ARCADIS U.S., Inc.
100 Montgomery Street, Suite 300
San Francisco, CA 94104
Tel 415.374.2744
Fax 415.374.2745
www.arcadis-us.com

CPT/UVOST Field Investigation Summary Report and Additional Soil Investigation Work Plan
Former BP Service Station #11132
3201 35th Avenue
Oakland, California
ACEH Case #RO0000014

ENVIRONMENT

"I declare that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct."

Date:
February 17, 2012

Submitted by:

ARCADIS U.S., Inc

Hollis E. Phillips, PG
Project Manager

Contact:
Hollis E. Phillips

Phone:
415.374.2744 ext 13

Email:
Hollis.phillips@arcadis-us.com

Our ref:
GP09BPNA.C112

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ENVIRONMENT

Paresh C. Khatri
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject:
CPT/UVOST Field Investigation Summary Report and Additional Soil Investigation Workplan
Former BP Station #11132
3201 35th Avenue
Oakland, California
ACEH CASE Number: RO0000014

Date:
February 17, 2012

Contact:
Hollis Phillips

Phone:
415.374.2744 ext. 13

Email:
Hollis.Phillips@arcadis-us.com

Our ref:
GP09BPNA.C112

Dear Mr. Khatri:

ARCADIS U.S. (ARCADIS) has prepared this *Cone Penetrometer Test/Ultra Violet Optical Screening Tool (CPT/UVOST Field Investigation Summary Report and Additional Soil Investigation Workplan* for the Former BP Service Station #11132 (site) located at 3201 35th Avenue in Oakland, California (site) (Figure 1). This report has been prepared to document site assessment activities conducted as proposed in ARCADIS's *CPT/UVOST Field Investigation Work Plan* dated April 22, 2011 (ARCADIS, 2011) and proposes additional soil investigation activities based on the results of the field investigation.

CPT/UVOST Field Investigation Report

Objectives

The objectives of the field investigation were the following :

- Utilize CPT/UVOST technologies to delineate separate phase hydrocarbons (SPH) in the vicinity of MW-10 and the dispenser islands/underground storage tanks (USTs).

- Collect soil samples at the CPT/UVOST borings to evaluate the subsurface soil conditions and correlate analyte concentrations to the UVOST readings.

Site Background

The Site is an active 76-branded gas station located on the northeast corner of the intersection of 35th Avenue and Sutter Street, southwest of Interstate 580, in Oakland, California. Current facility operations consist of gasoline dispensing and retail sales by ConocoPhillips. The Site has operated as a gasoline service station since at least the early 1970's. It was acquired in 1989 from Mobil Oil Company by BP and operated under the BP brand. BP sold the station in 1994 to Tosco, which was acquired by Conoco Phillips who now operates the 76-branded station.

Leaking USTs were removed and replaced in 1986. Product conveyance lines and fuel dispensing equipment was subsequently replaced in the 1990s. Existing USTs consist of one 12,000-gallon and two 10,000-gallon double-wall fiberglass USTs. Existing Site features are shown on Figure 2.

Previous Site Investigations

A comprehensive summary of previous environmental investigations is presented in the report prepared by Broadbent & Associates, Inc. (BAI) titled *Site Conceptual Model with Feasibility Study Report, Former BP Station #11132*, dated July 21, 2008 (BAI, 2008).

Soil impacts originate from historical operations relating to the former USTs. Laboratory analysis of soil samples collected from soil borings confirmed the presence of petroleum hydrocarbons in soils beneath the site. Groundwater has been sampled on a quarterly or semi-annual basis since the 1986 site investigation following the originally reported UST release. Historically, measurable quantities of SPH have been detected in wells MW-1, MW-2, MW-8, MW-9, MW-10, and RW-1. During the third quarter 2011 sampling event, SPH was not detected in any site wells. The highest concentrations of site contaminants of concern (COCs) were detected at MW-2. The third quarter 2011 results indicated: Gasoline Range Organics (GRO) at 23,000 micrograms per liter (µg/L); benzene at 4,900 µg/L; toluene at 620 µg/L; ethylbenzene at 1,500 µg/L; total xylenes at 4,400 µg/L; and, Methyl Tert-Butyl Ether (MTBE) at 150 µg/L.

Regional Geology and Hydrogeology mad Hydrogeologic Conditions

The site is situated in an alluvial plain generally underlain by Cretaceous and Jurassic metamorphic rocks of the Franciscan Complex. There is considerable

spatial variation in the thickness of the Quaternary alluvial valley sediments. The alluvium has generally been derived from erosion and nearby fluvial re-deposition of the underlying Franciscan Complex. Alluvium was deposited as debris flows, mud flows, and by braided streams. The sediments are generally poorly sorted and poorly to moderately bedded (Department of Water Resources [DWR], 2003).

Sediments encountered at the site consist primarily of silty clays or clayey silts with varying amounts of sand and gravel, extending from the ground surface to the total depth investigated, approximately 45 feet below ground surface (bgs) (BAI, 2008) Interbedded lenses of sandy gravelly silts and sandy gravelly clays have also been reported in subsurface soils.

The site is located in the East Bay Plain Subbasin, Groundwater Basin No. 2-9.04 (DWR 2003). The East Bay Plain Subbasin is a northwest trending alluvial basin, bounded on the north by San Pablo Bay, on the east by the contact with Franciscan basement rock, and on the south by the Nile Cone Groundwater Basin. The East Bay Plain Subbasin extends beneath the San Francisco Bay to the west. The East Bay Plain Subbasin aquifer system consists of unconsolidated sediments of Quaternary age. These include the Santa Clara Formation, Alameda Formation, Temescal Formation, and artificial fill.

Throughout most of the Alameda County portion of the East Bay Plain, from Hayward north to Albany, water level contours show that the general direction of ground-water flow is from east to west or from the Hayward Fault to the San Francisco Bay. Ground-water flow direction generally correlates to topography.

Groundwater depth historically varies across the site from approximately 11 to 24 feet bgs. Average seasonal fluctuations are approximately 10 feet. Historically the groundwater gradient has ranged from 0.003 foot per foot (ft/ft) to 0.01 ft/ft. Based on ground-water elevation data, the ground-water flow direction has varied between southeast and southwest.

Field Activities

All work was conducted in accordance with a site-specific Health and Safety Plan (HASP). Soil boring permits were obtained from Alameda County Public Works Agency. Field documentation for the work is included in Attachment A, and the permits are included in Attachment B.

Underground Service Alert (USA) was notified at least 48 hours before proposed drilling activities to identify public utilities in the vicinity of the proposed borings. In conjunction with USA, a private utility locating company was utilized to further evaluate the potential presence of underground utilities in the vicinity of the proposed boring locations. Prior to installation, the proposed CPT/UVOST borings were cleared by advancing a hand auger to approximately 6.5 feet bgs to manually clear the boring of any underground utilities.

CPT/UVOST Borings

On November 17 and 18, 2011, ARCADIS supervised Gregg Drilling and Testing, Inc. in the advancement of the CPT/UVOST borings UCPT-1 through UCPT-4 to a depth of approximately 40 feet bgs (Figure 2). UCPT-1 through UCPT-3 were advanced onsite to delineate SPH in the vicinity of the USTs and dispenser islands. UCPT-4 was advanced adjacent to MW-10 to delineate the SPH in the downgradient area off site. The CPT/UVOST logs are provided in Attachment C.

CPTs were conducted using a piezocone connected by stainless steel rods to a hydraulic direct push system that advances the piezocone through the soil. The piezocone measures friction, tip resistance, and pore pressure. CPT was performed in accordance with revised (2002) American Society for Testing and Materials (ASTM) standards (D-5778-95). UVOST was advanced simultaneously with the CPT rod to detect the laser-induced fluorescence response of polyaromatic compounds present in hydrocarbon fuels, which quantifies the relative concentrations of hydrocarbons present in soil at or below the water table. Deploying the CPT with the UVOST allowed for the correlation of site lithology and the presence of SPH.

Upon the completion of each CPT/UVOST boring, the borehole was backfilled to just below grade with neat cement grout and finished at the surface to match the existing grade.

Based on the UVOST logs, no SPH was detected in any of the borings. Minor peaks (not indicative of free product) were observed from 10 to 11 feet bgs at UCPT-1 which was advanced in the vicinity of the dispenser islands, and from 10 to 11 feet bgs in the vicinity of the USTs at UCPT-3.

Soil Sampling

Soil samples were collected immediately adjacent to UCPT-1 and UCPT-4. The sample depths were chosen based on lithologic data and real-time fluorescence measurements from the CPT/UVOST borings. At UCPT-1, a sample was collected between 9.5 to 10.5 feet bgs due to the minor peak shown in the UVOST log (Attachment C). At UCPT-4, a sample was collected between 12.5 and 13.5 feet bgs as a background sample.

The CPT rig advanced hollow push rods to the desired sampling depth, and the core (soil sampling device) was extracted and samples collected. Upon completion of the sample collection, all down-hole equipment was retrieved and decontaminated. The soil samples were analyzed for the following constituents by Test America Laboratories, Inc., (TA) a California-certified laboratory:

- GRO by USEPA Method 8015B (M)

- Benzene, Toluene, Ethylbenzene and total Xylenes (BTEX) and MTBE by USEPA Method 8260B

Soil analytical data is presented in Table 1**.** A copy of the laboratory analytical report and chain-of-custody documentation is included in Attachment D. No analytes were detected above the reporting limit in either soil sample.

Investigation Summary

Based on the UVOST results, SPH was not detected in any of the CPT/UVOST locations. In addition, the discrete soil samples collected at UCPT-1 and UCPT-4 had no analyte detections.

Recommendations

Based on the observations during this field investigation, SPH was not encountered at the select CPT/UVOST locations. However, sheen or measurable SPH has historically been observed at several monitoring wells including MW-2, MW-8, MW-9, MW-10, and RW-1. The free product that is encountered during monitoring events may be too weatherd to fluoresce and therefore the UVOST cannot detect it. Therefore, ARCADIS recommends conducting additional subsurface investigation in the southwestern area of the site as well as downgradient offsite locations to further

characterize localized site lithology and to better understand contaminant migration at the site. ARCADIS recommends conducting three direct-push borings located adjacent to MW-2, MW-8, and MW-10 to evaluate SPH impacts in the soil. The sections below describe the proposed activities in greater detail.

Additional Soil Investigation Workplan

Proposed Subsurface Assessment Activities

To evaluate the lateral and vertical extent of petroleum-hydrocarbon affected soil and groundwater ARCADIS proposes to conduct three direct push soil borings to obtain a continuous soil core from 6.5 feet bgs up to 40 feet bgs. The proposed direct push boring locations are shown on Figure 2.

Pre-Field Activities

Prior to initiating drilling activities, the site-specific HASP will be updated in accordance with state and federal requirements for use during the proposed field activities. All necessary permits and licenses will be obtained prior to the initiation of subsurface investigations including drilling permits from the Alameda County Public Works Agency and permits from the City of Oakland to work in the public right-of-way. Underground utilities and other potential subsurface obstructions in the vicinity of the proposed well locations will be located and marked prior to sampling. The utility survey will include identifying the site using white paint and obtaining a USA ticket for the site by calling USA at least 48 hours prior to drilling activities. Additionally, a private third-party utility locator will screen all proposed boring locations to determine the location of nearby underground utilities.

Direct Push Borings

Prior to the advancement of direct push rods, the first 6.5 feet of each boring will be hand-augured or air knifed to confirm that utilities or obstructions are not present. If refusal is encountered, the occurrence will be documented and the boring location will be moved less than five feet away from the original boring location.

Three direct push borings are proposed to further delineate SPH in the vicinity of onsite monitoring well MW-2, and downgradient offsite monitoring wells MW-8 and MW-10. As stated above, sheen or measurable product has historically been observed in these wells. Direct push borings will be advanced to the deepest soil

impacts observed in the field. This depth is expected to be no greater than 40 feet bgs. During advancement of the boreholes with a direct push rig, continuous soil cores will be collected in 4 foot long, clear, acetate sleeves, and logged in accordance with the unified soil classification system (USCS).. All soil descriptions, including grain size distribution, sorting, moisture content, consistency/density, color (based on the Munsell color system), and Photo Ionization Detector (PID) readings will be recorded on the field boring logs. Upon completion of the soil boring, all down-hole equipment will be retrieved and decontaminated and the borehole brought to grade with neat cement grout.

