1	20
Vinyl chloride	25.0	20.8		ug/L		83	54 - 135	1	20
Chloroethane	25.0	21.1		ug/L		85	62 - 138	2	20
Trichlorofluoromethane	25.0	21.9		ug/L		88	66 - 132	1	20
Methylene Chloride	25.0	22.7		ug/L		91	70 - 147	3	20
trans-1,2-Dichloroethene	25.0	22.6		ug/L		91	68 - 130	1	20
cis-1,2-Dichloroethene	25.0	23.3		ug/L		93	70 - 130	2	20
Chloroform	25.0	23.0		ug/L		92	70 - 130	1	20
1,1,1-Trichloroethane	25.0	21.7		ug/L		87	70 - 130	0	20
Carbon tetrachloride	25.0	23.2		ug/L		93	70 - 146	0	20
1,2-Dichloroethane	25.0	22.8		ug/L		91	61 - 132	0	20
Trichloroethene	25.0	21.9		ug/L		88	70 - 130	0	20
1,2-Dichloropropane	25.0	22.9		ug/L		92	70 - 130	1	20
Dichlorobromomethane	25.0	24.1		ug/L		96	70 - 130	1	20
trans-1,3-Dichloropropene	25.0	26.9		ug/L		108	70 - 140	3	20
cis-1,3-Dichloropropene	25.0	27.8		ug/L		111	70 - 130	1	20
1,1,2-Trichloroethane	25.0	23.2		ug/L		93	70 - 130	1	20
Tetrachloroethene	25.0	22.7		ug/L		91	70 - 130	0	20
Chlorodibromomethane	25.0	25.2		ug/L		101	70 - 145	3	20
Chlorobenzene	25.0	22.4		ug/L		90	70 - 130	2	20
Bromoform	25.0	25.3		ug/L		101	68 - 136	2	20
1,1,2,2-Tetrachloroethane	25.0	21.7		ug/L		87	70 - 130	0	20
1,3-Dichlorobenzene	25.0	22.6		ug/L		90	70 - 130	2	20
1,4-Dichlorobenzene	25.0	22.7		ug/L		91	70 - 130	1	20
1,2-Dichlorobenzene	25.0	23.0		ug/L		92	70 - 130	2	20
Chloromethane	25.0	21.4		ug/L		86	52 - 175	1	20
Bromomethane	25.0	24.5		ug/L		98	43 - 151	0	20
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	22.6		ug/L		90	42 - 162	1	20
EDB	25.0	23.8		ug/L		95	70 - 130	2	20
1,2,4-Trichlorobenzene	25.0	23.4		ug/L		93	70 - 130	4	20

TestAmerica Pleasanton

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 720-134847/6

Matrix: Water

Analysis Batch: 134847

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	98		70 - 130
4-Bromofluorobenzene	98		67 - 130
1,2-Dichloroethane-d4 (Surr)	94		75 - 138

