WAREHAM
PROPERTY GROUP

14 May 2010
Project No. 4954.01

Mr. Mark Detterman
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: Letter Report
Soil and Groundwater Investigation Letter Report
Case No. RO0002621
5885 Hollis Street
Emeryville, California

Dear Mr. Detterman:

As a legally authorized representative of E S East LLC, and on behalf of E S East LLC I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document titled *Letter Report, Soil and Groundwater Investigation Letter Report, Case No. RO0002621, 5885 Hollis Street, Emeryville, California,* are true and correct to the best of my knowledge.

Sincerely yours,

Geoffrey B. Sears

Geoffrey Sears
WAREHAM PROPERTY GROUP
On behalf of E S East, LLC

Treadwell&Rollo

14 May 2010
Project 4954.01

Mr. Mark Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Subject: Soil and Groundwater Investigation Letter Report
5885 Hollis Street
Emeryville, California
RO# 2621

Dear Mr. Detterman:

This letter report documents the soil and groundwater investigation at 5885 Hollis Street in Emeryville, California ("Site", Figure 1) conducted from 31 March through 5 April 2010. The property is owned by E S East, LLC. Previous investigations at the Site included soil and grab groundwater sampling prior to construction of the building at the Site. Alameda County Environmental Health (ACEH) requested this additional investigation to further define the extent of potential residual compounds at the Site perimeter. Treadwell and Rollo proposed the requested investigation in work plans and addenda dated 26 August 2009, 15 December 2009, and 16 January 2010. ACEH approved the work plan in a letter dated 9 February 2010.

Residual concentrations of benzo(a)pyrene were detected in soil at the western boundary of the property, and ACEH requested grab soil and groundwater sampling to determine if these concentrations are present in groundwater leaving the Site or if the concentration might pose a health risk to workers involved in possible future subsurface utility repair.

Historical site maps suggest that volatile organic compound (VOC) storage and use may have occurred in the eastern portion of the Site prior to the excavation of the Site and construction of the new building. ACEH requested collection of soil and groundwater samples to assess the presence of these VOCs.

Above-ground storage of gasoline and other fuel products was historically conducted in the southwestern portion of the Site as well as at the adjacent property ("1400 Powell") to the south. Delta Environmental is working with the responsible party at 1400 Powell to investigate the extent of petroleum hydrocarbon impacted soil and groundwater. ACEH has requested additional delineation (both lateral and vertical) of soil and groundwater impacts in the southwestern area of the site and 1400 Powell and the sharing of information by E S East, LLC and the responsible party for 1400 Powell.

BACKGROUND

Site Description

The Site covers an area approximately 220 feet by 500 feet and is bound by Hollis Street to the east, 59th Street to the north, Peladeau Street to the west, and a Chevron Station and Powell Street to the south. The Site is currently occupied by a four-story office building with one level of subsurface parking.

The Site was historically operated by Union Oil Company of California as a distribution facility. Operations included numerous above-ground and underground petroleum hydrocarbon storage tanks. The Site also consisted of a garage along Hollis Street and an auto repair shop along Peladeau Street. Construction near the Site in the 1980s and 1990s revealed soil and groundwater impacted with petroleum hydrocarbons.

In 2000 and 2005, Treadwell & Rollo conducted pre-construction environmental sampling of soil and groundwater at the Site. Results of the sampling event were used to prepare a Site Management Plan (SMP) dated 14 July 2005 for use during construction. The SMP was approved by ACEH in a letter dated 8 December 2005. Post-excavation confirmation sampling was performed as outlined in the SMP. Historical boring locations are shown in Figure 2. Soil analytical data from soil remaining onsite after construction of the current building is shown in Table 1.

Site Geology and Hydrogeology

The building occupies the majority of the Site, and includes an underground garage level that extends approximately 15-feet below ground surface (bgs). The Site is primarily underlain by fine-grained material with thin lenses of course-grained material. The stiffness of this primarily fine-grained material tends to increase with depth.

Groundwater has been measured at approximately 6 to 14 feet bgs in borings. Some perched water, which appears to be originating in the coarse-grained backfill of utility trenches, was observed entering the excavation during construction of the building. Direction of groundwater flow has not been measured at the Site or the adjacent property, but groundwater flow has been observed at nearby sites towards the west (San Francisco Bay) with slight north and south variations.

RECENT SOIL AND GROUNDWATER SAMPLING

Soil and groundwater samples were collected using cone penetrometer testing (CPT) technology at nine locations (TRCPT-1 through TRCPT-9) during the March and April 2010 investigation. Four additional shallow hand auger locations (HA-1 through HA-4) were advanced for collection of soil samples. Four of the CPTs (TRCPT-1 through TRCPT-4) and the four hand auger borings (HA-1 through HA-4) were performed to collect soil and groundwater samples to analyze for potential VOCs and benzo(a)pyrene (Figure 3). The remaining five CPTs (TRCPT-5 through TRCPT-9) were performed to assess the extent of petroleum hydrocarbons in the southwestern portion of the property (Figures 4 and 5).

Subsurface lithology was logged electronically during each CPT boring, and used to estimate soil types, especially more permeable zones, as compared to standardized soil behavior charts. The CPT logs are included in Appendix B. The CPT results were also compared to nearby borings logged by a geologist

and the CPT logs from the adjacent property. Once the cone was retrieved, the boring was sealed with neat cement grout.

Upon completion of each CPT logging, soil samples were collected at identifiable changes in lithology from a separate borehole advanced within 3 feet of the first location. Samples were collected by pushing a modified dual tube sampler fitted with two 6-inch, 1-inch diameter stainless steel sample liners.

Based on the CPT logs, groundwater sampling zones were selected. Grab groundwater samples were collected at each location using a second hydropunch soil boring, advanced within 5 feet of the first location. The sample was collected by pushing hollow rods equipped with a 5-foot-long length of 3/4-inch-diameter, 0.010 slot PVC well screen and a disposable tip to the appropriate depth and pulling back the rods approximately 3 feet to expose the screen. Disposable bailers were used to collect the water sample through the hollow rods and inside the PVC screen.

If insufficient groundwater entered the sampler, the rods and hydropunch materials were removed and a five foot section of ¾-inch well screen was topped with blank casing to ground surface. This temporary groundwater sampling point was allowed to sit for up to 24-hours to allow water to enter the screened casing. Groundwater samples were collected, if possible, after water collected in the temporary sampling point.

Soil Sampling Rationale and Analysis

Investigation of VOCs and Benzo(a)pyrene in Soil

Soil samples were collected from four locations (TRCPT-1 through TRCPT-4) to evaluate the extent of VOCs and benzo(a)pyrene in subsurface soil (Figure 3). A soil sample was collected from 5 feet bgs in each location to evaluate whether potential risks to construction workers doing future utility repairs within Peladeau Street may be present. Samples were also collected from depths of approximately 10 and 18 feet bgs to correspond with the depths of elevated benzo(a)pyrene concentrations collected from upgradient borings during previous investigations (TR-13, TR-14, TR-15, and TR-16). Each soil sample collected from borings TRCPT-1 through TRCPT-4 was analyzed for VOC's by EPA Method 8260 and semivolatile organic compounds (SVOCs) by EPA Method 8270.

Four additional soil samples (HA-1 through HA-4) were collected from hand augered borings in the planters immediately west of the existing building. Each boring was advanced to approximately 2-feet bgs to evaluate whether potential risks to maintenance workers digging in the planters surrounding the building may be present. Samples were collected using a slide hammer fitted with stainless steel tubes. The soil samples collected from HA-1 through HA-4 were analyzed for SVOCs by EPA Method 8270. All samples were placed in chilled shipment containers and sent for analysis under chain-of-custody protocol to Curtis & Tompkins, Ltd., a State-certified laboratory in Berkeley, California.

Investigation of TPH in Soil

Soil samples were collected from five locations (TRCPT-5 through TRCPT-9) to evaluate the extent of petroleum hydrocarbons in subsurface soil in the southwestern portion of the Site. Soil samples were collected at general changes in lithology. Soil samples collected at the presumed groundwater interface (between 5 and 7 feet) and the bottom of each boring were submitted for analysis. TRCPT-9 was advanced to 50 feet bgs for vertical delineation purposes. Deeper samples were collected from TRCPT-9, but were not analyzed because groundwater analytical results were non-detect at depth. Additional

samples were collected from each boring at changes in lithology, but were not analyzed due to a lack of evidence of contamination in other soil and groundwater samples. All samples were placed in chilled shipment containers and sent for analysis under chain-of-custody protocol to Curtis & Tompkins, Ltd., a State-certified laboratory in Berkeley, California. All soil samples from TRCPT-5 through TRCPT-9 were analyzed for TPHd and TPHmo by EPA Method 8015 and TPHg and VOCs by EPA Method 8260.

Groundwater Sampling Rationale and Analysis

Investigation of VOCs and Benzo(a)pyrene in Groundwater

Groundwater samples were collected at three locations (TRCPT-1 through TRCPT-3) to evaluate the extent of VOCs and benzo(a)pyrene in groundwater. A screen was set in the boring at TRCPT-4, but the boring proved dry. The work plan proposed collection of depth-discreet samples within each boring using hydropunch technology. Because of the presence of primarily fine-grained soils, it was not possible to collect depth discreet samples due to the persistent absence of water in the sampling device (after waiting over one hour per sample). Accordingly, each boring was advanced to the proposed termination depth (20 feet), and a PVC screen was inserted to collect groundwater. The PVC screen was left in the ground for a period of time sufficient to obtain the required volume for laboratory analysis. The PVC screen at boring TRCPT-4 was allowed to sit for approximately six hours, and groundwater sampling was abandoned after approximately six hours when no water had entered the screen at this location. The PVC screen at boring TRCPT-1 was allowed to sit for approximately 24 hours, and inadequate volume was available for the SVOC analysis. The groundwater samples from TRCPT-1 through TRCPT-3 were analyzed for VOCs by EPA Method 8260. Groundwater samples from TRCPT-2 and TRCPT-3 were analyzed for SVOCs by EPA Method 8270. All samples were placed in chilled shipment containers and sent for analysis under chain-of-custody protocol to Curtis & Tompkins, Ltd., a State-certified laboratory in Berkeley, California.

Investigation of TPH in Groundwater

Groundwater samples were collected from five locations (TRCPT-5 through TRCPT-9) to determine the extent of TPH-related compounds in groundwater. The work plan proposed collection of depth-discreet samples within each boring using hydropunch technology. Depth-discreet samples were collected from TRCPT-9 from depths of 17 feet and 50 feet bgs. Because of the presence of primarily fine-grained soils, it was not possible to collect depth discreet samples in borings TRCPT-5 through TRCPT-8. Accordingly, the borings were advanced to a depth corresponding with a likely good producing zone identified from each CPT log, and a PVC screen was inserted into the borehole. The PVC screen was left in the ground for a period of time sufficient to obtain required volume for the laboratory analysis. All samples were placed in chilled shipment containers and sent for analysis under chain-of-custody protocol to Curtis & Tompkins, Ltd., a State-certified laboratory in Berkeley, California. Each groundwater sample collected from this location was analyzed for TPHd and TPHmo by EPA Method 8015 and TPHg and VOCs by EPA Method 8260.

LABORATORY ANALYTICAL RESULTS

Soil and Groundwater Analytical Results for Benzo(a)pyrene and VOC

Historical analytical data for organic compounds in soil remaining on site is summarized in Table 1. Soil analytical data from the April 2010 investigation is summarized in Table 2. Groundwater analytical data from the April 2010 investigation is summarized in Table 4. Historic soil and groundwater sampling

locations are shown on Figure 2. A comparison of data from historic investigation and the April 2010 investigations regarding benzo(a)pyrene and VOCs is presented on Figure 3. Laboratory analytical data is included in Appendix C. A complete summary of historic soil and groundwater data is summarized in Treadwell & Rollo's, *Site Management Completion Report* , dated 5 January 2007.

Benzo(a)pyrene was analyzed as part of a full suite of SVOC analysis by EPA Method 8270. No SVOCs (including benzo(a)pyrene) were detected above laboratory reporting limits in any of the 16 soil samples collected at the Site. Two groundwater samples (TRCPT-2 and TRCPT-3) were analyzed for SVOCs. Benzo(a)pyrene was not detected above laboratory reporting limits in either of the two groundwater samples collected downgradient of the Site. Phenanthrene and Naphthalene were detected in groundwater at concentrations of 0.1 and 0.3 µg/L, respectively. Otherwise, no SVOCs were detected in groundwater from the Site.

Twelve soil samples from boring TRCPT-1 through TRCPT-4 were analyzed for VOCs at the Site. No VOCs were detected above laboratory reporting limits in any of the soil samples. Three groundwater samples (TRCPT-1, TRCPT-2, and TRCPT-3) were analyzed for VOC's. The sample from TRCPT-3 detected toluene (0.6 µg/L), ethylbenzene (0.7 µg/L), total xylenes (3.5 µg/L), 1,3,5-trimethylbenzene (1.3 µg/L), 1,2,4-trimethylbenzene (3.4 µg/L), n-Butyl-benzene (0.7 µg/L), and acetone (21 µg/L). No other VOCs were detected from TRCPT-3. No VOCs were detected above the laboratory reporting limits in the groundwater samples collected at TRCPT-1 or TRCPT-2.

Soil and Groundwater Analytical Results for TPH Investigation Area

Historical analytical data for organic compounds in soil remaining on site is summarized in Table 1. Soil analytical data from the April 2010 investigation is summarized in Table 2. Historical groundwater analytical data is summarized in Table 3. Groundwater analytical data from the April 2010 investigation is summarized in Table 4. Historic soil and groundwater sampling locations are shown on Figure 2. Soil data from the April 2010 investigation is presented on Figure 4. A comparison of groundwater data from historic investigations and the April 2010 investigation regarding TPH impacts in the southwestern portion of the Site is presented on Figure 5. Laboratory analytical data is included in Appendix C. A complete summary of historic soil and groundwater data is summarized in Treadwell & Rollo's, *Site Management Completion Report* , dated 5 January 2007.

TPHd was detected in three of ten soil samples (TRCPT-5, TRCPT-7, and TRCPT-9) with concentrations ranging from 2.5 mg/kg to 220 mg/kg. TPHmo was detected in two of ten soil samples (TRCPT-5 and TRCPT-7) with concentrations ranging from 6.3 mg/kg to 80 mg/kg. TPHg was detected in three of ten soil samples (TRCPT-5, TRCPT-7, and TRCPT-9) with concentrations ranging from 5.5 mg/kg to 690 mg/kg. Ten soil samples were analyzed for VOCs by EPA Method 8260. The sample from TRCPT-5 at 5 feet bgs contained ethylbenzene (4 mg/kg), isopropylbenzene (1.3 mg/kg), propylbenzene (4.8 mg/kg), 1,3,5 trimethylbenze (1.1 mg/kg), sec-butyl-benzene (1 mg/kg), n-butylbenzene (4.6 mg/kg), and naphthalene (4.9 mg/kg); no other VOCs were detected above laboratory reporting limits. The soil sample from TRCPT-7 at 6 feet bgs contained isopropylbenzene (0.39 mg/kg), propylbenzene (0.89 mg/kg), 1,3,5, trimethylbenzene (0.34 mg/kg), sec-butyl-benzene (0.52 mg/kg), para-isopropyltoluene (0.64 mg/kg), and n-butylbenzene (1.2 mg/kg); no other VOCs were detected above laboratory reporting limits. The soil sample from TRCPT-9 at 10 feet bgs contained acetone (0.28 mg/kg) and 2-butanone (0.062 mg/kg); no other VOCs were detected above laboratory reporting limits. No VOCs were detected above laboratory reporting limits from the seven other soil samples analyzed.

TPHd was detected in two of five shallow groundwater samples with concentrations ranging of 210 µg/L (TRCPT-5) to 240 µg/L (TRCPT-6). TPHmo was detected in one of five shallow groundwater samples with a concentration of 1,700 µg/L (TRCPT-6). TPHg was detected in four of five shallow groundwater samples with concentrations ranging from 300 µg/L to 2,500 µg/L (TRCPT-5, 6, 7, & 9). Benzene was detected in three of five shallow groundwater samples with concentrations ranging from 0.6 µg/L to 140 µg/L (TRCPT-5, 6, & 9). Toluene was detected in two of five shallow groundwater samples with concentrations of 0.6 µg/L (TRCPT-6) and 0.7 µg/L (TRCPT-5). Ethylbenzene was detected in four of five shallow groundwater samples with concentrations ranging from 0.6 µg/L to 100 µg/L (TRCPT-5, 6, 7, & 9). Total xylenes were detected in four of five shallow groundwater samples with concentrations ranging from 0.5 µg/L to 11 µg/L (TRCPT-5, 6, 7, & 9). Isopropylbenzene was detected in four of five shallow groundwater samples with concentrations ranging from 2.6 µg/L to 23 µg/L (TRCPT-5, 6, 7, & 9). Propylbenzene was detected in four of five shallow groundwater samples with concentrations ranging from 5.9 µg/L to 56 µg/L (TRCPT-5, 6, 7, & 9). 1,3,5-trimethylbenzene was detected in three of five shallow groundwater samples with concentrations ranging from 0.6 µg/L to 4 µg/L (TRCPT-5, 6, & 9). 1,2,4-trimethylbenzene was detected in three of five shallow groundwater samples with concentrations ranging from 0.6 µg/L to 6.6 µg/L (TRCPT-5, 6, & 9). Sec-butyl benzene was detected in four of five shallow groundwater samples with concentrations ranging from 0.7 µg/L to 6.8 µg/L (TRCPT-5, 6, 7, & 9). Para-isopropyl-toluene was detected in four of five shallow groundwater samples with concentrations ranging from 1 µg/L to 3.8 µg/L (TRCPT-5, 6, 7, & 9). N-Butylbenzene was detected in four of five shallow groundwater samples with concentrations ranging from 1.4 µg/L to 23 µg/L (TRCPT-5, 6, 7, & 9). Naphthalene was detected in one of five shallow groundwater sample with a concentration of 46 µg/L (TRCPT-5). Acetone was detected in three of five shallow groundwater samples with concentrations ranging from 34 µg/L to 53 µg/L (TRCPT-5, 6, & 9). MtBE was detected in three of five shallow groundwater samples with concentrations ranging from 0.6 µg/L to 61 µg/L (TRCPT-6, 7, & 9). 2-Butanone was detected in three of five shallow groundwater samples with concentrations ranging from 11 µg/L to 21 µg/L (TRCPT-5, 6, & 9). 1,2-Dichloroethane was detected in two of five shallow groundwater samples with concentrations ranging from 1.4 µg/L (TRCPT-9) to 11 µg/L (TRCPT-7). Otherwise, VOCs were not detected above laboratory reporting limits in shallow groundwater at the Site.

One deep groundwater sample was collected from TRCPT-9 from 50 feet bgs. The sample was analyzed for TPHd, TPHmo, TPHg, and VOCs. None of the analytes were detected above laboratory reporting limits from this sample.

DISCUSSION

Soil samples at the Site were compared to Regional Water Quality Control Board summary tables for shallow soils at commercial/industrial sites where groundwater is not a current or potential source of drinking water. Groundwater at the Site tends to be greater than 10 feet below ground surface, so groundwater samples were compared to Regional Water Quality Control Board summary tables for deep soil at commercial/industrial sites where groundwater is not a current or potential source of drinking water. Groundwater at the site is not used for potable water, nor does the city of Emeryville permit the use of groundwater for potable purposes. Potable water at the Site is provided by East Bay Municipal Utility District. Vapor intrusion due to groundwater offgassing is not an issue given that the building is constructed below the water table, waterproofed, and consists of a mechanically ventilated subslab garage.

Soil Discussion for Benzo(a)pyrene and VOC Investigation Area

Soil samples collected from the areas of concern and analyzed for benzo(a)pyrene (TRCPT-1 through TRCPT-4 and HA-1 through HA-4) did not indicate any SVOCs above laboratory reporting limits. Soil samples from TRCPT-1 through TRCPT-4 were also analyzed for VOCs to evaluate if former VOC storage areas might have impacted soil downgradient of the Site. No VOCs were detected above laboratory reporting limits for any of the samples analyzed in this portion of the Site.

Groundwater Discussion for Benzo(a)pyrene and VOC Investigation Area

Groundwater samples were collected from borings TRCPT-2 and TRCPT-3 to assess if residual benzo(a)pyrene from soil has impacted groundwater. Benzo(a)pyrene was not detected above laboratory reporting limits in either of these groundwater samples. The groundwater sample from TRCPT-3 contained trace concentrations of other SVOCs, but the concentrations detected were well below the applicable ESLs. SVOCs were not detected above laboratory reporting limits in groundwater from TRCPT-2. Groundwater samples from this area (TRCPT-1 through TRCPT-3) were also analyzed for VOCs to evaluate if former VOC storage areas might have impacted groundwater at the Site. Trace concentrations of VOCs were detected in boring TRCPT-3, but at concentrations below the applicable ESL. VOCs were not detected above laboratory reporting limits for groundwater samples collected from the other borings (TRCPT-1 or TRCPT-2).

Soil Discussion for TPH Investigation Area

Soil samples were collected from five borings (TRCPT-5 through TRCPT-9) to assess the extent of petroleum hydrocarbon related contamination in soil in the southwestern portion of the Site. TPHd was detected in one sample (TRCPT-7 at 6 feet bgs) at a concentration exceeding the ESL. TPHg was detected in two samples (TRCPT-5 at 5 feet bgs and TRCPT-7 at 6 feet bgs) at concentrations exceeding the ESL. Naphthalene was also detected in one sample (TRCPT-5 at 5 feet bgs) at a concentration exceeding the ESL. Otherwise, remaining soil samples were either not detected above laboratory reporting limits or at trace concentrations that were below their applicable ESL. Residual contamination appears to be largely confined to the shallow soil within the street, and there does not appear to be a source area of soil remaining onsite.

Groundwater Discussion for TPH Investigation Area

Groundwater samples were collected from five borings (TRCPT-5 through TRCPT-9) to assess the extent of petroleum hydrocarbon related contamination in groundwater in the southwestern portion of the Site. The groundwater analytical results indicate that impacted groundwater is limited to the shallow water bearing zone. TPHd and TPHmo were detected above applicable ESLs in one groundwater sample (TRCPT-6). TPHg was detected at concentrations exceeding the applicable ESL from four shallow groundwater samples (TRCPT-5, TRCPT-6, TRCPT-7, and TRCPT-9). Benzene, ethylbenzene, and naphthalene were detected from boring TRCPT-6 at concentrations exceeding the ESLs. Otherwise, remaining groundwater analytes were either not detected above laboratory reporting limits or at concentrations below the applicable ESL. Based on the groundwater analytical results from the investigation, petroleum hydrocarbons are impacting shallow groundwater of the Site immediately west and south in Peladeau Street and in the loading dock to the south of the Site.

CONCLUSIONS AND RECOMMENDATIONS

Soil and groundwater sampling was conducted in the vicinity of the residual benzo(a)pyrene concentrations left-in-place in soil after construction. Downgradient soil and groundwater sampling indicate that benzo(a)pyrene is not migrating offsite. Shallow soil sampling from the TRCPT-series borings indicate that benzo(a)pyrene is not a risk to future utility workers within Peladeau Street. Shallow soil sampling from the HA borings indicate that benzo(a)pyrene is not a risk to maintenance workers at the Site. No further action is warranted for this matter at the Site.

Soil and groundwater sampling was conducted within Peladeau Street and the loading dock south of the Site to determine if VOCs, reportedly historically stored at the Site, were impacting soil and downgradient groundwater. Based on the soil and groundwater analytical results of this investigation, there is no indication of former releases to soil and/or groundwater at the Site. No further action is warranted for this matter at the Site.

Soil and groundwater sampling was also conducted to investigate the extent of petroleum hydrocarbon contamination in soil and groundwater from historic bulk fuel storage operations at the Site. The soil sampling results suggest that shallow soil is impacted with some residual petroleum hydrocarbons within Peladeau Street. The groundwater sampling results suggest that shallow groundwater is impacted within the loading dock to the south of the Site and along Peladeau Street.

Please contact Matthew Hall (415-955-9040) if you have any questions regarding this report.

Sincerely,
TREADWELL & ROLLO, INC.

REGISTERED PROFESSIONAL ENGINEER
MATTHEW B. HALL
C73178
EXP 12/31/10
CIVIL
STATE OF CALIFORNIA

Matthew B. Hall, PE
Senior Project Engineer

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49540103.MBH

Attachments

Tables
Figures
Attachment A Permits
Attachment B CPT Logs
Attachment C Laboratory Reports

TABLES

Table 1
Organics in Soil Remaining On-Site
5885 Hollis Street
Emeryville, California

Sample ID	Sample Date	Sample Depth	TPHd mg/kg	TPHmo mg/kg	TPHg mg/kg	TRPH mg/kg	VOCs by 8010 mg/kg	Benzene mg/kg	Acetone mg/kg	2-Butanone mg/kg	Isopropyl benzene mg/kg	Propyl benzene mg/kg	Ethyl benzene mg/kg	Total Xylenes mg/kg	1,3,5-Trimethylbenzene mg/kg	1,2,4-Trimethylbenzene mg/kg	sec-Butyl benzene mg/kg	para-Isopropyl toluene mg/kg	n-Butyl benzene mg/kg	Naphthalene mg/kg	Methylene Chloride 8260 mg/kg	Other VOCs by 8260 mg/kg	Benzo(a)pyrene by EPA 8270 mg/kg	Other SVOCs by 8270 mg/kg	Aroclor -1260 mg/kg	Other PCBs mg/kg
TR-1	4/6/2000	15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-2	4/6/2000	15	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-5	4/5/2000	15	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-6	4/5/2000	15	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.330	--	--	--	--	--	--
TR-7	4/5/2000	15	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-8	4/5/2000	15	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-9	4/5/2000	15	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-10	4/6/2000	15	ND	180	ND	330	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-11	4/5/2000	15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-12	4/5/2000	15	ND	ND	19	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-13	4/6/2000	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		5	ND	ND	ND	30	ND	--	--	--	--	--	--	--	--	--	--	--	--	< 0.330	--	--	0.55	ND	--	--
		8	ND	39	ND	52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		10	ND	ND	ND	ND	--	< 0.005	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05	ND	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	ND	ND	--	--	--	--
		15	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-14	4/6/2000	3	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		5	ND	ND	ND	ND	--	< 0.005	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05	ND	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	ND	ND	0.57	ND	--	--
		8	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		10	2.3	ND	1.2	ND	--	< 0.005	< 0.01	< 0.02	< 0.05	< 0.05	< 0.05	ND	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	ND	ND	--	--	--	--
		15	4.0	ND	1.4	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.330	--	--	0.54	ND	--	--
TR-15	4/6/2000	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		5	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		10	1.3	ND	1.0	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.330	--	--	0.59	ND	--	--
		15	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-16	4/6/2000	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		5	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		10	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.330	--	--	0.6	ND	--	--
TR-22	1/20/05	2	5.5 H Y	32	< 1.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		6	8.5 H Y	10 H L	1.7 L Y	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-25	1/20/05	2	11 H Y	62	< 1.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.011	ND
		6	44 H L Y	16	**2,100 Y**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-28	1/20/05	2	4.3 H Y	54	< 0.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.0096	ND
		6	140 H L Y	280	160 Y	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-33	8/11/05	15	< 1.0	< 5.0	< 0.92	--	--	< 0.0046	--	--	--	--	--	< 0.0046	ND	--	--	--	--	--	--	--	--	--	--	--
TR-34	8/11/05	15	< 0.99	< 5.0	< 1.0	--	--	< 0.0053	--	--	--	--	--	< 0.0053	ND	--	--	--	--	--	--	--	--	--	--	--
TR-35	8/11/05	15	2.4 H Y	17	1.7 Z	--	--	< 0.0051	--	--	--	--	--	0.076	0.65	--	--	--	--	--	--	--	--	--	--	--
TR-36	8/11/05	15	< 1.0	< 5.0	< 1.1	--	--	< 0.0053	--	--	--	--	--	< 0.0053	ND	--	--	--	--	--	--	--	--	--	--	--
TR-37	8/11/05	15	9.1 H Y	46	< 0.92	--	--	< 0.0046	--	--	--	--	--	< 0.0046	ND	--	--	--	--	--	--	--	--	--	--	--
TR-38	8/11/05	15	< 0.99	< 5.0	< 1.0	--	--	< 0.005	--	--	--	--	--	< 0.005	ND	--	--	--	--	--	--	--	--	--	--	--
TR-39	5/4/06	15	--	--	<1.0	--	--	<0.0049	ND	ND	ND	ND	<0.0049	<0.0049	ND	ND	ND	ND	ND	ND	0.180 a	ND	--	--	--	--
TR-40	5/4/06	15	--	--	<0.96	--	--	<0.0048	ND	ND	ND	ND	<0.0048	<0.0048	ND	ND	ND	ND	ND	ND	0.220 a	ND	--	--	--	--
TR-41	5/4/06	15	--	--	<1.0	--	--	<0.0047	ND	ND	ND	ND	<0.0047	<0.0047	ND	ND	ND	ND	ND	ND	0.170 a	ND	--	--	--	--
TR-42	5/4/06	15	--	--	<1.1	--	--	<0.0050	ND	ND	ND	ND	<0.0050	<0.005	--	--	--	--	--	--	--	--	--	--	--	--
TR-43	5/4/06	15	--	--	<0.98	--	--	<0.0045	ND	ND	ND	ND	<0.0045	<0.0045	--	--	--	--	--	--	--	--	--	--	--	--
TR-44	5/10/06	15	--	--	<0.99	--	--	<0.0047	ND	ND	ND	ND	<0.0047	ND	ND	ND	ND	ND	ND	ND	0.094 a	ND	--	--	--	--
TR-45	5/10/06	15	<1.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-46	5/12/06	15	<1.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-46A	5/10/06	15	<1.0	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-47	5/12/06	15	<0.99	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-48	5/12/06	15	7.9 H Y	33 L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-49	5/4/06	15	<1.0	<5.0	<0.97	--	--	<0.0048	ND	ND	ND	ND	<0.0048	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-50	5/4/06	15	2.0 H Y	6.0	<0.93	--	--	<0.0048	ND	ND	ND	ND	<0.0048	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-51	5/4/06	15	<0.99	<5.0	<1.1	--	--	0.0082	ND	ND	ND	ND	<0.0050	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-52	5/4/06	15	1.9 H Y	<5.0	10 H Y	--	--	<0.005	ND	ND	ND	ND	0.0076	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-53	5/4/06	15	<1.0	<5.0	<0.99	--	--	<0.0045	ND	ND	ND	ND	<0.0045	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-54	5/4/06	15	2.0 H Y	5.8	<1.1	--	--	<0.0046	ND	ND	ND	ND	<0.0046	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-55	5/4/06	15	<1.0	<5.0	<1.1	--	--	<0.0049	ND	ND	ND	ND	<0.0049	--	--	--	--	--	--	--	--	--	--	--	--	--
TR-56	5/4/06	15	1.4 H Y	<5.0	<0.94	--	--	<0.0046	ND	ND	ND	ND	<0.0046	--	--	--	--	--	--	--	--	--	--	--	--	--
ESL-C NDW (Table B-2)			180	2,500	180	--	--	0.27	0.5	NE	NE	NE	4.7	11	NE	NE	NE	NE	NE	2.8	17	--	0.13	--	NE	--