Soil Sampling

The acetate sleeve will be sliced on either side exposing the soil, samples will be collecting with an Encore sampling device. Soil samples in each boring will be collected based on PID readings and field observations (i.e. visible SPH). If the PID readings are generally low, a soil sample representative of the lithology will be collected.

All samples will be sealed, labeled, and placed in an ice-chilled cooler for delivery to TA under proper chain of custody procedures. Soil samples will be analyzed for the following:

- GRO by USEPA Method 8015B (M)
- BTEX and MTBE by USEPA Method 8260B

Investigation Derived Waste Disposal

Investigation derived waste (IDW) generated during drilling operations will be containerized in 55-gallon drums and temporarily stored onsite pending characterization for offsite disposal. A composite sample of investigation derived waste will be collected for waste profiling purposes. Following the receipt of waste characterization sampling results, all investigation derived waste will be transported to an appropriate disposal facility.

Reporting

A report will be prepared to document the results of the sampling activities. The report will include the following:

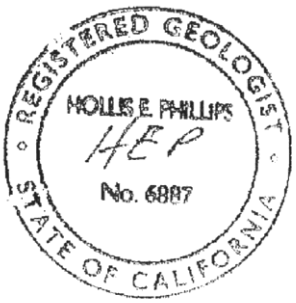
- Site conditions and background information;
- A site plan illustrating drilling locations and other relevant site features;
- Documentation of selected sampling activities performed in connection with subsurface assessment activities;
- Results of the laboratory analyses performed on soil samples;
- Conclusions and recommendations relevant to the assessment objectives, including the installation of additional wells.

Schedule

ARCADIS is prepared to initiate field work after receipt of all necessary approvals and permits. A summary report will be submitted to Alameda County Environmental Health Department within 60 days of receiving the final sampling results.

If you have any questions or comments regarding the contents of this letter, please contact me at (415) 374-2744 extension 13 or by e-mail at hollis.phillips@arcadis-us.com.

Sincerely,



ARCADIS

Hollis E. Phillips, P.G.
Principal Geologist

Enclosures:

Table 1	Soil Analytical Results
Figure 1	Site Location Map
Figure 2	Site Plan With Proposed Direct Push Soil Boring Locations
Attachment A	CPT/UVOST Field Documentation
Attachment B	Permits

Attachment C CPT and UVOST Logs
Attachment D Laboratory Analytical Reports and Chain-of-Custody Documentation

References

ARCADIS, 2011. *CPT/UVOST Field Investigation Work Plan, Former BP Station #11132, 3201 35th Avenue, Oakland, California, ACEH Case #RO0000014*. April 28.

Broadbent & Associates, Inc. (BAI), 2008. *Site Conceptual Model and Feasibility Study Report, Former BP Station No. 11132*, July 2008.California Department of Water Resources. 2003. *California's Groundwater*. Sacramento. Bulletin 118, update 2003.

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Table

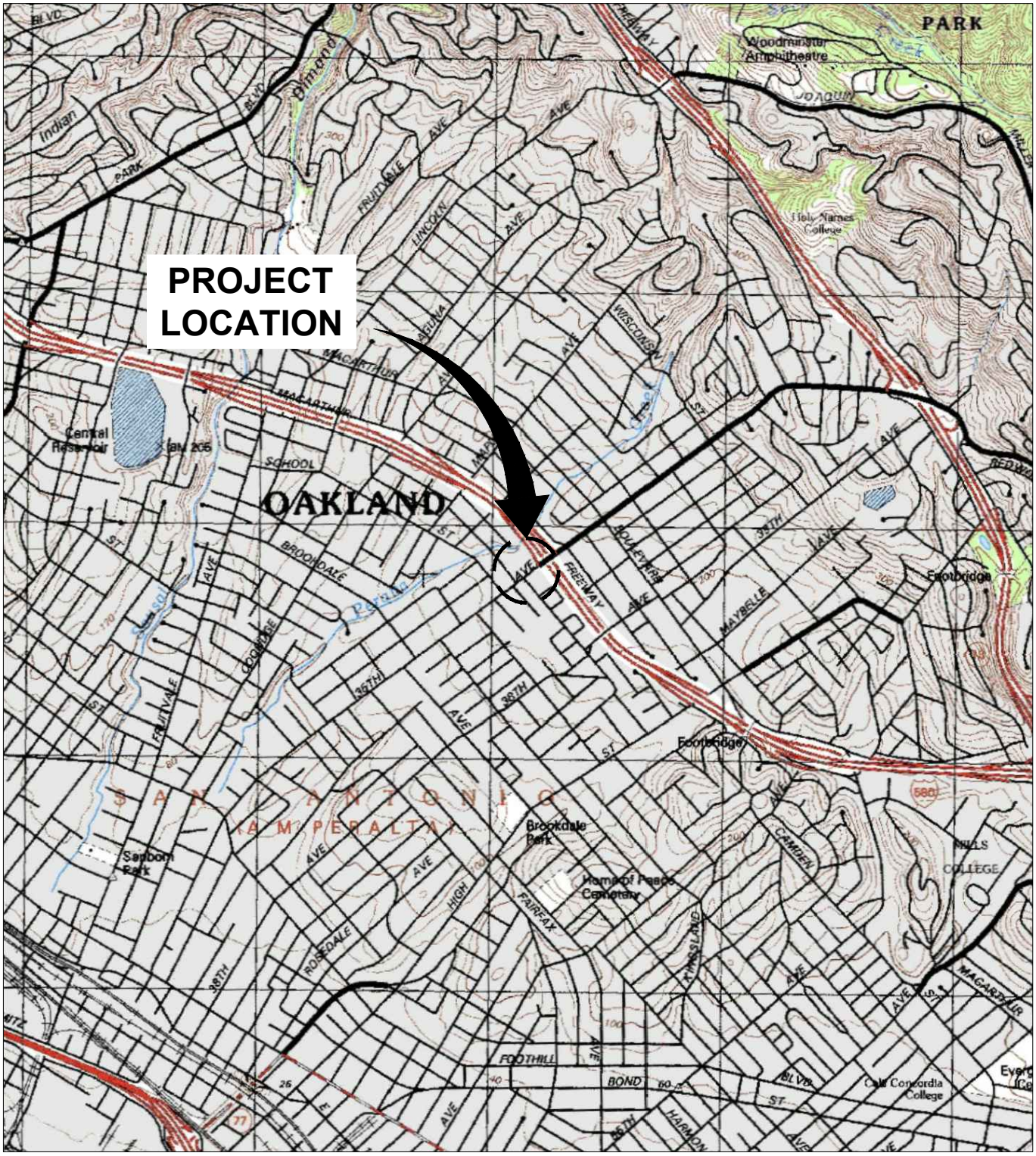
Table 1: Soil Analytical Results
BP # 11132
3205 35th Avenue, Oakland, California
ACEH CASE Number: RO0000014

Location	Sample Depth (ft bgs)	Sample Date	GRO	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			mg/kg					
ESL			**83**	**0.023**	**0.044**	**2.9**	**3.3**	**2.3**
UCPT-1	9.5-10.5	11/18/2011	<210	<0.0043	<0.0043	<0.0043	<0.0043	<0.0086
UCPT-4	12.5-13.5	11/17/2011	<190	<0.0037	<0.0037	<0.0037	<0.0037	<0.0075

Notes:
ft bgs = feet below ground surface
mg/kg = milligrams per kilogram
GRO = Gasoline Range Organics (C6-C12)
MTBE = Methyl tert-butyl ether
ETBE = Ethyl tert-butyl ether
ESL = Environmental Screening Level, *Table C-1: Deep Soil Screening Levels (>3m bgs, Residential Land Use, groundwater is a current or potential drinking water source)*
< = Analyte was not detected above the specified method reporting limit

ARCADIS

Figures



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., OAKLAND EAST, CALIFORNIA, 1997.

0 2000' 4000'

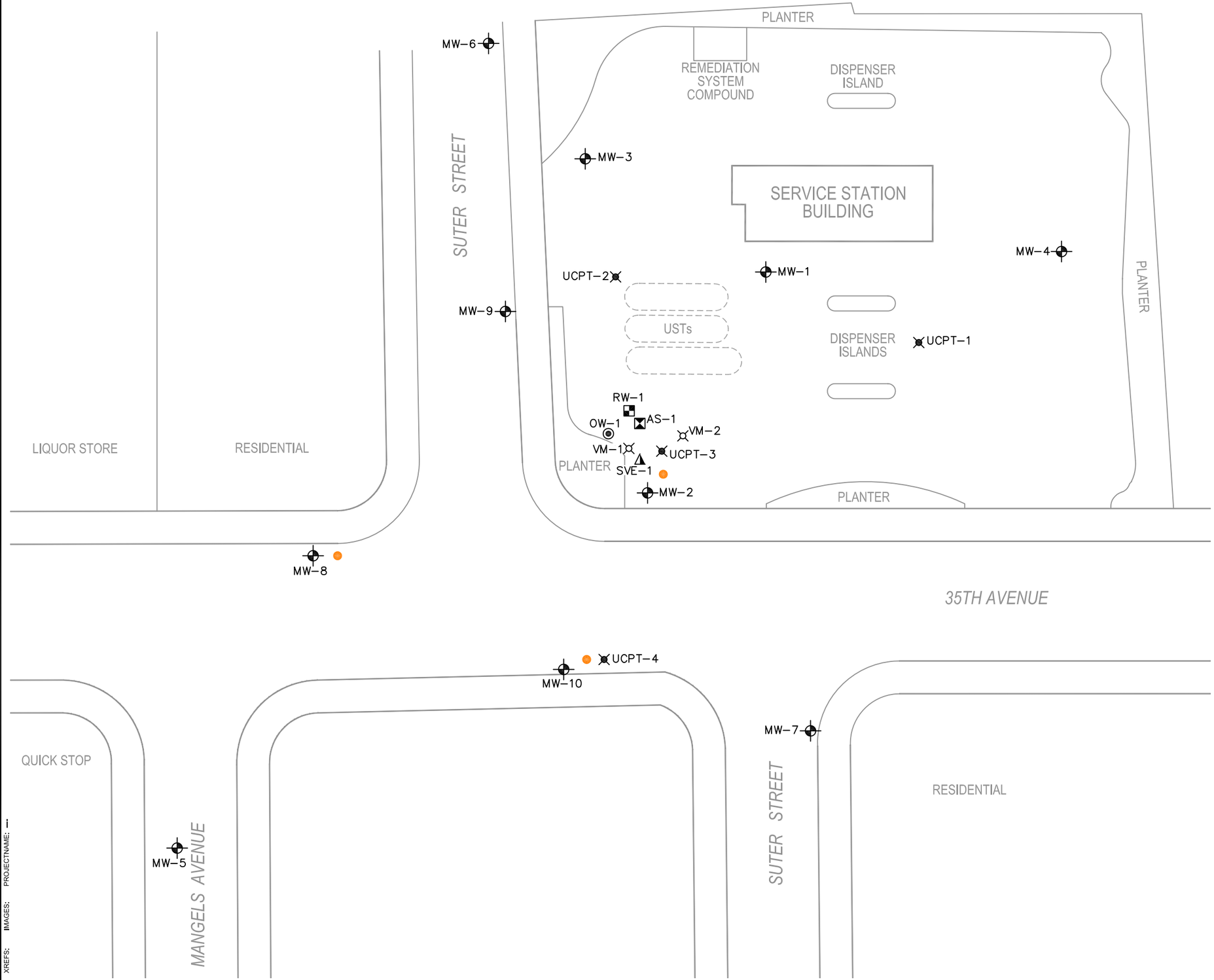
Approximate Scale: 1 in. = 2000 ft.