Lab Sample ID: MB 720-134880/5

Matrix: Water

Analysis Batch: 134880

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	ND		0.50		ug/L			04/22/13 08:59	1
1,1-Dichloroethane	ND		0.50		ug/L			04/22/13 08:59	1
Dichlorodifluoromethane	ND		0.50		ug/L			04/22/13 08:59	1
Vinyl chloride	ND		0.50		ug/L			04/22/13 08:59	1
Chloroethane	ND		1.0		ug/L			04/22/13 08:59	1
Trichlorofluoromethane	ND		1.0		ug/L			04/22/13 08:59	1
Methylene Chloride	ND		5.0		ug/L			04/22/13 08:59	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			04/22/13 08:59	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			04/22/13 08:59	1
Chloroform	ND		1.0		ug/L			04/22/13 08:59	1
1,1,1-Trichloroethane	ND		0.50		ug/L			04/22/13 08:59	1
Carbon tetrachloride	ND		0.50		ug/L			04/22/13 08:59	1
1,2-Dichloroethane	ND		0.50		ug/L			04/22/13 08:59	1
Trichloroethene	ND		0.50		ug/L			04/22/13 08:59	1
1,2-Dichloropropane	ND		0.50		ug/L			04/22/13 08:59	1
Dichlorobromomethane	ND		0.50		ug/L			04/22/13 08:59	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			04/22/13 08:59	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			04/22/13 08:59	1
1,1,2-Trichloroethane	ND		0.50		ug/L			04/22/13 08:59	1
Tetrachloroethene	ND		0.50		ug/L			04/22/13 08:59	1
Chlorodibromomethane	ND		0.50		ug/L			04/22/13 08:59	1
Chlorobenzene	ND		0.50		ug/L			04/22/13 08:59	1
Bromoform	ND		1.0		ug/L			04/22/13 08:59	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			04/22/13 08:59	1
1,3-Dichlorobenzene	ND		0.50		ug/L			04/22/13 08:59	1
1,4-Dichlorobenzene	ND		0.50		ug/L			04/22/13 08:59	1
1,2-Dichlorobenzene	ND		0.50		ug/L			04/22/13 08:59	1
Chloromethane	ND		1.0		ug/L			04/22/13 08:59	1
Bromomethane	ND		1.0		ug/L			04/22/13 08:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			04/22/13 08:59	1
EDB	ND		0.50		ug/L			04/22/13 08:59	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			04/22/13 08:59	1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Toluene-d8 (Surr)	95		70 - 130		04/22/13 08:59	1
4-Bromofluorobenzene	93		67 - 130		04/22/13 08:59	1
1,2-Dichloroethane-d4 (Surr)	100		75 - 138		04/22/13 08:59	1

TestAmerica Pleasanton

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 720-134880/6

Matrix: Water

Analysis Batch: 134880

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	25.0	21.4		ug/L		86	64 - 128
1,1-Dichloroethane	25.0	21.5		ug/L		86	70 - 130
Dichlorodifluoromethane	25.0	17.5		ug/L		70	34 - 132
Vinyl chloride	25.0	20.8		ug/L		83	54 - 135
Chloroethane	25.0	20.5		ug/L		82	62 - 138
Trichlorofluoromethane	25.0	23.1		ug/L		92	66 - 132
Methylene Chloride	25.0	21.1		ug/L		84	70 - 147
trans-1,2-Dichloroethene	25.0	21.7		ug/L		87	68 - 130
cis-1,2-Dichloroethene	25.0	22.5		ug/L		90	70 - 130
Chloroform	25.0	22.8		ug/L		91	70 - 130
1,1,1-Trichloroethane	25.0	21.6		ug/L		87	70 - 130
Carbon tetrachloride	25.0	23.3		ug/L		93	70 - 146
1,2-Dichloroethane	25.0	22.8		ug/L		91	61 - 132
Trichloroethene	25.0	21.3		ug/L		85	70 - 130
1,2-Dichloropropane	25.0	21.7		ug/L		87	70 - 130
Dichlorobromomethane	25.0	24.2		ug/L		97	70 - 130
trans-1,3-Dichloropropene	25.0	26.8		ug/L		107	70 - 140
cis-1,3-Dichloropropene	25.0	27.3		ug/L		109	70 - 130
1,1,2-Trichloroethane	25.0	22.1		ug/L		89	70 - 130
Tetrachloroethene	25.0	22.6		ug/L		90	70 - 130
Chlorodibromomethane	25.0	25.5		ug/L		102	70 - 145
Chlorobenzene	25.0	21.6		ug/L		87	70 - 130
Bromoform	25.0	26.4		ug/L		106	68 - 136
1,1,1,2-Tetrachloroethane	25.0	21.8		ug/L		87	70 - 130
1,3-Dichlorobenzene	25.0	21.9		ug/L		87	70 - 130
1,4-Dichlorobenzene	25.0	22.0		ug/L		88	70 - 130
1,2-Dichlorobenzene	25.0	22.2		ug/L		89	70 - 130
Chloromethane	25.0	20.7		ug/L		83	52 - 175
Bromomethane	25.0	24.4		ug/L		98	43 - 151
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	22.8		ug/L		91	42 - 162
EDB	25.0	23.7		ug/L		95	70 - 130
1,2,4-Trichlorobenzene	25.0	22.3		ug/L		89	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	99		70 - 130
4-Bromofluorobenzene	98		67 - 130
1,2-Dichloroethane-d4 (Surr)	98		75 - 138