Notes:
mg/kg = milligrams per kilogram
-- = not analyzed
< 1 = indicates not detected at the indicated laboratory detection limit
ND = Not detected at or greater than laboratory detection limit which varies, see laboratory repor
NE = Not established
C = Presence confirmed, but RPD (Relative Percent Difference) between columns exceeds 40%
Y = Laboratory flag indicating sample exhibits chromatographic pattern which does not resemble stand
H = Laboratory flag indicating heavier hydrocarbons contributed to quantitatior
a = Detected concentration of methylene chloride due to laboratory contaminatior
L = Laboratory flag indicating lighter hydrocarbons contributed to quantitatior

TPHd = Total Petroleum Hydrcarbons quantified as diesel fuel
TPHg = Total Petroleum Hydrocarbons quantified as gasoline
TPHmo = Total Petroleum Hydrocarbons quantified as motor oi
PCBs = Polychlorinated Biphenyls
SFBRWQCB = San Francisco Bay Regional Water Quality Control Board
Table B-2: Shallow soils (less than 10 feet bgs) where groundwater is NOT a current or potential source of drinking water
ESL = Environmental Screening Levels established by the SFBRWQCB

May 2010

Table 2
Soil Analytical Results from April 2010 Investigation
5885 Hollis Street
Emeryville, California

Sample Location	Sample Date	Sample Depth feet bgs	TPHd mg/kg	TPHmo mg/kg	TPHg mg/kg	Benzene mg/kg	Ethylbenzene mg/kg	Total Xylenes mg/kg	Isopropyl-benzene mg/kg	Propyl-benzene mg/kg	1,3,5-Trimethyl-benzene mg/kg	1,2,4-Trimethyl-benzene mg/kg	sec-Butyl-benzene mg/kg	para-isopropyl toluene mg/kg	n-butylbenzene mg/kg	Naphthalene (8260) mg/kg	Acetone mg/kg	2-Butanone mg/kg	1,2-Dichloro-ethane mg/kg	Other VOCs mg/kg	Benzo(a) pyrene mg/kg	Napthalene (8270) mg/kg	Phenanthrene mg/kg	Other SVOCs
HA-1	4/5/2010	2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.067	<0.067	<0.067	ND
HA-2	4/5/2010	2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.066	<0.066	<0.066	ND
HA-3	4/5/2010	2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.066	<0.066	<0.066	ND
HA-4	4/5/2010	2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.066	<0.066	<0.066	ND
TRCPT-1	4/5/2010	5.0	--	--	--	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.019	<0.0096	<0.0048	ND	<0.0049	<0.0049	<0.0049	ND
		9.5	--	--	--	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.019	<0.0093	<0.0047	ND	<0.005	<0.005	<0.005	ND
		18.0	--	--	--	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.019	<0.0093	<0.0046	ND	<0.005	<0.005	<0.005	ND
TRCPT-2	4/5/2010	5.0	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.020	<0.010	<0.005	ND	<0.0049	<0.0049	<0.0049	ND
		9.5	--	--	--	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.019	<0.0097	<0.0049	ND	<0.005	<0.005	<0.005	ND
		18.0	--	--	--	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.019	<0.0097	<0.0048	ND	<0.0049	<0.0049	<0.0049	ND
TRCPT-3	4/2/2010	5.0	--	--	--	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.019	<0.0094	<0.0047	ND	<0.005	<0.005	<0.005	ND
		9.5	--	--	--	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.018	<0.0092	<0.0046	ND	<0.0049	<0.0049	<0.0049	ND
		18.0	--	--	--	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.019	<0.0094	<0.0047	ND	<0.0049	<0.0049	<0.0049	ND
TRCPT-4	4/2/2010	5.0	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.020	<0.010	<0.005	ND	<0.0049	<0.0049	<0.0049	ND
		10.0	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.020	<0.0099	<0.005	ND	<0.005	<0.005	<0.005	ND
		18.0	--	--	--	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.019	<0.0097	<0.0049	ND	<0.005	<0.005	<0.005	ND
TRCPT-5	4/2/2010	5.0	67	6.3	**680Y**	<0.5	4	<0.5	1.3	4.8	1.1	<0.5	1	<0.5	4.6	**4.9**	<2	<1	<0.5	ND	--	--	--	--
		16.0	<0.99	<5.0	<1.0	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.020	<0.0098	<0.0049	ND	--	--	--	--
TRCPT-6	4/2/2010	7.0	<1.0	<5.0	<0.99	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.020	<0.0098	<0.0049	ND	--	--	--	--
		19.0	<0.99	<5.0	<1.0	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.020	<0.0098	<0.0049	ND	--	--	--	--
TRCPT-7	4/1/2010	6.0	**220**	80	**690Y**	<0.25	<0.25	<0.25	0.39	0.89	0.34	<0.25	0.52	0.64	1.2	<0.25	<1	<0.5	<0.25	ND	--	--	--	--
		16.0	<0.99	<5.0	<0.96	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.019	<0.096	<0.0048	ND	--	--	--	--
TRCPT-8	4/1/2010	10.0	<1.0	<5.0	<0.95	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.019	<0.0094	<0.0047	ND	--	--	--	--
		19.0	<1.0	<5.0	<0.98	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.019	<0.0093	<0.0047	ND	--	--	--	--
TRCPT-9	3/31/2010	10.0	2.5	<5.0	5.5	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	0.28	0.062	<0.0048	ND	--	--	--	--
		22.0	<1.0	<5.0	<0.93	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.019	<0.0094	<0.0047	ND	--	--	--	--
ESL-C NDW (Table B-2)			180	2,500	180	0.27	4.7	11	NE	NE	NE	NE	NE	NE	NE	2.8	0.5	NE	0.48	--	0.13	2.8	11	--

Notes:
Results presented in units indicated at top of table.
mg/kg = milligrams per kilogram (parts per million)
TPHd = Total Petroleum Hydrcarbons quantified as diesel fuel
TPHmo = Total Petroleum Hydrocarbons quantified as motor oi
TPHg = Total Petroleum Hydrocarbons quantified as gasoline
VOCs = Volatile Organic Compounds (see laboratory data sheets for complete list of VOCs analyzed)
SVOCs = Semivolatile Organic Comounds (see laboratory data sheets for complete list of SVOCs analyzed)
< 1 = indicates not detected at the indicated laboratory detection limit
ND = Not detected at or greater than the laboratory detection limit which varies, see laboratory repor
Y = Laboratory flag indicating sample exhibits chromatographic pattern which does not resemble standard
-- = not analyzed
TPHg and VOCs analyzed by EPA Method 8260
TPHmo and TPHd analyzed by EPA Method 8015
SVOCs analyzed by EPA Method 8270

ESL = Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater by the San Francisco Bay Regional Water Quality Control Board (2007, revised May 2008).
ESL-C NDW (Table B-2): Shallow soils (less than 10 feet bgs) where groundwater is NOT a current or potential source of drinking water for commercial/industrial land use (SF-RWQCB, May 2008
Concentrations in **bold** exceed the ESL
NE= Not established

Table 3
Summary of Historic Groundwater Analytical Data - Organics
5885 Hollis Street
Emeryville, California

Sample ID	Sample Date	TPHd µg/L	TPHmo µg/L	TPHg µg/L	Benzene µg/L	Toluene µg/L	Ethyl -benzene µg/L	Total xylenes µg/L	Isopropyl -benzene µg/L	Propyl -benzene µg/L	1,3,5-Trimethyl -benzene µg/L	1,2,4-Trimethyl -benzene µg/L	sec-Butyl -benzene µg/L	Naphthalene µg/L	Acetone µg/L	Other VOCs µg/L
TR-1	4/6/2000	130	ND	98	--	--	--	--	--	--	--	--	--	--	--	ND (8010)
TR-6	4/5/2000	ND	**1,400**	ND	< 5	< 5	< 5	<5	< 5	< 5	< 5	< 5	< 5	< 5	< 100	ND (8260)
TR-9	4/6/2000	ND	**420**	ND	--	--	--	--	--	--	--	--	--	--	--	--
TR-12	4/6/2000	**700**	ND	**3,300**	--	--	--	--	--	--	--	--	--	--	--	ND (8010)
TR-23 (GW)	6/20/2005	**8,400 L Y**	--	**28,000**	**4,300**	< 25	**990**	**300**	120	240	45	160	< 25	**380**	< 500	ND (8260)
TR-24 (GW)	6/15/2005	**6,800 L**	--	**91,000 Y**	**2,500**	31	**950**	**760**	210	110	290	43	70	**710**	35	ND
TR-25 (GW)	1/20/2005	--	--	**150,000 Y**	**2,500**	< 10	**3,600**	**1,720**	--	--	--	--	--	--	--	--
TR-29 (GW)	1/20/2005	**280 H Y**	**340 L**	< 50	< 0.5	0.61 C	< 0.5	0.6	--	--	--	--	--	--	--	--
TR-30 (GW)	1/20/2005	**640 H Y**	**960**	< 50	< 0.5	0.85 C	< 0.5	0.85	--	--	--	--	--	--	--	--
TR-31 (GW)	1/20/2005	**270 H Y**	**1,500**	< 50	< 0.5	0.56 C	< 0.5	0.57	--	--	--	--	--	--	--	ND
ESL (Summary Table D)		210	210	210	46	130	43	100	NE	NE	NE	NE	NE	24	1,500	--

Notes:
Results presented in units indicated at top of table.
ug/l = micrograms per liter (parts per billion)
TPHg = Total Petroleum Hydrocarbons quantified as gasoline
TPHd = Total Petroleum Hydrcarbons quantified as diesel fuel
TPHmo = Total Petroleum Hydrocarbons quantified as motor oil
VOCs = Volatile Organic Compounds (see laboratory data sheets for complete list of VOCs analyzed)
< 5 = indicates not detected at the indicated laboratory detection limit
ND = Not detected at or greater than the laboratory detection limit which varies, see laboratory report
C = Presence confirmed, but RPD (Relative Percent Difference) between columns exceeds 40%
Y = Laboratory flag indicating sample exhibits chromatographic pattern which does not resemble standard
H = Laboratory flag indicating heavier hydrocarbons contributed to quantitation
L = Laboratory flag indicating lighter hydrocarbons contributed to quantitation
Z = Sample exhibits unknown single peak or peaks
NA = not analyzed

ESL = Environmental Screening Levels established by the SFBRWQCB, 2005
SFBRWQCB = San Francisco Bay Regional Water Quality Control Board
Summary Table D: Deep Soil (>3m bgs), Groundwater is NOT a current or potential source of drinking water.

Table 4
Groundwater Analytical Results from April 2010 Investigation
5885 Hollis Street
Emeryville, California

Sample ID	Sample Date	Sample Depth feet bgs	TPHd µg/L	TPHmo µg/L	TPHg µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Total Xylenes µg/L	m,p-Xylene µg/L	o-Xylene µg/L	Isopropyl-benzene µg/L	Propyl-benzene µg/L	1,3,5-Trimethyl-benzene µg/L	1,2,4-Trimethyl-benzene µg/L	sec-Butyl-benzene µg/L	para-isopropyl toluene µg/L	n-butyl-benzene µg/L	Naphthalene (8260) µg/L	Acetone µg/L	MtBE µg/L	2-Butanone µg/L	1,2-Dichloro-ethane µg/L	Other VOCs µg/L	Benzo(a) pyrene µg/L	Napthalene (8270) µg/L	Phenanthrene µg/L	Other SVOCs µg/L
TRCPT-1-GW	4/6/2010	20	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<10	<0.5	<10	<0.5	ND	--	--	--	--
TRCPT-2-GW	4/5/2010	20	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<10	<0.5	<10	<0.5	ND	<0.1	<0.1	<0.1	ND
TRCPT-3-GW	4/2/2010	20	--	--	--	<0.5	0.6	0.7	3.5	2.3	1.2	<0.5	<0.5	1.3	3.4	<0.5	<0.5	0.7	<2.0	21	<0.5	<10	<0.5	ND	<0.1	0.3	0.1	ND
TRCPT-4-GW	Boring left open for 6 hours. No measurable water.																											
TRCPT-5-GW	4/2/2010	20	210	<300	**2,500y**	**140**	0.7	**100**	11	10	1	23	56	4	6.6	6.8	3.8	23	**46**	42	<0.5	17	<0.5	ND				
TRCPT-6-GW	4/2/2010	11	**240**	**1,700**	**300y**	0.6	0.6	0.8	2.3	1.6	0.7	2.6	4.1	0.6	2	0.7	1	1.4	<2.0	34	0.8	11	<0.5	ND				
TRCPT-7-GW	4/1/2010	9	<500	<3,000	**460y**	<0.5	<0.5	0.6	0.5	0.5	<0.5	5.5	8.2	<0.5	<0.5	1.7	2.5	3.2	<2.0	<10	61	<10	11	ND				
TRCPT-8-GW	4/1/2010	20	<100	<600	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<10	<0.5	<10	<0.5	ND				
TRCPT-9-GW	4/1/2010	17	<100	<600	**830y**	24	<0.5	6.5	0.6	0.6	<0.5	5.3	5.9	1.7	0.6	1.4	2.1	2	<2.0	53	0.6	21	1.4	ND				
		50	<50	<300	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<10	<0.5	<10	<0.5	ND				
		ESL - NDW (Summary Table D)	210	210	210	46	130	43	100	NE	NE	NE	NE	NE	NE	NE	NE	NE	24	1,500	1,800	NE	200	--		24	4.6	--

Notes:
Results presented in units indicated at top of table.
ug/l = micrograms per liter (parts per billion)
TPHd = Total Petroleum Hydrcarbons quantified as diesel fuel
TPHmo = Total Petroleum Hydrocarbons quantified as motor oil
TPHg = Total Petroleum Hydrocarbons quantified as gasoline
VOCs = Volatile Organic Compounds (see laboratory data sheets for complete list of VOCs analyzed)
<0.5 = indicates not detected at the indicated laboratory detection limit
ND = Not detected at or greater than the laboratory detection limit which varies, see laboratory report
Y = Laboratory flag indicating sample exhibits chromatographic pattern which does not resemble standard
-- = not analyzed
TPHg and VOC analyzed using EPA Method 8260
TPHd and TPHmo analyzed using EPA Method 8015
SVOCs analyzed using EPA Method 8270

ESL = Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater by the San Francisco Bay Regional Water Quality Control Board (2007, revised May 2008).

ESL-NDW (Summary Table D): Deep soils (> 3 meters bgs) where groundwater is NOT a current or potential source of drinking water for commercial/industrial land use (SF-RWQCB, May 2008)
Concentrations in **bold** exceed the ESL
NE = not established

FIGURES

Base map: The Thomas Guide
Alameda County
1999

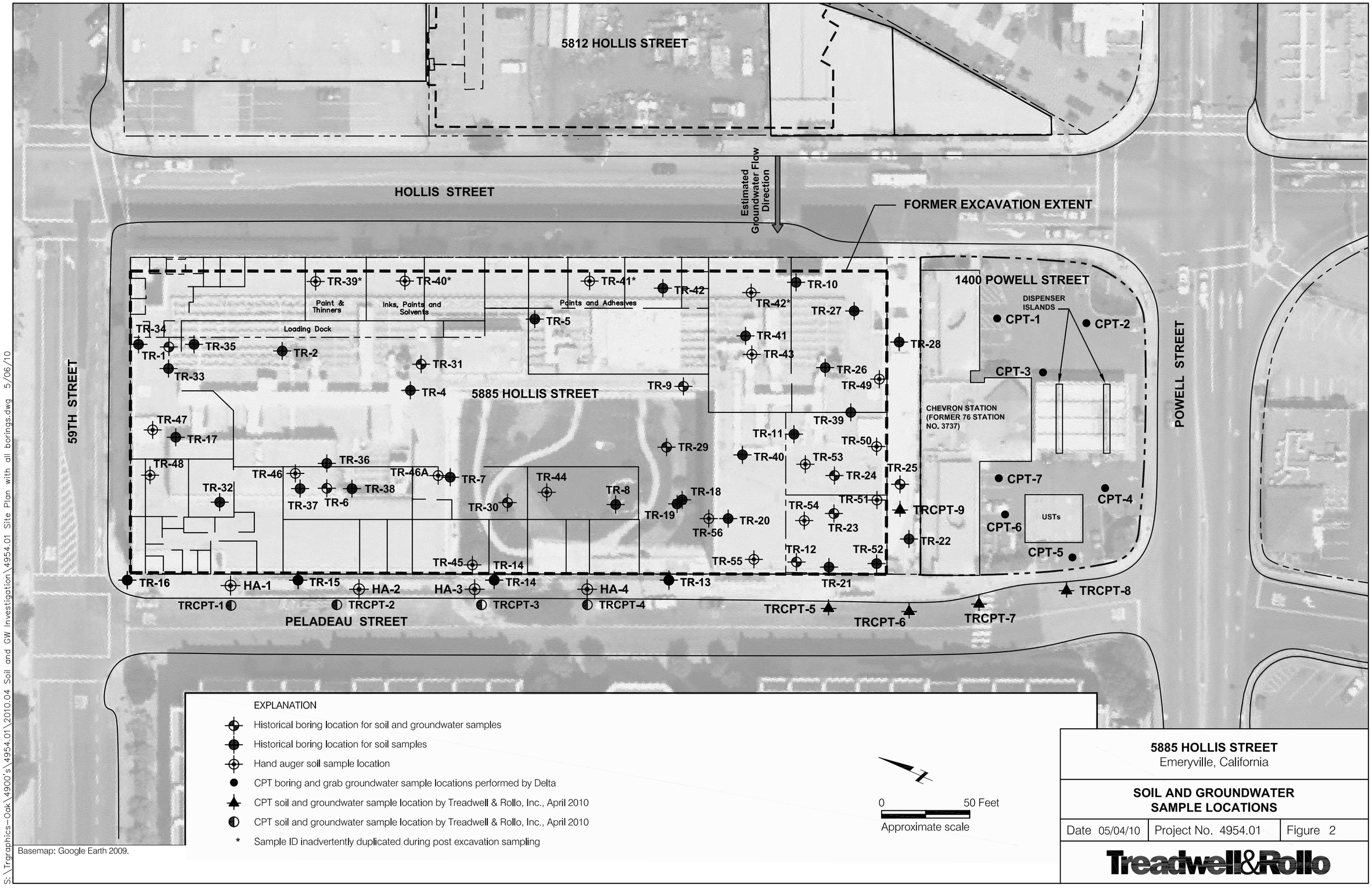
No scale

5885 HOLLIS STREET
Emeryville, California

SITE LOCATION MAP

Treadwell&Rollo

Date 04/27/10	Project No. 4954.01	Figure 1


5812 HOLLIS STREET
HOLLIS STREET
Estimated Groundwater Flow Direction
FORMER EXCAVATION EXTENT
59TH STREET
1400 POWELL STREET
POWELL STREET
DISPENSER ISLANDS
CPT-1
CPT-2
CPT-3
CPT-4
CPT-5
CPT-6
CPT-7
USTs
CHEVRON STATION (FORMER 76 STATION NO. 3737)
5885 HOLLIS STREET
Paint & Thinners
Inks, Paints and Solvents
Paints and Adhesives
Loading Dock
TR-1
TR-2
TR-4
TR-5
TR-9
TR-10
TR-11
TR-12
TR-13
TR-14
TR-15
TR-16
TR-17
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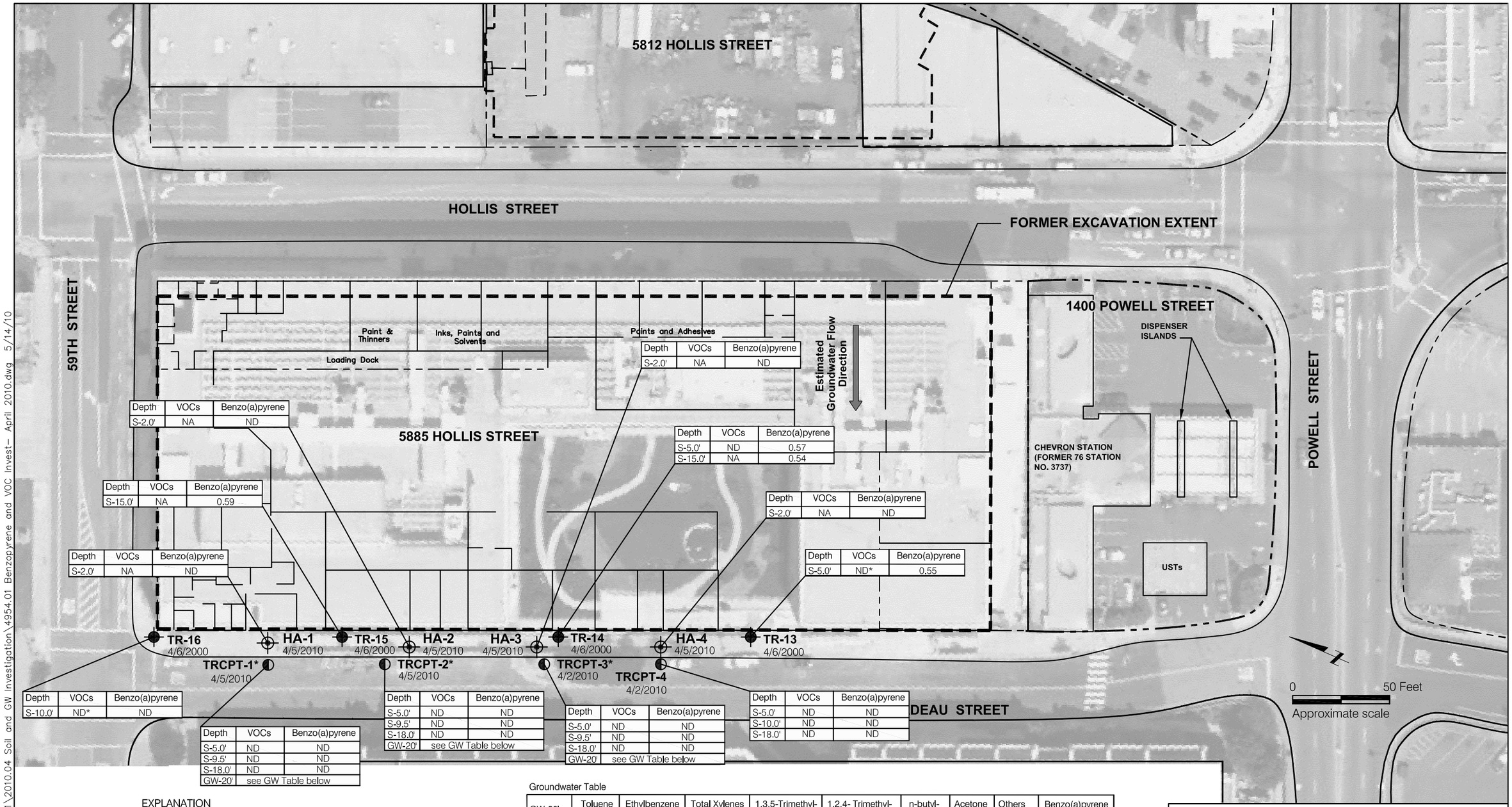
TR-56
TR-6
TR-7
TR-8
HA-1
HA-2
HA-3
HA-4
TRCPT-1
TRCPT-2
TRCPT-3
TRCPT-4
TRCPT-5
TRCPT-6
TRCPT-7
TRCPT-8
TRCPT-9
PELADEAU STREET
EXPLANATION
Historical boring location for soil and groundwater samples
Historical boring location for soil samples
Hand auger soil sample location
CPT boring and grab groundwater sample locations performed by Delta
CPT soil and groundwater sample location by Treadwell & Rollo, Inc., April 2010
CPT soil and groundwater sample location by Treadwell & Rollo, Inc., April 2010
* Sample ID inadvertently duplicated during post excavation sampling
0
50 Feet
Approximate scale
Basemap: Google Earth 2009.
5885 HOLLIS STREET
Emeryville, California
SOIL AND GROUNDWATER SAMPLE LOCATIONS
Date 05/04/10
Project No. 4954.01
Figure 2
Treadwell&Rollo
S:\Trgraphics-Oak\4900's\4954.01\2010.04 Soil and GW Investigation\4954.01 Site Plan with all borings.dwg 5/06/10



Depth	VOCs	Benzo(a)pyrene
S-2.0'	NA	ND

Depth	VOCs	Benzo(a)pyrene
S-5.0'	ND	0.57
S-15.0'	NA	0.54

Depth	VOCs	Benzo(a)pyrene
S-15.0'	NA	0.59

Depth	VOCs	Benzo(a)pyrene
S-2.0'	NA	ND

Depth	VOCs	Benzo(a)pyrene
S-2.0'	NA	ND

Depth	VOCs	Benzo(a)pyrene
S-5.0'	ND*	0.55

Depth	VOCs	Benzo(a)pyrene
S-10.0'	ND*	ND

Depth	VOCs	Benzo(a)pyrene
S-5.0'	ND	ND
S-9.5'	ND	ND
S-18.0'	ND	ND
GW-20'	see GW Table below	

Depth	VOCs	Benzo(a)pyrene
S-5.0'	ND	ND
S-9.5'	ND	ND
S-18.0'	ND	ND
GW-20'	see GW Table below	

Depth	VOCs	Benzo(a)pyrene
S-5.0'	ND	ND
S-10.0'	ND	ND
S-18.0'	ND	ND

EXPLANATION

HA-1 4/5/2010 — Hand auger and soil sample locations, performed by Treadwell & Rollo, Inc., April 2010 (date of boring)

TRCPT-1 4/5/2010 — Soil and groundwater sampling location for VOC's & PAH's, performed by Treadwell & Rollo, Inc., April 2010 (date of boring)

TR-16 4/6/2000 — Historical boring location for soil samples (date of boring)

* VOCs analyzed by EPA Method 8010

Basemap: Google Earth 2009.

Groundwater Table

GW-20'	Toluene	Ethylbenzene	Total Xylenes	1,3,5-Trimethyl-benzene	1,2,4- Trimethyl-benzene	n-butyl-benzene	Acetone	Others	Benzo(a)pyrene
TRCPT-1	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRCPT-2	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRCPT-3	0.6	0.7	3.5	1.3	3.4	0.7	21	ND	ND

ND = not detected
NA = not analyzed
S-5.0 = Soil Sample and depth sample collected
GW-20.0' = Groundwater sample and depth collected
All soil analytical data is reported in mg/kg
All groundwater analytical data is reported in µg/L
All VOC analyses performed by EPA Method 8260 unless otherwise noted
Benzo(a)pyrene analyzed by EPA Method 8270

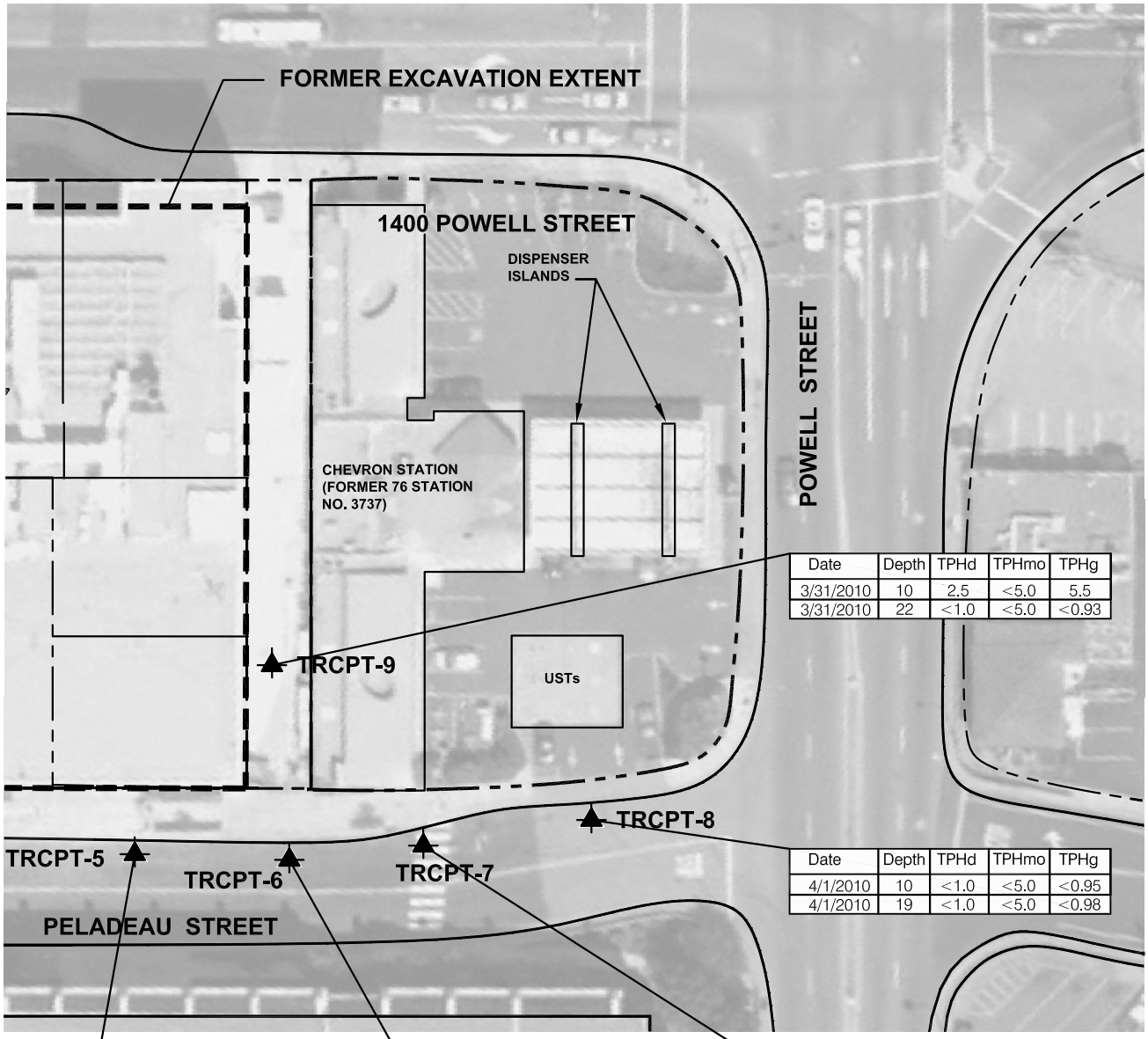
5885 HOLLIS STREET
Emeryville, California

BENZO(A)PYRENE AND VOC INVESTIGATION
APRIL 2010

Date 05/14/10 | Project No. 4954.01 | Figure 3

Treadwell&Rollo

S:\Trgraphics-Oak\4900's\4954.01\2010.04 Soil and GW Investigation\4954.01 Benzopyrene and VOC Invest- April 2010.dwg 5/14/10



Date	Depth	TPHd	TPHmo	TPHg
3/31/2010	10	2.5	<5.0	5.5
3/31/2010	22	<1.0	<5.0	<0.93

Date	Depth	TPHd	TPHmo	TPHg
4/1/2010	10	<1.0	<5.0	<0.95
4/1/2010	19	<1.0	<5.0	<0.98

Basemap: Google Earth 2009.