FORMER BP STATION No. 11132
3201 35TH AVENUE
OAKLAND, CALIFORNIA

SITE LOCATION MAP

ARCADIS

FIGURE
1



LEGEND

- MW-1 GROUNDWATER MONITORING WELL
- RW-1 GROUNDWATER RECOVERY WELL
- UCPT-1 CPT/UVOST (ARCADIS, 2011)
- AS-1 AIR SPARGE WELL (ARCADIS, 2010)
- OW-1 OBSERVATION WELL (ARCADIS, 2010)
- SVE-1 SOIL VAPOR EXTRACTION WELL (ARCADIS, 2010)
- VM-1 SOIL VAPOR MONITORING WELL (ARCADIS, 2010)
- PROPOSED DIRECT-PUSH SOIL BORING LOCATION

NOTE:

BASE MAP PROVIDED BY BROADBENT & ASSOCIATES, INC., DATED 9/15/09, AT A SCALE OF 1"=50'.

0 30' 60'

GRAPHIC SCALE

FORMER BP STATION No. 11132
3201 35TH AVENUE
OAKLAND, CALIFORNIA

SITE PLAN WITH PROPOSED DIRECT-PUSH SOIL BORING LOCATIONS

ARCADIS

FIGURE 2

Attachment A

CPT/UVOST Field Documentation

Site Visit Report

ARCADIS Project Number:	Dates of Site Visit: 11/17/11 → 11/18/11
ARCADIS Project Name: BP-11136	Location of Project: OAKLAND, CA
ARCADIS Personnel Present: K. KING, E. MANTOR, T. HESS	Other Persons Present: GREGG

Purpose of Site Visit:

CPT WORK

Date & Time:	Activities:
11/17	
0645	ARCADIS ONSITE, SPEAK WITH STATION OPERATOR
0715	GREGG DRILLING ONSITE, BEGIN TAILGATE
0735	END TAILGATE, GOING TO SET UP ON CPT-3 FIRST. NEED TO MOVE THE LOCATION ~5' DUE TO SIDEWALK.
0850	FINISHED HAND AUGERING CPT-3, COULD ONLY GET DOWN 6' ON SECOND HOLE
0915	CLEAR TO PROCEED D.F. & I.C.B. NO VISUAL IN AREA.
0930	GOING TO GO TO CPT-4 FIRST, 8" CORE, SUBBASE BELOW, SLOW HAND AUGERING.
1030	COMPLETED HAND AUGERING, START BRING CPT RIG OUT
1130	SET UP ON CPT-4, SOME ISSUES WITH LIVEST
1250	CPT-4 COMPLETE, PER HP, COLLECT SAMPLE 12.5 → 13.5
1430	SET UP ON CPT-3.
1530	PER HOLLIS, NO SOIL SAMPLE, MOVE TO CPT-2.
1615	BEGIN HAND AUGERING CPT-2.
1700	CURRIER PICKS UP SAMPLES
1730	OFFSITE.

Rental Equipment Used

Qty	Rental ID	Description	Rental Period	Return Conf. #

Weather:	Signature & Date: 11/18/11
	Eqpt Billing Log to Accounting Date: Initials:

Site Visit Report

Date & Time:	Activities:
11/18/11 0645	KIC ONSITE. GREGG ONSITE, CONDUCT TAILGATE.
0700	CONTINUE HAND AUGERING CPT-2 LOCATION, HARD SOILS (FILL)
0830	DOWN 5.5' MOVING TO CPT-1 LOCATION. DRILLERS BOSS TO CALL HP & DF.
0845	PER HP, DRILLERS BRINGING OUT AIR KNIFE
0930	SET UP ON CPT-1
1015	AIR KNIFE RIG ARRIVES ONSITE.
1030	PER HP, COLLECT 9.5-10.5'
1045	AIR KNIFE NOT LOOKING, BROKE CLUTCH IN MOTOR, OFFSITE
1130	SET UP ON CPT-1 TO COLLECT SOIL SAMPLE
1290	DRILLERS COMPLETE GROUTING OF CPT-1.
1330	UNABLE TO GET ANY FURTHER HAND AUGERING CPT-2. DRILLERS COMPLAIN OF HAND & BACK PAIN. KYLE TO CONTACT HP
1350	PER HP, PUSH MOST DOWN 5.5' HOLE.
1500	PER HP, NO SOIL SAMPLE, CREW TO CLEAN UP FOR DAY.
1630	OFFSITE

Attachment B

Permits

Alameda County Public Works Agency - Water Resources Well Permit

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 07/13/2011 By jamesy

Permit Numbers: W2011-0461
Permits Valid from 10/28/2011 to 11/17/2011

Application Id:	1310513110711	**City of Project Site:**	Oakland
Site Location:	3201 35th Avenue, CA		
Project Start Date:	07/22/2011	**Completion Date:**	07/22/2011
Assigned Inspector:	Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org		
Extension Start Date:	10/28/2011	**Extension End Date:**	11/17/2011
Extension Count:	1	**Extended By:**	priest

Applicant:	Arcadis - Arpen Shah 100 Montgomery St, Ste 300, San Francisco, CA 94104	**Phone:** 415-374-2744
Property Owner:	Rajinder S. Sull 2004 Hartwell St., Union City, CA 94587	**Phone:** 510-366-8760
Client:	Hollis Phillips 100 Montgomery St, Ste 300, San Francisco, CA 94104	**Phone:** 415-374-2988

	Total Due:	$265.00
Receipt Number: WR2011-0210	**Total Amount Paid:**	$265.00
Payer Name : Arcadis	Paid By: CHECK	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Environmental/Monitorinig Study - 4 Boreholes
Driller: Gregg Drilling, Inc - Lic #: 485165 - Method: CPT **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2011-0461	07/13/2011	10/20/2011	4	2.00 in.	40.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact Steve Miller for an inspection time at (510) 670-5517 or email to stevem@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

6. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

7. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

Attachment C

CPT and UVOST Logs

GREGG

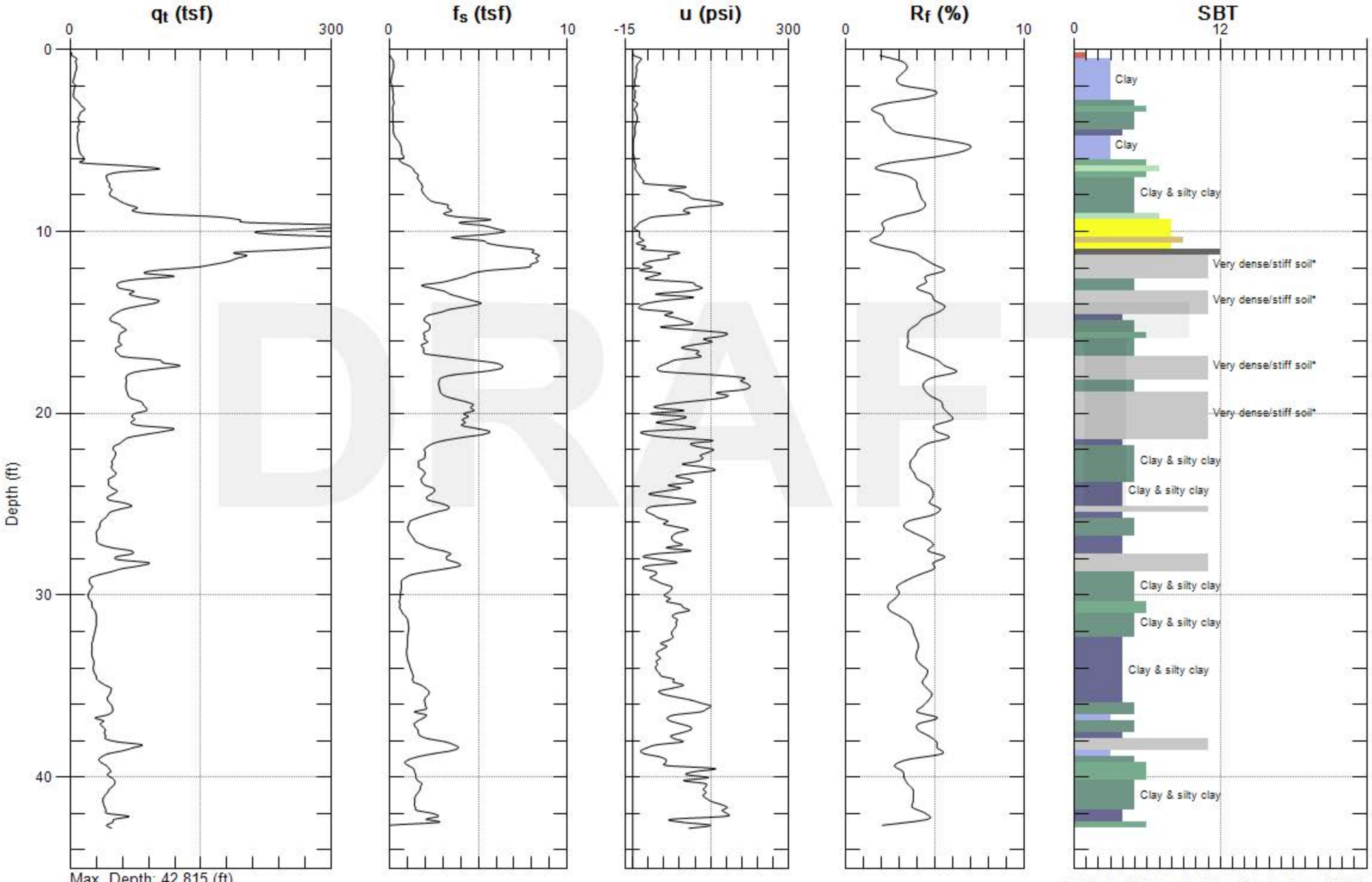
Arcadis

Site: BP11132

Sounding: UCPT-01

Engineer: KYLE K.

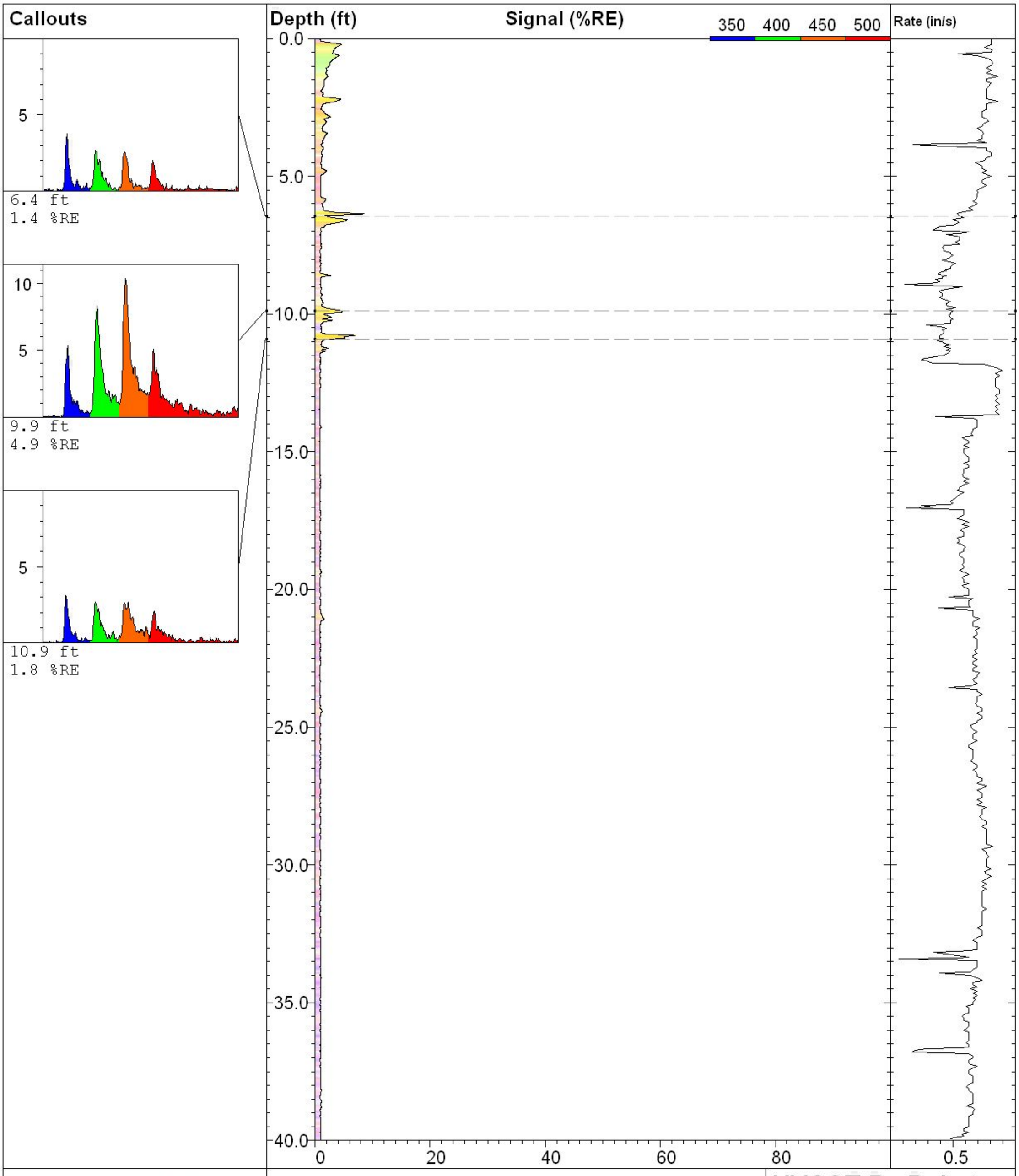
Date: 11/18/2011 09:12



Max. Depth: 42.815 (ft)

Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



GREGG

www.greggdrilling.com

UCPT-01

UVOST By Dakota
www.DakotaTechnologies.com

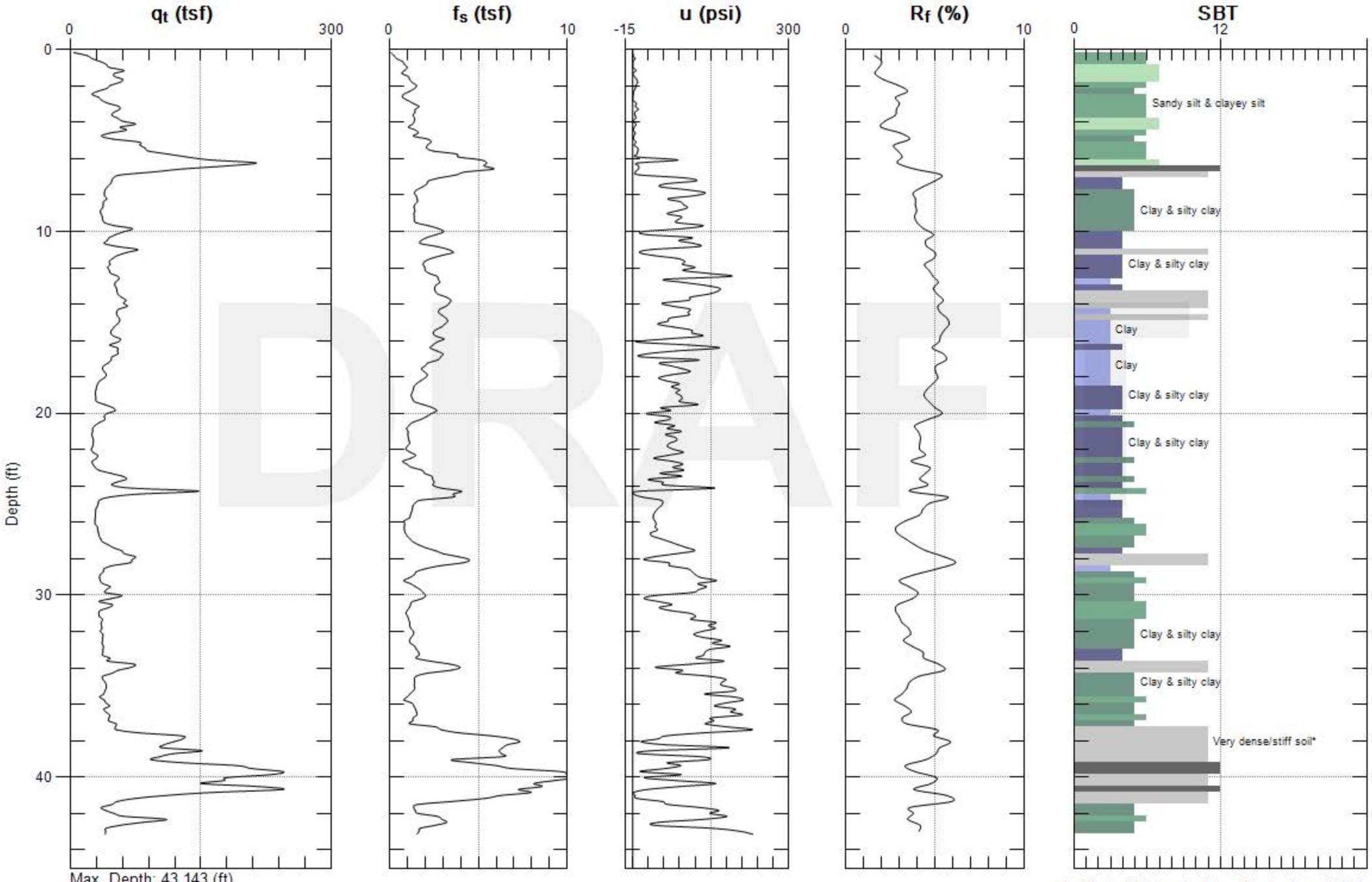
Site: **BP11132**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **40.07 ft**
Client: **ARCADIS**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **8.7 % @ 6.37 ft**
Job: **GP09BPNA.C112**	*Operator/Unit:* **JOHN/GARMAN/UVOST10**	*Date & Time:* **2011-11-18 09:21 PST**

GREGG

Arcadis

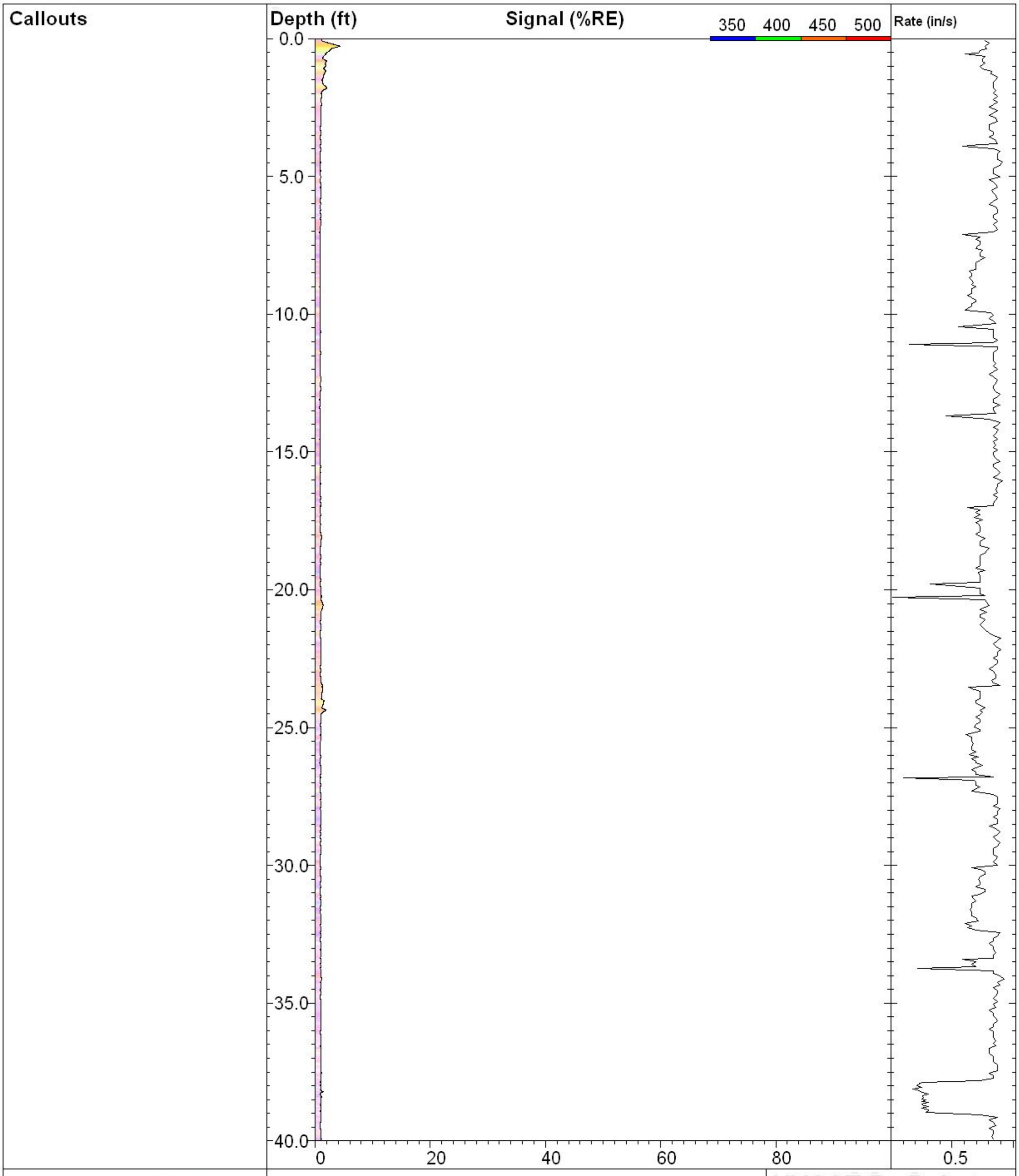
Site: BP11132
Sounding: UCPT-02

Engineer: KYLE K.
Date: 11/18/2011 01:59



Max. Depth: 43.143 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



GREGG

www.greggdrilling.com

UCPT-02

UVOST By Dakota
www.DakotaTechnologies.com

Site: **BP11132**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **40.56 ft**
Client: **ARCADIS**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **4.3 % @ 0.28 ft**
Job: **GP09BPNA.C112**	*Operator/Unit:* **JOHN/GARMAN/UVOST10**	*Date & Time:* **2011-11-18 14:06 PST**