Lab Sample ID: LCSD 720-134880/7

Matrix: Water

Analysis Batch: 134880

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
								RPD	Limit
1,1-Dichloroethene	25.0	20.3		ug/L		81	64 - 128	5	20
1,1-Dichloroethane	25.0	21.4		ug/L		85	70 - 130	1	20
Dichlorodifluoromethane	25.0	16.5		ug/L		66	34 - 132	6	20
Vinyl chloride	25.0	20.3		ug/L		81	54 - 135	2	20

TestAmerica Pleasanton

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 720-134880/7

Matrix: Water

Analysis Batch: 134880

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloroethane	25.0	20.5		ug/L		82	62 - 138	0	20
Trichlorofluoromethane	25.0	22.0		ug/L		88	66 - 132	5	20
Methylene Chloride	25.0	21.2		ug/L		85	70 - 147	1	20
trans-1,2-Dichloroethene	25.0	21.9		ug/L		87	68 - 130	1	20
cis-1,2-Dichloroethene	25.0	22.5		ug/L		90	70 - 130	0	20
Chloroform	25.0	22.5		ug/L		90	70 - 130	1	20
1,1,1-Trichloroethane	25.0	21.9		ug/L		88	70 - 130	1	20
Carbon tetrachloride	25.0	23.5		ug/L		94	70 - 146	1	20
1,2-Dichloroethane	25.0	22.8		ug/L		91	61 - 132	0	20
Trichloroethene	25.0	21.1		ug/L		85	70 - 130	1	20
1,2-Dichloropropane	25.0	22.2		ug/L		89	70 - 130	2	20
Dichlorobromomethane	25.0	24.1		ug/L		97	70 - 130	0	20
trans-1,3-Dichloropropene	25.0	26.9		ug/L		108	70 - 140	0	20
cis-1,3-Dichloropropene	25.0	27.2		ug/L		109	70 - 130	0	20
1,1,2-Trichloroethane	25.0	22.2		ug/L		89	70 - 130	0	20
Tetrachloroethene	25.0	22.0		ug/L		88	70 - 130	2	20
Chlorodibromomethane	25.0	25.4		ug/L		102	70 - 145	0	20
Chlorobenzene	25.0	21.8		ug/L		87	70 - 130	1	20
Bromoform	25.0	26.4		ug/L		106	68 - 136	0	20
1,1,2,2-Tetrachloroethane	25.0	21.6		ug/L		86	70 - 130	1	20
1,3-Dichlorobenzene	25.0	21.9		ug/L		88	70 - 130	0	20
1,4-Dichlorobenzene	25.0	22.2		ug/L		89	70 - 130	1	20
1,2-Dichlorobenzene	25.0	22.4		ug/L		90	70 - 130	1	20
Chloromethane	25.0	20.8		ug/L		83	52 - 175	0	20
Bromomethane	25.0	23.4		ug/L		93	43 - 151	4	20
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	22.1		ug/L		88	42 - 162	3	20
EDB	25.0	23.3		ug/L		93	70 - 130	1	20
1,2,4-Trichlorobenzene	25.0	22.4		ug/L		90	70 - 130	0	20

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
Toluene-d8 (Surr)	99		70 - 130
4-Bromofluorobenzene	99		67 - 130
1,2-Dichloroethane-d4 (Surr)	97		75 - 138

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Lab Sample ID: MB 280-170520/1-A

Matrix: Water

Analysis Batch: 170843

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 170520

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	ND		1.0		ug/L		04/21/13 11:20	04/23/13 12:25	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2-Fluorobiphenyl	81		57 - 120	04/21/13 11:20	04/23/13 12:25	1

TestAmerica Pleasanton

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: LCS 280-170520/2-A

Matrix: Water

Analysis Batch: 170843

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 170520

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	5.24		ug/L		52	38 - 120
Surrogate		LCS %Recovery	LCS Qualifier				Limits
2-Fluorobiphenyl		85					57 - 120

Lab Sample ID: LCSD 280-170520/3-A

Matrix: Water

Analysis Batch: 170843

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 170520

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	10.0	5.67		ug/L		57	38 - 120	8	30
Surrogate		LCSD %Recovery	LCSD Qualifier				Limits		
2-Fluorobiphenyl		80					57 - 120		

Method: 7199 - Chromium, Hexavalent (IC)

Lab Sample ID: MB 720-135127/1-A

Matrix: Water

Analysis Batch: 134726

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	ND		0.50		ug/L			04/18/13 21:17	1