Date	Depth	TPHd	TPHmo	TPHg
4/1/2010	6	220	80	690
4/1/2010	16	<0.99	<5.0	<0.96

Date	Depth	TPHd	TPHmo	TPHg
4/2/2010	7	<1.0	<5.0	<0.99
4/2/2010	19	<0.99	<5.0	<1.0

Date	Depth	TPHd	TPHmo	TPHg
4/2/2010	5	67	6.3	680
4/2/2010	16	<0.99	<5.0	<1.0

EXPLANATION

Additional CPT and soil and groundwater sampling location for dissolved petroleum hydrocarbon delineation, performed by Treadwell & Rollo, Inc., April 2010

All concentrations reported in mg/kg

0 50 Feet

Approximate scale

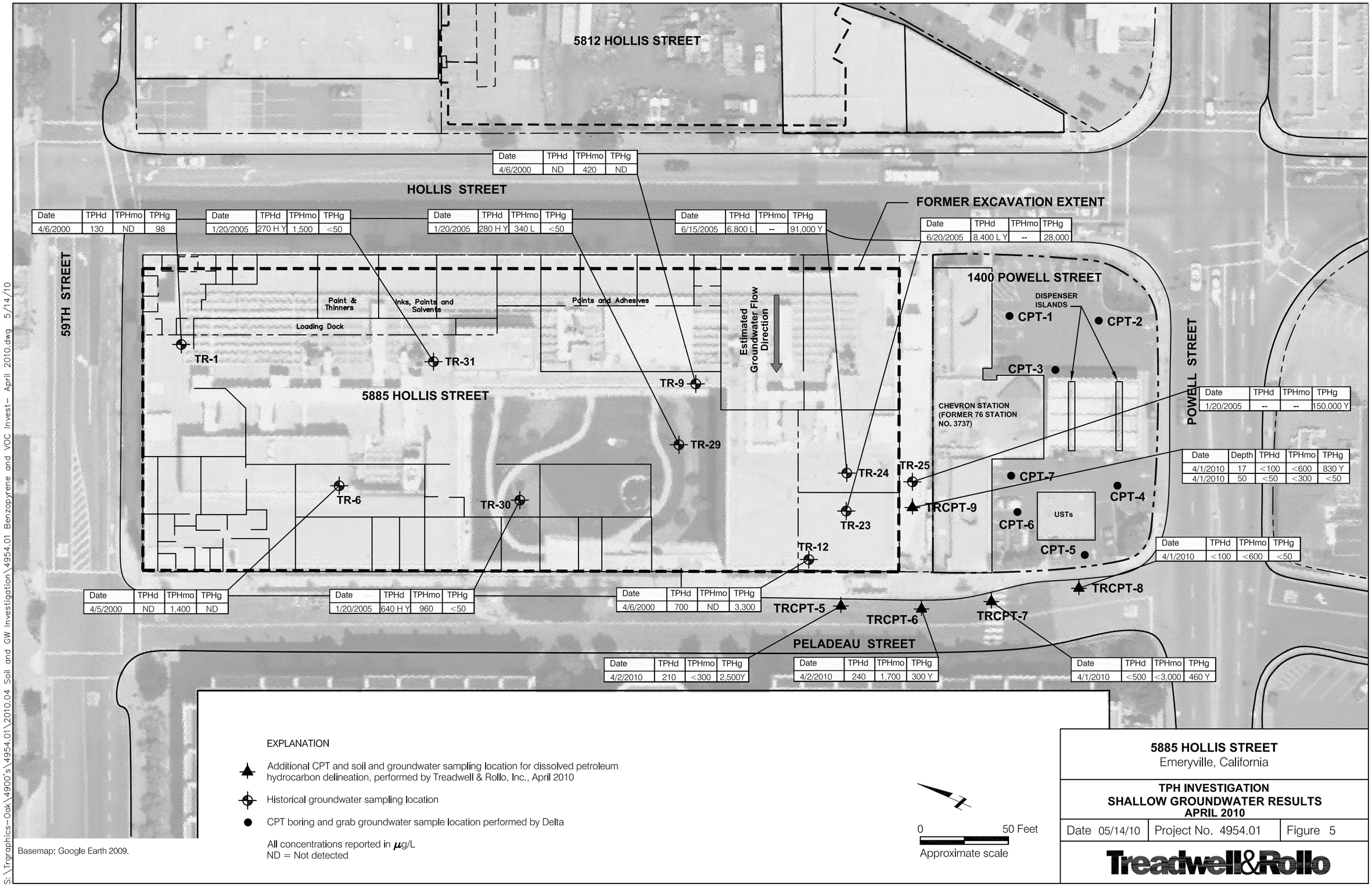
5885 HOLLIS STREET
Emeryville, California

TPH INVESTIGATION SOIL RESULTS FROM APRIL 2010

Treadwell&Rollo

Date 05/14/10 | Project No. 4954.01 | Figure 4

S:\Trgraphics-Oak\4900's\4954.01\2010.04 Soil and GW Investigation\4954.01 Benzopyrene and VOC Invest- April 2010.dwg 5/14/10



Date	TPHd	TPHmo	TPHg
4/6/2000	ND	420	ND

Date	TPHd	TPHmo	TPHg
4/6/2000	130	ND	98

Date	TPHd	TPHmo	TPHg
1/20/2005	270 H Y	1,500	<50

Date	TPHd	TPHmo	TPHg
1/20/2005	280 H Y	340 L	<50

Date	TPHd	TPHmo	TPHg
6/15/2005	6,800 L	--	91,000 Y

Date	TPHd	TPHmo	TPHg
6/20/2005	8,400 L Y	--	28,000

Date	TPHd	TPHmo	TPHg
1/20/2005	--	--	150,000 Y

Date	Depth	TPHd	TPHmo	TPHg
4/1/2010	17	<100	<600	830 Y
4/1/2010	50	<50	<300	<50

Date	TPHd	TPHmo	TPHg
4/1/2010	<100	<600	<50

Date	TPHd	TPHmo	TPHg
4/5/2000	ND	1,400	ND

Date	TPHd	TPHmo	TPHg
1/20/2005	640 H Y	960	<50

Date	TPHd	TPHmo	TPHg
4/6/2000	700	ND	3,300

Date	TPHd	TPHmo	TPHg
4/2/2010	210	<300	2,500Y

Date	TPHd	TPHmo	TPHg
4/2/2010	240	1,700	300 Y

Date	TPHd	TPHmo	TPHg
4/1/2010	<500	<3,000	460 Y

EXPLANATION

Additional CPT and soil and groundwater sampling location for dissolved petroleum hydrocarbon delineation, performed by Treadwell & Rollo, Inc., April 2010

Historical groundwater sampling location

CPT boring and grab groundwater sample location performed by Delta

All concentrations reported in μg/L
ND = Not detected

0 50 Feet
Approximate scale

Basemap: Google Earth 2009.

5885 HOLLIS STREET
Emeryville, California

TPH INVESTIGATION
SHALLOW GROUNDWATER RESULTS
APRIL 2010

Date 05/14/10 | Project No. 4954.01 | Figure 5

Treadwell&Rollo

S:\Trgraphics-Oak\4900's\4954.01\2010.04 Soil and GW Investigation\4954.01 Benzopyrene and VOC Invest- April 2010.dwg 5/14/10

Treadwell&Rollo

ATTACHMENT A

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: 03/25/2010 By jamesy

Permit Numbers: W2010-0172
Permits Valid from 03/31/2010 to 04/01/2010

Application Id: 1269536089340
City of Project Site: Emeryville
Site Location: 5885 Hollis St, Emeryville, CA
Project Start Date: 03/31/2010
Completion Date: 04/01/2010
Assigned Inspector: Contact John Shouldice at (510) 670-5424 or johns@acpwa.org

Applicant: Treadwell & Rollo Inc. - JC Gekov
501 14th St, 3rd Flr., Oakland, CA 94612
Phone: 510-874-4500 x527

Property Owner: Waveham Development
1120 Nye St, Ste 400, San Rafael, CA 94901
Phone: 415-457-4964

Client: ** same as Property Owner **

	Total Due:	$265.00
Receipt Number: WR2010-0082	**Total Amount Paid:**	$265.00
Payer Name : Treadwell & Rollo	Paid By: CHECK	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Geotechnical Study/CPT's - 13 Boreholes
Driller: Gregg - Lic #: 485165 - Method: other

Work Total: $265.00

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2010-0172	03/25/2010	06/29/2010	13	4.00 in.	50.00 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.

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. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an 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.

5. Applicant shall contact John Shouldice for an inspection time at 510-670-5424 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.

6. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material 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 work is being completed.

7. 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.

8. 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.

City of Emeryville • Department of Public Works
Encroachment Permit

$100 3/10/11

Permit No. 30 Date 3-31-10
Permit Admin. Fee $155
Permit Inspection Deposit (2 hr. min.) $202
Cost Recovery Estimate
Required Security Deposit:
☑ $1,000 cash
☐ $10,000 Bond, Bond #
☐ 100% Perf. Bond,
Bond Value Bond #
Total Payment Required $1,360
Received: Date
Receipt #
Failure to obtain approval of a Final Inspection of the work covered by this Encroachment Permit within one (1) year of the estimated completion date shall result in the loss of the security deposit which shall be retained by the City of Emeryville.

APPLICANT Treadwell and Rollo, Inc
CONTACT PERSON Jeremy Gekor
ADDRESS 501 14th St, 3rd Flr, Oakland
PHONE (510) 874-4500 ext: 527
FAX (510) 874-4507

OWNER/DEVELOPER OF FACILITIES
Wareham Development
ADDRESS 1120 Nye St Suite 400, San Rafael, CA
PHONE (415) 457 4964
FAX

CONTRACTOR DOING WORK
Gregg Drilling
CONTACT PERSON Chris Pruner
ADDRESS 950 Howe Road, Martinez, CA PHONE (925) 313-5800 FAX (925) 313-0302
LICENSE NO. 485165 CLASS C-57
☒ Yes ☐ No CURRENT CITY BUSINESS LICENSE ON FILE
☒ Yes ☐ No PROVIDE PROOF OF INSURANCE 3/31/10 -
EST. START DATE 3/31/10 EST. COMPLETION DATE 4/1/10 EST. COST IN CITY R/W $20,000

LOCATION OF WORK 5885 Hollis Street
CHECK ALL THAT APPLY
☐ **Traffic Control** ☐ **Survey** ☐ **Sidewalk Detour** ☐ **Dumpster** ☒ **Temporary No Parking**
☐ **Private Facilities on Public Right of Way** ☐ **Construction** ☐ **Sidewalk** ☐ **Driveway Approach** ☐ **Curb & Gutter** ☐ **Pedestrian Ramp** ☐ **Water Service** ☐ **Gas Service** ☐ **Electric Service** ☐ **Roof Drain** ☐ **Utility Maintenance** ☐ **Fence** ☐ **Excavation** ☐ **Obstruction** ☐ **Access Road** ☐ **Monitoring Well** ☐ **Sewer Lateral** ☐ **Storm Drain** ☐ **Crane** ☐ **Block Party**
FULLY DESCRIBE PROPOSED WORK WITHIN CITY RIGHT-OF-WAY (additional space on reverse if needed): Attach 3 complete sets of plans 8 ½ X 11, if applicable.

Collection of soil and groundwater samples using a hand auger for shallow soil samples and a CPT drilling rig for deeper soil and groundwater sample collection.

I hereby agree to protect and indemnify the City of Emeryville and hold it harmless in every way from all claim or suits for injury or damage to persons or property as set forth in the Standard Provisions. I agree not to begin construction until all materials to be used are on hand; to perform all work in accordance with the plans submitted (if any), the Standard Provisions to Encroachment Permit, and all applicable Special Conditions of Approval, and to pay all inspection and engineering costs in addition to those paid at the time of issuance of this permit. I further agree to complete the work to the satisfaction of the City Engineer and if for any reason the City of Emeryville is required to complete this work, I will pay all costs for such work.

Applicant Signature Date 3/12/10

After final inspection is approved, please contact the Public Works Department at 510-596-4330 to determine final cost, and for final payment or reimbursement of deposit.

FOR CITY USE ONLY ○*Temporary Permit* #_____ *days* ○*Long Term Permit*

The following documents are attached and incorporated into this permit and have been given to the applicant:

☑ Standard Provisions to Encroachment Permit ☐ Special Conditions of Approval

☐ City Standard Details (List Details) ☑ Handout, Urban Runoff BMP's

☐ Other _____

Remarks _____

☐ 48 HOUR NOTICE PRIOR TO START OF WORK.

☐ PROVIDE CONSTRUCTION SCHEDULE 5 DAYS PRIOR TO START OF WORK

☐ AS-BUILT PLANS REQUIRED

☑ PLEASE CALL FOR INSPECTION AT 510-596-4333

☐ PLEASE NOTIFY POLICE (510-596-3700) AND FIRE (510-596-3750) 24 HOURS IN ADVANCE.

This permit is void unless the work is completed before 4-2, 20 10

This permit is to be strictly construed and no other work than is specifically mentioned is hereby authorized.

APPROVED [signature] TITLE PWD DATE 3-31-10

FINAL INSPECTION APPROVED _____ TITLE _____ DATE _____

Treadwell&Rollo

ATTACHMENT B

CPT LOGS

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

April 7, 2010

Treadwell & Rollo
Attn: Matt Hall
555 Montgomery St., Suite 1300
San Francisco, California 94111

Subject: CPT Site Investigation
Emery Station East
Emeryville, California
GREGG Project Number: 10-050MA

Dear Mr. Hall:

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)	☒
2	Pore Pressure Dissipation Tests	(PPD)	☐
3	Seismic Cone Penetration Tests	(SCPTU)	☐
4	Resistivity Cone Penetration Tests	(RCPTU)	☐
5	UVOST Laser Induced Fluorescence	(UVOST)	☐
6	Groundwater Sampling	(GWS)	☒
7	Soil Sampling	(SS)	☒
8	Vapor Sampling	(VS)	☐
9	Vane Shear Testing	(VST)	☐
10	SPT Energy Calibration	(SPTE)	☐

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 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)
TRCPT-01	4/05/10	20	12NR, 20	10, 19	-
TRCPT-02	4/05/10	20	13NR, 20	10, 19	-
TRCPT-03	4/02/10	20	12NR, 20	10, 19	-
TRCPT-04	4/02/10	20	13, 20NR	11, 19	-
TRCPT-05	4/02/10	20	11NR, 20	6, 17	-
TRCPT-06	4/01/10	20	11	7	-
TRCPT-07	4/01/10	20	9, 20	5, 6, 16	-
TRCPT-08	4/01/10	20	11, 20	10, 19	-
TRCPT-09	3/31/10	50	11, 17NR, 50	10, 22, 37, 45	-

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, 1990 pp. 151-158.

Mayne, P.W., "NHI (2002) Manual on Subsurface Investigations: Geotechnical Site Characterization", available through www.ce.gatech.edu/~geosys/Faculty/Mayne/papers/index.html, Section 5.3, pp. 107-112.

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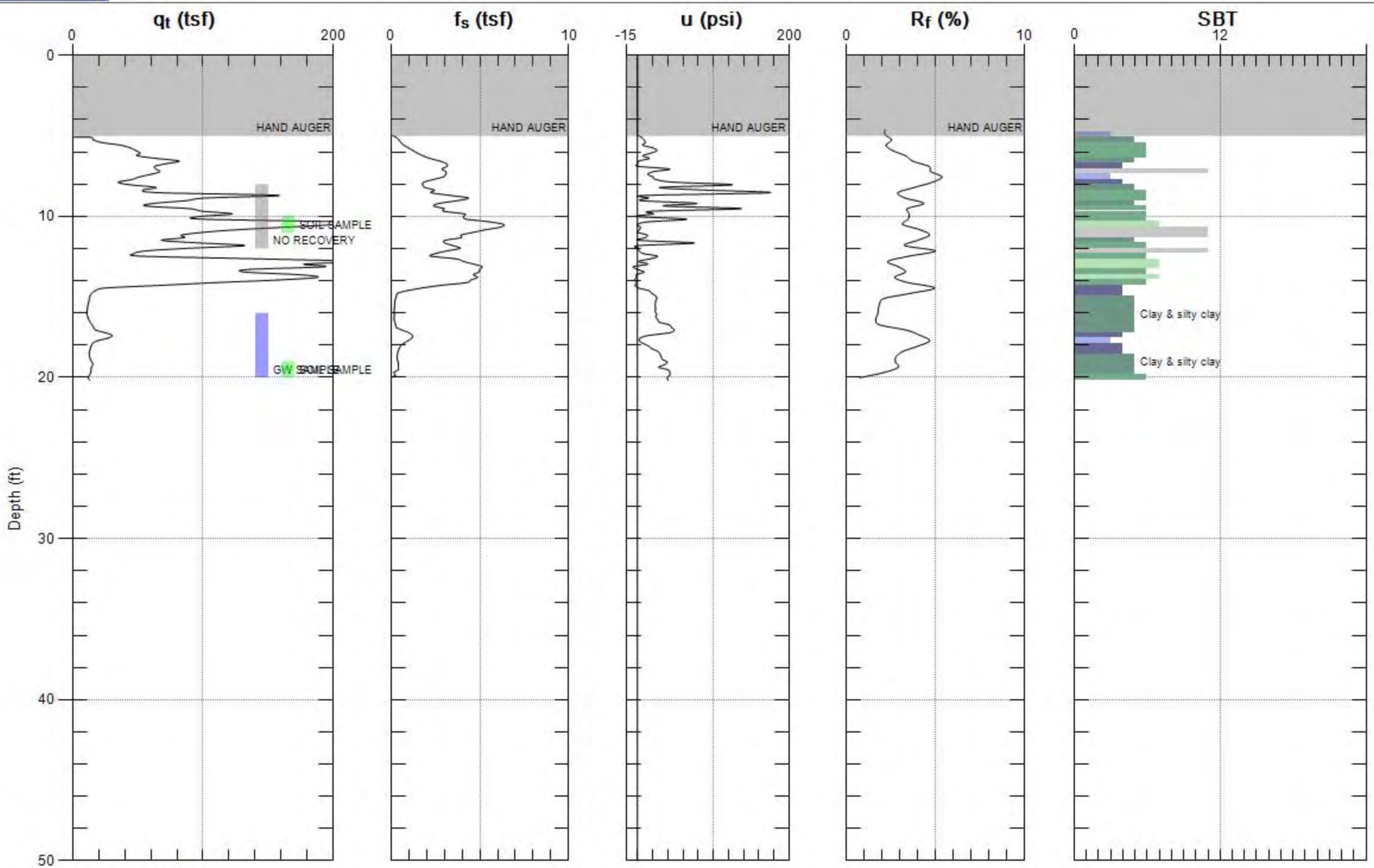
Copies of ASTM Standards are available through www.astm.org

TREADWELL & ROLLO

Site: EMERY STATION EAST
Sounding: TRCPT-01
Engineer: M.HALL
Date: 2010-04-05 11:06

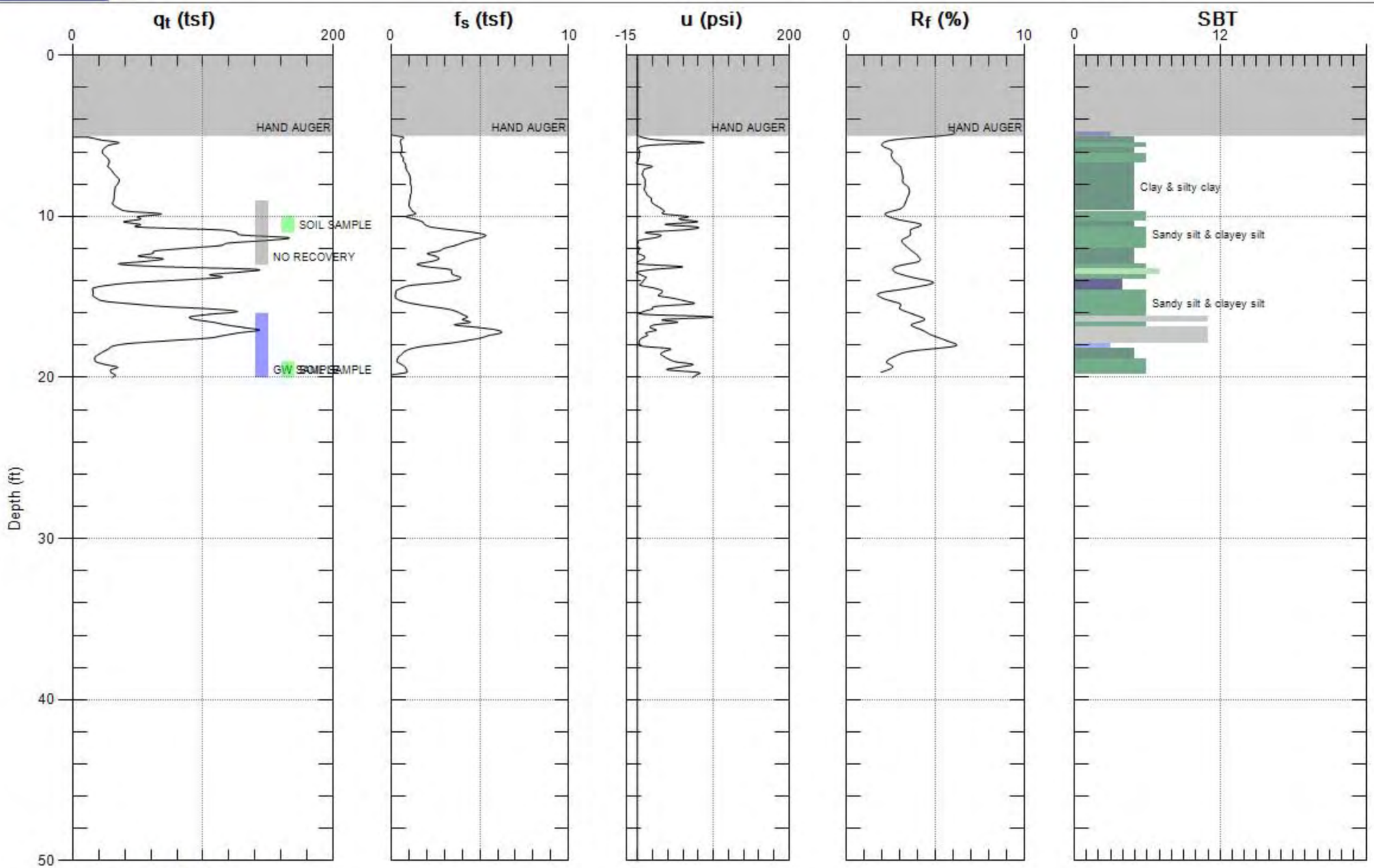


Max. Depth: 20.177 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

TREADWELL & ROLLO

Site: EMERY STATION EAST
Sounding: TRCPT-02
Engineer: M.HALL
Date: 2010-04-05 08:16

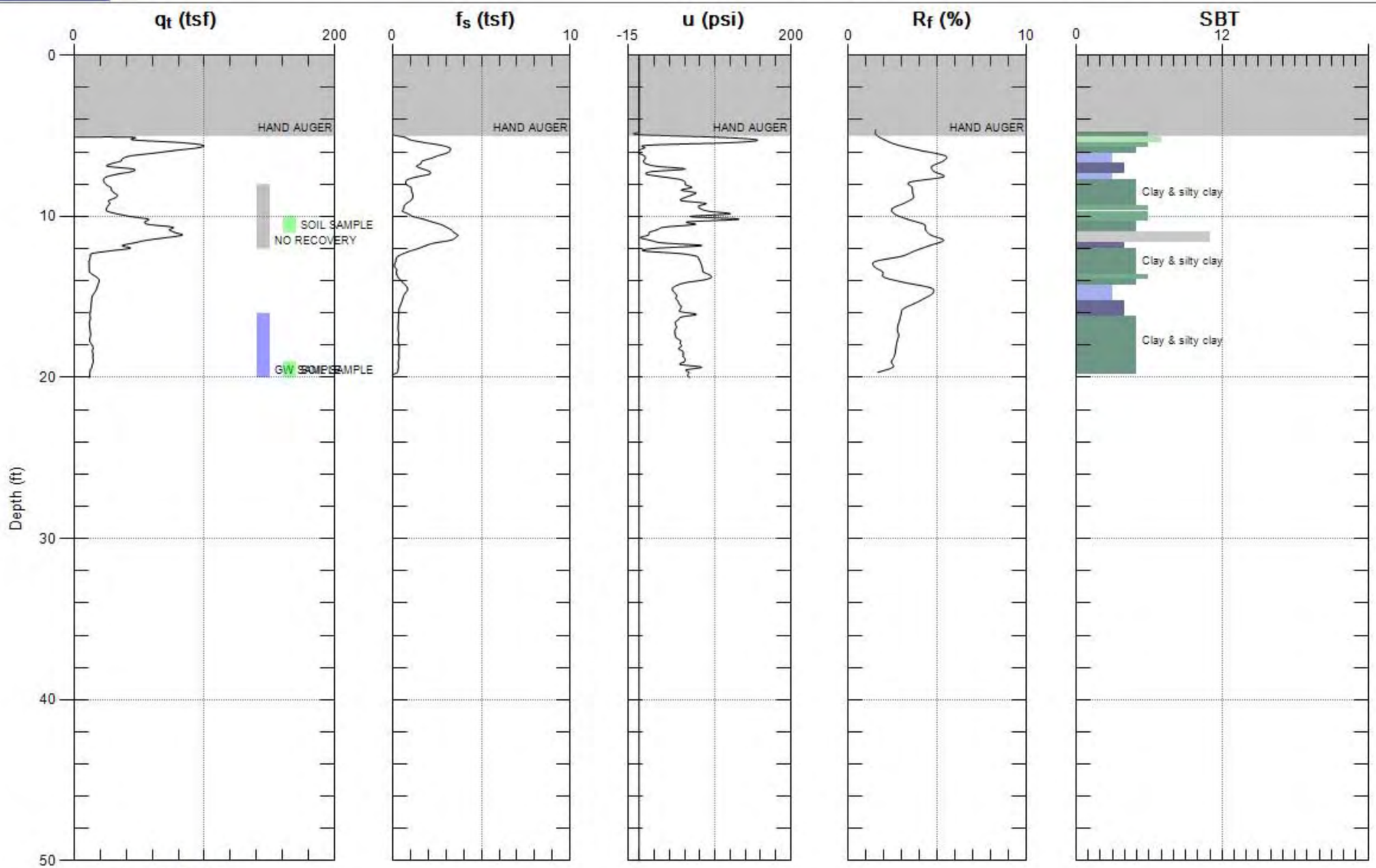


Max. Depth: 20.013 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

TREADWELL & ROLLO

Site: EMERY STATION EAST
Sounding: TRCPT-03
Engineer: M.HALL
Date: 2010-04-02 01:50

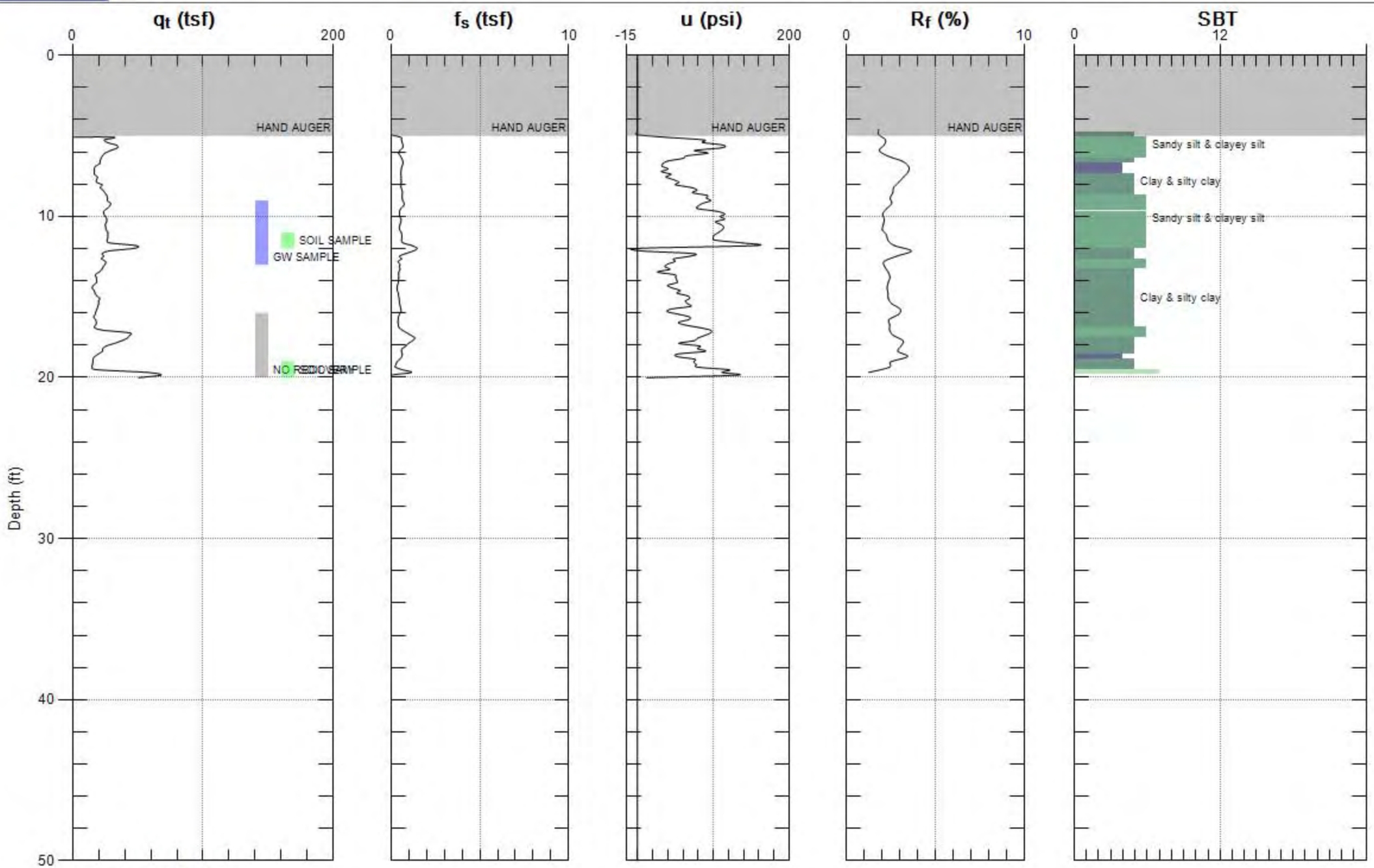


Max. Depth: 20.013 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

TREADWELL & ROLLO

Site: EMERY STATION EAST
Sounding: TRCPT-04
Engineer: M.HALL
Date: 2010-04-02 11:17