GREGG

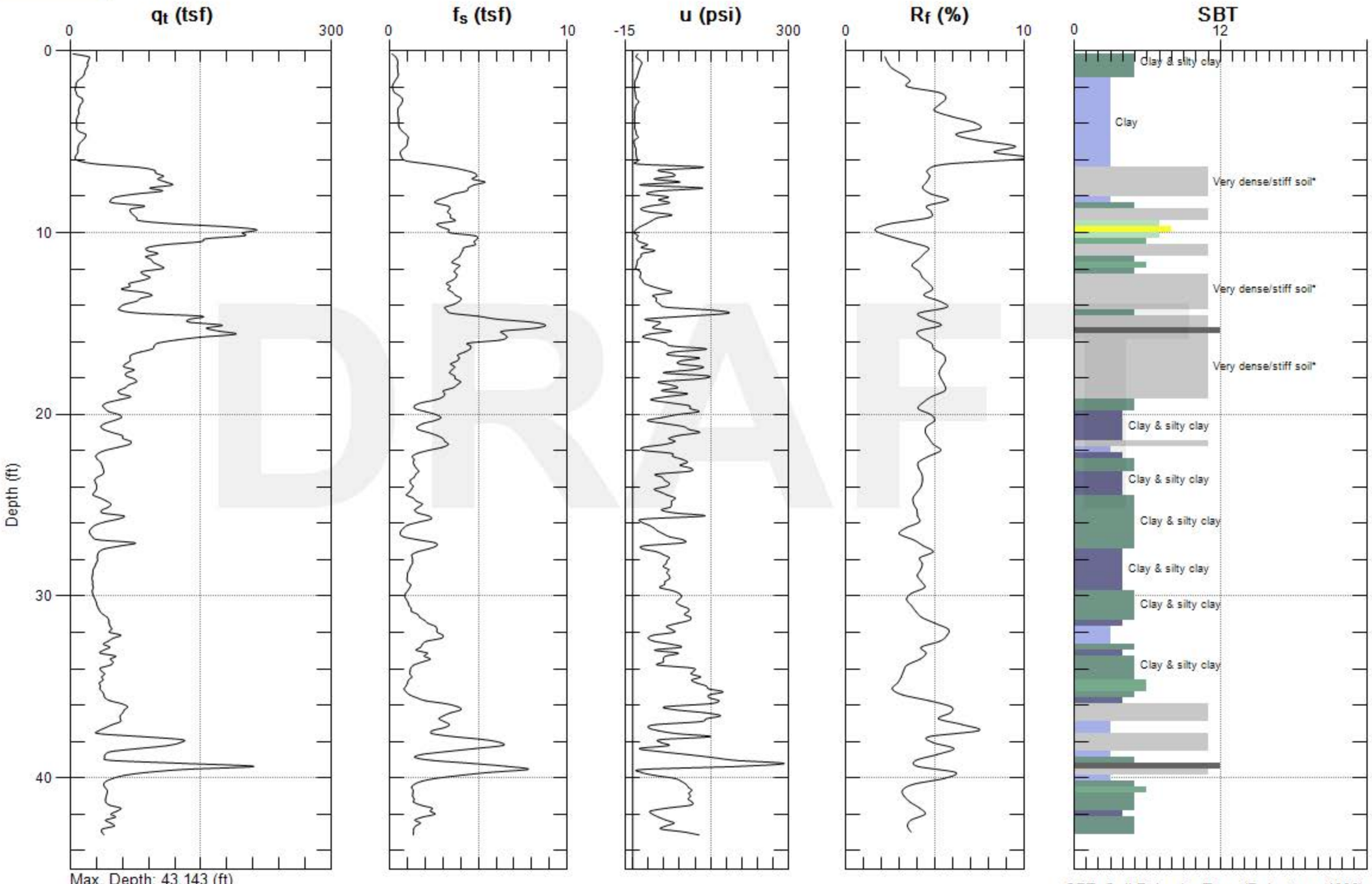
ARCADIS

Site: BP-11132

Sounding: UCPT-03

Engineer: KYLE K.

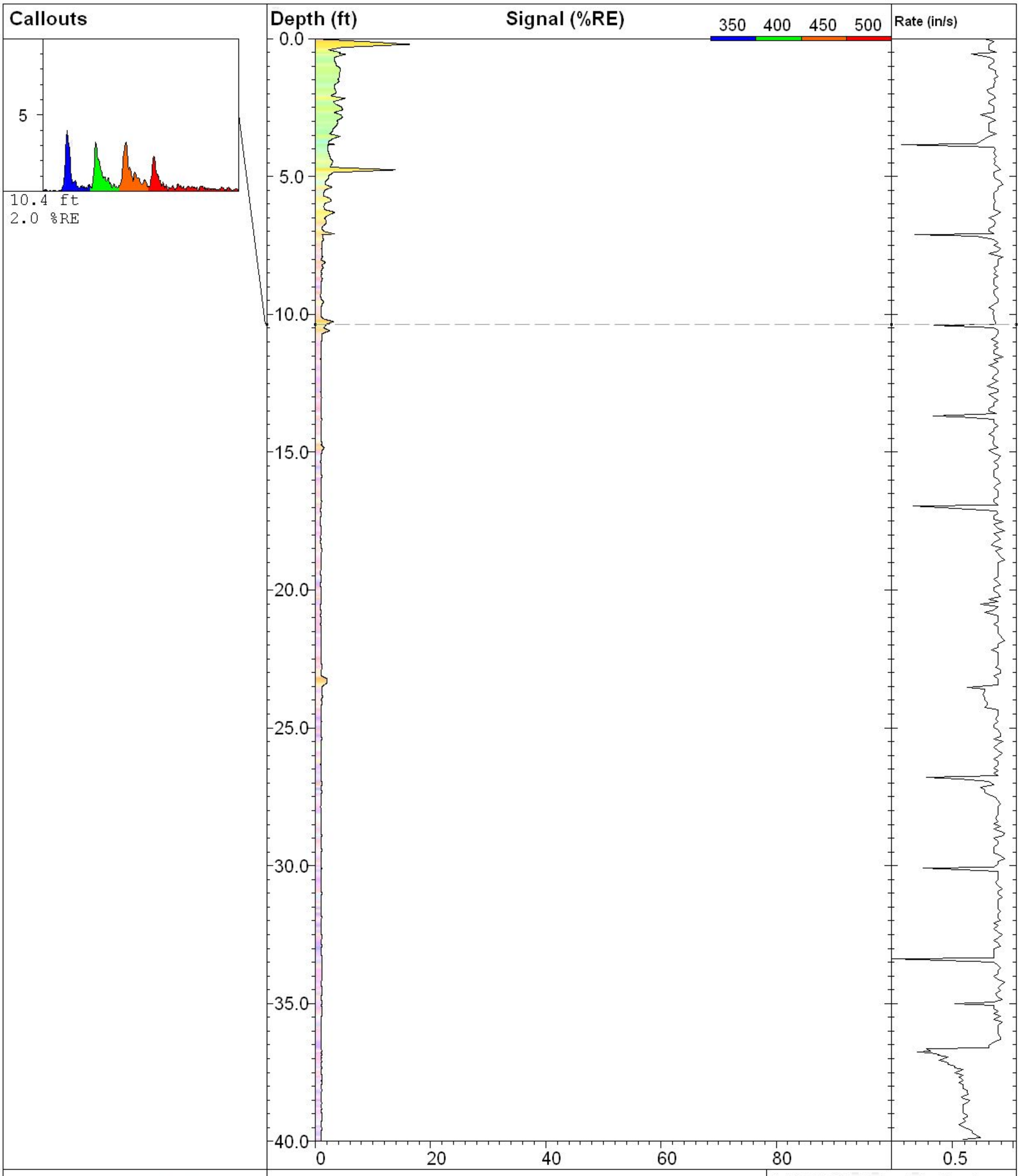
Date: 11/17/2011 02:21



Max. Depth: 43.143 (ft)

Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



GREGG

www.greggdrilling.com

UCPT-03

UVOST By Dakota
www.DakotaTechnologies.com

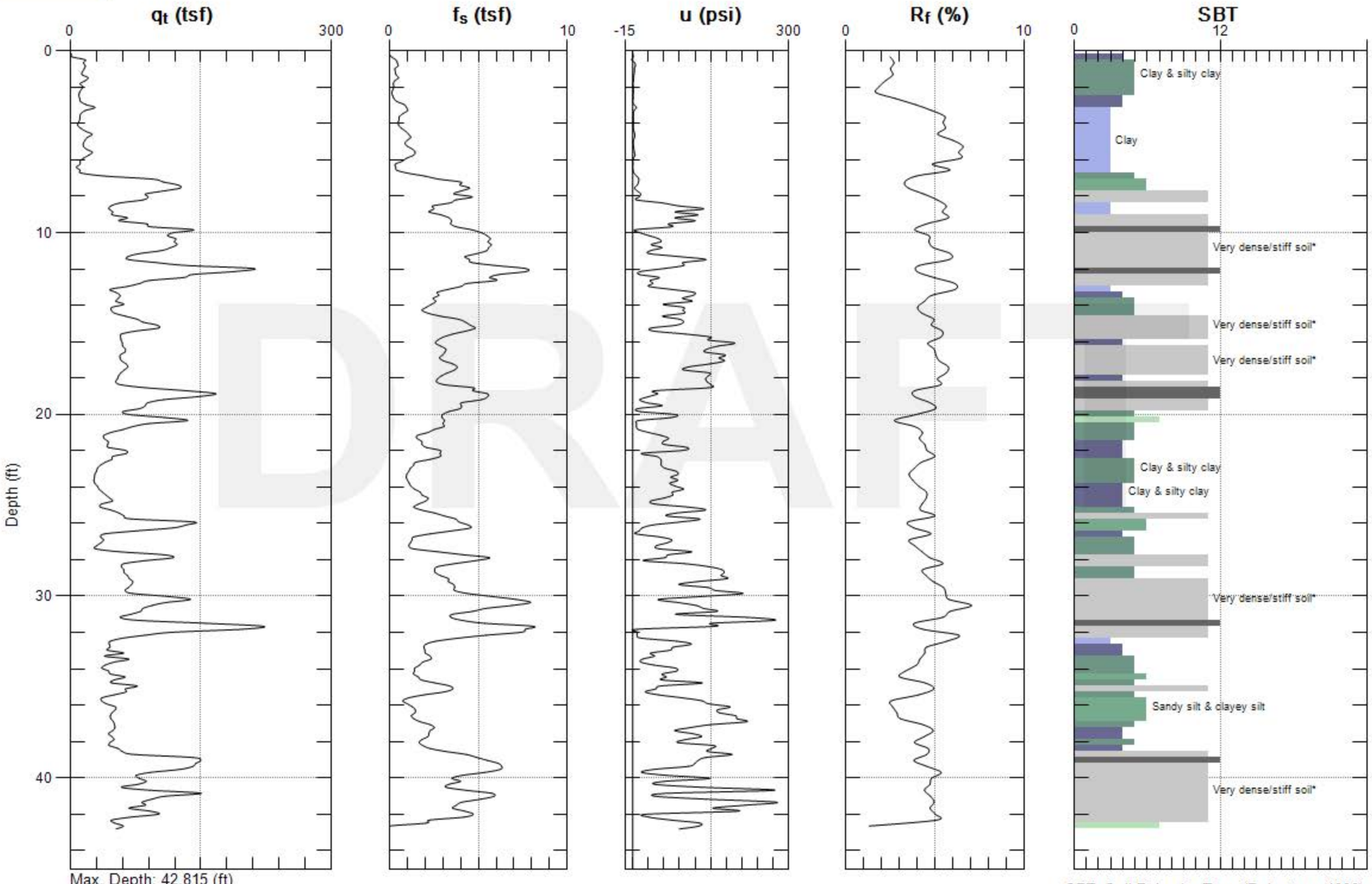
Site: **BP11132**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **40.56 ft**
Client: **Arcadis**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **16.5 % @ 0.21 ft**
Job: **GP09BPNA.C112**	*Operator/Unit:* **John/German/UVOST1009**	*Date & Time:* **2011-11-17 14:29 PST**