Lab Sample ID: LCS 720-135127/2-A

Matrix: Water

Analysis Batch: 134726

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	2.00	1.88		ug/L		94	90 - 110

Lab Sample ID: 720-49233-4 MS

Matrix: Water

Analysis Batch: 134726

Client Sample ID: SB-10-35.5-38.5

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	ND		2.00	1.92		ug/L		96	80 - 120

Lab Sample ID: 720-49233-4 MSD

Matrix: Water

Analysis Batch: 134726

Client Sample ID: SB-10-35.5-38.5

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cr (VI)	ND		2.00	1.93		ug/L		96	80 - 120	0	20

TestAmerica Pleasanton

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 720-134805/2
Matrix: Water
Analysis Batch: 134805

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			04/19/13 16:46	1

Lab Sample ID: LCS 720-134805/1
Matrix: Water
Analysis Batch: 134805

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	1030		mg/L		103	85 - 115

Lab Sample ID: 720-49233-4 DU
Matrix: Water
Analysis Batch: 134805

Client Sample ID: SB-10-35.5-38.5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	690		700		mg/L		1	10



QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

GC/MS VOA

Analysis Batch: 134740

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49233-1	SB-9-20-23	Total/NA	Water	8260B	
720-49233-2	SB-9-40-43	Total/NA	Water	8260B	
720-49233-3	SB-10-20.5-23	Total/NA	Water	8260B	
720-49233-4	SB-10-35.5-38.5	Total/NA	Water	8260B	
LCS 720-134740/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 720-134740/6	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 720-134740/4	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 134846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49233-2	SB-9-40-43	Total/NA	Water	8260B	
720-49233-3	SB-10-20.5-23	Total/NA	Water	8260B	
LCS 720-134846/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 720-134846/6	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 720-134846/4	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 134847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49233-1	SB-9-20-23	Total/NA	Water	8260B	
720-49233-5	TAL SF TB	Total/NA	Water	8260B	
LCS 720-134847/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 720-134847/6	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 720-134847/4	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 134880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49233-4	SB-10-35.5-38.5	Total/NA	Water	8260B	
LCS 720-134880/6	Lab Control Sample	Total/NA	Water	8260B	
LCSD 720-134880/7	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 720-134880/5	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 170520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49233-1	SB-9-20-23	Total/NA	Water	3520C	
720-49233-2	SB-9-40-43	Total/NA	Water	3520C	
720-49233-3	SB-10-20.5-23	Total/NA	Water	3520C	
720-49233-4	SB-10-35.5-38.5	Total/NA	Water	3520C	
LCS 280-170520/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 280-170520/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 280-170520/1-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 170843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49233-1	SB-9-20-23	Total/NA	Water	8270C LL	170520
720-49233-2	SB-9-40-43	Total/NA	Water	8270C LL	170520
720-49233-3	SB-10-20.5-23	Total/NA	Water	8270C LL	170520
720-49233-4	SB-10-35.5-38.5	Total/NA	Water	8270C LL	170520
LCS 280-170520/2-A	Lab Control Sample	Total/NA	Water	8270C LL	170520

TestAmerica Pleasanton

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

GC/MS Semi VOA (Continued)

Analysis Batch: 170843 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 280-170520/3-A	Lab Control Sample Dup	Total/NA	Water	8270C LL	170520
MB 280-170520/1-A	Method Blank	Total/NA	Water	8270C LL	170520

General Chemistry

Analysis Batch: 134726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49233-1	SB-9-20-23	Dissolved	Water	7199	
720-49233-3	SB-10-20.5-23	Dissolved	Water	7199	
720-49233-4	SB-10-35.5-38.5	Dissolved	Water	7199	
720-49233-4 MS	SB-10-35.5-38.5	Dissolved	Water	7199	
720-49233-4 MSD	SB-10-35.5-38.5	Dissolved	Water	7199	
LCS 720-135127/2-A	Lab Control Sample	Dissolved	Water	7199	
MB 720-135127/1-A	Method Blank	Dissolved	Water	7199	