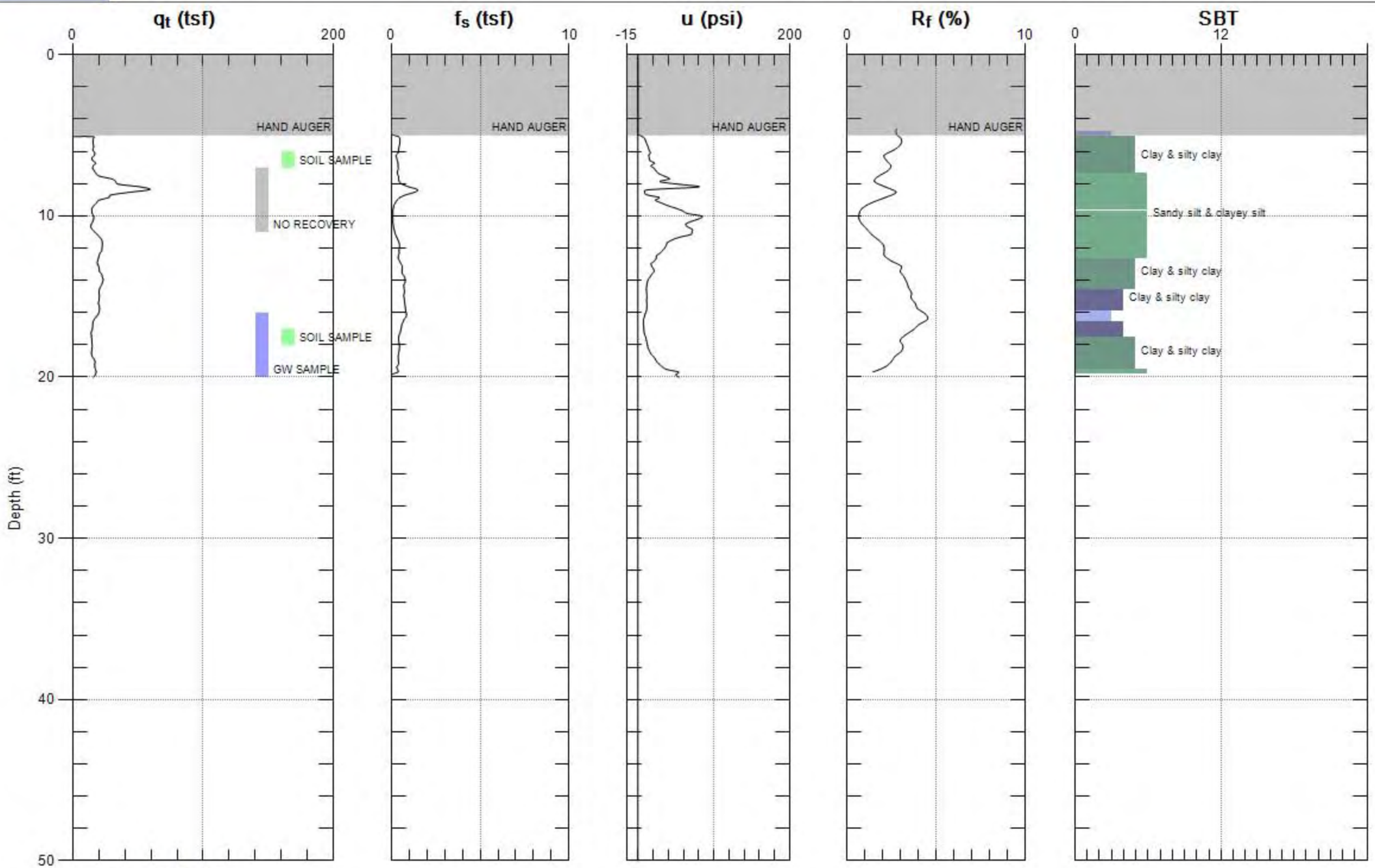


Max. Depth: 20.013 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

TREADWELL & ROLLO

Site: EMERY STATION EAST
Sounding: TRCPT-05
Engineer: M.HALL
Date: 2010-04-02 08:05

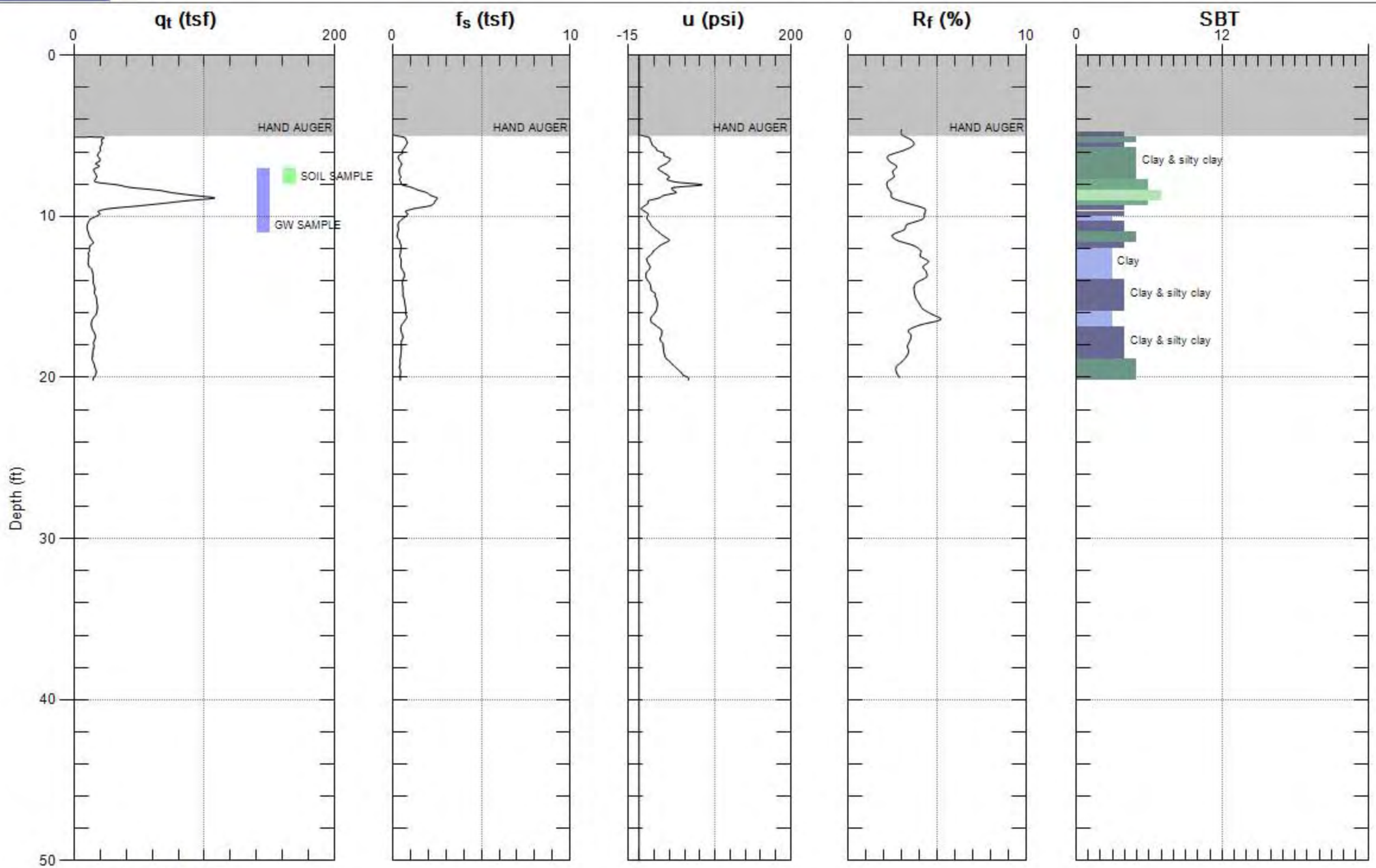


Max. Depth: 20.013 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

TREADWELL & ROLLO

Site: EMERY STATION EAST
Sounding: TRCPT-06
Engineer: M.HALL
Date: 2010-04-01 04:00

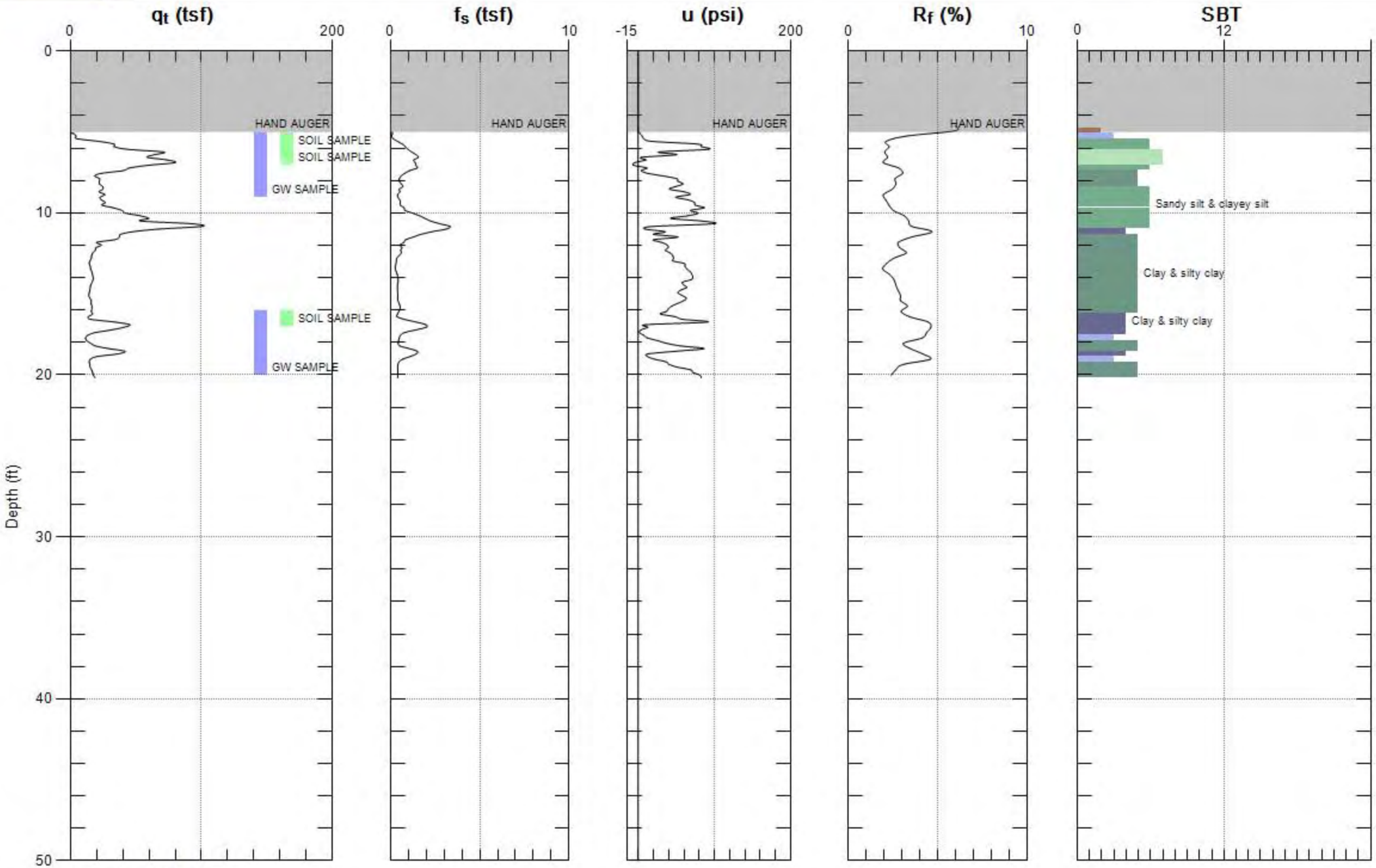


Max. Depth: 20.177 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

TREADWELL & ROLLO

Site: EMERY STATION EAST
Sounding: TRCPT-07
Engineer: M.HALL
Date: 2010-04-01 12:51

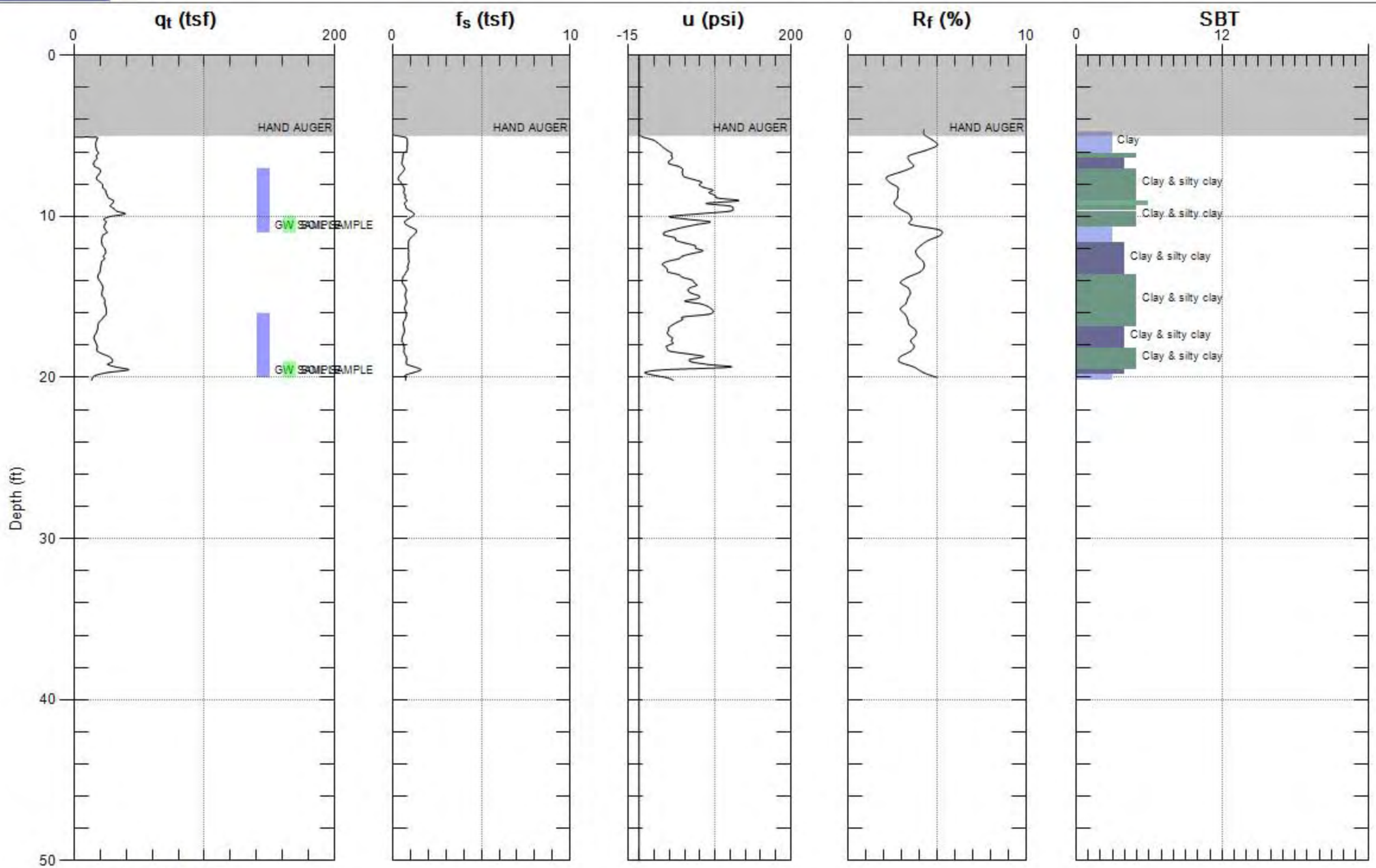


Max. Depth: 20.177 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

TREADWELL & ROLLO

Site: EMERY STATION EAST
Sounding: TRCPT-08
Engineer: M.HALL
Date: 2010-04-01 08:56

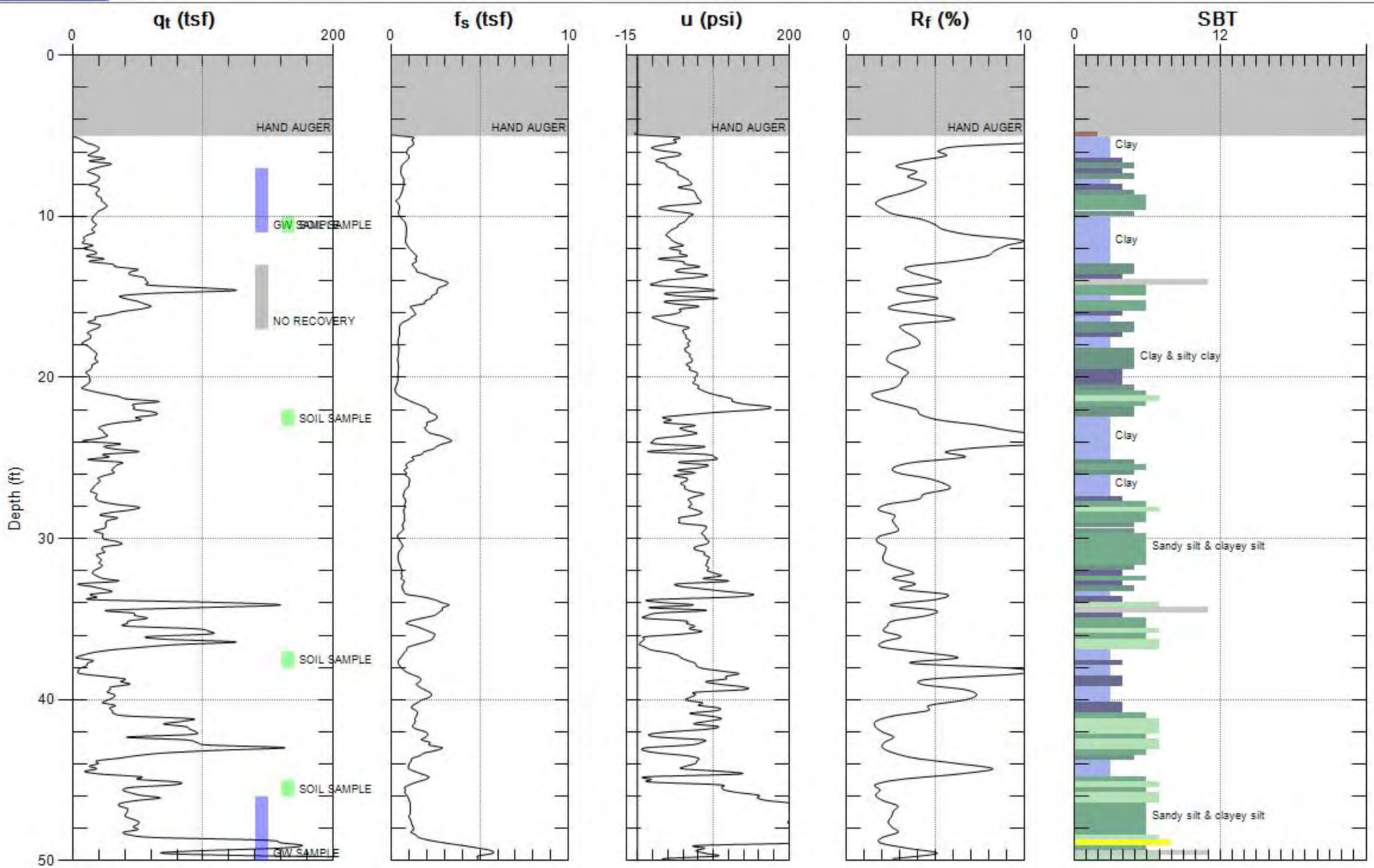


Max. Depth: 20.177 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

TREADWELL & ROLLO

Site: EMERY STATION EAST
Sounding: TRCPT-09
Engineer: M.HALL
Date: 2010-03-31 11:27



Max. Depth: 50.033 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

GREGG DRILLING & TESTING, INC.

CONE PENETRATION TEST DATA

Client:	TREADWELL & ROLLO
Site:	EMERY STATION EAST
Engineer:	M.HALL
Sounding:	TRCPT-01
Date:	2010-04-05
Time:	11:06 AM

Units:	Imperial	
Data averaging interval:	0.100	meters
Assumed depth of water:	10.003	feet
Net area ratio of cone:	0.80	
Unit weight of water:	62.4	lb/ft3
Relative density constant, CDR:	350	
Young's modulus for sands, a:	4	
Small strain shear modulus number, SG (sands):	180	
Small strain shear modulus number, CG (clays):	50	
Nkt for clays:	15	
OCR number, kocr:	0.3	

Interpretation based on Lunne, Robertson and Powell, 1997

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
0.100	0.328	0.000	0.000	0.000							0.000				
0.200	0.656	0.000	0.000	0.000							0.000				
0.300	0.984	0.000	0.000	0.000							0.000				
0.400	1.312	0.000	0.000	0.000							0.000				
0.500	1.640	0.000	0.000	0.000							0.000				
0.600	1.969	0.000	0.000	0.000							0.000				
0.700	2.297	0.000	0.000	0.000							0.000				
0.800	2.625	0.000	0.000	0.000							0.000				
0.900	2.953	0.000	0.000	0.000							0.000				
1.000	3.281	0.000	0.000	0.000							0.000				
1.100	3.609	0.000	0.000	0.000							0.000				
1.200	3.937	0.000	0.000	0.000							0.000				
1.300	4.265	0.000	0.000	0.000							0.000				
1.400	4.593	0.000	0.000	0.000							0.000				
1.500	4.921	4.605	0.100	1.675		4.63	2.17	3	111	0.274	0.000	0.274	15.89	2.30	0.03
1.600	5.249	17.383	0.443	7.992		17.50	2.53	5	115	0.293	0.000	0.293	58.74	2.58	0.03
1.700	5.577	34.279	0.766	12.411		34.46	2.22	6	115	0.312	0.000	0.312	109.54	2.24	0.03
1.800	5.906	47.834	1.244	21.085		48.14	2.58	6	115	0.331	0.000	0.331	144.64	2.60	0.03
1.900	6.234	55.014	1.829	13.428		55.21	3.31	6	115	0.349	0.000	0.349	157.05	3.33	0.02
2.000	6.562	72.443	2.689	5.957		72.53	3.71	5	115	0.368	0.000	0.368	196.03	3.73	0.01
2.100	6.890	66.012	3.060	14.657		66.22	4.62	4	115	0.387	0.000	0.387	170.16	4.65	0.02
2.200	7.218	63.363	3.024	25.714		63.73	4.74	11	131	0.408	0.000	0.408	155.09	4.78	0.03
2.300	7.546	52.112	2.809	19.398		52.39	5.36	3	111	0.427	0.000	0.427	121.81	5.40	0.03
2.400	7.874	40.654	2.010	65.825		41.60	4.83	4	115	0.445	0.000	0.445	92.41	4.88	0.12
2.500	8.202	52.795	2.050	81.735		53.97	3.80	5	115	0.464	0.000	0.464	115.27	3.83	0.11
2.600	8.530	91.689	2.688	92.036		93.01	2.89	6	115	0.483	0.000	0.483	191.59	2.90	0.07
2.700	8.858	115.428	3.808	10.549		115.58	3.29	6	115	0.502	0.000	0.502	229.34	3.31	0.01
2.800	9.186	67.781	2.966	39.652		68.35	4.34	5	115	0.521	0.000	0.521	130.30	4.37	0.04
2.900	9.514	80.728	2.793	63.380		81.64	3.42	6	115	0.539	0.000	0.539	150.36	3.44	0.06
3.000	9.843	106.039	3.734	12.808		106.22	3.52	6	115	0.558	0.000	0.558	189.31	3.53	0.01
3.100	10.171	133.373	4.631	25.851		133.74	3.46	6	115	0.577	0.005	0.572	232.93	3.48	0.01

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth (m)	Depth (ft)	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT (ft/sec)	SPT N60 (blows/ft)	SPT (N1)60 (blows/ft)	Relative Density, Dr (%)	Friction Angle, φ' (degrees)	Young's modulus, Es (tsf)	Small strain shear modulus, Go (tsf)	Undrained shear strength, su (tsf)	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
0.100	0.328													
0.200	0.656													
0.300	0.984													
0.400	1.312													
0.500	1.640													
0.600	1.969													
0.700	2.297													
0.800	2.625													
0.900	2.953													
1.000	3.281													
1.100	3.609													
1.200	3.937													
1.300	4.265													
1.400	4.593													
1.500	4.921	4	2.77	12.76	3.00E-8	1.3	2.5				231	0.29	1.06	4.8
1.600	5.249	5	2.36	40.73	3.00E-6	4.0	7.5	34	38	70	316			
1.700	5.577	5	2.12	71.01	3.00E-6	7.1	13.0	45	41	138	405			
1.800	5.906	5	2.10	94.76	3.00E-6	9.8	17.5	52	42	193	461			
1.900	6.234	8	2.16	107.23	3.00E-6	11.5	20.1	55	43	221				
2.000	6.562	8	2.14	135.63	3.00E-6	15.1	25.6	62	44	290				
2.100	6.890	9	2.26	123.98	1.00E-8	14.4	23.8					4.39	11.34	51.0
2.200	7.218	9	2.29	115.99	1.00E-8	14.0	22.6					4.22	10.34	46.5
2.300	7.546	9	2.39	94.98	1.00E-8	12.1	19.0					3.46	8.12	36.5
2.400	7.874	9	2.43	73.61	1.00E-8	9.6	14.8					2.74	6.16	27.7
2.500	8.202	8	2.29	89.62	3.00E-6	11.7	17.6	51	41	216				
2.600	8.530	8	2.06	142.88	3.00E-6	18.5	27.3	64	44	372				
2.700	8.858	8	2.06	173.63	3.00E-6	23.3	33.8	70	45	462				
2.800	9.186	9	2.30	105.22	1.00E-8	15.1	21.5					4.52	8.69	39.1
2.900	9.514	8	2.18	119.77	3.00E-6	17.1	23.9	58	43	327				
3.000	9.843	8	2.13	151.14	3.00E-6	22.0	30.3	66	44	425				
3.100	10.171	8	2.08	185.64	3.00E-6	27.0	36.8	73	45	535				

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
3.200	10.499	190.249	6.021	5.957		190.33	3.16	7	118	0.596	0.015	0.581	326.68	3.17	0.00
3.300	10.827	130.087	5.376	2.321		130.12	4.13	11	131	0.618	0.026	0.592	218.77	4.15	0.00
3.400	11.155	89.555	4.178	7.856		89.67	4.66	11	131	0.639	0.036	0.603	147.61	4.69	0.01
3.500	11.483	83.470	3.344	29.128		83.89	3.99	5	115	0.658	0.046	0.612	136.07	4.02	0.02
3.600	11.811	105.786	3.475	25.765		106.16	3.27	6	115	0.677	0.056	0.620	170.06	3.29	0.02
3.700	12.139	64.177	3.197	3.724		64.23	4.98	11	131	0.698	0.067	0.631	100.62	5.03	0.00
3.800	12.467	80.138	2.812	16.990		80.38	3.50	6	115	0.717	0.077	0.640	124.48	3.53	0.01
3.900	12.795	178.708	4.131	10.586		178.86	2.31	7	118	0.736	0.087	0.649	274.42	2.32	0.00
4.000	13.123	168.785	4.924	2.656		168.82	2.92	7	118	0.756	0.097	0.658	255.36	2.93	0.00
4.100	13.451	147.077	4.865	2.370		147.11	3.31	6	115	0.774	0.108	0.667	219.49	3.32	0.00
4.200	13.780	173.091	4.671	-2.085		173.06	2.70	7	118	0.794	0.118	0.676	254.91	2.71	0.00
4.300	14.108	112.208	3.868	-2.594		112.17	3.45	6	115	0.812	0.128	0.684	162.72	3.47	0.00
4.400	14.436	37.761	1.872	4.021		37.82	4.95	4	115	0.831	0.138	0.693	53.38	5.06	0.00
4.500	14.764	15.080	0.561	19.038		15.35	3.65	4	115	0.850	0.149	0.701	20.68	3.87	0.08
4.600	15.092	12.628	0.276	24.424		12.98	2.12	5	115	0.869	0.159	0.710	17.06	2.28	0.13
4.700	15.420	11.710	0.224	23.605		12.05	1.86	5	115	0.888	0.169	0.719	15.53	2.01	0.14
4.800	15.748	11.008	0.203	23.568		11.35	1.79	5	115	0.906	0.179	0.727	14.36	1.95	0.15
4.900	16.076	10.943	0.198	24.250		11.29	1.75	5	115	0.925	0.189	0.736	14.09	1.91	0.15
5.000	16.404	12.197	0.206	26.546		12.58	1.64	5	115	0.944	0.200	0.744	15.63	1.77	0.15
5.100	16.732	14.406	0.278	38.510		14.96	1.86	5	115	0.963	0.210	0.753	18.59	1.98	0.18
5.200	17.060	19.171	0.669	45.149		19.82	3.37	5	115	0.982	0.220	0.761	24.74	3.55	0.16
5.300	17.388	27.352	1.143	20.031		27.64	4.14	4	115	1.000	0.230	0.770	34.60	4.29	0.05
5.400	17.717	20.538	0.961	4.468		20.60	4.67	3	111	1.019	0.241	0.778	25.17	4.91	0.00
5.500	18.045	14.238	0.582	13.491		14.43	4.03	4	115	1.037	0.251	0.787	17.03	4.35	0.05
5.600	18.373	12.731	0.417	25.032		13.09	3.18	4	115	1.056	0.261	0.795	15.14	3.46	0.13
5.700	18.701	12.628	0.365	31.175		13.08	2.79	5	115	1.075	0.271	0.804	14.93	3.04	0.16
5.800	19.029	14.107	0.401	36.003		14.63	2.74	5	115	1.094	0.282	0.812	16.66	2.96	0.17
5.900	19.357	14.238	0.429	34.923		14.74	2.91	5	115	1.113	0.292	0.821	16.60	3.15	0.16
6.000	19.685	13.143	0.291	41.836		13.75	2.12	5	115	1.131	0.302	0.829	15.21	2.31	0.21
6.100	20.013	12.169	0.095	40.719		12.76	0.74	6	115	1.150	0.312	0.838	13.85	0.82	0.23

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth	Depth	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT	SPT N60	SPT (N1)60	Relative Density, Dr	Friction Angle, φ'	Young's modulus, Es	Small strain shear modulus, Go	Undrained shear strength, su	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
(m)	(ft)				(ft/sec)	(blows/ft)	(blows/ft)	(%)	(degrees)	(tsf)	(tsf)	(tsf)		
3.200	10.499	8	1.97	256.80	3.00E-6	37.0	49.9	86	46	761				
3.300	10.827	8	2.16	179.08	3.00E-6	27.2	36.4	72	44	520				
3.400	11.155	9	2.30	124.47	1.00E-8	19.9	26.3					5.94	9.84	44.3
3.500	11.483	8	2.26	114.58	3.00E-6	18.3	24.0	57	42	336				
3.600	11.811	8	2.13	140.94	3.00E-6	21.9	28.7	63	43	425				
3.700	12.139	9	2.42	87.68	1.00E-8	15.0	19.5					4.24	6.71	30.2
3.800	12.467	8	2.24	105.97	3.00E-6	17.4	22.3	55	42	322				
3.900	12.795	8	1.89	223.01	3.00E-6	33.7	43.1	80	46	715				
4.000	13.123	8	1.99	211.81	3.00E-6	33.1	42.0	78	45	675				
4.100	13.451	8	2.08	185.06	3.00E-6	29.8	37.5	73	44	588				
4.200	13.780	8	1.97	212.84	3.00E-6	33.6	42.1	78	45	692				
4.300	14.108	8	2.16	140.15	3.00E-6	23.6	29.3	63	43	449				
4.400	14.436	4	2.60	48.77	3.00E-8	9.6	11.9				1891	2.47	3.56	16.0
4.500	14.764	3	2.81	19.45	1.00E-9	4.3	5.3				768	0.97	1.38	6.2
4.600	15.092	4	2.74	15.93	3.00E-8	3.5	4.2				649	0.81	1.14	5.1
4.700	15.420	4	2.74	14.55	3.00E-8	3.2	3.9				603	0.74	1.04	4.7
4.800	15.748	4	2.76	13.50	3.00E-8	3.1	3.7				567	0.70	0.96	4.3
4.900	16.076	4	2.76	13.28	3.00E-8	3.0	3.7				565	0.69	0.94	4.2
5.000	16.404	4	2.71	14.68	3.00E-8	3.3	3.9				629	0.78	1.04	4.7
5.100	16.732	4	2.67	17.43	3.00E-8	3.8	4.5				748	0.93	1.24	5.6
5.200	17.060	4	2.73	23.37	3.00E-8	5.2	6.2				991	1.26	1.65	7.4
5.300	17.388	4	2.68	32.58	3.00E-8	7.3	8.5				1382	1.78	2.31	10.4
5.400	17.717	3	2.82	24.06	1.00E-9	5.9	6.9				1030	1.31	1.68	7.6
5.500	18.045	3	2.91	16.44	1.00E-9	4.3	5.0				722	0.89	1.14	5.1
5.600	18.373	3	2.89	14.60	1.00E-9	3.8	4.4				655	0.80	1.01	4.5
5.700	18.701	4	2.86	14.39	3.00E-8	3.7	4.3				654	0.80	1.00	4.5
5.800	19.029	4	2.81	16.02	3.00E-8	4.0	4.6				731	0.90	1.11	5.0
5.900	19.357	4	2.83	16.01	3.00E-8	4.1	4.7				737	0.91	1.11	5.0
6.000	19.685	4	2.78	14.64	3.00E-8	3.7	4.2				687	0.84	1.01	4.6
6.100	20.013	5	2.59	13.17	3.00E-6	3.1	3.5	19	28	51	404			

GREGG DRILLING & TESTING, INC.