GREGG

Arcadis

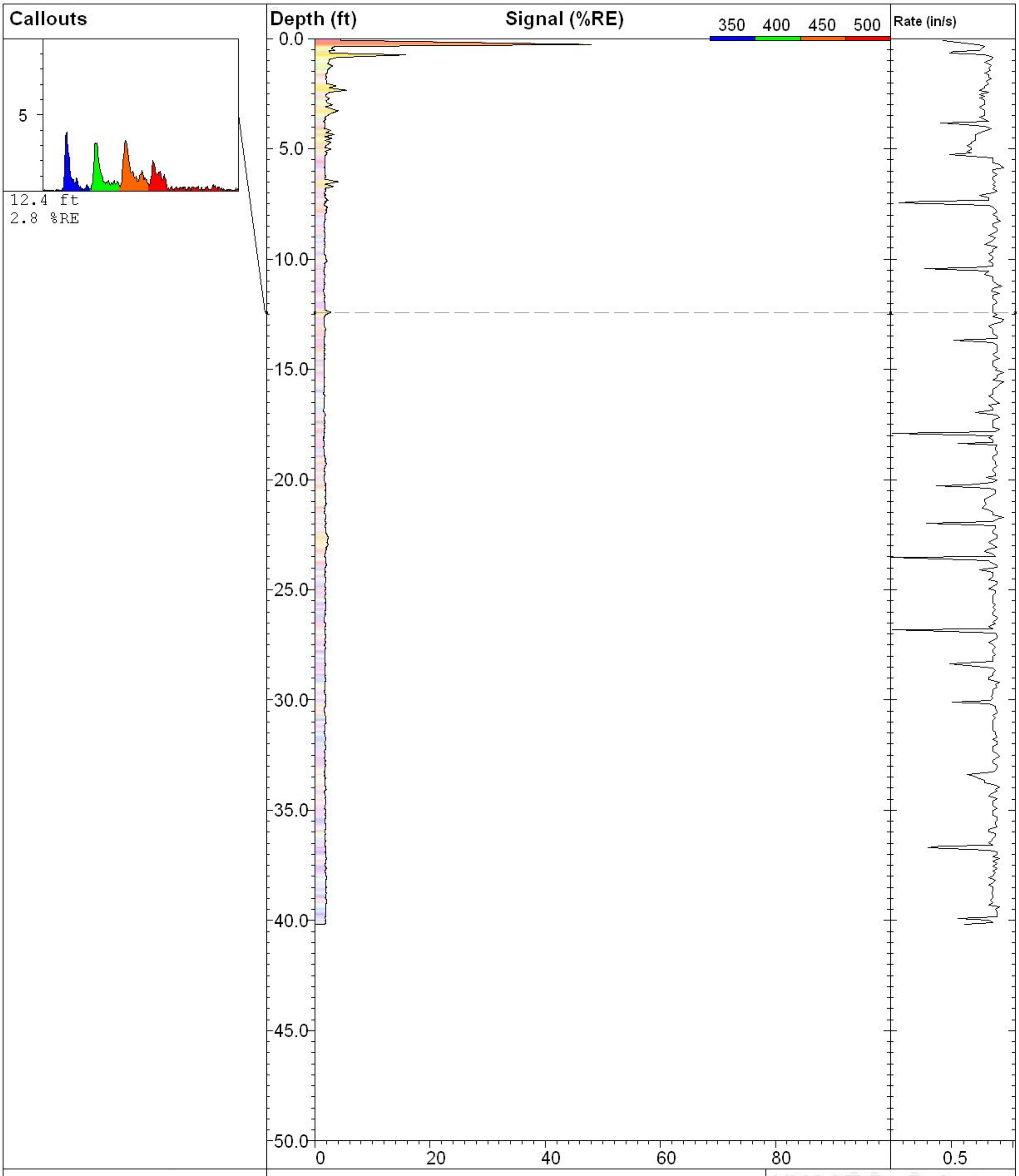
Site: BP11132
Sounding: UCPT-04

Engineer: KYLE K.
Date: 11/17/2011 09:45



Max. Depth: 42.815 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



GREGG

www.greggdrilling.com

UCPT-04

UVOST By Dakota
www.DakotaTechnologies.com

Site: **BP11132**	*Latitude / Datum:* **Unavailable / NA**	*Final depth:* **40.16 ft**
Client: **Arcadis**	*Longitude / Fix:* **Unavailable / NA**	*Max signal:* **48.3 % @ 0.27 ft**
Job: **GP09BPNA.C112**	*Operator/Unit:* **John/German/UVOST1009**	*Date & Time:* **2011-11-17 11:18 PST**

Attachment D

Laboratory Analytical Reports and
Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: 720-38812-1
Client Project/Site: BP #11132, Oakland

For:
ARCADIS U.S., Inc.
100 Montgomery Street
Suite 300
San Francisco, California 94104

Attn: Hollis Phillips

Authorized for release by:
12/6/2011 2:16:20 PM

Dimple Sharma
Project Manager I
dimple.sharma@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.

Table of Contents

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38812-1

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
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
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
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 720-38812-1

Laboratory: TestAmerica San Francisco

Narrative

Job Narrative
720-38812-1

Comments
No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

GC/MS VOA
No analytical or quality issues were noted.

GC VOA
No analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38812-1

Client Sample ID: CPT-1-9.5-10.5 — Lab Sample ID: 720-38812-1

No Detections

Client Sample ID: WCS — Lab Sample ID: 720-38812-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	40		1.9		mg/Kg	4		6010B	Total/NA

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38812-1

Client Sample ID: CPT-1-9.5-10.5
Date Collected: 11/18/11 12:00
Date Received: 11/18/11 18:00

Lab Sample ID: 720-38812-1
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		4.3		ug/Kg		11/18/11 20:00	11/19/11 14:59	1
Benzene	ND		4.3		ug/Kg		11/18/11 20:00	11/19/11 14:59	1
Ethylbenzene	ND		4.3		ug/Kg		11/18/11 20:00	11/19/11 14:59	1
Toluene	ND		4.3		ug/Kg		11/18/11 20:00	11/19/11 14:59	1
Xylenes, Total	ND		8.6		ug/Kg		11/18/11 20:00	11/19/11 14:59	1
Gasoline Range Organics (GRO) -C6-C12	ND		210		ug/Kg		11/18/11 20:00	11/19/11 14:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*89*		*45 - 131*	*11/18/11 20:00*	*11/19/11 14:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*60 - 140*	*11/18/11 20:00*	*11/19/11 14:59*	*1*
Toluene-d8 (Surr)	*90*		*58 - 140*	*11/18/11 20:00*	*11/19/11 14:59*	*1*

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38812-1

Client Sample ID: WCS
Date Collected: 11/18/11 13:00
Date Received: 11/18/11 18:00

Lab Sample ID: 720-38812-2
Matrix: Solid

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		5.0		ug/Kg		11/18/11 20:00	11/19/11 05:24	1
Benzene	ND		5.0		ug/Kg		11/18/11 20:00	11/19/11 05:24	1
Ethylbenzene	ND		5.0		ug/Kg		11/18/11 20:00	11/19/11 05:24	1
Toluene	ND		5.0		ug/Kg		11/18/11 20:00	11/19/11 05:24	1
Xylenes, Total	ND		9.9		ug/Kg		11/18/11 20:00	11/19/11 05:24	1
Gasoline Range Organics (C6-C12)	ND		250		ug/Kg		11/18/11 20:00	11/19/11 05:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*87*		*45 - 131*	*11/18/11 20:00*	*11/19/11 05:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*123*		*60 - 140*	*11/18/11 20:00*	*11/19/11 05:24*	*1*
Toluene-d8 (Surr)	*90*		*58 - 140*	*11/18/11 20:00*	*11/19/11 05:24*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**40**		1.9		mg/Kg		12/05/11 11:42	12/05/11 22:11	4

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

Lab Sample ID: MB 720-103243/1-A
Matrix: Solid
Analysis Batch: 103220

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 103243

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		5.0		ug/Kg		11/19/11 09:36	11/19/11 11:28	1
Benzene	ND		5.0		ug/Kg		11/19/11 09:36	11/19/11 11:28	1
Ethylbenzene	ND		5.0		ug/Kg		11/19/11 09:36	11/19/11 11:28	1
Toluene	ND		5.0		ug/Kg		11/19/11 09:36	11/19/11 11:28	1
Xylenes, Total	ND		10		ug/Kg		11/19/11 09:36	11/19/11 11:28	1
Gasoline Range Organics (GRO) -C6-C12	ND		250		ug/Kg		11/19/11 09:36	11/19/11 11:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*89*		*45 - 131*	*11/19/11 09:36*	*11/19/11 11:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*60 - 140*	*11/19/11 09:36*	*11/19/11 11:28*	*1*
Toluene-d8 (Surr)	*92*		*58 - 140*	*11/19/11 09:36*	*11/19/11 11:28*	*1*

Lab Sample ID: LCS 720-103243/2-A
Matrix: Solid
Analysis Batch: 103220

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103243

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	50.0	45.2		ug/Kg		90	71 - 144
Benzene	50.0	45.4		ug/Kg		91	77 - 113
Ethylbenzene	50.0	46.0		ug/Kg		92	80 - 137
Toluene	50.0	46.8		ug/Kg		94	68 - 121
m-Xylene & p-Xylene	100	90.0		ug/Kg		90	79 - 146
o-Xylene	50.0	46.8		ug/Kg		94	84 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*95*		*45 - 131*
1,2-Dichloroethane-d4 (Surr)	*89*		*60 - 140*
Toluene-d8 (Surr)	*95*		*58 - 140*

Lab Sample ID: LCS 720-103243/4-A
Matrix: Solid
Analysis Batch: 103220

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103243

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C12	1000	807		ug/Kg		81	64 - 107

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*96*		*45 - 131*
1,2-Dichloroethane-d4 (Surr)	*93*		*60 - 140*
Toluene-d8 (Surr)	*94*		*58 - 140*

Lab Sample ID: LCSD 720-103243/3-A
Matrix: Solid
Analysis Batch: 103220

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 103243

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether	50.0	46.0		ug/Kg		92	71 - 144	2	20

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

Lab Sample ID: LCSD 720-103243/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 103220 — **Prep Batch: 103243**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			50.0	47.0		ug/Kg		94	77 - 113	3	20
Ethylbenzene			50.0	46.6		ug/Kg		93	80 - 137	1	20
Toluene			50.0	47.2		ug/Kg		94	68 - 121	1	20
m-Xylene & p-Xylene			100	91.0		ug/Kg		91	79 - 146	1	20
o-Xylene			50.0	46.6		ug/Kg		93	84 - 140	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*91*		*45 - 131*
1,2-Dichloroethane-d4 (Surr)	*92*		*60 - 140*
Toluene-d8 (Surr)	*96*		*58 - 140*

Lab Sample ID: LCSD 720-103243/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 103220 — **Prep Batch: 103243**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C12			1000	742		ug/Kg		74	64 - 107	8	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*95*		*45 - 131*
1,2-Dichloroethane-d4 (Surr)	*93*		*60 - 140*
Toluene-d8 (Surr)	*92*		*58 - 140*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Lab Sample ID: MB 720-103212/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 103208 — **Prep Batch: 103212**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		5.0		ug/Kg		11/18/11 19:00	11/18/11 20:12	1
Benzene	ND		5.0		ug/Kg		11/18/11 19:00	11/18/11 20:12	1
Ethylbenzene	ND		5.0		ug/Kg		11/18/11 19:00	11/18/11 20:12	1
Toluene	ND		5.0		ug/Kg		11/18/11 19:00	11/18/11 20:12	1
Xylenes, Total	ND		10		ug/Kg		11/18/11 19:00	11/18/11 20:12	1
Gasoline Range Organics (C6-C12)	ND		250		ug/Kg		11/18/11 19:00	11/18/11 20:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*45 - 131*	*11/18/11 19:00*	*11/18/11 20:12*	*1*
1,2-Dichloroethane-d4 (Surr)	*117*		*60 - 140*	*11/18/11 19:00*	*11/18/11 20:12*	*1*
Toluene-d8 (Surr)	*94*		*58 - 140*	*11/18/11 19:00*	*11/18/11 20:12*	*1*

Lab Sample ID: LCS 720-103212/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 103208 — **Prep Batch: 103212**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Methyl tert-butyl ether			50.0	59.6		ug/Kg		119	70 - 144		

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCS 720-103212/2-A
Matrix: Solid
Analysis Batch: 103208

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103212

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			50.0	45.4		ug/Kg		91	70 - 130		
Ethylbenzene			50.0	45.4		ug/Kg		91	80 - 137		
Toluene			50.0	43.4		ug/Kg		87	80 - 128		
m-Xylene & p-Xylene			100	90.8		ug/Kg		91	70 - 146		
o-Xylene			50.0	46.6		ug/Kg		93	70 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*98*		*45 - 131*
1,2-Dichloroethane-d4 (Surr)	*122*		*60 - 140*
Toluene-d8 (Surr)	*96*		*58 - 140*

Lab Sample ID: LCS 720-103212/4-A
Matrix: Solid
Analysis Batch: 103208

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103212

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (C6-C12)			1000	910		ug/Kg		91	64 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*45 - 131*
1,2-Dichloroethane-d4 (Surr)	*118*		*60 - 140*
Toluene-d8 (Surr)	*95*		*58 - 140*

Lab Sample ID: LCSD 720-103212/3-A
Matrix: Solid
Analysis Batch: 103208

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 103212

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether			50.0	58.2		ug/Kg		116	70 - 144	2	20
Benzene			50.0	45.8		ug/Kg		92	70 - 130	1	20
Ethylbenzene			50.0	46.6		ug/Kg		93	80 - 137	3	20
Toluene			50.0	45.0		ug/Kg		90	80 - 128	4	20
m-Xylene & p-Xylene			100	92.0		ug/Kg		92	70 - 146	1	20
o-Xylene			50.0	47.2		ug/Kg		94	70 - 140	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*97*		*45 - 131*
1,2-Dichloroethane-d4 (Surr)	*117*		*60 - 140*
Toluene-d8 (Surr)	*95*		*58 - 140*