Analysis Batch: 134805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49233-1	SB-9-20-23	Total/NA	Water	SM 2540C	
720-49233-3	SB-10-20.5-23	Total/NA	Water	SM 2540C	
720-49233-4	SB-10-35.5-38.5	Total/NA	Water	SM 2540C	
720-49233-4 DU	SB-10-35.5-38.5	Total/NA	Water	SM 2540C	
LCS 720-134805/1	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 720-134805/2	Method Blank	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Client Sample ID: SB-9-20-23

Lab Sample ID: 720-49233-1

Date Collected: 04/18/13 10:45

Matrix: Water

Date Received: 04/18/13 19:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	134740	04/19/13 17:43	AC	TAL PLS
Total/NA	Analysis	8260B		500	134847	04/20/13 19:11	AC	TAL PLS
Total/NA	Prep	3520C			170520	04/21/13 11:20	CDC	TAL DEN
Total/NA	Analysis	8270C LL		1	170843	04/23/13 14:36	KGV	TAL DEN
Dissolved	Analysis	7199		1	134726	04/18/13 21:46	EYT	TAL PLS
Total/NA	Analysis	SM 2540C		1	134805	04/19/13 16:46	EYT	TAL PLS

Client Sample ID: SB-9-40-43

Lab Sample ID: 720-49233-2

Date Collected: 04/18/13 12:05

Matrix: Water

Date Received: 04/18/13 19:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	134740	04/19/13 18:11	AC	TAL PLS
Total/NA	Analysis	8260B		5	134846	04/20/13 18:44	AC	TAL PLS
Total/NA	Prep	3520C			170520	04/21/13 11:20	CDC	TAL DEN
Total/NA	Analysis	8270C LL		1	170843	04/23/13 15:09	KGV	TAL DEN

Client Sample ID: SB-10-20.5-23

Lab Sample ID: 720-49233-3

Date Collected: 04/18/13 14:45

Matrix: Water

Date Received: 04/18/13 19:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	134740	04/19/13 18:40	AC	TAL PLS
Total/NA	Analysis	8260B		10	134846	04/20/13 19:13	AC	TAL PLS
Total/NA	Prep	3520C			170520	04/21/13 11:20	CDC	TAL DEN
Total/NA	Analysis	8270C LL		1	170843	04/23/13 15:42	KGV	TAL DEN
Dissolved	Analysis	7199		1	134726	04/18/13 21:58	EYT	TAL PLS
Total/NA	Analysis	SM 2540C		1	134805	04/19/13 16:46	EYT	TAL PLS

Client Sample ID: SB-10-35.5-38.5

Lab Sample ID: 720-49233-4

Date Collected: 04/18/13 15:40

Matrix: Water

Date Received: 04/18/13 19:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	134740	04/19/13 19:09	AC	TAL PLS
Total/NA	Analysis	8260B		50	134880	04/22/13 13:46	AC	TAL PLS
Total/NA	Prep	3520C			170520	04/21/13 11:20	CDC	TAL DEN
Total/NA	Analysis	8270C LL		1	170843	04/23/13 16:15	KGV	TAL DEN
Dissolved	Analysis	7199		1	134726	04/18/13 22:09	EYT	TAL PLS
Total/NA	Analysis	SM 2540C		1	134805	04/19/13 16:46	EYT	TAL PLS

TestAmerica Pleasanton

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Client Sample ID: TAL SF TB

Lab Sample ID: 720-49233-5

Date Collected: 04/18/13 00:00

Matrix: Water

Date Received: 04/18/13 19:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	134847	04/20/13 14:59	AC	TAL PLS

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

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Certification Summary

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Laboratory: TestAmerica Pleasanton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-14