CONE PENETRATION TEST DATA

Client:	TREADWELL & ROLLO
Site:	EMERY STATION EAST
Engineer:	M.HALL
Sounding:	TRCPT-02
Date:	2010-04-05
Time:	8:16 AM

Units:	Imperial	
Data averaging interval:	0.100	meters
Assumed depth of water:	10.003	feet
Net area ratio of cone:	0.80	
Unit weight of water:	62.4	lb/ft3
Relative density constant, CDR:	350	
Young's modulus for sands, a:	4	
Small strain shear modulus number, SG (sands):	180	
Small strain shear modulus number, CG (clays):	50	
Nkt for clays:	15	
OCR number, kocr:	0.3	

Interpretation based on Lunne, Robertson and Powell, 1997

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
0.100	0.328	0.000	0.000	0.000							0.000				
0.200	0.656	0.000	0.000	0.000							0.000				
0.300	0.984	0.000	0.000	0.000							0.000				
0.400	1.312	0.000	0.000	0.000							0.000				
0.500	1.640	0.000	0.000	0.000							0.000				
0.600	1.969	0.000	0.000	0.000							0.000				
0.700	2.297	0.000	0.000	0.000							0.000				
0.800	2.625	0.000	0.000	0.000							0.000				
0.900	2.953	0.000	0.000	0.000							0.000				
1.000	3.281	0.000	0.000	0.000							0.000				
1.100	3.609	0.000	0.000	0.000							0.000				
1.200	3.937	0.000	0.000	0.000							0.000				
1.300	4.265	0.000	0.000	0.000							0.000				
1.400	4.593	0.000	0.000	0.000							0.000				
1.500	4.921	3.978	0.235	2.023		4.01	5.86	3	111	0.274	0.000	0.274	13.62	6.29	0.04
1.600	5.249	22.297	0.602	39.937		22.87	2.63	5	115	0.293	0.000	0.293	77.08	2.67	0.13
1.700	5.577	28.794	0.583	35.419		29.30	1.99	6	115	0.312	0.000	0.312	93.01	2.01	0.09
1.800	5.906	23.552	0.599	2.109		23.58	2.54	5	115	0.331	0.000	0.331	70.35	2.57	0.01
1.900	6.234	24.984	0.629	2.072		25.01	2.51	6	115	0.349	0.000	0.349	70.61	2.55	0.01
2.000	6.562	27.633	0.743	0.608		27.64	2.69	6	115	0.368	0.000	0.368	74.09	2.73	0.00
2.100	6.890	27.774	0.843	9.568		27.91	3.02	5	115	0.387	0.000	0.387	71.14	3.06	0.03
2.200	7.218	30.450	0.949	7.756		30.56	3.10	5	115	0.406	0.000	0.406	74.33	3.15	0.02
2.300	7.546	33.895	1.079	8.178		34.01	3.17	5	115	0.424	0.000	0.424	79.13	3.21	0.02
2.400	7.874	34.963	1.111	10.015		35.11	3.16	5	115	0.443	0.000	0.443	78.20	3.20	0.02
2.500	8.202	32.941	1.150	9.519		33.08	3.48	5	115	0.462	0.000	0.462	70.58	3.53	0.02
2.600	8.530	32.033	1.136	11.182		32.19	3.53	5	115	0.481	0.000	0.481	65.95	3.58	0.03
2.700	8.858	31.593	1.081	16.419		31.83	3.40	5	115	0.500	0.000	0.500	62.70	3.45	0.04
2.800	9.186	31.200	1.037	21.321		31.51	3.29	5	115	0.518	0.000	0.518	59.77	3.35	0.05
2.900	9.514	36.339	1.123	30.753		36.78	3.05	5	115	0.537	0.000	0.537	67.46	3.10	0.06
3.000	9.843	52.822	1.158	45.584		53.48	2.17	6	115	0.556	0.000	0.556	95.17	2.19	0.06
3.100	10.171	46.233	1.331	66.942		47.20	2.82	6	115	0.575	0.005	0.570	81.85	2.85	0.10

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth	Depth	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT	SPT N60	SPT (N1)60	Relative Density, Dr	Friction Angle, φ'	Young's modulus, Es	Small strain shear modulus, Go	Undrained shear strength, su	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
(m)	(ft)				(ft/sec)	(blows/ft)	(blows/ft)	(%)	(degrees)	(tsf)	(tsf)	(tsf)		
0.100	0.328													
0.200	0.656													
0.300	0.984													
0.400	1.312													
0.500	1.640													
0.600	1.969													
0.700	2.297													
0.800	2.625													
0.900	2.953													
1.000	3.281													
1.100	3.609													
1.200	3.937													
1.300	4.265													
1.400	4.593													
1.500	4.921	3	3.09	12.46	1.00E-9	1.3	2.6				200	0.25	0.91	4.1
1.600	5.249	5	2.28	51.98	3.00E-6	4.9	9.4	39	39	91	346			
1.700	5.577	5	2.14	60.62	3.00E-6	6.0	11.0	42	40	117	383			
1.800	5.906	5	2.30	49.51	3.00E-6	5.2	9.4	38	39	94	364			
1.900	6.234	5	2.30	50.46	3.00E-6	5.5	9.7	38	39	100	378			
2.000	6.562	5	2.30	53.90	3.00E-6	6.2	10.4	39	39	111	397			
2.100	6.890	5	2.35	53.32	3.00E-6	6.3	10.4	39	39	112	405			
2.200	7.218	5	2.35	56.40	3.00E-6	6.9	11.2	40	39	122	425			
2.300	7.546	5	2.33	60.63	3.00E-6	7.7	12.1	42	39	136	447			
2.400	7.874	5	2.34	60.72	3.00E-6	7.9	12.2	42	39	140	458			
2.500	8.202	4	2.40	56.32	3.00E-8	7.7	11.6				1654	2.17	4.71	21.2
2.600	8.530	4	2.42	53.51	3.00E-8	7.5	11.2				1610	2.11	4.40	19.8
2.700	8.858	4	2.43	51.43	3.00E-8	7.4	10.8				1591	2.09	4.18	18.8
2.800	9.186	4	2.43	49.56	3.00E-8	7.4	10.5				1575	2.07	3.98	17.9
2.900	9.514	5	2.37	55.77	3.00E-6	8.3	11.7	40	38	147	496			
3.000	9.843	5	2.16	76.25	3.00E-6	11.1	15.3	47	40	214	568			
3.100	10.171	5	2.29	67.73	3.00E-6	10.2	13.9	44	39	189	549			

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
3.200	10.499	46.673	1.988	65.093		47.61	4.18	5	115	0.594	0.015	0.578	81.32	4.23	0.10
3.300	10.827	95.050	3.448	51.640		95.79	3.60	6	115	0.612	0.026	0.587	162.22	3.62	0.04
3.400	11.155	140.000	5.017	21.793		140.31	3.58	6	115	0.631	0.036	0.595	234.64	3.59	0.01
3.500	11.483	145.186	4.514	8.836		145.31	3.11	6	115	0.650	0.046	0.604	239.56	3.12	0.00
3.600	11.811	106.788	3.534	0.894		106.80	3.31	6	115	0.669	0.056	0.612	173.30	3.33	0.00
3.700	12.139	70.786	2.600	1.601		70.81	3.67	5	115	0.688	0.067	0.621	112.92	3.71	0.00
3.800	12.467	60.312	2.426	6.131		60.40	4.02	5	115	0.706	0.077	0.630	94.82	4.06	0.01
3.900	12.795	53.291	2.160	4.678		53.36	4.05	5	115	0.725	0.087	0.638	82.48	4.10	0.00
4.000	13.123	81.851	2.271	28.408		82.26	2.76	6	115	0.744	0.097	0.647	126.05	2.79	0.02
4.100	13.451	124.752	3.400	8.352		124.87	2.72	7	118	0.763	0.108	0.656	189.26	2.74	0.00
4.200	13.780	101.041	3.715	7.843		101.15	3.67	6	115	0.782	0.118	0.664	151.09	3.70	0.00
4.300	14.108	52.336	2.557	6.056		52.42	4.88	4	115	0.801	0.128	0.673	76.72	4.95	0.01
4.400	14.436	19.405	0.714	18.888		19.68	3.63	4	115	0.820	0.138	0.681	27.67	3.79	0.06
4.500	14.764	15.211	0.289	30.505		15.65	1.84	6	115	0.839	0.149	0.690	21.47	1.95	0.14
4.600	15.092	18.694	0.397	46.601		19.36	2.05	6	115	0.857	0.159	0.699	26.49	2.15	0.17
4.700	15.420	44.642	1.364	53.749		45.42	3.00	6	115	0.876	0.169	0.707	62.99	3.06	0.08
4.800	15.748	100.554	3.035	17.300		100.80	3.01	6	115	0.895	0.179	0.716	139.60	3.04	0.01
4.900	16.076	106.442	4.014	38.721		107.00	3.75	6	115	0.914	0.189	0.724	146.48	3.78	0.02
5.000	16.404	96.389	4.271	61.804		97.28	4.39	11	131	0.935	0.200	0.735	131.01	4.43	0.04
5.100	16.732	118.452	4.331	30.691		118.89	3.64	6	115	0.954	0.210	0.744	158.53	3.67	0.02
5.200	17.060	133.841	5.711	17.536		134.09	4.26	11	131	0.975	0.220	0.755	176.28	4.29	0.01
5.300	17.388	115.784	5.585	10.003		115.93	4.82	11	131	0.997	0.230	0.766	149.98	4.86	0.00
5.400	17.717	73.763	4.159	3.425		73.81	5.63	11	131	1.018	0.241	0.777	93.63	5.71	0.00
5.500	18.045	34.195	2.095	16.518		34.43	6.09	3	111	1.036	0.251	0.786	42.51	6.27	0.03
5.600	18.373	23.673	0.863	36.276		24.20	3.57	5	115	1.055	0.261	0.794	29.14	3.73	0.10
5.700	18.701	17.870	0.492	35.680		18.38	2.68	5	115	1.074	0.271	0.803	21.57	2.84	0.13
5.800	19.029	19.180	0.450	55.214		19.98	2.25	6	115	1.093	0.282	0.811	23.28	2.38	0.20
5.900	19.357	28.803	0.769	55.909		29.61	2.60	6	115	1.112	0.292	0.820	34.76	2.70	0.13
6.000	19.685	29.590	0.589	65.453		30.53	1.93	6	115	1.130	0.302	0.828	35.50	2.00	0.15

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth	Depth	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT	SPT N60	SPT (N1)60	Relative Density, Dr	Friction Angle, φ'	Young's modulus, Es	Small strain shear modulus, Go	Undrained shear strength, su	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
(m)	(ft)				(ft/sec)	(blows/ft)	(blows/ft)	(%)	(degrees)	(tsf)	(tsf)	(tsf)		
3.200	10.499	4	2.42	69.20	3.00E-8	10.9	14.8				2381	3.13	5.42	24.4
3.300	10.827	8	2.18	132.91	3.00E-6	20.1	27.0	62	43	383				
3.400	11.155	8	2.09	190.15	3.00E-6	28.5	38.0	74	45	561				
3.500	11.483	8	2.03	193.31	3.00E-6	28.9	38.3	74	45	581				
3.600	11.811	8	2.13	142.96	3.00E-6	22.1	29.1	64	43	427				
3.700	12.139	8	2.28	95.86	3.00E-6	15.6	20.4	52	41	283				
3.800	12.467	9	2.36	81.83	1.00E-8	13.8	17.9					3.98	6.32	28.4
3.900	12.795	4	2.40	71.92	3.00E-8	12.4	16.0				2668	3.51	5.50	24.7
4.000	13.123	5	2.16	106.35	3.00E-6	17.1	21.9	55	42	329	690			
4.100	13.451	8	2.04	157.85	3.00E-6	24.9	31.7	67	44	499				
4.200	13.780	8	2.21	129.55	3.00E-6	21.6	27.2	61	43	405				
4.300	14.108	9	2.49	68.63	1.00E-8	12.7	15.9					3.44	5.11	23.0
4.400	14.436	4	2.71	25.58	3.00E-8	5.3	6.5				984	1.26	1.84	8.3
4.500	14.764	4	2.62	19.65	3.00E-8	3.9	4.9				783	0.99	1.43	6.4
4.600	15.092	4	2.57	24.17	3.00E-8	4.7	5.8				968	1.23	1.77	7.9
4.700	15.420	5	2.39	56.37	3.00E-6	10.3	12.6	40	38	182	583			
4.800	15.748	6	2.16	121.99	3.00E-4	21.1	25.6	59	42	403	764			
4.900	16.076	8	2.22	129.47	3.00E-6	22.9	27.7	61	43	428				
5.000	16.404	9	2.31	117.44	1.00E-8	21.5	25.8					6.42	8.73	39.3
5.100	16.732	8	2.19	140.89	3.00E-6	25.1	30.0	63	43	476				
5.200	17.060	8	2.22	157.93	3.00E-6	28.8	34.0	67	43	536				
5.300	17.388	9	2.30	136.11	1.00E-8	25.8	30.3					7.66	10.00	45.0
5.400	17.717	9	2.48	86.74	1.00E-8	17.8	20.8					4.85	6.24	28.1
5.500	18.045	3	2.73	40.38	1.00E-9	9.4	10.9				1722	2.23	2.83	12.8
5.600	18.373	4	2.69	27.63	3.00E-8	6.3	7.3				1210	1.54	1.94	8.7
5.700	18.701	4	2.71	20.53	3.00E-8	4.8	5.6				919	1.15	1.44	6.5
5.800	19.029	4	2.64	22.07	3.00E-8	5.0	5.7				999	1.26	1.55	7.0
5.900	19.357	4	2.54	32.78	3.00E-8	7.1	8.1				1480	1.90	2.32	10.4
6.000	19.685	5	2.45	33.33	3.00E-6	7.0	8.0	31	35	122	538			

GREGG DRILLING & TESTING, INC.

CONE PENETRATION TEST DATA

Client:	TREADWELL & ROLLO
Site:	EMERY STATION EAST
Engineer:	M.HALL
Sounding:	TRCPT-03
Date:	2010-04-02
Time:	1:50 PM

Units:	Imperial	
Data averaging interval:	0.100	meters
Assumed depth of water:	10.003	feet
Net area ratio of cone:	0.80	
Unit weight of water:	62.4	lb/ft3
Relative density constant, CDR:	350	
Young's modulus for sands, a:	4	
Small strain shear modulus number, SG (sands):	180	
Small strain shear modulus number, CG (clays):	50	
Nkt for clays:	15	
OCR number, kocr:	0.3	

Interpretation based on Lunne, Robertson and Powell, 1997

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
0.100	0.328	0.000	0.000	0.000							0.000				
0.200	0.656	0.000	0.000	0.000							0.000				
0.300	0.984	0.000	0.000	0.000							0.000				
0.400	1.312	0.000	0.000	0.000							0.000				
0.500	1.640	0.000	0.000	0.000							0.000				
0.600	1.969	0.000	0.000	0.000							0.000				
0.700	2.297	0.000	0.000	0.000							0.000				
0.800	2.625	0.000	0.000	0.000							0.000				
0.900	2.953	0.000	0.000	0.000							0.000				
1.000	3.281	0.000	0.000	0.000							0.000				
1.100	3.609	0.000	0.000	0.000							0.000				
1.200	3.937	0.000	0.000	0.000							0.000				
1.300	4.265	0.000	0.000	0.000							0.000				
1.400	4.593	0.000	0.000	0.000							0.000				
1.500	4.921	14.425	0.233	34.948		14.93	1.56	6	115	0.282	0.000	0.282	51.95	1.59	0.17
1.600	5.249	55.397	1.167	128.064		57.24	2.04	7	118	0.301	0.000	0.301	189.00	2.05	0.16
1.700	5.577	91.053	2.573	48.029		91.74	2.80	6	115	0.320	0.000	0.320	285.64	2.81	0.04
1.800	5.906	77.854	3.173	2.346		77.89	4.07	5	115	0.339	0.000	0.339	228.85	4.09	0.00
1.900	6.234	47.675	2.594	4.915		47.75	5.43	3	111	0.357	0.000	0.357	132.69	5.47	0.01
2.000	6.562	33.952	1.817	7.558		34.06	5.33	3	111	0.375	0.000	0.375	89.73	5.39	0.02
2.100	6.890	32.837	1.561	30.753		33.28	4.69	4	115	0.394	0.000	0.394	83.42	4.75	0.07
2.200	7.218	40.401	1.966	28.991		40.82	4.82	4	115	0.413	0.000	0.413	97.83	4.87	0.05
2.300	7.546	26.416	1.436	31.833		26.87	5.34	3	111	0.431	0.000	0.431	61.31	5.43	0.09
2.400	7.874	22.775	0.815	58.751		23.62	3.45	5	115	0.450	0.000	0.450	51.48	3.52	0.18
2.500	8.202	26.425	0.981	61.978		27.32	3.59	5	115	0.469	0.000	0.469	57.26	3.65	0.17
2.600	8.530	30.011	1.118	66.098		30.96	3.61	5	115	0.488	0.000	0.488	62.49	3.67	0.16
2.700	8.858	29.627	1.112	61.035		30.51	3.65	5	115	0.506	0.000	0.506	59.23	3.71	0.15
2.800	9.186	25.704	0.835	74.141		26.77	3.12	5	115	0.525	0.000	0.525	49.97	3.18	0.20
2.900	9.514	24.347	0.632	83.486		25.55	2.47	6	115	0.544	0.000	0.544	45.96	2.53	0.24
3.000	9.843	32.800	0.883	92.843		34.14	2.59	6	115	0.563	0.000	0.563	59.65	2.63	0.20
3.100	10.171	50.427	1.712	87.829		51.69	3.31	6	115	0.582	0.005	0.576	88.67	3.35	0.12

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth (m)	Depth (ft)	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT (ft/sec)	SPT N60 (blows/ft)	SPT (N1)60 (blows/ft)	Relative Density, Dr (%)	Friction Angle, φ' (degrees)	Young's modulus, Es (tsf)	Small strain shear modulus, Go (tsf)	Undrained shear strength, su (tsf)	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
0.100	0.328													
0.200	0.656													
0.300	0.984													
0.400	1.312													
0.500	1.640													
0.600	1.969													
0.700	2.297													
0.800	2.625													
0.900	2.953													
1.000	3.281													
1.100	3.609													
1.200	3.937													
1.300	4.265													
1.400	4.593													
1.500	4.921	5	2.26	34.27	3.00E-6	3.2	6.1	31	37	60	296			
1.600	5.249	6	1.94	112.99	3.00E-4	10.7	20.0	57	44	229	474			
1.700	5.577	8	1.95	175.79	3.00E-6	17.6	32.0	71	46	367				
1.800	5.906	8	2.14	153.75	3.00E-6	16.2	28.6	66	45	312				
1.900	6.234	9	2.38	98.01	1.00E-8	11.0	18.9					3.16	8.85	39.8
2.000	6.562	9	2.47	69.22	1.00E-8	8.2	13.7					2.25	5.98	26.9
2.100	6.890	9	2.45	64.69	1.00E-8	7.8	12.8					2.19	5.56	25.0
2.200	7.218	9	2.41	76.04	1.00E-8	9.5	15.1					2.69	6.52	29.3
2.300	7.546	4	2.58	50.40	3.00E-8	6.7	10.5				1344	1.76	4.09	18.4
2.400	7.874	4	2.49	41.78	3.00E-8	5.5	8.5				1181	1.54	3.43	15.4
2.500	8.202	4	2.47	46.70	3.00E-8	6.4	9.5				1366	1.79	3.82	17.2
2.600	8.530	4	2.45	51.17	3.00E-8	7.1	10.5				1548	2.03	4.17	18.7
2.700	8.858	4	2.47	49.19	3.00E-8	7.1	10.3				1525	2.00	3.95	17.8
2.800	9.186	4	2.47	41.92	3.00E-8	6.2	8.8				1339	1.75	3.33	15.0
2.900	9.514	5	2.43	38.58	3.00E-6	5.7	8.0	33	36	102	441			
3.000	9.843	5	2.36	49.84	3.00E-6	7.5	10.3	38	37	137	491			
3.100	10.171	5	2.32	74.02	3.00E-6	11.3	15.3	46	40	207	569			

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
3.200	10.499	61.622	2.660	57.188		62.45	4.26	5	115	0.600	0.015	0.585	105.72	4.30	0.07
3.300	10.827	74.962	3.260	23.654		75.30	4.33	5	115	0.619	0.026	0.594	125.83	4.37	0.02
3.400	11.155	76.731	3.560	9.196		76.86	4.63	11	131	0.641	0.036	0.605	126.05	4.67	0.01
3.500	11.483	57.063	3.067	16.121		57.30	5.35	11	131	0.662	0.046	0.616	91.95	5.41	0.02
3.600	11.811	41.496	1.920	45.311		42.15	4.56	4	115	0.681	0.056	0.624	66.41	4.63	0.08
3.700	12.139	27.923	1.055	26.980		28.31	3.73	5	115	0.700	0.067	0.633	43.62	3.82	0.07
3.800	12.467	11.935	0.389	69.077		12.93	3.01	5	115	0.718	0.077	0.642	19.03	3.19	0.40
3.900	12.795	10.718	0.181	80.221		11.87	1.52	5	115	0.737	0.087	0.650	17.13	1.62	0.51
4.000	13.123	10.615	0.174	82.741		11.81	1.47	5	115	0.756	0.097	0.659	16.78	1.57	0.53
4.100	13.451	11.504	0.248	86.824		12.75	1.94	5	115	0.775	0.108	0.667	17.95	2.07	0.51
4.200	13.780	15.866	0.345	90.894		17.18	2.01	6	115	0.794	0.118	0.676	24.24	2.11	0.39
4.300	14.108	17.954	0.601	65.477		18.90	3.18	5	115	0.812	0.128	0.684	26.42	3.32	0.25
4.400	14.436	16.962	0.816	46.204		17.63	4.63	3	111	0.831	0.138	0.692	24.26	4.86	0.19
4.500	14.764	14.856	0.738	47.135		15.53	4.75	3	111	0.849	0.149	0.700	20.97	5.02	0.22
4.600	15.092	13.115	0.591	49.716		13.83	4.27	3	111	0.867	0.159	0.708	18.30	4.56	0.26
4.700	15.420	12.553	0.491	53.042		13.32	3.69	4	115	0.886	0.169	0.717	17.34	3.95	0.29
4.800	15.748	12.113	0.396	54.755		12.90	3.07	4	115	0.905	0.179	0.726	16.53	3.30	0.31
4.900	16.076	11.579	0.369	61.916		12.47	2.96	4	115	0.924	0.189	0.734	15.73	3.19	0.37
5.000	16.404	11.532	0.355	51.851		12.28	2.89	5	115	0.942	0.200	0.743	15.26	3.13	0.31
5.100	16.732	11.243	0.334	48.388		11.94	2.80	5	115	0.961	0.210	0.751	14.61	3.04	0.30
5.200	17.060	11.748	0.343	47.879		12.44	2.76	5	115	0.980	0.220	0.760	15.08	2.99	0.28
5.300	17.388	11.869	0.357	48.004		12.56	2.84	5	115	0.999	0.230	0.768	15.05	3.09	0.28
5.400	17.717	11.692	0.342	52.657		12.45	2.75	5	115	1.018	0.241	0.777	14.71	2.99	0.31
5.500	18.045	13.264	0.378	54.048		14.04	2.69	5	115	1.036	0.251	0.786	16.56	2.91	0.28
5.600	18.373	13.685	0.384	55.959		14.49	2.65	5	115	1.055	0.261	0.794	16.92	2.86	0.28
5.700	18.701	13.751	0.377	59.061		14.60	2.58	5	115	1.074	0.271	0.803	16.85	2.79	0.29
5.800	19.029	13.723	0.352	58.205		14.56	2.42	5	115	1.093	0.282	0.811	16.60	2.61	0.29
5.900	19.357	12.543	0.338	66.346		13.50	2.51	5	115	1.112	0.292	0.820	15.11	2.73	0.36
6.000	19.685	11.467	0.206	63.902		12.39	1.66	5	115	1.130	0.302	0.828	13.59	1.83	0.38

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth	Depth	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT	SPT N60	SPT (N1)60	Relative Density, Dr	Friction Angle, φ'	Young's modulus, Es	Small strain shear modulus, Go	Undrained shear strength, su	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
(m)	(ft)				(ft/sec)	(blows/ft)	(blows/ft)	(%)	(degrees)	(tsf)	(tsf)	(tsf)		
3.200	10.499	9	2.35	89.20	1.00E-8	14.0	18.8					4.12	7.05	31.7
3.300	10.827	9	2.31	105.86	1.00E-8	16.7	22.4					4.98	8.39	37.7
3.400	11.155	9	2.33	107.05	1.00E-8	17.3	22.9					5.08	8.40	37.8
3.500	11.483	9	2.47	80.24	1.00E-8	13.7	17.9					3.78	6.13	27.6
3.600	11.811	4	2.50	58.49	3.00E-8	10.1	13.2				2107	2.76	4.43	19.9
3.700	12.139	4	2.57	38.93	3.00E-8	7.0	9.1				1416	1.84	2.91	13.1
3.800	12.467	4	2.79	17.61	3.00E-8	3.4	4.3				646	0.81	1.27	5.7
3.900	12.795	4	2.65	15.57	3.00E-8	2.8	3.6				594	0.74	1.14	5.1
4.000	13.123	4	2.65	15.29	3.00E-8	2.8	3.5				590	0.74	1.12	5.0
4.100	13.451	4	2.70	16.50	3.00E-8	3.1	3.9				638	0.80	1.20	5.4
4.200	13.780	4	2.59	22.03	3.00E-8	4.0	5.1				859	1.09	1.62	7.3
4.300	14.108	4	2.69	24.37	3.00E-8	4.8	6.0				945	1.21	1.76	7.9
4.400	14.436	3	2.83	22.82	1.00E-9	4.9	6.0				881	1.12	1.62	7.3
4.500	14.764	3	2.88	19.89	1.00E-9	4.4	5.4				777	0.98	1.40	6.3
4.600	15.092	3	2.90	17.42	1.00E-9	3.9	4.8				692	0.86	1.22	5.5
4.700	15.420	3	2.88	16.49	1.00E-9	3.7	4.5				666	0.83	1.16	5.2
4.800	15.748	3	2.84	15.69	1.00E-9	3.5	4.3				645	0.80	1.10	5.0
4.900	16.076	3	2.85	14.97	1.00E-9	3.4	4.1				624	0.77	1.05	4.7
5.000	16.404	3	2.86	14.55	1.00E-9	3.4	4.0				614	0.76	1.02	4.6
5.100	16.732	3	2.87	13.97	1.00E-9	3.3	3.9				597	0.73	0.97	4.4
5.200	17.060	4	2.85	14.41	3.00E-8	3.4	4.1				622	0.76	1.01	4.5
5.300	17.388	3	2.86	14.42	1.00E-9	3.5	4.1				628	0.77	1.00	4.5
5.400	17.717	4	2.86	14.12	3.00E-8	3.4	4.0				622	0.76	0.98	4.4
5.500	18.045	4	2.81	15.84	3.00E-8	3.8	4.4				702	0.87	1.10	5.0
5.600	18.373	4	2.80	16.20	3.00E-8	3.9	4.5				725	0.90	1.13	5.1
5.700	18.701	4	2.79	16.15	3.00E-8	3.9	4.5				730	0.90	1.12	5.1
5.800	19.029	4	2.78	15.92	3.00E-8	3.9	4.4				728	0.90	1.11	5.0
5.900	19.357	4	2.83	14.57	3.00E-8	3.6	4.1				675	0.83	1.01	4.5
6.000	19.685	4	2.77	13.06	3.00E-8	3.2	3.6				619	0.75	0.91	4.1

GREGG DRILLING & TESTING, INC.