Lab Sample ID: LCSD 720-103212/5-A
Matrix: Solid
Analysis Batch: 103208

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 103212

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (C6-C12)			1000	880		ug/Kg		88	64 - 130	3	20

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCSD 720-103212/5-A
Matrix: Solid
Analysis Batch: 103208

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 103212

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*98*		*45 - 131*
1,2-Dichloroethane-d4 (Surr)	*115*		*60 - 140*
Toluene-d8 (Surr)	*95*		*58 - 140*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 720-103917/1-A
Matrix: Solid
Analysis Batch: 103967

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 103917

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.50		mg/Kg		12/05/11 11:42	12/05/11 21:04	1

Lab Sample ID: LCS 720-103917/2-A
Matrix: Solid
Analysis Batch: 103967

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103917

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	49.9		mg/Kg		100	80 - 120

Lab Sample ID: LCSD 720-103917/3-A
Matrix: Solid
Analysis Batch: 103967

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 103917

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	50.0	49.2		mg/Kg		98	80 - 120	1	20

GC/MS VOA

Analysis Batch: 103208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-38812-2	WCS	Total/NA	Solid	8260B/CA_LUFT MS	103212
LCS 720-103212/2-A	Lab Control Sample	Total/NA	Solid	8260B/CA_LUFT MS	103212
LCS 720-103212/4-A	Lab Control Sample	Total/NA	Solid	8260B/CA_LUFT MS	103212
LCSD 720-103212/3-A	Lab Control Sample Dup	Total/NA	Solid	8260B/CA_LUFT MS	103212
LCSD 720-103212/5-A	Lab Control Sample Dup	Total/NA	Solid	8260B/CA_LUFT MS	103212
MB 720-103212/1-A	Method Blank	Total/NA	Solid	8260B/CA_LUFT MS	103212

Prep Batch: 103212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-38812-2	WCS	Total/NA	Solid	5030B	
LCS 720-103212/2-A	Lab Control Sample	Total/NA	Solid	5030B	
LCS 720-103212/4-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 720-103212/3-A	Lab Control Sample Dup	Total/NA	Solid	5030B	
LCSD 720-103212/5-A	Lab Control Sample Dup	Total/NA	Solid	5030B	
MB 720-103212/1-A	Method Blank	Total/NA	Solid	5030B	

Analysis Batch: 103220

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-38812-1	CPT-1-9.5-10.5	Total/NA	Solid	8260B	103243
LCS 720-103243/2-A	Lab Control Sample	Total/NA	Solid	8260B	103243
LCS 720-103243/4-A	Lab Control Sample	Total/NA	Solid	8260B	103243
LCSD 720-103243/3-A	Lab Control Sample Dup	Total/NA	Solid	8260B	103243
LCSD 720-103243/5-A	Lab Control Sample Dup	Total/NA	Solid	8260B	103243
MB 720-103243/1-A	Method Blank	Total/NA	Solid	8260B	103243

Prep Batch: 103243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-38812-1	CPT-1-9.5-10.5	Total/NA	Solid	5035	
LCS 720-103243/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 720-103243/4-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 720-103243/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	
LCSD 720-103243/5-A	Lab Control Sample Dup	Total/NA	Solid	5035	
MB 720-103243/1-A	Method Blank	Total/NA	Solid	5035	

Metals

Prep Batch: 103917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-38812-2	WCS	Total/NA	Solid	3050B	
LCS 720-103917/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 720-103917/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
MB 720-103917/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 103967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-38812-2	WCS	Total/NA	Solid	6010B	103917
LCS 720-103917/2-A	Lab Control Sample	Total/NA	Solid	6010B	103917

Metals (Continued)

Analysis Batch: 103967 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 720-103917/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	103917
MB 720-103917/1-A	Method Blank	Total/NA	Solid	6010B	103917

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38812-1

Client Sample ID: CPT-1-9.5-10.5

Lab Sample ID: 720-38812-1

Date Collected: 11/18/11 12:00

Matrix: Solid

Date Received: 11/18/11 18:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			103243	11/18/11 20:00	PGM	TAL SF
Total/NA	Analysis	8260B		1	103220	11/19/11 14:59	AC	TAL SF

Client Sample ID: WCS

Lab Sample ID: 720-38812-2

Date Collected: 11/18/11 13:00

Matrix: Solid

Date Received: 11/18/11 18:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			103212	11/18/11 20:00	LL	TAL SF
Total/NA	Analysis	8260B/CA_LUFTMS		1	103208	11/19/11 05:24	JZ	TAL SF
Total/NA	Prep	3050B			103917	12/05/11 11:42	EFH	TAL SF
Total/NA	Analysis	6010B		4	103967	12/05/11 22:11	BA	TAL SF

Laboratory References:

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

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38812-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica San Francisco	California	State Program	9	2496

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38812-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SF
8260B/CA_LUFTMS	8260B / CA LUFT MS	SW846	TAL SF
6010B	Metals (ICP)	SW846	TAL SF

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38812-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-38812-1	CPT-1-9.5-10.5	Solid	11/18/11 12:00	11/18/11 18:00
720-38812-2	WCS	Solid	11/18/11 13:00	11/18/11 18:00

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

TestAmerica

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TESTAMERICA San Francisco Chain of Custody
1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 • Fax: (925) 600-3002

Reference #: 1350006

Date 11/18/11 Page 2 of 2

12/6/2011

Report To

Attn: Hollis Phillips
Company: Arcadis
Address: 100 Montgomery St, Suite 300
Phone: 415-374-2744 x13 Email: Hollis.Phillips@Arcadis-us.com
Bill To: Hollis Phillips
Sampled By: K. King
Attn: Hollis Phillips
Phone: 415-374-2744 x13

Analysis Request

Sample ID	Date	Time	Matrix	Preserv	TPH EPA - ☐ 8260B ☐ Gas w/ ☒ BTEX ☒ MTBE	TEPH EPA 8015M* ☐ Silica Gel ☐ Diesel ☐ Motor Oil ☒ Other (g RO)	EPA 8260B: ☐ Gas ☐ BTEX ☐ 5 Oxygenates ☐ DCA, EDB ☐ Ethanol	(HVOCs) EPA 8021 by 8260B	Volatile Organics GC/MS (VOCs) ☐ EPA 8260B ☐ 624	Semivolatiles GC/MS ☐ EPA 8270 ☐ 625	Oil and Grease ☐ Petroleum (EPA 1664) ☐ Total	Pesticides ☐ EPA 8081 ☐ 608 PCBs ☐ EPA 8082 ☐ 608	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☒ Lead ☐ LUFT ☐ RCRA ☐ Other:	Low Level Metals by EPA 200.8/6020 (ICP-MS):	☐ W.E.T (STLC) ☐ TCLP	☐ Hex. Chrom.(Specify Method) ☐ pH (24h hold time for H_2O)	☐ Spec. Cond. ☐ Alkalinity ☐ TSS ☐ TDS	Anions: ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4					Number of Containers
CPT-1-9.5-10.5	11/18/11	1200	S	N/A	X	X															4 containers				
WCS	11/18/11	1300	S	N/A	X	X									X						2 cont.				

Project Info.

Project Name: BP-11132
Project#: GP09BPNA.C112.1C0000
PO#:
Credit Card#:

Sample Receipt

of Containers: 6
Head Space:
Temp:
Conforms to record:

1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature: [signature] Time: 1623	Signature: [signature] Time: 1710	Signature: [signature] Time: 1800
Printed Name: Kyle King Date: 11/18/11	Printed Name: T. Stitt Date: 11-18-11	Printed Name: T. Stitt Date: 11-18-11
Company: Arcadis	Company: TASF	Company: TASF

1) Received by:	2) Received by:	3) Received by:
Signature: [signature] Time: 11/18/11	Signature: [signature] Time: 1710	Signature: [signature] Time: 1800
Printed Name: Azaneh Salimpour Date:	Printed Name: T. Stitt Date: 11-18-11	Printed Name: [signature] Date: 11/18/11
Company: TestAmerica	Company: TASF	Company: TASF

TAT: 5 Day | 3 Day | 2 Day | 1 Day | Other:

Report: ☐ Routine ☐ Level 3 ☐ Level 4 ☐ EDD ☐ State Tank Fund EDF ☐ Global ID ____

Special Instructions / Comments:

Temp - 2.3

See Terms and Conditions on reverse
*TestAmerica SF reports 8015M from C_9-C_{24} (industry norm). Default for 8015B is C_{10}-C_{28}

Rev. 09/11

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 720-38812-1

Login Number: 38812

List Source: TestAmerica San Francisco

List Number: 1

Creator: Hoang, Julie

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is 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	2.3
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 sample IDs on the containers 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	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

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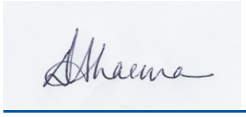
ANALYTICAL REPORT

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

TestAmerica Job ID: 720-38793-1
Client Project/Site: BP #11132, Oakland

For:
ARCADIS U.S., Inc.
100 Montgomery Street
Suite 300
San Francisco, California 94104

Attn: Hollis Phillips



Authorized for release by:
12/5/2011 10:19:08 AM

Dimple Sharma
Project Manager I
dimple.sharma@testamericainc.com

Table of Contents

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38793-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F	RPD of the MS and MSD exceeds the control limits

Metals

Qualifier	Qualifier Description
F	MS or MSD exceeds the control limits
F	RPD of the MS and MSD exceeds the control limits

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
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
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
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 720-38793-1

Laboratory: TestAmerica San Francisco

Narrative

Job Narrative
720-38793-1

Comments
No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

GC/MS VOA
No analytical or quality issues were noted.

Metals
Method 6010B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analysis batch 103874 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38793-1

Client Sample ID: UCPT-4-12.5-13.5 **Lab Sample ID: 720-38793-1**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	4.8		2.0		mg/Kg	4		6010B	Total/NA

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38793-1

Client Sample ID: UCPT-4-12.5-13.5
Date Collected: 11/17/11 13:15
Date Received: 11/17/11 18:35

Lab Sample ID: 720-38793-1
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		3.7		ug/Kg		11/17/11 20:00	11/18/11 15:22	1
Benzene	ND		3.7		ug/Kg		11/17/11 20:00	11/18/11 15:22	1
Ethylbenzene	ND		3.7		ug/Kg		11/17/11 20:00	11/18/11 15:22	1
Toluene	ND		3.7		ug/Kg		11/17/11 20:00	11/18/11 15:22	1
Xylenes, Total	ND		7.5		ug/Kg		11/17/11 20:00	11/18/11 15:22	1
Gasoline Range Organics (GRO) -C6-C12	ND		190		ug/Kg		11/17/11 20:00	11/18/11 15:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*83*		*45 - 131*	*11/17/11 20:00*	*11/18/11 15:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*60 - 140*	*11/17/11 20:00*	*11/18/11 15:22*	*1*
Toluene-d8 (Surr)	*88*		*58 - 140*	*11/17/11 20:00*	*11/18/11 15:22*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**4.8**		2.0		mg/Kg		12/01/11 10:58	12/02/11 17:35	4

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

Lab Sample ID: MB 720-103164/1-A
Matrix: Solid
Analysis Batch: 103150

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 103164

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		5.0		ug/Kg		11/18/11 07:54	11/18/11 09:46	1
Benzene	ND		5.0		ug/Kg		11/18/11 07:54	11/18/11 09:46	1
Ethylbenzene	ND		5.0		ug/Kg		11/18/11 07:54	11/18/11 09:46	1
Toluene	ND		5.0		ug/Kg		11/18/11 07:54	11/18/11 09:46	1
Xylenes, Total	ND		9.9		ug/Kg		11/18/11 07:54	11/18/11 09:46	1
Gasoline Range Organics (GRO) -C6-C12	ND		250		ug/Kg		11/18/11 07:54	11/18/11 09:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*89*		*45 - 131*	*11/18/11 07:54*	*11/18/11 09:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*60 - 140*	*11/18/11 07:54*	*11/18/11 09:46*	*1*
Toluene-d8 (Surr)	*92*		*58 - 140*	*11/18/11 07:54*	*11/18/11 09:46*	*1*