Laboratory: TestAmerica Denver

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-13
A2LA	ISO/IEC 17025		2907.01	10-31-13
Alaska (UST)	State Program	10	UST-30	04-05-14
Arizona	State Program	9	AZ0713	12-19-13
Arkansas DEQ	State Program	6	88-0687	06-01-13
California	State Program	9	2513	08-31-14
Colorado	State Program	8	N/A	09-30-13
Connecticut	State Program	1	PH-0686	09-30-14
Florida	NELAP	4	E87667	06-30-13
Idaho	State Program	10	CO00026	09-30-13
Illinois	NELAP	5	200017	04-30-13
Iowa	State Program	7	370	12-01-14
Kansas	NELAP	7	E-10166	04-30-13
Louisiana	NELAP	6	30785	06-30-13
Maine	State Program	1	CO0002	03-03-15
Maryland	State Program	3	268	03-31-14
Minnesota	NELAP	5	8-999-405	12-31-13
Nevada	State Program	9	CO0026	07-30-13
New Hampshire	NELAP	1	205310	04-28-13
New Jersey	NELAP	2	CO004	06-30-13
New Mexico	State Program	6	CO00026	06-30-13
New York	NELAP	2	11964	04-01-14
North Carolina DENR	State Program	4	358	12-31-13
North Dakota	State Program	8	R-034	06-30-13
Oklahoma	State Program	6	8614	08-31-13
Oregon	NELAP	10	CO200001	01-16-14
Pennsylvania	NELAP	3	68-00664	07-31-13
South Carolina	State Program	4	72002	06-30-13
Texas	NELAP	6	T104704183-08-TX	09-30-13
USDA	Federal		P330-08-00036	02-08-14
Utah	NELAP	8	QUAN5	06-30-13
Virginia	NELAP	3	460232	06-14-13
Washington	State Program	10	C583	08-03-13
West Virginia DEP	State Program	3	354	11-30-13
Wisconsin	State Program	5	999615430	08-31-13
Wyoming (UST)	A2LA	8		10-31-13

Method Summary

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PLS
8270C LL	Semivolatile Organic Compounds by GCMS - Low Levels	SW846	TAL DEN
7199	Chromium, Hexavalent (IC)	SW846	TAL PLS
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PLS

Protocol References:

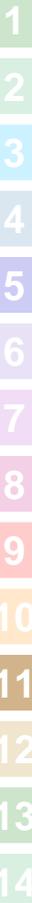
SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919



Sample Summary

Client: Geosyntec Consultants, Inc.
Project/Site: MEW

TestAmerica Job ID: 720-49233-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-49233-1	SB-9-20-23	Water	04/18/13 10:45	04/18/13 19:10
720-49233-2	SB-9-40-43	Water	04/18/13 12:05	04/18/13 19:10
720-49233-3	SB-10-20.5-23	Water	04/18/13 14:45	04/18/13 19:10
720-49233-4	SB-10-35.5-38.5	Water	04/18/13 15:40	04/18/13 19:10
720-49233-5	TAL SF TB	Water	04/18/13 00:00	04/18/13 19:10

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Chain of Custody Record

1220 Quarry Lane
Pleasanton, CA 94566
Phone 925.484.1919 fax 925.600.3002

720-49233

145501

TestAmerica Laboratories, Inc.

Client Contact

Project Manager: *Eric Sullivan*

Site Contact: *Morgan Estlin*

Date: 18 April 2013

COC No. 1 of 1 COCs

Geosyntec Consultants
1111 Broadway, 6th Floor
Oakland, CA 94607

Tel/Fax: (510) 285-2750 / (510) 836-3114
Analysis Turnaround Time

Lab Contact: *Mitch Smith*

Carrier:

For Lab Use Only:

510.285.2700 Phone
510.836.3114 FAX

Project Name: *MCW*

Site: *MCW*

Job / SDG No.:

Walk-in Client:

P.O.# *WB1125A*

Sample Identification

Sampler: *Morgan Estlin*

Sample Specific Notes:

Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.
4/18/13	10:45	G	W	8
4/18/13	12:05	G	W	4
4/18/13	14:45	G	W	7
4/19/13	15:40	G	W	9
		G	W	2

Filtered Sample (Y/N)	Perform MS/MSD (Y/N)
	826013
	8270C
	TDS
	Chromium VI
	1,4-Dioxane



720-49233 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments:
3.905

Custody Seals Intact Yes No

Custody Seal No.:

Cooling Temp (°C): Obs'd _____

Corrd. _____

Therm ID No.:

Relinquished by: *[Signature]*

Company: *Geosyntec*

Date/Time: *4/18/13 13:40*

Received by: *[Signature]*

Company: *TRSE*

Date/Time: *04/18/13 17:40*

Relinquished by: *[Signature]*

Company: *TRSE*

Date/Time: *04/18/13 19:10*

Received in Laboratory by: *[Signature]*

Company: *TRSE*

Date/Time: *4/18/13 19:10*

Salimpour, Afsaneh

From: Nicole Gotberg [NGotberg@Geosyntec.com]
Sent: Friday, April 19, 2013 11:06 AM
To: Salimpour, Afsaneh; Eric Suchomel
Cc: Morgan Fahlman; John Gallinatti
Subject: RE: Sample Login Confirmation for 720-49233, MEW

Afsaneh,

Per our conversation please make the following revisions to the requested analysis for 720-49233 and 720-49202.