CONE PENETRATION TEST DATA

Client:	TREADWELL & ROLLO
Site:	EMERY STATION EAST
Engineer:	M.HALL
Sounding:	TRCPT-04
Date:	2010-04-02
Time:	11:17 AM

Units:	Imperial	
Data averaging interval:	0.100	meters
Assumed depth of water:	10.003	feet
Net area ratio of cone:	0.80	
Unit weight of water:	62.4	lb/ft3
Relative density constant, CDR:	350	
Young's modulus for sands, a:	4	
Small strain shear modulus number, SG (sands):	180	
Small strain shear modulus number, CG (clays):	50	
Nkt for clays:	15	
OCR number, kocr:	0.3	

Interpretation based on Lunne, Robertson and Powell, 1997

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth (m)	Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf (%)	SBT	Unit Weight, γ (pcf)	Total Overburden Stress, σv (tsf)	Insitu pore pressure, uo (tsf)	Effective overburden stress, σ'v (tsf)	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
0.100	0.328	0.000	0.000	0.000							0.000				
0.200	0.656	0.000	0.000	0.000							0.000				
0.300	0.984	0.000	0.000	0.000							0.000				
0.400	1.312	0.000	0.000	0.000							0.000				
0.500	1.640	0.000	0.000	0.000							0.000				
0.600	1.969	0.000	0.000	0.000							0.000				
0.700	2.297	0.000	0.000	0.000							0.000				
0.800	2.625	0.000	0.000	0.000							0.000				
0.900	2.953	0.000	0.000	0.000							0.000				
1.000	3.281	0.000	0.000	0.000							0.000				
1.100	3.609	0.000	0.000	0.000							0.000				
1.200	3.937	0.000	0.000	0.000							0.000				
1.300	4.265	0.000	0.000	0.000							0.000				
1.400	4.593	0.000	0.000	0.000							0.000				
1.500	4.921	10.391	0.191	12.336		10.57	1.81	5	115	0.282	0.000	0.282	36.48	1.86	0.09
1.600	5.249	26.660	0.605	70.008		27.67	2.19	6	115	0.301	0.000	0.301	91.00	2.21	0.18
1.700	5.577	30.123	0.666	103.417		31.61	2.11	6	115	0.320	0.000	0.320	97.93	2.13	0.24
1.800	5.906	28.176	0.542	92.905		29.51	1.84	6	115	0.338	0.000	0.338	86.23	1.86	0.23
1.900	6.234	22.167	0.529	72.651		23.21	2.28	6	115	0.357	0.000	0.357	64.00	2.31	0.23
2.000	6.562	20.594	0.660	44.430		21.23	3.11	5	115	0.376	0.000	0.376	55.48	3.16	0.15
2.100	6.890	17.785	0.636	35.432		18.30	3.48	4	115	0.395	0.000	0.395	45.35	3.55	0.14
2.200	7.218	16.147	0.581	38.659		16.70	3.48	4	115	0.414	0.000	0.414	39.39	3.56	0.17
2.300	7.546	17.486	0.580	42.829		18.10	3.21	5	115	0.432	0.000	0.432	40.87	3.28	0.17
2.400	7.874	19.162	0.584	50.622		19.89	2.94	5	115	0.451	0.000	0.451	43.09	3.00	0.19
2.500	8.202	21.502	0.595	66.433		22.46	2.65	5	115	0.470	0.000	0.470	46.79	2.70	0.22
2.600	8.530	23.627	0.645	80.966		24.79	2.60	5	115	0.489	0.000	0.489	49.73	2.65	0.24
2.700	8.858	25.284	0.653	93.004		26.62	2.45	6	115	0.508	0.000	0.508	51.46	2.50	0.26
2.800	9.186	26.912	0.715	87.420		28.17	2.54	6	115	0.526	0.000	0.526	52.53	2.59	0.23
2.900	9.514	24.975	0.593	87.730		26.24	2.26	6	115	0.545	0.000	0.545	47.13	2.31	0.25
3.000	9.843	22.822	0.496	109.262		24.40	2.03	6	115	0.564	0.000	0.564	42.26	2.08	0.33
3.100	10.171	24.301	0.549	108.741		25.87	2.12	6	115	0.583	0.005	0.577	43.78	2.17	0.31

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth	Depth	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT	SPT N60	SPT (N1)60	Relative Density, Dr	Friction Angle, φ'	Young's modulus, Es	Small strain shear modulus, Go	Undrained shear strength, su	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
(m)	(ft)				(ft/sec)	(blows/ft)	(blows/ft)	(%)	(degrees)	(tsf)	(tsf)	(tsf)		
0.100	0.328													
0.200	0.656													
0.300	0.984													
0.400	1.312													
0.500	1.640													
0.600	1.969													
0.700	2.297													
0.800	2.625													
0.900	2.953													
1.000	3.281													
1.100	3.609													
1.200	3.937													
1.300	4.265													
1.400	4.593													
1.500	4.921	5	2.42	25.67	3.00E-6	2.4	4.7	27	35	42	264			
1.600	5.249	5	2.18	59.37	3.00E-6	5.6	10.5	41	40	111	372			
1.700	5.577	5	2.14	64.43	3.00E-6	6.3	11.4	43	40	126	397			
1.800	5.906	5	2.14	57.81	3.00E-6	5.9	10.4	41	40	118	395			
1.900	6.234	5	2.30	46.06	3.00E-6	4.9	8.5	36	38	93	371			
2.000	6.562	4	2.44	42.35	3.00E-8	4.9	8.2				1062	1.39	3.70	16.6
2.100	6.890	4	2.53	36.09	3.00E-8	4.4	7.2				915	1.19	3.02	13.6
2.200	7.218	4	2.58	32.09	3.00E-8	4.1	6.5				835	1.09	2.63	11.8
2.300	7.546	4	2.54	33.30	3.00E-8	4.3	6.8				905	1.18	2.72	12.3
2.400	7.874	4	2.50	35.06	3.00E-8	4.7	7.1				995	1.30	2.87	12.9
2.500	8.202	5	2.44	37.92	3.00E-6	5.1	7.7	33	36	90	402			
2.600	8.530	5	2.42	40.48	3.00E-6	5.5	8.1	34	36	99	421			
2.700	8.858	5	2.39	42.04	3.00E-6	5.9	8.4	35	37	106	437			
2.800	9.186	5	2.39	43.38	3.00E-6	6.2	8.8	35	37	113	451			
2.900	9.514	5	2.39	39.31	3.00E-6	5.8	8.1	34	36	105	445			
3.000	9.843	5	2.40	35.62	3.00E-6	5.3	7.3	32	35	98	439			
3.100	10.171	5	2.40	37.15	3.00E-6	5.7	7.7	33	36	103	452			

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
3.200	10.499	24.001	0.530	108.741		25.57	2.07	6	115	0.602	0.015	0.586	42.60	2.12	0.31
3.300	10.827	24.460	0.524	110.838		26.06	2.01	6	115	0.620	0.026	0.595	42.78	2.06	0.31
3.400	11.155	25.602	0.611	102.685		27.08	2.25	6	115	0.639	0.036	0.603	43.84	2.31	0.28
3.500	11.483	25.808	0.639	114.164		27.45	2.33	6	115	0.658	0.046	0.612	43.80	2.39	0.31
3.600	11.811	40.317	1.122	99.706		41.75	2.69	6	115	0.677	0.056	0.620	66.22	2.73	0.17
3.700	12.139	32.604	1.201	27.713		33.00	3.64	5	115	0.695	0.067	0.629	51.38	3.72	0.06
3.800	12.467	22.054	0.647	63.492		22.97	2.82	5	115	0.714	0.077	0.637	34.91	2.91	0.20
3.900	12.795	23.542	0.512	45.770		24.20	2.11	6	115	0.733	0.087	0.646	36.33	2.18	0.14
4.000	13.123	23.149	0.510	39.478		23.72	2.15	6	115	0.752	0.097	0.655	35.09	2.22	0.12
4.100	13.451	19.583	0.472	39.180		20.15	2.34	5	115	0.771	0.108	0.663	29.22	2.43	0.14
4.200	13.780	17.336	0.441	50.213		18.06	2.44	5	115	0.789	0.118	0.672	25.71	2.56	0.20
4.300	14.108	16.925	0.413	47.818		17.61	2.34	5	115	0.808	0.128	0.680	24.71	2.46	0.20
4.400	14.436	15.165	0.361	47.185		15.84	2.28	5	115	0.827	0.138	0.689	21.80	2.40	0.22
4.500	14.764	16.606	0.406	58.069		17.44	2.33	5	115	0.846	0.149	0.697	23.80	2.45	0.24
4.600	15.092	18.843	0.463	65.875		19.79	2.34	5	115	0.865	0.159	0.706	26.81	2.45	0.24
4.700	15.420	18.853	0.503	66.397		19.81	2.54	5	115	0.883	0.169	0.714	26.49	2.66	0.24
4.800	15.748	17.935	0.562	51.280		18.67	3.01	5	115	0.902	0.179	0.723	24.58	3.16	0.20
4.900	16.076	16.382	0.503	54.209		17.16	2.93	5	115	0.921	0.189	0.732	22.20	3.10	0.23
5.000	16.404	16.475	0.414	63.455		17.39	2.38	5	115	0.940	0.200	0.740	22.23	2.52	0.27
5.100	16.732	16.747	0.430	65.664		17.69	2.43	5	115	0.959	0.210	0.749	22.35	2.57	0.27
5.200	17.060	26.491	0.673	91.304		27.81	2.42	6	115	0.977	0.220	0.757	35.43	2.51	0.24
5.300	17.388	41.806	1.133	88.338		43.08	2.63	6	115	0.996	0.230	0.766	54.95	2.69	0.15
5.400	17.717	36.301	1.187	69.511		37.30	3.18	5	115	1.015	0.241	0.774	46.86	3.27	0.13
5.500	18.045	26.014	0.829	71.931		27.05	3.06	5	115	1.034	0.251	0.783	33.23	3.19	0.19
5.600	18.373	20.866	0.631	73.904		21.93	2.88	5	115	1.053	0.261	0.791	26.38	3.02	0.24
5.700	18.701	16.606	0.599	60.315		17.47	3.43	4	115	1.071	0.271	0.800	20.50	3.65	0.25
5.800	19.029	14.453	0.386	75.667		15.54	2.48	5	115	1.090	0.282	0.809	17.87	2.67	0.36
5.900	19.357	15.333	0.402	92.657		16.67	2.41	5	115	1.109	0.292	0.817	19.04	2.58	0.41
6.000	19.685	46.608	0.606	121.164		48.35	1.25	7	118	1.128	0.302	0.826	57.16	1.28	0.18

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth	Depth	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT	SPT N60	SPT (N1)60	Relative Density, Dr	Friction Angle, φ'	Young's modulus, Es	Small strain shear modulus, Go	Undrained shear strength, su	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
(m)	(ft)				(ft/sec)	(blows/ft)	(blows/ft)	(%)	(degrees)	(tsf)	(tsf)	(tsf)		
3.200	10.499	5	2.40	36.30	3.00E-6	5.6	7.5	32	35	102	452			
3.300	10.827	5	2.39	36.54	3.00E-6	5.7	7.6	32	35	104	457			
3.400	11.155	5	2.42	37.74	3.00E-6	6.0	8.0	33	36	108	465			
3.500	11.483	5	2.43	37.91	3.00E-6	6.1	8.0	33	36	110	470			
3.600	11.811	5	2.34	56.70	3.00E-6	9.1	11.9	40	38	167	543			
3.700	12.139	4	2.51	45.37	3.00E-8	8.0	10.3				1650	2.15	3.43	15.4
3.800	12.467	4	2.56	31.16	3.00E-8	5.5	7.1				1148	1.48	2.33	10.5
3.900	12.795	5	2.46	32.07	3.00E-6	5.6	7.2	30	35	97	459			
4.000	13.123	5	2.48	31.16	3.00E-6	5.6	7.1	30	34	95	458			
4.100	13.451	4	2.57	26.35	3.00E-8	4.9	6.2				1007	1.29	1.95	8.8
4.200	13.780	4	2.63	23.43	3.00E-8	4.5	5.6				903	1.15	1.71	7.7
4.300	14.108	4	2.63	22.58	3.00E-8	4.4	5.5				881	1.12	1.65	7.4
4.400	14.436	4	2.67	20.08	3.00E-8	4.0	5.0				792	1.00	1.45	6.5
4.500	14.764	4	2.64	21.90	3.00E-8	4.3	5.3				872	1.11	1.59	7.1
4.600	15.092	4	2.60	24.61	3.00E-8	4.8	5.9				990	1.26	1.79	8.0
4.700	15.420	4	2.63	24.45	3.00E-8	4.9	5.9				990	1.26	1.77	7.9
4.800	15.748	4	2.70	22.93	3.00E-8	4.8	5.8				934	1.18	1.64	7.4
4.900	16.076	4	2.73	20.82	3.00E-8	4.5	5.4				858	1.08	1.48	6.7
5.000	16.404	4	2.67	20.76	3.00E-8	4.4	5.2				869	1.10	1.48	6.7
5.100	16.732	4	2.67	20.93	3.00E-8	4.4	5.3				885	1.12	1.49	6.7
5.200	17.060	4	2.51	32.71	3.00E-8	6.5	7.7				1390	1.79	2.36	10.6
5.300	17.388	5	2.39	50.28	3.00E-6	9.7	11.4	38	37	172	588			
5.400	17.717	4	2.50	43.45	3.00E-8	8.8	10.3				1865	2.42	3.12	14.1
5.500	18.045	4	2.60	31.18	3.00E-8	6.7	7.7				1352	1.73	2.22	10.0
5.600	18.373	4	2.66	24.94	3.00E-8	5.5	6.4				1096	1.39	1.76	7.9
5.700	18.701	4	2.80	19.65	3.00E-8	4.7	5.4				874	1.09	1.37	6.2
5.800	19.029	4	2.76	17.11	3.00E-8	4.0	4.6				777	0.96	1.19	5.4
5.900	19.357	4	2.73	18.21	3.00E-8	4.2	4.8				833	1.04	1.27	5.7
6.000	19.685	5	2.17	52.52	3.00E-6	9.8	11.1	39	37	193	627			

GREGG DRILLING & TESTING, INC.

CONE PENETRATION TEST DATA

Client:	TREADWELL & ROLLO
Site:	EMERY STATION EAST
Engineer:	M.HALL
Sounding:	TRCPT-05
Date:	2010-04-02
Time:	8:05 AM

Units:	Imperial	
Data averaging interval:	0.100	meters
Assumed depth of water:	10.003	feet
Net area ratio of cone:	0.80	
Unit weight of water:	62.4	lb/ft3
Relative density constant, CDR:	350	
Young's modulus for sands, a:	4	
Small strain shear modulus number, SG (sands):	180	
Small strain shear modulus number, CG (clays):	50	
Nkt for clays:	15	
OCR number, kocr:	0.3	

Interpretation based on Lunne, Robertson and Powell, 1997

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
0.100	0.328	0.000	0.000	0.000							0.000				
0.200	0.656	0.000	0.000	0.000							0.000				
0.300	0.984	0.000	0.000	0.000							0.000				
0.400	1.312	0.000	0.000	0.000							0.000				
0.500	1.640	0.000	0.000	0.000							0.000				
0.600	1.969	0.000	0.000	0.000							0.000				
0.700	2.297	0.000	0.000	0.000							0.000				
0.800	2.625	0.000	0.000	0.000							0.000				
0.900	2.953	0.000	0.000	0.000							0.000				
1.000	3.281	0.000	0.000	0.000							0.000				
1.100	3.609	0.000	0.000	0.000							0.000				
1.200	3.937	0.000	0.000	0.000							0.000				
1.300	4.265	0.000	0.000	0.000							0.000				
1.400	4.593	0.000	0.000	0.000							0.000				
1.500	4.921	5.130	0.143	1.998		5.16	2.77	3	111	0.274	0.000	0.274	17.82	2.92	0.03
1.600	5.249	15.426	0.475	8.650		15.55	3.05	5	115	0.293	0.000	0.293	52.09	3.11	0.04
1.700	5.577	15.661	0.476	12.026		15.83	3.00	5	115	0.312	0.000	0.312	49.80	3.06	0.06
1.800	5.906	15.951	0.426	14.781		16.16	2.63	5	115	0.331	0.000	0.331	47.91	2.69	0.07
1.900	6.234	15.951	0.337	15.166		16.17	2.08	5	115	0.349	0.000	0.349	45.29	2.13	0.07
2.000	6.562	15.763	0.354	17.449		16.01	2.21	5	115	0.368	0.000	0.368	42.51	2.26	0.08
2.100	6.890	16.054	0.401	20.217		16.34	2.46	5	115	0.387	0.000	0.387	41.25	2.51	0.09
2.200	7.218	16.400	0.378	24.424		16.75	2.26	5	115	0.406	0.000	0.406	40.29	2.31	0.11
2.300	7.546	22.606	0.402	34.911		23.11	1.74	6	115	0.424	0.000	0.424	53.44	1.77	0.11
2.400	7.874	32.360	0.507	41.600		32.96	1.54	6	115	0.443	0.000	0.443	73.35	1.56	0.09
2.500	8.202	48.236	1.051	50.163		48.96	2.15	6	115	0.462	0.000	0.462	104.95	2.17	0.07
2.600	8.530	44.043	1.215	12.498		44.22	2.75	6	115	0.481	0.000	0.481	90.96	2.78	0.02
2.700	8.858	25.508	0.553	21.024		25.81	2.14	6	115	0.500	0.000	0.500	50.65	2.19	0.06
2.800	9.186	17.879	0.249	30.716		18.32	1.36	6	115	0.518	0.000	0.518	34.34	1.40	0.12
2.900	9.514	14.603	0.132	48.811		15.31	0.86	6	115	0.537	0.000	0.537	27.49	0.89	0.24
3.000	9.843	14.257	0.103	69.114		15.25	0.68	6	115	0.556	0.000	0.556	26.43	0.70	0.34
3.100	10.171	14.837	0.105	78.447		15.97	0.66	6	115	0.575	0.005	0.570	27.02	0.68	0.37

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth	Depth	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT	SPT N60	SPT (N1)60	Relative Density, Dr	Friction Angle, φ'	Young's modulus, Es	Small strain shear modulus, Go	Undrained shear strength, su	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
(m)	(ft)				(ft/sec)	(blows/ft)	(blows/ft)	(%)	(degrees)	(tsf)	(tsf)	(tsf)		
0.100	0.328													
0.200	0.656													
0.300	0.984													
0.400	1.312													
0.500	1.640													
0.600	1.969													
0.700	2.297													
0.800	2.625													
0.900	2.953													
1.000	3.281													
1.100	3.609													
1.200	3.937													
1.300	4.265													
1.400	4.593													
1.500	4.921	4	2.79	14.43	3.00E-8	1.4	2.8				258	0.33	1.19	5.3
1.600	5.249	4	2.45	37.46	3.00E-8	3.7	7.0				778	1.02	3.47	15.6
1.700	5.577	4	2.46	36.51	3.00E-8	3.7	6.9				792	1.03	3.32	14.9
1.800	5.906	5	2.43	35.32	3.00E-6	3.8	6.7	32	36	65	321			
1.900	6.234	5	2.38	33.33	3.00E-6	3.7	6.4	31	36	65	327			
2.000	6.562	5	2.42	32.13	3.00E-6	3.7	6.3	30	36	64	331			
2.100	6.890	5	2.46	31.97	3.00E-6	3.8	6.4	30	35	65	339			
2.200	7.218	5	2.45	31.46	3.00E-6	3.9	6.3	30	35	67	347			
2.300	7.546	5	2.28	40.32	3.00E-6	5.0	7.9	34	37	92	393			
2.400	7.874	5	2.14	54.07	3.00E-6	6.7	10.4	39	39	132	448			
2.500	8.202	5	2.13	78.26	3.00E-6	10.0	15.1	47	41	196	519			
2.600	8.530	5	2.25	70.80	3.00E-6	9.6	14.2	45	40	177	508			
2.700	8.858	5	2.36	40.89	3.00E-6	5.8	8.5	34	37	103	430			
2.800	9.186	5	2.37	28.09	3.00E-6	4.1	5.9	28	34	73	388			
2.900	9.514	5	2.34	22.60	3.00E-6	3.3	4.6	25	33	61	370			
3.000	9.843	5	2.31	21.80	3.00E-6	3.2	4.4	25	32	61	374			
3.100	10.171	5	2.29	22.39	3.00E-6	3.3	4.5	25	32	64	383			

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
3.200	10.499	13.695	0.122	66.210		14.65	0.83	6	115	0.594	0.015	0.578	24.31	0.87	0.34
3.300	10.827	14.275	0.171	69.151		15.27	1.12	6	115	0.612	0.026	0.587	24.98	1.17	0.34
3.400	11.155	17.945	0.260	65.130		18.88	1.38	6	115	0.631	0.036	0.595	30.66	1.43	0.25
3.500	11.483	21.287	0.383	46.328		21.95	1.75	6	115	0.650	0.046	0.604	35.28	1.80	0.15
3.600	11.811	22.138	0.462	37.294		22.68	2.04	6	115	0.669	0.056	0.612	35.93	2.10	0.12
3.700	12.139	21.502	0.457	32.491		21.97	2.08	6	115	0.688	0.067	0.621	34.27	2.15	0.11
3.800	12.467	19.948	0.425	25.951		20.32	2.09	6	115	0.706	0.077	0.630	31.16	2.17	0.09
3.900	12.795	18.984	0.478	21.036		19.29	2.48	5	115	0.725	0.087	0.638	29.09	2.58	0.08
4.000	13.123	19.508	0.602	18.666		19.78	3.04	5	115	0.744	0.097	0.647	29.43	3.16	0.07
4.100	13.451	20.781	0.628	19.981		21.07	2.98	5	115	0.763	0.108	0.655	30.99	3.09	0.07
4.200	13.780	22.597	0.730	15.947		22.83	3.20	5	115	0.782	0.118	0.664	33.21	3.31	0.05
4.300	14.108	22.709	0.766	12.509		22.89	3.35	5	115	0.800	0.128	0.672	32.85	3.47	0.03
4.400	14.436	21.043	0.730	11.355		21.21	3.44	5	115	0.819	0.138	0.681	29.94	3.58	0.03
4.500	14.764	20.173	0.735	11.467		20.34	3.61	4	115	0.838	0.149	0.689	28.28	3.77	0.03
4.600	15.092	20.191	0.731	11.579		20.36	3.59	4	115	0.857	0.159	0.698	27.94	3.75	0.03
4.700	15.420	19.967	0.769	11.554		20.13	3.82	4	115	0.876	0.169	0.707	27.25	3.99	0.03
4.800	15.748	20.341	0.811	11.480		20.51	3.95	4	115	0.894	0.179	0.715	27.42	4.14	0.03
4.900	16.076	19.302	0.851	9.718		19.44	4.38	3	111	0.913	0.189	0.723	25.62	4.59	0.03
5.000	16.404	16.719	0.760	7.707		16.83	4.52	3	111	0.931	0.200	0.731	21.74	4.78	0.02
5.100	16.732	15.352	0.624	7.335		15.46	4.04	4	115	0.950	0.210	0.740	19.61	4.30	0.02
5.200	17.060	14.725	0.551	7.868		14.84	3.71	4	115	0.969	0.220	0.748	18.53	3.97	0.02
5.300	17.388	14.238	0.469	9.246		14.37	3.27	4	115	0.987	0.230	0.757	17.68	3.51	0.03
5.400	17.717	14.519	0.437	11.145		14.68	2.97	5	115	1.006	0.241	0.765	17.86	3.19	0.04
5.500	18.045	14.753	0.467	12.634		14.93	3.13	5	115	1.025	0.251	0.774	17.97	3.36	0.05
5.600	18.373	14.471	0.449	15.054		14.69	3.06	5	115	1.044	0.261	0.783	17.43	3.29	0.06
5.700	18.701	14.921	0.411	19.857		15.21	2.70	5	115	1.063	0.271	0.791	17.88	2.90	0.08
5.800	19.029	16.475	0.418	25.057		16.84	2.48	5	115	1.081	0.282	0.800	19.70	2.65	0.10
5.900	19.357	16.681	0.369	32.603		17.15	2.15	5	115	1.100	0.292	0.808	19.86	2.30	0.13
6.000	19.685	17.018	0.256	46.887		17.69	1.45	6	115	1.119	0.302	0.817	20.29	1.55	0.19

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth	Depth	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT	SPT N60	SPT (N1)60	Relative Density, Dr	Friction Angle, φ'	Young's modulus, Es	Small strain shear modulus, Go	Undrained shear strength, su	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
(m)	(ft)				(ft/sec)	(blows/ft)	(blows/ft)	(%)	(degrees)	(tsf)	(tsf)	(tsf)		
3.200	10.499	5	2.38	20.56	3.00E-6	3.2	4.3	24	32	59	374			
3.300	10.827	5	2.44	21.43	3.00E-6	3.4	4.5	25	32	61	381			
3.400	11.155	5	2.41	26.28	3.00E-6	4.2	5.6	27	33	76	411			
3.500	11.483	5	2.42	30.41	3.00E-6	5.0	6.6	29	34	88	434			
3.600	11.811	5	2.46	31.27	3.00E-6	5.3	6.9	30	35	91	441			
3.700	12.139	5	2.48	30.03	3.00E-6	5.2	6.8	29	34	88	438			
3.800	12.467	5	2.52	27.54	3.00E-6	4.9	6.3	28	34	81	429			
3.900	12.795	4	2.59	26.07	3.00E-8	4.8	6.2				964	1.24	1.94	8.7
4.000	13.123	4	2.64	26.67	3.00E-8	5.1	6.5				989	1.27	1.96	8.8
4.100	13.451	4	2.62	28.06	3.00E-8	5.4	6.8				1053	1.35	2.07	9.3
4.200	13.780	4	2.61	30.14	3.00E-8	5.8	7.3				1141	1.47	2.21	10.0
4.300	14.108	4	2.63	29.96	3.00E-8	5.9	7.4				1144	1.47	2.19	9.9
4.400	14.436	4	2.67	27.52	3.00E-8	5.6	6.9				1060	1.36	2.00	9.0
4.500	14.764	4	2.70	26.17	3.00E-8	5.4	6.7				1017	1.30	1.89	8.5
4.600	15.092	4	2.70	25.91	3.00E-8	5.4	6.7				1018	1.30	1.86	8.4
4.700	15.420	4	2.73	25.42	3.00E-8	5.5	6.7				1007	1.28	1.82	8.2
4.800	15.748	4	2.74	25.65	3.00E-8	5.6	6.8				1025	1.31	1.83	8.2
4.900	16.076	3	2.79	24.16	1.00E-9	5.5	6.6				972	1.24	1.71	7.7
5.000	16.404	3	2.86	20.68	1.00E-9	4.9	5.9				841	1.06	1.45	6.5
5.100	16.732	3	2.86	18.69	1.00E-9	4.5	5.4				773	0.97	1.31	5.9
5.200	17.060	3	2.86	17.69	1.00E-9	4.3	5.1				742	0.92	1.24	5.6
5.300	17.388	3	2.84	16.87	1.00E-9	4.1	4.9				719	0.89	1.18	5.3
5.400	17.717	4	2.81	17.02	3.00E-8	4.1	4.9				734	0.91	1.19	5.4
5.500	18.045	4	2.82	17.17	3.00E-8	4.2	5.0				747	0.93	1.20	5.4
5.600	18.373	4	2.83	16.69	3.00E-8	4.2	4.9				734	0.91	1.16	5.2
5.700	18.701	4	2.78	17.08	3.00E-8	4.2	4.9				760	0.94	1.19	5.4
5.800	19.029	4	2.73	18.76	3.00E-8	4.5	5.2				842	1.05	1.31	5.9
5.900	19.357	4	2.69	18.89	3.00E-8	4.5	5.1				858	1.07	1.32	6.0
6.000	19.685	4	2.58	19.18	3.00E-8	4.3	4.9				885	1.10	1.35	6.1

GREGG DRILLING & TESTING, INC.

CONE PENETRATION TEST DATA

Client:	TREADWELL & ROLLO
Site:	EMERY STATION EAST
Engineer:	M.HALL
Sounding:	TRCPT-06
Date:	2010-04-01
Time:	4:00 PM

Units:	Imperial	
Data averaging interval:	0.100	meters
Assumed depth of water:	10.003	feet
Net area ratio of cone:	0.80	
Unit weight of water:	62.4	lb/ft3
Relative density constant, CDR:	350	
Young's modulus for sands, a:	4	
Small strain shear modulus number, SG (sands):	180	
Small strain shear modulus number, CG (clays):	50	
Nkt for clays:	15	
OCR number, kocr:	0.3	

Interpretation based on Lunne, Robertson and Powell, 1997

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
0.100	0.328	0.000	0.000	0.000							0.000				
0.200	0.656	0.000	0.000	0.000							0.000				
0.300	0.984	0.000	0.000	0.000							0.000				
0.400	1.312	0.000	0.000	0.000							0.000				
0.500	1.640	0.000	0.000	0.000							0.000				
0.600	1.969	0.000	0.000	0.000							0.000				
0.700	2.297	0.000	0.000	0.000							0.000				
0.800	2.625	0.000	0.000	0.000							0.000				
0.900	2.953	0.000	0.000	0.000							0.000				
1.000	3.281	0.000	0.000	0.000							0.000				
1.100	3.609	0.000	0.000	0.000							0.000				
1.200	3.937	0.000	0.000	0.000							0.000				
1.300	4.265	0.000	0.000	0.000							0.000				
1.400	4.593	0.000	0.000	0.000							0.000				
1.500	4.921	7.211	0.218	4.231		7.27	3.00	4	115	0.282	0.000	0.282	24.79	3.12	0.04
1.600	5.249	21.307	0.761	14.523		21.52	3.54	5	115	0.301	0.000	0.301	70.54	3.59	0.05
1.700	5.577	20.634	0.768	18.598		20.90	3.67	4	115	0.320	0.000	0.320	64.41	3.73	0.07
1.800	5.906	19.361	0.613	26.140		19.74	3.10	5	115	0.338	0.000	0.338	57.34	3.16	0.10
1.900	6.234	18.388	0.426	35.452		18.90	2.25	5	115	0.357	0.000	0.357	51.92	2.30	0.14
2.000	6.562	18.142	0.431	38.691		18.70	2.30	5	115	0.376	0.000	0.376	48.74	2.35	0.15
2.100	6.890	16.805	0.468	29.834		17.23	2.72	5	115	0.395	0.000	0.395	42.66	2.78	0.13
2.200	7.218	15.523	0.397	30.145		15.96	2.49	5	115	0.414	0.000	0.414	37.59	2.55	0.14
2.300	7.546	16.369	0.435	37.460		16.91	2.57	5	115	0.432	0.000	0.432	38.11	2.64	0.16
2.400	7.874	21.407	0.486	56.536		22.22	2.19	6	115	0.451	0.000	0.451	48.26	2.23	0.19
2.500	8.202	46.006	1.036	57.815		46.84	2.21	6	115	0.470	0.000	0.470	98.67	2.23	0.09
2.600	8.530	76.361	1.855	41.846		76.96	2.41	7	118	0.489	0.000	0.489	156.31	2.43	0.04
2.700	8.858	94.931	2.365	23.726		95.27	2.48	7	118	0.509	0.000	0.509	186.34	2.50	0.02
2.800	9.186	67.922	2.282	10.351		68.07	3.35	6	115	0.527	0.000	0.527	128.08	3.38	0.01
2.900	9.514	31.656	1.357	5.618		31.74	4.28	4	115	0.546	0.000	0.546	57.11	4.35	0.01
3.000	9.843	18.315	0.790	9.789		18.46	4.28	4	115	0.565	0.000	0.565	31.67	4.41	0.04
3.100	10.171	13.368	0.564	11.654		13.54	4.17	3	111	0.583	0.005	0.578	22.41	4.36	0.06

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth (m)	Depth (ft)	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT (ft/sec)	SPT N60 (blows/ft)	SPT (N1)60 (blows/ft)	Relative Density, Dr (%)	Friction Angle, φ' (degrees)	Young's modulus, Es (tsf)	Small strain shear modulus, Go (tsf)	Undrained shear strength, su (tsf)	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
0.100	0.328													
0.200	0.656													
0.300	0.984													
0.400	1.312													
0.500	1.640													
0.600	1.969													
0.700	2.297													
0.800	2.625													
0.900	2.953													
1.000	3.281													
1.100	3.609													
1.200	3.937													
1.300	4.265													
1.400	4.593													
1.500	4.921	4	2.69	19.43	3.00E-8	1.9	3.7				364	0.47	1.65	7.4
1.600	5.249	4	2.40	50.17	3.00E-8	5.0	9.3				1076	1.41	4.70	21.2
1.700	5.577	4	2.44	47.23	3.00E-8	4.9	8.9				1045	1.37	4.29	19.3
1.800	5.906	5	2.43	42.42	3.00E-6	4.6	8.1	35	37	79	345			
1.900	6.234	5	2.36	38.16	3.00E-6	4.2	7.2	33	37	76	347			
2.000	6.562	5	2.39	36.66	3.00E-6	4.2	7.0	32	36	75	351			
2.100	6.890	4	2.48	33.41	3.00E-8	4.1	6.6				862	1.12	2.84	12.8
2.200	7.218	4	2.50	29.92	3.00E-8	3.8	6.0				798	1.04	2.51	11.3
2.300	7.546	4	2.50	30.71	3.00E-8	4.0	6.2				845	1.10	2.54	11.4
2.400	7.874	5	2.38	38.05	3.00E-6	4.9	7.5	33	36	89	395			
2.500	8.202	5	2.15	74.52	3.00E-6	9.6	14.4	46	40	187	514			
2.600	8.530	5	2.05	116.87	3.00E-6	15.3	22.5	58	43	308	615			
2.700	8.858	5	2.01	140.24	3.00E-6	18.8	27.1	63	44	381	669			
2.800	9.186	8	2.22	102.00	3.00E-6	14.6	20.6	54	42	272				
2.900	9.514	4	2.53	48.93	3.00E-8	7.8	10.9				1587	2.08	3.81	17.1
3.000	9.843	4	2.71	28.32	3.00E-8	5.0	6.8				923	1.19	2.11	9.5
3.100	10.171	3	2.82	20.51	1.00E-9	3.8	5.2				677	0.86	1.49	6.7