Lab Sample ID: LCS 720-103164/2-A
Matrix: Solid
Analysis Batch: 103150

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	49.9	54.5		ug/Kg		109	71 - 144
Benzene	49.9	47.9		ug/Kg		96	77 - 113
Ethylbenzene	49.9	48.3		ug/Kg		97	80 - 137
Toluene	49.9	48.5		ug/Kg		97	68 - 121
m-Xylene & p-Xylene	99.8	98.6		ug/Kg		99	79 - 146
o-Xylene	49.9	50.7		ug/Kg		102	84 - 140

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*95*		*45 - 131*
1,2-Dichloroethane-d4 (Surr)	*91*		*60 - 140*
Toluene-d8 (Surr)	*95*		*58 - 140*

Lab Sample ID: LCS 720-103164/4-A
Matrix: Solid
Analysis Batch: 103150

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 103164

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C12	996	796		ug/Kg		80	64 - 107

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*97*		*45 - 131*
1,2-Dichloroethane-d4 (Surr)	*96*		*60 - 140*
Toluene-d8 (Surr)	*96*		*58 - 140*

Lab Sample ID: LCSD 720-103164/3-A
Matrix: Solid
Analysis Batch: 103150

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 103164

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether	49.5	52.5		ug/Kg		106	71 - 144	4	20

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

Lab Sample ID: LCSD 720-103164/3-A
Matrix: Solid
Analysis Batch: 103150

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 103164

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			49.5	46.9		ug/Kg		95	77 - 113	2	20
Ethylbenzene			49.5	46.7		ug/Kg		94	80 - 137	3	20
Toluene			49.5	47.1		ug/Kg		95	68 - 121	3	20
m-Xylene & p-Xylene			99.0	95.0		ug/Kg		96	79 - 146	4	20
o-Xylene			49.5	49.1		ug/Kg		99	84 - 140	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*96*		*45 - 131*
1,2-Dichloroethane-d4 (Surr)	*92*		*60 - 140*
Toluene-d8 (Surr)	*95*		*58 - 140*

Lab Sample ID: LCSD 720-103164/5-A
Matrix: Solid
Analysis Batch: 103150

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 103164

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C12			1000	784		ug/Kg		78	64 - 107	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*94*		*45 - 131*
1,2-Dichloroethane-d4 (Surr)	*93*		*60 - 140*
Toluene-d8 (Surr)	*96*		*58 - 140*

Lab Sample ID: 720-38793-1 MS
Matrix: Solid
Analysis Batch: 103150

Client Sample ID: UCPT-4-12.5-13.5
Prep Type: Total/NA
Prep Batch: 103164

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	ND		38.3	30.2		ug/Kg		79	69 - 130
Benzene	ND		38.3	35.8		ug/Kg		94	70 - 130
Ethylbenzene	ND		38.3	37.4		ug/Kg		98	65 - 130
Toluene	ND		38.3	37.5		ug/Kg		98	70 - 130
m-Xylene & p-Xylene	ND		76.6	76.7		ug/Kg		100	70 - 130
o-Xylene	ND		38.3	39.2		ug/Kg		102	68 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene	*93*		*45 - 131*
1,2-Dichloroethane-d4 (Surr)	*82*		*60 - 140*
Toluene-d8 (Surr)	*94*		*58 - 140*

Lab Sample ID: 720-38793-1 MSD
Matrix: Solid
Analysis Batch: 103150

Client Sample ID: UCPT-4-12.5-13.5
Prep Type: Total/NA
Prep Batch: 103164

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether	ND		39.2	40.6	F	ug/Kg		104	69 - 130	29	20
Benzene	ND		39.2	36.4		ug/Kg		93	70 - 130	1	20
Ethylbenzene	ND		39.2	35.6		ug/Kg		91	65 - 130	5	20

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

Lab Sample ID: 720-38793-1 MSD — **Client Sample ID: UCPT-4-12.5-13.5**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 103150 — **Prep Batch: 103164**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Toluene	ND		39.2	35.9		ug/Kg		92	70 - 130	4	20
m-Xylene & p-Xylene	ND		78.4	72.1		ug/Kg		92	70 - 130	6	20
o-Xylene	ND		39.2	37.6		ug/Kg		96	68 - 130	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene	*96*		*45 - 131*
1,2-Dichloroethane-d4 (Surr)	*97*		*60 - 140*
Toluene-d8 (Surr)	*96*		*58 - 140*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 720-103763/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 103874 — **Prep Batch: 103763**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.50		mg/Kg		12/01/11 10:58	12/02/11 17:14	1

Lab Sample ID: LCS 720-103763/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 103874 — **Prep Batch: 103763**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	49.8		mg/Kg		100	80 - 120

Lab Sample ID: LCSD 720-103763/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 103874 — **Prep Batch: 103763**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	50.0	50.5		mg/Kg		101	80 - 120	1	20

Lab Sample ID: 720-38793-1 MS — **Client Sample ID: UCPT-4-12.5-13.5**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 103874 — **Prep Batch: 103763**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	4.8		47.2	50.2		mg/Kg		96	75 - 125

Lab Sample ID: 720-38793-1 MSD — **Client Sample ID: UCPT-4-12.5-13.5**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 103874 — **Prep Batch: 103763**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	4.8		49.0	37.7	F	mg/Kg		67	75 - 125	29	20

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38793-1

GC/MS VOA

Analysis Batch: 103150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-38793-1	UCPT-4-12.5-13.5	Total/NA	Solid	8260B	103164
720-38793-1 MS	UCPT-4-12.5-13.5	Total/NA	Solid	8260B	103164
720-38793-1 MSD	UCPT-4-12.5-13.5	Total/NA	Solid	8260B	103164
LCS 720-103164/2-A	Lab Control Sample	Total/NA	Solid	8260B	103164
LCS 720-103164/4-A	Lab Control Sample	Total/NA	Solid	8260B	103164
LCSD 720-103164/3-A	Lab Control Sample Dup	Total/NA	Solid	8260B	103164
LCSD 720-103164/5-A	Lab Control Sample Dup	Total/NA	Solid	8260B	103164
MB 720-103164/1-A	Method Blank	Total/NA	Solid	8260B	103164

Prep Batch: 103164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-38793-1	UCPT-4-12.5-13.5	Total/NA	Solid	5035	
720-38793-1 MS	UCPT-4-12.5-13.5	Total/NA	Solid	5035	
720-38793-1 MSD	UCPT-4-12.5-13.5	Total/NA	Solid	5035	
LCS 720-103164/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 720-103164/4-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 720-103164/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	
LCSD 720-103164/5-A	Lab Control Sample Dup	Total/NA	Solid	5035	
MB 720-103164/1-A	Method Blank	Total/NA	Solid	5035	

Metals

Prep Batch: 103763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-38793-1	UCPT-4-12.5-13.5	Total/NA	Solid	3050B	
720-38793-1 MS	UCPT-4-12.5-13.5	Total/NA	Solid	3050B	
720-38793-1 MSD	UCPT-4-12.5-13.5	Total/NA	Solid	3050B	
LCS 720-103763/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 720-103763/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
MB 720-103763/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 103874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-38793-1	UCPT-4-12.5-13.5	Total/NA	Solid	6010B	103763
720-38793-1 MS	UCPT-4-12.5-13.5	Total/NA	Solid	6010B	103763
720-38793-1 MSD	UCPT-4-12.5-13.5	Total/NA	Solid	6010B	103763
LCS 720-103763/2-A	Lab Control Sample	Total/NA	Solid	6010B	103763
LCSD 720-103763/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	103763
MB 720-103763/1-A	Method Blank	Total/NA	Solid	6010B	103763

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38793-1

Client Sample ID: UCPT-4-12.5-13.5
Date Collected: 11/17/11 13:15
Date Received: 11/17/11 18:35

Lab Sample ID: 720-38793-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			103164	11/17/11 20:00	JZ	TAL SF
Total/NA	Analysis	8260B		1	103150	11/18/11 15:22	AC	TAL SF
Total/NA	Prep	3050B			103763	12/01/11 10:58	JR	TAL SF
Total/NA	Analysis	6010B		4	103874	12/02/11 17:35	BA	TAL SF

Laboratory References:

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

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38793-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica San Francisco	California	State Program	9	2496

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38793-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SF
6010B	Metals (ICP)	SW846	TAL SF

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11132, Oakland

TestAmerica Job ID: 720-38793-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-38793-1	UCPT-4-12.5-13.5	Solid	11/17/11 13:15	11/17/11 18:35

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TESTAMERICA San Francisco Chain of Custody
1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 Fax: (925) 600-3002

720-38793

Reference #: 134993

Date 11/16/11 Page 1 of 2

12/5/2011

Report To

Attn: Hollis Phillips
Company: Arcadis
Address: 100 Montgomery St, Suite 300
Phone: 415-374-2744 x13 Email: Hollis.Phillips@arcadis-us.com
Bill To: Hollis Phillips
Sampled By: K. King
Attn: Hollis Phillips
Phone: 415-374-2744 x13

Analysis Request

Sample ID	Date	Time	Matrix	Preserv	TPH EPA - ☒ 8260B ☐ Gas w/ ☒ BTEX ☒ MTBE	TEPH EPA 8015M* ☐ Silica Gel ☐ Diesel ☐ Motor Oil ☒ Other GRO	EPA 8260B: ☐ Gas ☐ BTEX ☐ 5 Oxygenates ☐ DCA, EDB ☐ Ethanol	(HVOCs) EPA 8021 by 8260B	Volatile Organics GC/MS (VOCs) ☐ EPA 8260B ☐ 624	Semivolatiles GC/MS ☐ EPA 8270 ☐ 625	Oil and Grease ☐ Petroleum (EPA 1664) ☐ Total	Pesticides ☐ EPA 8081 ☐ 608 PCBs ☐ EPA 8082 ☐ 608	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☒ Lead ☐ LUFT ☐ RCRA ☐ Other:	Low Level Metals by EPA 200.8/6020 (ICP-MS):	☐ W.E.T (STLC) ☐ TCLP	☐ Hex. Chrom (Specify Method) ☐ pH (24h hold time for H_2O)	☐ Spec. Cond. ☐ Alkalinity ☐ TSS ☐ TDS	Anions: ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4					Number of Containers
UCPT-4-12.5-13.5	11/17/11	~~13~~:15	S	N/A	X	X															MS/MSD ([illegible])				

Project Info.

Project Name: BP-11132
Project#: GP09BPNA.C112.K0000
PO#:
Credit Card#:

Sample Receipt

\# of Containers: 10
Head Space: N/A
Temp: 2.7°C
Conforms to record:

1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature: [signature] Time: 1700	Signature: [signature] Time: 1835	Signature: Time:
Printed Name: Kyle King Date: 11/17/11	Printed Name: [signature] Date: 11-17-11	Printed Name: Date:
Company: ARCADIS	Company: TASF	Company:

1) Received by:	2) Received by:	3) Received by:
Signature: [signature] Time: 1700	Signature: [signature] Time: 1835	Signature: Time:
Printed Name: [signature] Date: 11-17-11	Printed Name: [signature] Date: 11/17/11	Printed Name: Date:
Company: TASF	Company: TASF	Company:

TAT: ☐ 5 Day ☐ 3 Day ☐ 2 Day ☐ 1 Day Other:

Report: ☐ Routine ☐ Level 3 ☐ Level 4 ☐ EDD ☐ State Tank Fund EDF ☐ Global ID ________

Special Instructions / Comments:

See Terms and Conditions on reverse
*TestAmerica SF reports 8015M from C_9-C_{24} (industry norm). Default for 8015B is C_{10}-C_{28}

Rev. 09/11

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 720-38793-1

Login Number: 38793

List Source: TestAmerica San Francisco

List Number: 1

Creator: Apostol, Anita

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is 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	2.7
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 sample IDs on the containers 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	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	