1. Remove the SVOC 8270C analysis, we would only like to run 1,4 Dioxane by 8270C
2. For 8260B only run the halogenated VOC (HVOC) list
3. For the trip blank only run the HVOC analysis

I will have Morgan revise and initial changes on the Chain of Custody forms to be included with the lab reports.

Thanks,
 Nicole

Nicole K. Gotberg, P.G.
Professional Geologist

1111 Broadway, 6th Floor
 Oakland, CA 94607
 Main Phone: 510.836.3034, ext. 2771
 Direct Phone: 510.285.2771
 Fax: 510.836.3036
www.geosyntec.com

Geosyntec
 consultants

engineers | scientists | innovators

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10:41 AM

To: Eric Suchomel; Nicole Gotberg
Subject: Sample Login Confirmation for 720-49233, MEW

Insufficient sample volume was provided for the following sample(s) for the 8270C; 1,4-Dioxane, TDS, CrVI analysis: TAL SF TB. Received 2-40ml Hcl voa vials, can only run for 8260B.

AFSANEH SALIMPOUR

TestAmerica Pleasanton
 THE LEADER IN ENVIRONMENTAL TESTING

Tel: 925.484.1919
www.testamericainc.com

Reference: [128017]
 Attachments: 3



720-49233 Chain of Custody

TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
phone 925.484.1919 fax 925.600.3002

Chain of Custody Record

720-49233-REV

145501

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

For Lab Use Only:
Walk-in Client
Lab Sampling:
Job / SDG No.
Sampler: Margan Eakinman

COCs No. 1 of 1 COCs

Date: 18 April 2013

Carrier: Margan Eakinman

Lab Contact: Margan Eakinman

Site Contact: Margan Eakinman

Project Manager: Eric Salzman

Tel/Fax: (510) 285-2700 / (510) 285-3114

Geosyntec Consultants
1111 Broadway, 6th Floor
Oakland, CA 94607
Phone: 510.285.2700
FAX: 510.836.3114

Client Contact
Project Name: MCMU
Site: MEML
PO# WE1122A

Analysis Turnaround Time
 CALENDAR DAYS
 WORKING DAYS
TAT if different from Below:
 2 weeks
 1 week
 2 days
 1 day

Sample Identification	Sample Date	Sample Time	Sample Type (Comp, Gen)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)
SB-9-20-23	4/18/13	10:45	G	W	8	X	X
SB-9-40-43	4/18/13	12:05	G	W	4	X	X
SB-10-20.5-73	4/18/13	14:45	G	W	7	X	X
SB-10-35.5-38.5	4/19/13	15:40	G	W	9	X	X
TAL SF TB			G	W	2	X	X

Sample Specific Notes:
826013 (HVOCS) 82706 MF 2/22/13 TDS Chromium VI 1,4-Dioxane (82706)



Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other
Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments:
 Non-Hazard Flammable Skin Irritant Poison B Unknown

3901

Requisitioned by: [Signature] Company: Greenspace Date/Time: 4/18/13 13:46 Received by: [Signature] Company: TRSE Date/Time: 04/18/13 14:00

Requisitioned by: [Signature] Company: TRSE Date/Time: 04/18/13 19:10 Received in Laboratory by: [Signature] Company: TRSE Date/Time: 4/18/13 19:10

Coold Temp (°C) Obs'd: _____ Term ID No. _____

Return to Client Disposal by Lab Archive for _____ Months

Login Sample Receipt Checklist

Client: Geosyntec Consultants, Inc.

Job Number: 720-49233-1

Login Number: 49233

List Source: TestAmerica Pleasanton

List Number: 1

Creator: Bullock, Tracy

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	False	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Geosyntec Consultants, Inc.

Job Number: 720-49233-1

Login Number: 49233

List Number: 1

Creator: Wheeler, Virginia L

List Source: TestAmerica Denver

List Creation: 04/20/13 12:10 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	