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
3.200	10.499	10.331	0.350	15.717		10.56	3.31	4	115	0.602	0.015	0.587	16.97	3.51	0.11
3.300	10.827	10.185	0.329	22.041		10.50	3.14	4	115	0.621	0.026	0.595	16.60	3.33	0.16
3.400	11.155	11.295	0.291	30.707		11.74	2.48	5	115	0.640	0.036	0.604	18.38	2.63	0.20
3.500	11.483	13.213	0.378	36.396		13.74	2.75	5	115	0.658	0.046	0.612	21.36	2.89	0.20
3.600	11.811	12.640	0.478	28.220		13.05	3.67	4	115	0.677	0.056	0.621	19.93	3.87	0.16
3.700	12.139	11.286	0.473	19.818		11.57	4.08	3	111	0.695	0.067	0.629	17.29	4.35	0.13
3.800	12.467	11.031	0.454	13.351		11.22	4.04	3	111	0.714	0.077	0.637	16.50	4.32	0.08
3.900	12.795	10.822	0.494	11.152		10.98	4.50	3	111	0.732	0.087	0.645	15.89	4.82	0.07
4.000	13.123	11.913	0.508	13.554		12.11	4.20	3	111	0.750	0.097	0.653	17.39	4.48	0.08
4.100	13.451	14.095	0.624	10.829		14.25	4.38	3	111	0.769	0.108	0.661	20.40	4.63	0.05
4.200	13.780	14.659	0.649	9.634		14.80	4.38	3	111	0.787	0.118	0.669	20.94	4.63	0.04
4.300	14.108	14.868	0.577	13.124		15.06	3.83	4	115	0.806	0.128	0.678	21.03	4.05	0.06
4.400	14.436	15.696	0.588	15.586		15.92	3.69	4	115	0.824	0.138	0.686	22.00	3.89	0.07
4.500	14.764	15.905	0.603	19.315		16.18	3.72	4	115	0.843	0.149	0.695	22.08	3.93	0.08
4.600	15.092	16.869	0.653	22.352		17.19	3.80	4	115	0.862	0.159	0.703	23.22	4.00	0.09
4.700	15.420	17.415	0.710	23.941		17.76	4.00	4	115	0.881	0.169	0.712	23.71	4.21	0.09
4.800	15.748	17.579	0.749	22.973		17.91	4.18	4	115	0.900	0.179	0.720	23.61	4.41	0.09
4.900	16.076	16.414	0.784	19.124		16.69	4.70	3	111	0.918	0.189	0.728	21.65	4.97	0.08
5.000	16.404	14.050	0.739	15.885		14.28	5.18	3	111	0.936	0.200	0.736	18.12	5.54	0.07
5.100	16.732	13.213	0.549	20.905		13.51	4.06	3	111	0.954	0.210	0.744	16.87	4.37	0.10
5.200	17.060	14.223	0.494	28.399		14.63	3.38	4	115	0.973	0.220	0.753	18.14	3.62	0.13
5.300	17.388	15.751	0.571	29.045		16.17	3.53	4	115	0.992	0.230	0.762	19.93	3.76	0.12
5.400	17.717	15.251	0.542	29.129		15.67	3.46	4	115	1.011	0.241	0.770	19.03	3.70	0.13
5.500	18.045	14.796	0.506	31.711		15.25	3.32	4	115	1.030	0.251	0.779	18.26	3.56	0.14
5.600	18.373	14.241	0.498	32.463		14.71	3.39	4	115	1.048	0.261	0.787	17.35	3.65	0.15
5.700	18.701	13.759	0.466	34.698		14.26	3.27	4	115	1.067	0.271	0.796	16.57	3.54	0.17
5.800	19.029	14.223	0.445	40.472		14.81	3.00	5	115	1.086	0.282	0.804	17.05	3.24	0.19
5.900	19.357	15.487	0.435	47.787		16.17	2.69	5	115	1.105	0.292	0.813	18.54	2.89	0.21
6.000	19.685	16.105	0.459	54.935		16.90	2.71	5	115	1.124	0.302	0.822	19.20	2.91	0.23
6.100	20.013	14.541	0.447	62.549		15.44	2.89	5	115	1.142	0.312	0.830	17.23	3.13	0.29

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth	Depth	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT	SPT N60	SPT (N1)60	Relative Density, Dr	Friction Angle, φ'	Young's modulus, Es	Small strain shear modulus, Go	Undrained shear strength, su	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
(m)	(ft)				(ft/sec)	(blows/ft)	(blows/ft)	(%)	(degrees)	(tsf)	(tsf)	(tsf)		
3.200	10.499	3	2.85	15.66	1.00E-9	3.0	4.1				528	0.66	1.13	5.1
3.300	10.827	3	2.85	15.33	1.00E-9	3.0	4.0				525	0.66	1.11	5.0
3.400	11.155	4	2.75	16.73	3.00E-8	3.1	4.1				587	0.74	1.23	5.5
3.500	11.483	4	2.72	19.41	3.00E-8	3.6	4.7				687	0.87	1.42	6.4
3.600	11.811	3	2.82	18.45	1.00E-9	3.6	4.8				652	0.82	1.33	6.0
3.700	12.139	3	2.90	16.24	1.00E-9	3.4	4.4				579	0.73	1.15	5.2
3.800	12.467	3	2.92	15.55	1.00E-9	3.4	4.3				561	0.70	1.10	5.0
3.900	12.795	3	2.96	15.10	1.00E-9	3.4	4.3				549	0.68	1.06	4.8
4.000	13.123	3	2.91	16.43	1.00E-9	3.6	4.6				605	0.76	1.16	5.2
4.100	13.451	3	2.87	19.17	1.00E-9	4.2	5.3				713	0.90	1.36	6.1
4.200	13.780	3	2.86	19.69	1.00E-9	4.3	5.4				740	0.93	1.40	6.3
4.300	14.108	3	2.82	19.71	1.00E-9	4.3	5.3				753	0.95	1.40	6.3
4.400	14.436	4	2.79	20.58	3.00E-8	4.4	5.5				796	1.01	1.47	6.6
4.500	14.764	4	2.79	20.70	3.00E-8	4.5	5.6				809	1.02	1.47	6.6
4.600	15.092	4	2.78	21.78	3.00E-8	4.7	5.8				860	1.09	1.55	7.0
4.700	15.420	3	2.79	22.30	1.00E-9	4.9	6.0				888	1.13	1.58	7.1
4.800	15.748	3	2.81	22.29	1.00E-9	5.0	6.1				895	1.13	1.57	7.1
4.900	16.076	3	2.87	20.62	1.00E-9	4.8	5.8				834	1.05	1.44	6.5
5.000	16.404	3	2.96	17.44	1.00E-9	4.4	5.2				714	0.89	1.21	5.4
5.100	16.732	3	2.91	16.19	1.00E-9	4.0	4.8				676	0.84	1.12	5.1
5.200	17.060	3	2.84	17.29	1.00E-9	4.1	4.9				732	0.91	1.21	5.4
5.300	17.388	3	2.82	18.99	1.00E-9	4.5	5.3				808	1.01	1.33	6.0
5.400	17.717	3	2.83	18.18	1.00E-9	4.4	5.2				784	0.98	1.27	5.7
5.500	18.045	4	2.83	17.48	3.00E-8	4.3	5.0				763	0.95	1.22	5.5
5.600	18.373	3	2.86	16.67	1.00E-9	4.2	4.8				735	0.91	1.16	5.2
5.700	18.701	3	2.86	15.96	1.00E-9	4.0	4.7				713	0.88	1.10	5.0
5.800	19.029	4	2.83	16.40	3.00E-8	4.1	4.7				740	0.91	1.14	5.1
5.900	19.357	4	2.77	17.77	3.00E-8	4.3	4.9				809	1.00	1.24	5.6
6.000	19.685	4	2.76	18.42	3.00E-8	4.5	5.1				845	1.05	1.28	5.8
6.100	20.013	4	2.82	16.62	3.00E-8	4.2	4.7				772	0.95	1.15	5.2

GREGG DRILLING & TESTING, INC.

CONE PENETRATION TEST DATA

Client:	TREADWELL & ROLLO
Site:	EMERY STATION EAST
Engineer:	M.HALL
Sounding:	TRCPT-07
Date:	2010-04-01
Time:	12:51 PM

Units:	Imperial	
Data averaging interval:	0.100	meters
Assumed depth of water:	10.003	feet
Net area ratio of cone:	0.80	
Unit weight of water:	62.4	lb/ft3
Relative density constant, CDR:	350	
Young's modulus for sands, a:	4	
Small strain shear modulus number, SG (sands):	180	
Small strain shear modulus number, CG (clays):	50	
Nkt for clays:	15	
OCR number, kocr:	0.3	

Interpretation based on Lunne, Robertson and Powell, 1997

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
0.100	0.328	0.000	0.000	0.000							0.000				
0.200	0.656	0.000	0.000	0.000							0.000				
0.300	0.984	0.000	0.000	0.000							0.000				
0.400	1.312	0.000	0.000	0.000							0.000				
0.500	1.640	0.000	0.000	0.000							0.000				
0.600	1.969	0.000	0.000	0.000							0.000				
0.700	2.297	0.000	0.000	0.000							0.000				
0.800	2.625	0.000	0.000	0.000							0.000				
0.900	2.953	0.000	0.000	0.000							0.000				
1.000	3.281	0.000	0.000	0.000							0.000				
1.100	3.609	0.000	0.000	0.000							0.000				
1.200	3.937	0.000	0.000	0.000							0.000				
1.300	4.265	0.000	0.000	0.000							0.000				
1.400	4.593	0.000	0.000	0.000							0.000				
1.500	4.921	0.773	0.047	0.729		0.78	5.96	2	80	0.196	0.000	0.196	3.00	7.94	0.09
1.600	5.249	3.910	0.130	4.960		3.98	3.26	3	111	0.214	0.000	0.214	17.60	3.45	0.09
1.700	5.577	19.561	0.421	34.245		20.05	2.10	6	115	0.233	0.000	0.233	85.12	2.12	0.12
1.800	5.906	35.703	0.841	83.992		36.91	2.28	6	115	0.252	0.000	0.252	145.67	2.29	0.16
1.900	6.234	59.074	1.213	56.345		59.89	2.03	7	118	0.271	0.000	0.271	219.99	2.04	0.07
2.000	6.562	65.430	1.440	21.658		65.74	2.19	7	118	0.290	0.000	0.290	225.46	2.20	0.02
2.100	6.890	70.960	1.383	-0.120		70.96	1.95	7	118	0.310	0.000	0.310	228.17	1.96	0.00
2.200	7.218	48.216	1.349	3.072		48.26	2.80	6	115	0.328	0.000	0.328	145.94	2.81	0.00
2.300	7.546	27.482	0.841	15.873		27.71	3.03	5	115	0.347	0.000	0.347	78.81	3.07	0.04
2.400	7.874	20.370	0.548	44.644		21.01	2.61	5	115	0.366	0.000	0.366	56.41	2.65	0.16
2.500	8.202	22.235	0.613	53.285		23.00	2.66	5	115	0.385	0.000	0.385	58.77	2.71	0.17
2.600	8.530	23.108	0.587	50.273		23.83	2.46	6	115	0.404	0.000	0.404	58.05	2.50	0.15
2.700	8.858	22.807	0.463	59.190		23.66	1.96	6	115	0.422	0.000	0.422	55.01	1.99	0.18
2.800	9.186	23.408	0.506	62.859		24.31	2.08	6	115	0.441	0.000	0.441	54.11	2.12	0.19
2.900	9.514	26.709	0.633	78.398		27.84	2.27	6	115	0.460	0.000	0.460	59.52	2.31	0.21
3.000	9.843	36.930	0.956	77.884		38.05	2.51	6	115	0.479	0.000	0.479	78.47	2.55	0.15
3.100	10.171	50.762	1.614	62.202		51.66	3.12	6	115	0.498	0.005	0.492	103.91	3.15	0.09

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth	Depth	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT	SPT N60	SPT (N1)60	Relative Density, Dr	Friction Angle, φ'	Young's modulus, Es	Small strain shear modulus, Go	Undrained shear strength, su	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
(m)	(ft)				(ft/sec)	(blows/ft)	(blows/ft)	(%)	(degrees)	(tsf)	(tsf)	(tsf)		
0.100	0.328													
0.200	0.656													
0.300	0.984													
0.400	1.312													
0.500	1.640													
0.600	1.969													
0.700	2.297													
0.800	2.625													
0.900	2.953													
1.000	3.281													
1.100	3.609													
1.200	3.937													
1.300	4.265													
1.400	4.593													
1.500	4.921	2	3.67	3.00	3.00E-7	0.4	1.0				39	0.04	0.20	0.9
1.600	5.249	4	2.84	14.04	3.00E-8	1.1	2.5				199	0.25	1.17	5.3
1.700	5.577	5	2.18	51.09	3.00E-6	4.1	8.8	38	40	80	307			
1.800	5.906	5	2.05	84.79	3.00E-6	7.2	14.7	49	42	148	386			
1.900	6.234	6	1.90	123.79	3.00E-4	11.2	22.1	59	44	240	464			
2.000	6.562	6	1.92	131.68	3.00E-4	12.5	23.8	61	45	263	490			
2.100	6.890	6	1.88	134.67	3.00E-4	13.3	24.6	62	45	284	514			
2.200	7.218	5	2.12	96.21	3.00E-6	9.9	17.8	52	43	193	461			
2.300	7.546	5	2.32	56.70	3.00E-6	6.2	10.8	40	39	111	390			
2.400	7.874	5	2.38	41.97	3.00E-6	4.7	8.0	35	37	84	362			
2.500	8.202	5	2.37	44.26	3.00E-6	5.1	8.5	36	37	92	379			
2.600	8.530	5	2.35	44.04	3.00E-6	5.3	8.5	35	37	95	390			
2.700	8.858	5	2.30	41.71	3.00E-6	5.1	8.0	35	37	95	395			
2.800	9.186	5	2.33	41.82	3.00E-6	5.3	8.2	35	37	97	405			
2.900	9.514	5	2.32	46.51	3.00E-6	6.0	9.1	36	37	111	429			
3.000	9.843	5	2.26	61.23	3.00E-6	8.1	12.0	42	39	152	483			
3.100	10.171	5	2.25	81.55	3.00E-6	11.1	16.2	48	41	207	539			

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
3.200	10.499	67.804	2.324	75.159		68.89	3.37	6	115	0.516	0.015	0.501	136.49	3.40	0.08
3.300	10.827	86.501	3.082	42.539		87.11	3.54	6	115	0.535	0.026	0.509	169.94	3.56	0.04
3.400	11.155	51.035	2.403	21.395		51.34	4.68	4	115	0.554	0.036	0.518	98.04	4.73	0.03
3.500	11.483	36.176	1.297	30.707		36.62	3.54	5	115	0.573	0.046	0.527	68.45	3.60	0.06
3.600	11.811	25.563	0.727	29.511		25.99	2.80	5	115	0.592	0.056	0.535	47.46	2.86	0.08
3.700	12.139	20.243	0.596	37.723		20.79	2.87	5	115	0.610	0.067	0.544	37.11	2.95	0.13
3.800	12.467	16.906	0.565	40.962		17.50	3.23	5	115	0.629	0.077	0.552	30.54	3.35	0.17
3.900	12.795	15.151	0.399	45.767		15.81	2.53	5	115	0.648	0.087	0.561	27.03	2.63	0.21
4.000	13.123	14.114	0.317	55.795		14.92	2.13	5	115	0.667	0.097	0.569	25.03	2.22	0.28
4.100	13.451	14.778	0.301	64.234		15.70	1.92	5	115	0.686	0.108	0.578	25.98	2.01	0.30
4.200	13.780	15.860	0.384	69.947		16.87	2.28	5	115	0.704	0.118	0.587	27.56	2.38	0.30
4.300	14.108	16.160	0.437	66.469		17.12	2.55	5	115	0.723	0.128	0.595	27.55	2.67	0.28
4.400	14.436	14.959	0.420	60.433		15.83	2.65	5	115	0.742	0.138	0.604	24.99	2.78	0.28
4.500	14.764	14.050	0.411	57.158		14.87	2.77	5	115	0.761	0.149	0.612	23.05	2.91	0.28
4.600	15.092	13.632	0.423	57.505		14.46	2.92	5	115	0.780	0.159	0.621	22.04	3.09	0.29
4.700	15.420	14.778	0.455	58.067		15.61	2.91	5	115	0.798	0.169	0.629	23.54	3.07	0.27
4.800	15.748	15.642	0.538	45.026		16.29	3.30	5	115	0.817	0.179	0.638	24.26	3.48	0.20
4.900	16.076	15.987	0.486	35.237		16.49	2.95	5	115	0.836	0.189	0.646	24.22	3.10	0.15
5.000	16.404	14.850	0.530	45.301		15.50	3.42	4	115	0.855	0.200	0.655	22.36	3.62	0.21
5.100	16.732	30.755	1.407	53.202		31.52	4.46	4	115	0.874	0.210	0.664	46.19	4.59	0.12
5.200	17.060	38.931	1.802	8.773		39.06	4.61	4	115	0.892	0.220	0.672	56.78	4.72	0.01
5.300	17.388	21.034	0.922	4.088		21.09	4.37	4	115	0.911	0.230	0.681	29.65	4.57	0.00
5.400	17.717	12.277	0.516	14.869		12.49	4.13	3	111	0.929	0.241	0.689	16.79	4.47	0.07
5.500	18.045	15.214	0.486	39.253		15.78	3.08	5	115	0.948	0.251	0.697	21.27	3.28	0.17
5.600	18.373	29.091	1.037	63.672		30.01	3.46	5	115	0.967	0.261	0.706	41.14	3.57	0.15
5.700	18.701	32.456	1.362	24.802		32.81	4.15	4	115	0.986	0.271	0.714	44.55	4.28	0.05
5.800	19.029	16.387	0.766	23.391		16.72	4.58	3	111	1.004	0.282	0.722	21.76	4.87	0.09
5.900	19.357	14.168	0.450	42.862		14.79	3.05	5	115	1.023	0.292	0.731	18.83	3.27	0.20
6.000	19.685	15.223	0.427	63.923		16.14	2.64	5	115	1.042	0.302	0.740	20.42	2.83	0.28
6.100	20.013	16.715	0.429	78.326		17.84	2.40	5	115	1.060	0.312	0.748	22.43	2.56	0.32

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth	Depth	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT	SPT N60	SPT (N1)60	Relative Density, Dr	Friction Angle, φ'	Young's modulus, Es	Small strain shear modulus, Go	Undrained shear strength, su	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
(m)	(ft)				(ft/sec)	(blows/ft)	(blows/ft)	(%)	(degrees)	(tsf)	(tsf)	(tsf)		
3.200	10.499	8	2.20	106.53	3.00E-6	14.5	21.0	55	42	276				
3.300	10.827	8	2.16	132.22	3.00E-6	18.1	26.2	61	43	348				
3.400	11.155	9	2.40	80.79	1.00E-8	11.9	17.0					3.39	6.54	29.4
3.500	11.483	4	2.41	56.78	3.00E-8	8.5	12.0				1831	2.40	4.56	20.5
3.600	11.811	5	2.46	39.87	3.00E-6	6.1	8.6	34	36	104	441			
3.700	12.139	4	2.54	31.86	3.00E-8	5.0	7.0				1039	1.35	2.47	11.1
3.800	12.467	4	2.64	26.83	3.00E-8	4.4	6.1				875	1.12	2.04	9.2
3.900	12.795	4	2.62	23.70	3.00E-8	3.9	5.4				790	1.01	1.80	8.1
4.000	13.123	4	2.60	21.94	3.00E-8	3.6	4.9				746	0.95	1.67	7.5
4.100	13.451	4	2.56	22.68	3.00E-8	3.7	5.0				785	1.00	1.73	7.8
4.200	13.780	4	2.58	24.24	3.00E-8	4.0	5.4				843	1.08	1.84	8.3
4.300	14.108	4	2.61	24.44	3.00E-8	4.2	5.5				856	1.09	1.84	8.3
4.400	14.436	4	2.66	22.41	3.00E-8	3.9	5.2				791	1.01	1.67	7.5
4.500	14.764	4	2.70	20.86	3.00E-8	3.8	5.0				744	0.94	1.54	6.9
4.600	15.092	4	2.73	20.09	3.00E-8	3.7	4.9				723	0.91	1.47	6.6
4.700	15.420	4	2.70	21.43	3.00E-8	4.0	5.2				781	0.99	1.57	7.1
4.800	15.748	4	2.73	22.22	3.00E-8	4.3	5.5				815	1.03	1.62	7.3
4.900	16.076	4	2.70	22.14	3.00E-8	4.3	5.5				825	1.04	1.61	7.3
5.000	16.404	4	2.77	20.69	3.00E-8	4.1	5.3				775	0.98	1.49	6.7
5.100	16.732	4	2.61	41.88	3.00E-8	7.9	10.0				1576	2.04	3.08	13.9
5.200	17.060	4	2.56	51.26	3.00E-8	9.7	12.2				1953	2.54	3.79	17.0
5.300	17.388	4	2.74	27.52	3.00E-8	5.8	7.2				1055	1.35	1.98	8.9
5.400	17.717	3	2.92	15.97	1.00E-9	3.7	4.6				625	0.77	1.12	5.0
5.500	18.045	4	2.76	19.86	3.00E-8	4.2	5.2				789	0.99	1.42	6.4
5.600	18.373	4	2.57	37.61	3.00E-8	7.3	9.0				1500	1.94	2.74	12.3
5.700	18.701	4	2.60	40.98	3.00E-8	8.3	10.1				1641	2.12	2.97	13.4
5.800	19.029	3	2.86	20.68	1.00E-9	4.8	5.8				836	1.05	1.45	6.5
5.900	19.357	4	2.80	17.79	3.00E-8	4.0	4.8				739	0.92	1.26	5.6
6.000	19.685	4	2.73	19.20	3.00E-8	4.2	5.0				807	1.01	1.36	6.1
6.100	20.013	4	2.67	21.00	3.00E-8	4.4	5.3				892	1.12	1.50	6.7

GREGG DRILLING & TESTING, INC.

CONE PENETRATION TEST DATA

Client:	TREADWELL & ROLLO
Site:	EMERY STATION EAST
Engineer:	M.HALL
Sounding:	TRCPT-08
Date:	2010-04-01
Time:	8:56 AM

Units:	Imperial	
Data averaging interval:	0.100	meters
Assumed depth of water:	10.003	feet
Net area ratio of cone:	0.80	
Unit weight of water:	62.4	lb/ft3
Relative density constant, CDR:	350	
Young's modulus for sands, a:	4	
Small strain shear modulus number, SG (sands):	180	
Small strain shear modulus number, CG (clays):	50	
Nkt for clays:	15	
OCR number, kocr:	0.3	

Interpretation based on Lunne, Robertson and Powell, 1997

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
0.100	0.328	0.000	0.000	0.000							0.000				
0.200	0.656	0.000	0.000	0.000							0.000				
0.300	0.984	0.000	0.000	0.000							0.000				
0.400	1.312	0.000	0.000	0.000							0.000				
0.500	1.640	0.000	0.000	0.000							0.000				
0.600	1.969	0.000	0.000	0.000							0.000				
0.700	2.297	0.000	0.000	0.000							0.000				
0.800	2.625	0.000	0.000	0.000							0.000				
0.900	2.953	0.000	0.000	0.000							0.000				
1.000	3.281	0.000	0.000	0.000							0.000				
1.100	3.609	0.000	0.000	0.000							0.000				
1.200	3.937	0.000	0.000	0.000							0.000				
1.300	4.265	0.000	0.000	0.000							0.000				
1.400	4.593	0.000	0.000	0.000							0.000				
1.500	4.921	5.611	0.240	1.877		5.64	4.26	3	111	0.274	0.000	0.274	19.57	4.48	0.03
1.600	5.249	16.842	0.804	15.921		17.07	4.71	3	111	0.292	0.000	0.292	57.38	4.79	0.07
1.700	5.577	16.415	0.842	28.208		16.82	5.01	3	111	0.311	0.000	0.311	53.14	5.10	0.12
1.800	5.906	17.269	0.772	37.496		17.81	4.33	3	111	0.329	0.000	0.329	53.14	4.41	0.15
1.900	6.234	17.306	0.612	43.078		17.93	3.41	5	115	0.348	0.000	0.348	50.55	3.48	0.18
2.000	6.562	15.687	0.560	40.962		16.28	3.44	4	115	0.367	0.000	0.367	43.41	3.52	0.19
2.100	6.890	16.141	0.617	49.508		16.85	3.66	4	115	0.385	0.000	0.385	42.74	3.75	0.22
2.200	7.218	18.933	0.595	57.194		19.76	3.01	5	115	0.404	0.000	0.404	47.89	3.07	0.21
2.300	7.546	17.205	0.392	62.931		18.11	2.17	5	115	0.423	0.000	0.423	41.82	2.22	0.26
2.400	7.874	18.915	0.462	77.681		20.03	2.31	5	115	0.442	0.000	0.442	44.35	2.36	0.29
2.500	8.202	21.534	0.637	87.087		22.79	2.79	5	115	0.461	0.000	0.461	48.48	2.85	0.28
2.600	8.530	23.435	0.688	96.506		24.82	2.77	5	115	0.479	0.000	0.479	50.79	2.82	0.29
2.700	8.858	25.954	0.759	111.555		27.56	2.76	5	115	0.498	0.000	0.498	54.33	2.81	0.30
2.800	9.186	27.654	0.753	112.894		29.28	2.57	6	115	0.517	0.000	0.517	55.64	2.62	0.28
2.900	9.514	28.745	0.872	120.543		30.48	2.86	5	115	0.536	0.000	0.536	55.90	2.91	0.29
3.000	9.843	32.183	1.132	78.781		33.32	3.40	5	115	0.555	0.000	0.555	59.08	3.46	0.17
3.100	10.171	24.189	0.894	65.346		25.13	3.56	5	115	0.573	0.005	0.568	43.23	3.64	0.19

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth (m)	Depth (ft)	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT (ft/sec)	SPT N60 (blows/ft)	SPT (N1)60 (blows/ft)	Relative Density, Dr (%)	Friction Angle, φ' (degrees)	Young's modulus, Es (tsf)	Small strain shear modulus, Go (tsf)	Undrained shear strength, su (tsf)	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
0.100	0.328													
0.200	0.656													
0.300	0.984													
0.400	1.312													
0.500	1.640													
0.600	1.969													
0.700	2.297													
0.800	2.625													
0.900	2.953													
1.000	3.281													
1.100	3.609													
1.200	3.937													
1.300	4.265													
1.400	4.593													
1.500	4.921	3	2.87	16.41	1.00E-9	1.7	3.3				282	0.36	1.30	5.9
1.600	5.249	4	2.56	42.98	3.00E-8	4.2	8.0				854	1.12	3.83	17.2
1.700	5.577	4	2.60	40.98	3.00E-8	4.2	7.7				841	1.10	3.54	15.9
1.800	5.906	4	2.55	40.81	3.00E-8	4.3	7.7				890	1.17	3.54	15.9
1.900	6.234	4	2.49	38.55	3.00E-8	4.2	7.3				896	1.17	3.37	15.2
2.000	6.562	4	2.55	34.07	3.00E-8	3.9	6.6				814	1.06	2.89	13.0
2.100	6.890	4	2.57	34.18	3.00E-8	4.1	6.7				843	1.10	2.85	12.8
2.200	7.218	4	2.47	37.65	3.00E-8	4.6	7.4				988	1.29	3.19	14.4
2.300	7.546	5	2.42	32.80	3.00E-6	4.0	6.4	31	35	72	362			
2.400	7.874	5	2.42	35.16	3.00E-6	4.4	6.9	32	36	80	379			
2.500	8.202	5	2.45	39.13	3.00E-6	5.1	7.8	33	36	91	402			
2.600	8.530	5	2.43	41.24	3.00E-6	5.5	8.2	34	36	99	419			
2.700	8.858	5	2.41	44.33	3.00E-6	6.1	8.8	36	37	110	439			
2.800	9.186	5	2.38	45.58	3.00E-6	6.4	9.1	36	37	117	454			
2.900	9.514	5	2.41	46.54	3.00E-6	6.7	9.4	36	37	122	465			
3.000	9.843	4	2.44	50.00	3.00E-8	7.6	10.6				1666	2.18	3.94	17.7
3.100	10.171	4	2.56	37.58	3.00E-8	6.1	8.3				1257	1.64	2.88	13.0

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
3.200	10.499	22.789	0.834	76.402		23.89	3.49	5	115	0.592	0.015	0.577	40.40	3.58	0.24
3.300	10.827	23.617	1.235	45.779		24.28	5.09	3	111	0.610	0.026	0.585	40.48	5.22	0.14
3.400	11.155	22.534	1.199	37.950		23.08	5.19	3	111	0.629	0.036	0.593	37.88	5.34	0.12
3.500	11.483	20.643	0.962	51.732		21.39	4.50	3	111	0.647	0.046	0.601	34.53	4.64	0.18
3.600	11.811	21.289	0.904	69.314		22.29	4.06	4	115	0.666	0.056	0.609	35.49	4.18	0.23
3.700	12.139	22.925	0.911	76.127		24.02	3.79	4	115	0.685	0.067	0.618	37.77	3.90	0.23
3.800	12.467	22.580	0.914	59.572		23.44	3.90	4	115	0.703	0.077	0.626	36.29	4.02	0.19
3.900	12.795	21.334	0.920	39.922		21.91	4.20	4	115	0.722	0.087	0.635	33.37	4.34	0.13
4.000	13.123	20.107	0.880	33.934		20.60	4.27	4	115	0.741	0.097	0.644	30.85	4.43	0.12
4.100	13.451	18.988	0.788	42.480		19.60	4.02	4	115	0.760	0.108	0.652	28.89	4.18	0.16
4.200	13.780	17.833	0.624	59.537		18.69	3.34	5	115	0.779	0.118	0.661	27.11	3.48	0.23
4.300	14.108	19.443	0.601	72.601		20.49	2.93	5	115	0.797	0.128	0.669	29.42	3.05	0.26
4.400	14.436	20.989	0.738	68.979		21.98	3.36	5	115	0.816	0.138	0.678	31.23	3.49	0.23
4.500	14.764	20.634	0.755	70.605		21.65	3.49	5	115	0.835	0.149	0.686	30.33	3.63	0.24
4.600	15.092	21.862	0.765	72.183		22.90	3.34	5	115	0.854	0.159	0.695	31.73	3.47	0.23
4.700	15.420	22.780	0.771	77.024		23.89	3.23	5	115	0.872	0.169	0.703	32.72	3.35	0.23
4.800	15.748	23.344	0.721	94.499		24.70	2.92	5	115	0.891	0.179	0.712	33.44	3.03	0.28
4.900	16.076	22.962	0.774	82.343		24.15	3.20	5	115	0.910	0.189	0.721	32.25	3.33	0.25
5.000	16.404	20.316	0.706	55.114		21.11	3.34	5	115	0.929	0.200	0.729	27.68	3.50	0.19
5.100	16.732	17.987	0.637	44.452		18.63	3.42	5	115	0.948	0.210	0.738	23.97	3.60	0.17
5.200	17.060	17.278	0.676	38.452		17.83	3.79	4	115	0.966	0.220	0.746	22.60	4.01	0.15
5.300	17.388	15.550	0.610	40.078		16.13	3.78	4	115	0.985	0.230	0.755	20.06	4.03	0.18
5.400	17.717	15.578	0.568	43.759		16.21	3.50	4	115	1.004	0.241	0.763	19.92	3.73	0.19
5.500	18.045	16.987	0.649	39.396		17.55	3.70	4	115	1.023	0.251	0.772	21.42	3.93	0.16
5.600	18.373	18.570	0.674	47.763		19.26	3.50	5	115	1.042	0.261	0.781	23.34	3.70	0.17
5.700	18.701	25.008	0.764	72.470		26.05	2.93	5	115	1.060	0.271	0.789	31.67	3.06	0.20
5.800	19.029	27.154	0.813	75.697		28.24	2.88	5	115	1.079	0.282	0.798	34.06	2.99	0.19
5.900	19.357	32.374	1.246	81.291		33.54	3.71	5	115	1.098	0.292	0.806	40.25	3.84	0.17
6.000	19.685	28.173	1.195	19.698		28.46	4.20	4	115	1.117	0.302	0.815	33.56	4.37	0.04
6.100	20.013	14.532	0.750	33.360		15.01	5.00	3	111	1.135	0.312	0.823	16.87	5.40	0.15

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth	Depth	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT	SPT N60	SPT (N1)60	Relative Density, Dr	Friction Angle, φ'	Young's modulus, Es	Small strain shear modulus, Go	Undrained shear strength, su	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
(m)	(ft)				(ft/sec)	(blows/ft)	(blows/ft)	(%)	(degrees)	(tsf)	(tsf)	(tsf)		
3.200	10.499	4	2.57	35.35	3.00E-8	5.7	7.8				1194	1.55	2.69	12.1
3.300	10.827	4	2.69	36.26	3.00E-8	6.3	8.5				1214	1.58	2.70	12.1
3.400	11.155	3	2.71	34.18	1.00E-9	6.1	8.2				1154	1.50	2.53	11.4
3.500	11.483	4	2.70	31.15	3.00E-8	5.6	7.4				1069	1.38	2.30	10.4
3.600	11.811	4	2.66	31.88	3.00E-8	5.6	7.4				1114	1.44	2.37	10.6
3.700	12.139	4	2.62	33.81	3.00E-8	5.9	7.7				1201	1.56	2.52	11.3
3.800	12.467	4	2.64	32.69	3.00E-8	5.9	7.7				1172	1.52	2.42	10.9
3.900	12.795	4	2.69	30.36	3.00E-8	5.7	7.4				1095	1.41	2.22	10.0
4.000	13.123	4	2.72	28.27	3.00E-8	5.5	7.0				1030	1.32	2.06	9.3
4.100	13.451	4	2.73	26.55	3.00E-8	5.2	6.6				980	1.26	1.93	8.7
4.200	13.780	4	2.69	24.86	3.00E-8	4.8	6.1				935	1.19	1.81	8.1
4.300	14.108	4	2.63	26.81	3.00E-8	5.0	6.3				1024	1.31	1.96	8.8
4.400	14.436	4	2.65	28.59	3.00E-8	5.5	6.9				1099	1.41	2.08	9.4
4.500	14.764	4	2.67	27.92	3.00E-8	5.5	6.8				1083	1.39	2.02	9.1
4.600	15.092	4	2.64	29.17	3.00E-8	5.7	7.0				1145	1.47	2.12	9.5
4.700	15.420	4	2.62	30.08	3.00E-8	5.9	7.2				1194	1.53	2.18	9.8
4.800	15.748	4	2.58	30.69	3.00E-8	5.9	7.2				1235	1.59	2.23	10.0
4.900	16.076	4	2.62	29.81	3.00E-8	5.9	7.2				1207	1.55	2.15	9.7
5.000	16.404	4	2.69	25.83	3.00E-8	5.4	6.5				1055	1.35	1.85	8.3
5.100	16.732	4	2.74	22.55	3.00E-8	5.0	5.9				931	1.18	1.60	7.2
5.200	17.060	4	2.79	21.42	3.00E-8	4.9	5.8				892	1.12	1.51	6.8
5.300	17.388	3	2.83	19.12	1.00E-9	4.5	5.3				806	1.01	1.34	6.0
5.400	17.717	4	2.81	18.98	3.00E-8	4.5	5.3				810	1.01	1.33	6.0
5.500	18.045	3	2.80	20.42	1.00E-9	4.8	5.7				878	1.10	1.43	6.4
5.600	18.373	4	2.76	22.20	3.00E-8	5.2	6.0				963	1.21	1.56	7.0
5.700	18.701	4	2.61	29.77	3.00E-8	6.4	7.4				1303	1.67	2.11	9.5
5.800	19.029	4	2.58	32.01	3.00E-8	6.9	7.9				1412	1.81	2.27	10.2
5.900	19.357	4	2.60	37.98	3.00E-8	8.3	9.5				1677	2.16	2.68	12.1
6.000	19.685	4	2.69	31.97	3.00E-8	7.5	8.6				1423	1.82	2.24	10.1
6.100	20.013	3	2.97	16.45	1.00E-9	4.6	5.2				751	0.93	1.12	5.1

GREGG DRILLING & TESTING, INC.

CONE PENETRATION TEST DATA

Client:	TREADWELL & ROLLO
Site:	EMERY STATION EAST
Engineer:	M.HALL
Sounding:	TRCPT-09
Date:	2010-03-31
Time:	11:27 AM

Units:	Imperial	
Data averaging interval:	0.100	meters
Assumed depth of water:	10.003	feet
Net area ratio of cone:	0.80	
Unit weight of water:	62.4	lb/ft3
Relative density constant, CDR:	350	
Young's modulus for sands, a:	4	
Small strain shear modulus number, SG (sands):	180	
Small strain shear modulus number, CG (clays):	50	
Nkt for clays:	15	
OCR number, kocr:	0.3	

Interpretation based on Lunne, Robertson and Powell, 1997

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
0.100	0.328	0.000	0.000	0.000							0.000				
0.200	0.656	0.000	0.000	0.000							0.000				
0.300	0.984	0.000	0.000	0.000							0.000				
0.400	1.312	0.000	0.000	0.000							0.000				
0.500	1.640	0.000	0.000	0.000							0.000				
0.600	1.969	0.000	0.000	0.000							0.000				
0.700	2.297	0.000	0.000	0.000							0.000				
0.800	2.625	0.000	0.000	0.000							0.000				
0.900	2.953	0.000	0.000	0.000							0.000				
1.000	3.281	0.000	0.000	0.000							0.000				
1.100	3.609	0.000	0.000	0.000							0.000				
1.200	3.937	0.000	0.000	0.000							0.000				
1.300	4.265	0.000	0.000	0.000							0.000				
1.400	4.593	0.000	0.000	0.000							0.000				
1.500	4.921	0.667	0.413	17.951		0.93	44.64	2	80	0.196	0.000	0.196	3.73	56.62	1.77
1.600	5.249	5.992	1.237	50.796		6.72	18.40	3	111	0.214	0.000	0.214	30.41	19.01	0.56
1.700	5.577	15.217	1.181	33.907		15.71	7.52	3	111	0.232	0.000	0.232	66.59	7.63	0.16
1.800	5.906	17.668	0.945	34.655		18.17	5.20	3	111	0.251	0.000	0.251	71.49	5.27	0.14
1.900	6.234	16.765	0.974	46.722		17.44	5.59	3	111	0.269	0.000	0.269	63.85	5.68	0.20
2.000	6.562	21.994	0.866	30.788		22.44	3.86	4	115	0.288	0.000	0.288	76.99	3.91	0.10
2.100	6.890	22.023	0.630	40.416		22.60	2.79	5	115	0.306	0.000	0.306	72.75	2.83	0.13
2.200	7.218	13.852	0.575	50.903		14.59	3.94	4	115	0.325	0.000	0.325	43.84	4.03	0.26
2.300	7.546	18.255	0.660	59.963		19.12	3.45	5	115	0.344	0.000	0.344	54.56	3.51	0.23
2.400	7.874	15.659	0.741	68.804		16.65	4.45	3	111	0.362	0.000	0.362	44.95	4.55	0.30
2.500	8.202	16.380	0.703	65.252		17.32	4.06	4	115	0.381	0.000	0.381	44.44	4.15	0.28
2.600	8.530	17.909	0.612	75.234		18.99	3.22	5	115	0.400	0.000	0.400	46.49	3.29	0.29
2.700	8.858	19.841	0.441	80.062		20.99	2.10	6	115	0.419	0.000	0.419	49.13	2.14	0.28
2.800	9.186	23.446	0.401	67.798		24.42	1.64	6	115	0.438	0.000	0.438	54.82	1.67	0.20
2.900	9.514	22.888	0.476	39.140		23.45	2.03	6	115	0.456	0.000	0.456	50.39	2.07	0.12
3.000	9.843	17.034	0.469	63.082		17.94	2.61	5	115	0.475	0.000	0.475	36.76	2.69	0.26
3.100	10.171	14.660	0.651	65.184		15.60	4.17	3	111	0.493	0.005	0.488	30.94	4.31	0.31

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth (m)	Depth (ft)	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT (ft/sec)	SPT N60 (blows/ft)	SPT (N1)60 (blows/ft)	Relative Density, Dr (%)	Friction Angle, φ' (degrees)	Young's modulus, Es (tsf)	Small strain shear modulus, Go (tsf)	Undrained shear strength, su (tsf)	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
0.100	0.328													
0.200	0.656													
0.300	0.984													
0.400	1.312													
0.500	1.640													
0.600	1.969													
0.700	2.297													
0.800	2.625													
0.900	2.953													
1.000	3.281													
1.100	3.609													
1.200	3.937													
1.300	4.265													
1.400	4.593													
1.500	4.921	2	4.06	3.73	3.00E-7	0.6	1.5				46	0.05	0.25	1.1
1.600	5.249	3	3.19	28.79	1.00E-9	2.2	4.8				336	0.43	2.03	9.1
1.700	5.577	9	2.67	49.87	1.00E-8	4.0	8.6					1.03	4.44	20.0
1.800	5.906	9	2.53	51.03	1.00E-8	4.4	9.0					1.19	4.77	21.4
1.900	6.234	9	2.58	47.41	1.00E-8	4.2	8.4					1.14	4.26	19.2
2.000	6.562	4	2.41	54.16	3.00E-8	5.1	9.8				1122	1.48	5.13	23.1
2.100	6.890	5	2.32	50.40	3.00E-6	4.9	9.2	38	39	90	350			
2.200	7.218	4	2.58	33.94	3.00E-8	3.5	6.3				729	0.95	2.92	13.2
2.300	7.546	4	2.47	41.21	3.00E-8	4.4	7.7				956	1.25	3.64	16.4
2.400	7.874	4	2.61	35.97	3.00E-8	4.0	6.9				833	1.09	3.00	13.5
2.500	8.202	4	2.59	35.66	3.00E-8	4.2	6.9				866	1.13	2.96	13.3
2.600	8.530	4	2.50	36.77	3.00E-8	4.4	7.1				950	1.24	3.10	13.9
2.700	8.858	5	2.36	37.76	3.00E-6	4.5	7.2	33	36	84	379			
2.800	9.186	5	2.25	41.47	3.00E-6	5.1	7.9	34	37	98	404			
2.900	9.514	5	2.34	39.50	3.00E-6	5.2	7.9	34	37	94	404			
3.000	9.843	4	2.52	30.43	3.00E-8	4.2	6.2				897	1.16	2.45	11.0
3.100	10.171	4	2.71	26.95	3.00E-8	4.0	5.8				780	1.01	2.06	9.3

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
3.200	10.499	16.024	0.834	56.321		16.84	4.95	3	111	0.512	0.015	0.496	32.90	5.11	0.25
3.300	10.827	15.352	0.877	46.210		16.02	5.48	3	111	0.530	0.026	0.504	30.71	5.66	0.21
3.400	11.155	11.709	0.863	40.343		12.29	7.02	3	111	0.548	0.036	0.512	22.92	7.35	0.24
3.500	11.483	7.854	0.843	46.441		8.52	9.89	3	111	0.567	0.046	0.520	15.29	10.59	0.41
3.600	11.811	9.786	0.944	51.403		10.53	8.96	3	111	0.585	0.056	0.528	18.82	9.49	0.37
3.700	12.139	13.429	1.176	51.538		14.17	8.30	3	111	0.603	0.067	0.536	25.29	8.67	0.27
3.800	12.467	16.986	1.388	49.352		17.70	7.84	3	111	0.621	0.077	0.544	31.36	8.13	0.20
3.900	12.795	21.629	1.349	49.768		22.35	6.04	3	111	0.640	0.087	0.552	39.29	6.21	0.16
4.000	13.123	36.865	1.311	66.399		37.82	3.47	5	115	0.658	0.097	0.561	66.24	3.53	0.13
4.100	13.451	45.056	1.641	66.393		46.01	3.57	5	115	0.677	0.108	0.570	79.59	3.62	0.10
4.200	13.780	50.408	2.367	70.232		51.42	4.60	4	115	0.696	0.118	0.578	87.73	4.67	0.10
4.300	14.108	57.338	3.037	28.433		57.75	5.26	11	131	0.717	0.128	0.589	96.77	5.32	0.03
4.400	14.436	93.552	2.782	65.224		94.49	2.94	6	115	0.736	0.138	0.598	156.81	2.97	0.05
4.500	14.764	74.384	2.498	64.015		75.31	3.32	6	115	0.755	0.149	0.606	122.93	3.35	0.06
4.600	15.092	41.239	2.164	66.084		42.19	5.13	3	111	0.773	0.159	0.614	67.40	5.22	0.11
4.700	15.420	53.851	1.639	55.933		54.66	3.00	6	115	0.792	0.169	0.623	86.45	3.04	0.07
4.800	15.748	49.141	1.216	64.898		50.08	2.43	6	115	0.811	0.179	0.632	78.00	2.47	0.09
4.900	16.076	28.002	1.290	41.394		28.60	4.51	4	115	0.830	0.189	0.640	43.38	4.65	0.10
5.000	16.404	15.304	0.949	27.944		15.71	6.04	3	111	0.848	0.200	0.648	22.92	6.39	0.12
5.100	16.732	16.861	0.569	51.730		17.61	3.23	5	115	0.867	0.210	0.657	25.49	3.40	0.21
5.200	17.060	14.564	0.490	62.987		15.47	3.17	5	115	0.886	0.220	0.665	21.92	3.36	0.30
5.300	17.388	12.064	0.476	63.043		12.97	3.67	4	115	0.904	0.230	0.674	17.91	3.94	0.36
5.400	17.717	9.402	0.421	66.505		10.36	4.06	3	111	0.923	0.241	0.682	13.84	4.46	0.48
5.500	18.045	10.075	0.437	65.409		11.02	3.97	3	111	0.941	0.251	0.690	14.60	4.34	0.44
5.600	18.373	15.660	0.451	64.932		16.59	2.72	5	115	0.960	0.261	0.699	22.38	2.89	0.28
5.700	18.701	16.899	0.416	69.844		17.91	2.32	5	115	0.978	0.271	0.707	23.94	2.46	0.28
5.800	19.029	16.351	0.407	69.113		17.35	2.34	5	115	0.997	0.282	0.716	22.84	2.49	0.29
5.900	19.357	13.583	0.431	67.505		14.56	2.96	5	115	1.016	0.292	0.724	18.69	3.19	0.34
6.000	19.685	10.940	0.417	75.076		12.02	3.47	4	115	1.035	0.302	0.733	14.99	3.80	0.46
6.100	20.013	11.824	0.408	76.712		12.93	3.16	4	115	1.054	0.312	0.741	16.02	3.44	0.44
6.200	20.341	10.872	0.364	76.498		11.97	3.04	4	115	1.072	0.323	0.750	14.54	3.34	0.48
6.300	20.669	9.248	0.273	82.394		10.43	2.62	5	115	1.091	0.333	0.758	12.32	2.93	0.60
6.400	20.997	22.734	0.355	97.939		24.14	1.47	6	115	1.110	0.343	0.767	30.03	1.54	0.29
6.500	21.325	45.786	0.822	120.174		47.52	1.73	7	118	1.129	0.353	0.776	59.77	1.77	0.18
6.600	21.654	51.522	1.515	147.472		53.65	2.82	6	115	1.148	0.364	0.785	66.90	2.89	0.20
6.700	21.982	50.349	2.050	149.276		52.50	3.90	5	115	1.167	0.374	0.793	64.71	3.99	0.20
6.800	22.310	57.283	2.427	69.479		58.28	4.16	5	115	1.186	0.384	0.802	71.21	4.25	0.08
6.900	22.638	44.863	2.362	37.864		45.41	5.20	3	111	1.204	0.394	0.810	54.58	5.34	0.05
7.000	22.966	25.705	1.995	55.990		26.51	7.53	3	111	1.222	0.404	0.818	30.92	7.89	0.14
7.100	23.294	21.532	2.052	66.280		22.49	9.12	3	111	1.241	0.415	0.826	25.72	9.66	0.21
7.200	23.622	22.856	2.747	54.742		23.64	11.62	3	111	1.259	0.425	0.834	26.84	12.27	0.16
7.300	23.950	21.160	3.178	23.526		21.50	14.78	3	111	1.277	0.435	0.842	24.02	15.72	0.06
7.400	24.278	30.232	2.625	57.406		31.06	8.45	3	111	1.295	0.445	0.850	35.02	8.82	0.12
7.500	24.606	34.904	1.993	54.449		35.69	5.58	3	111	1.314	0.456	0.858	40.06	5.80	0.10
7.600	24.934	19.831	1.412	97.158		21.23	6.65	3	111	1.332	0.466	0.866	22.97	7.10	0.33
7.700	25.262	26.637	1.060	82.574		27.83	3.81	5	115	1.351	0.476	0.875	30.27	4.00	0.21
7.800	25.591	30.924	0.845	75.953		32.02	2.64	6	115	1.370	0.486	0.883	34.70	2.76	0.16
7.900	25.919	27.992	0.827	59.002		28.84	2.87	5	115	1.388	0.497	0.892	30.79	3.01	0.14
8.000	26.247	20.937	0.979	59.047		21.79	4.50	3	111	1.407	0.507	0.900	22.65	4.81	0.18
8.100	26.575	18.053	1.033	61.272		18.94	5.46	3	111	1.425	0.517	0.908	19.29	5.90	0.22

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth	Depth	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT	SPT N60	SPT (N1)60	Relative Density, Dr	Friction Angle, φ'	Young's modulus, Es	Small strain shear modulus, Go	Undrained shear strength, su	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
(m)	(ft)				(ft/sec)	(blows/ft)	(blows/ft)	(%)	(degrees)	(tsf)	(tsf)	(tsf)		
3.200	10.499	3	2.74	28.95	1.00E-9	4.4	6.4				842	1.09	2.19	9.9
3.300	10.827	3	2.80	27.42	1.00E-9	4.4	6.3				801	1.03	2.05	9.2
3.400	11.155	3	2.97	21.29	1.00E-9	3.7	5.3				614	0.78	1.53	6.9
3.500	11.483	3	3.20	14.96	1.00E-9	2.9	4.1				426	0.53	1.02	4.6
3.600	11.811	3	3.11	18.05	1.00E-9	3.4	4.7				526	0.66	1.25	5.6
3.700	12.139	3	2.99	23.71	1.00E-9	4.3	6.0				709	0.90	1.69	7.6
3.800	12.467	3	2.90	28.94	1.00E-9	5.1	7.1				885	1.14	2.09	9.4
3.900	12.795	3	2.75	35.26	1.00E-9	6.0	8.3				1117	1.45	2.62	11.8
4.000	13.123	4	2.42	55.92	3.00E-8	8.6	11.9				1891	2.48	4.42	19.9
4.100	13.451	5	2.37	66.90	3.00E-6	10.3	14.1	44	39	184	545			
4.200	13.780	9	2.43	74.82	1.00E-8	11.9	16.1					3.38	5.85	26.3
4.300	14.108	9	2.45	83.22	1.00E-8	13.6	18.3					3.80	6.45	29.0
4.400	14.436	8	2.12	127.94	3.00E-6	19.3	25.7	60	43	378				
4.500	14.764	8	2.23	102.62	3.00E-6	16.0	21.2	54	42	301				
4.600	15.092	4	2.54	59.48	3.00E-8	10.2	13.4				2110	2.76	4.49	20.2
4.700	15.420	5	2.29	73.58	3.00E-6	11.9	15.5	46	40	219	595			
4.800	15.748	5	2.26	66.29	3.00E-6	10.7	13.9	44	39	200	580			
4.900	16.076	4	2.63	39.17	3.00E-8	7.3	9.3				1430	1.85	2.89	13.0
5.000	16.404	3	2.92	21.67	1.00E-9	4.7	6.0				785	0.99	1.53	6.9
5.100	16.732	4	2.71	23.39	3.00E-8	4.6	5.8				880	1.12	1.70	7.6
5.200	17.060	4	2.75	20.30	3.00E-8	4.0	5.1				774	0.97	1.46	6.6
5.300	17.388	3	2.87	16.87	1.00E-9	3.6	4.5				649	0.80	1.19	5.4
5.400	17.717	3	2.99	13.27	1.00E-9	3.0	3.7				518	0.63	0.92	4.2
5.500	18.045	3	2.96	13.97	1.00E-9	3.1	3.9				551	0.67	0.97	4.4
5.600	18.373	4	2.71	20.77	3.00E-8	4.2	5.2				830	1.04	1.49	6.7
5.700	18.701	4	2.64	22.08	3.00E-8	4.4	5.4				895	1.13	1.60	7.2
5.800	19.029	4	2.66	21.17	3.00E-8	4.3	5.2				867	1.09	1.52	6.9
5.900	19.357	4	2.79	17.63	3.00E-8	3.8	4.6				728	0.90	1.25	5.6
6.000	19.685	3	2.92	14.36	1.00E-9	3.3	4.0				601	0.73	1.00	4.5
6.100	20.013	3	2.87	15.28	1.00E-9	3.5	4.2				646	0.79	1.07	4.8
6.200	20.341	3	2.89	13.93	1.00E-9	3.3	3.9				599	0.73	0.97	4.4
6.300	20.669	3	2.92	11.85	1.00E-9	2.8	3.3				522	0.62	0.82	3.7
6.400	20.997	5	2.44	27.62	3.00E-6	5.4	6.3	28	33	97	485			
6.500	21.325	5	2.24	54.13	3.00E-6	9.9	11.6	39	38	190	611			
6.600	21.654	5	2.35	61.41	3.00E-6	11.7	13.6	42	38	215	638			
6.700	21.982	4	2.46	60.16	3.00E-8	12.1	13.9				2625	3.42	4.31	19.4
6.800	22.310	4	2.46	66.35	3.00E-8	13.7	15.7				2914	3.81	4.75	21.4
6.900	22.638	4	2.61	51.61	3.00E-8	11.5	13.2				2270	2.95	3.64	16.4
7.000	22.966	3	2.90	29.96	1.00E-9	7.7	8.8				1326	1.69	2.06	9.3
7.100	23.294	3	3.02	25.18	1.00E-9	7.0	7.9				1124	1.42	1.71	7.7
7.200	23.622	3	3.08	26.42	1.00E-9	7.7	8.7				1182	1.49	1.79	8.1
7.300	23.950	3	3.19	23.83	1.00E-9	7.7	8.6				1075	1.35	1.60	7.2
7.400	24.278	3	2.90	34.09	1.00E-9	9.1	10.1				1553	1.98	2.33	10.5
7.500	24.606	3	2.72	38.62	1.00E-9	9.5	10.6				1784	2.29	2.67	12.0
7.600	24.934	3	2.96	22.50	1.00E-9	6.2	6.8				1062	1.33	1.53	6.9
7.700	25.262	4	2.70	29.23	3.00E-8	7.2	7.9				1391	1.77	2.02	9.1
7.800	25.591	4	2.55	33.30	3.00E-8	7.7	8.4				1601	2.04	2.31	10.4
7.900	25.919	4	2.61	29.70	3.00E-8	7.2	7.8				1442	1.83	2.05	9.2
8.000	26.247	3	2.84	22.15	1.00E-9	6.1	6.6				1089	1.36	1.51	6.8
8.100	26.575	3	2.96	18.98	1.00E-9	5.6	6.1				947	1.17	1.29	5.8

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
8.200	26.903	14.400	0.886	65.471		15.34	5.78	3	111	1.443	0.527	0.916	15.18	6.38	0.30
8.300	27.231	15.727	0.736	78.201		16.85	4.37	3	111	1.461	0.538	0.924	16.66	4.78	0.33
8.400	27.559	18.591	0.789	70.698		19.61	4.02	4	115	1.480	0.548	0.932	19.44	4.35	0.25
8.500	27.887	35.212	0.811	69.405		36.21	2.24	6	115	1.499	0.558	0.941	36.89	2.34	0.13
8.600	28.215	40.711	0.753	76.599		41.81	1.80	7	118	1.518	0.568	0.950	42.41	1.87	0.12
8.700	28.543	27.195	0.759	72.384		28.24	2.69	6	115	1.537	0.578	0.959	27.85	2.84	0.17
8.800	28.871	28.166	0.749	55.844		28.97	2.58	6	115	1.556	0.589	0.967	28.34	2.73	0.13
8.900	29.199	23.907	0.694	78.117		25.03	2.77	5	115	1.575	0.599	0.976	24.04	2.96	0.21
9.000	29.528	20.004	0.611	87.469		21.26	2.87	5	115	1.594	0.609	0.984	19.98	3.10	0.29
9.100	29.856	22.109	0.433	87.958		23.38	1.85	6	115	1.612	0.619	0.993	21.92	1.99	0.26
9.200	30.184	30.521	0.544	91.510		31.84	1.71	6	115	1.631	0.630	1.002	30.16	1.80	0.20
9.300	30.512	26.935	0.619	80.612		28.10	2.20	6	115	1.650	0.640	1.010	26.18	2.34	0.20
9.400	30.840	20.745	0.472	84.001		21.95	2.15	6	115	1.669	0.650	1.019	19.91	2.33	0.27
9.500	31.168	19.005	0.415	91.926		20.33	2.04	6	115	1.688	0.660	1.027	18.15	2.23	0.32
9.600	31.496	20.398	0.470	91.661		21.72	2.17	6	115	1.706	0.671	1.036	19.32	2.35	0.30
9.700	31.824	18.572	0.589	92.134		19.90	2.96	5	115	1.725	0.681	1.044	17.40	3.24	0.33
9.800	32.152	15.323	0.632	101.171		16.78	3.77	4	115	1.744	0.691	1.053	14.28	4.20	0.44
9.900	32.480	24.244	0.666	105.336		25.76	2.59	6	115	1.763	0.701	1.061	22.61	2.78	0.29
10.000	32.808	16.967	0.700	76.936		18.07	3.87	4	115	1.782	0.712	1.070	15.23	4.29	0.30
10.100	33.136	21.436	0.688	89.076		22.72	3.03	5	115	1.800	0.722	1.079	19.40	3.29	0.27
10.200	33.465	18.858	1.169	132.904		20.77	5.63	3	111	1.819	0.732	1.087	17.44	6.17	0.47
10.300	33.793	47.485	2.380	57.147		48.31	4.93	4	115	1.837	0.742	1.095	42.43	5.12	0.07
10.400	34.121	121.420	3.006	39.258		121.99	2.46	7	118	1.857	0.752	1.104	108.79	2.50	0.02
10.500	34.449	55.947	2.819	45.007		56.60	4.98	11	131	1.878	0.763	1.115	49.06	5.15	0.05
10.600	34.777	50.150	2.284	17.215		50.40	4.53	4	115	1.897	0.773	1.124	43.15	4.71	0.01
10.700	35.105	46.959	1.253	45.564		47.61	2.63	6	115	1.916	0.783	1.133	40.35	2.74	0.05
10.800	35.433	58.187	1.347	69.557		59.19	2.28	6	115	1.935	0.793	1.141	50.17	2.35	0.07
10.900	35.761	100.137	2.129	70.822		101.16	2.10	7	118	1.954	0.804	1.150	86.25	2.15	0.04
11.000	36.089	77.826	2.401	26.416		78.21	3.07	6	115	1.973	0.814	1.159	65.79	3.15	0.01
11.100	36.417	92.408	1.889	5.722		92.49	2.04	7	118	1.992	0.824	1.168	77.49	2.09	0.00
11.200	36.745	54.024	1.087	10.392		54.17	2.01	7	118	2.011	0.834	1.177	44.32	2.08	0.00
11.300	37.073	17.361	0.778	36.470		17.89	4.35	3	111	2.030	0.845	1.185	13.38	4.90	0.11
11.400	37.402	7.982	0.551	58.687		8.83	6.25	3	111	2.048	0.855	1.193	5.68	8.13	0.50
11.500	37.730	11.632	0.457	73.165		12.69	3.60	4	115	2.067	0.865	1.202	8.84	4.30	0.41
11.600	38.058	5.556	0.649	91.414		6.87	9.44	3	111	2.085	0.875	1.210	3.96	13.56	1.19
11.700	38.386	9.651	1.111	120.404		11.39	9.76	3	111	2.103	0.886	1.218	7.62	11.97	0.84
11.800	38.714	32.078	1.594	107.736		33.63	4.74	4	115	2.122	0.896	1.226	25.70	5.06	0.22
11.900	39.042	35.394	1.557	112.738		37.02	4.21	4	115	2.141	0.906	1.235	28.25	4.47	0.21
12.000	39.370	26.810	1.887	119.274		28.53	6.61	3	111	2.159	0.916	1.243	21.22	7.16	0.29
12.100	39.698	29.050	2.203	74.261		30.12	7.31	3	111	2.177	0.927	1.251	22.34	7.88	0.16
12.200	40.026	26.109	1.793	72.800		27.16	6.60	3	111	2.196	0.937	1.259	19.83	7.18	0.17
12.300	40.354	26.801	1.307	91.369		28.12	4.65	4	115	2.214	0.947	1.267	20.44	5.05	0.22
12.400	40.682	28.800	1.373	93.516		30.15	4.55	4	115	2.233	0.957	1.276	21.88	4.92	0.21
12.500	41.011	53.640	1.435	91.437		54.96	2.61	6	115	2.252	0.967	1.285	41.03	2.72	0.11
12.600	41.339	80.527	1.351	92.516		81.86	1.65	7	118	2.271	0.978	1.294	61.52	1.70	0.07
12.700	41.667	80.719	1.331	90.858		82.03	1.62	7	118	2.291	0.988	1.303	61.21	1.67	0.07
12.800	41.995	91.005	1.832	49.734		91.72	2.00	7	118	2.310	0.998	1.312	68.16	2.05	0.03
12.900	42.323	72.212	1.923	43.080		72.83	2.64	6	115	2.329	1.008	1.320	53.40	2.73	0.03
13.000	42.651	94.177	2.029	79.488		95.32	2.13	7	118	2.348	1.019	1.329	69.94	2.18	0.05
13.100	42.979	125.400	2.537	29.411		125.82	2.02	7	118	2.367	1.029	1.339	92.23	2.05	0.01

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth	Depth	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT	SPT N60	SPT (N1)60	Relative Density, Dr	Friction Angle, φ'	Young's modulus, Es	Small strain shear modulus, Go	Undrained shear strength, su	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
(m)	(ft)				(ft/sec)	(blows/ft)	(blows/ft)	(%)	(degrees)	(tsf)	(tsf)	(tsf)		
8.200	26.903	3	3.06	15.01	1.00E-9	4.8	5.1				767	0.93	1.01	4.6
8.300	27.231	3	2.94	16.41	1.00E-9	4.9	5.2				843	1.03	1.11	5.0
8.400	27.559	3	2.87	19.12	1.00E-9	5.5	5.8				980	1.21	1.30	5.8
8.500	27.887	5	2.48	35.83	3.00E-6	8.5	9.0	32	35	145	595			
8.600	28.215	5	2.37	41.15	3.00E-6	9.3	9.9	34	36	167	626			
8.700	28.543	4	2.63	27.30	3.00E-8	7.1	7.4				1412	1.78	1.86	8.4
8.800	28.871	4	2.61	27.82	3.00E-8	7.2	7.6				1449	1.83	1.89	8.5
8.900	29.199	4	2.69	23.68	3.00E-8	6.4	6.7				1252	1.56	1.60	7.2
9.000	29.528	4	2.76	19.75	3.00E-8	5.6	5.8				1063	1.31	1.33	6.0
9.100	29.856	4	2.62	21.63	3.00E-8	5.7	5.9				1169	1.45	1.46	6.6
9.200	30.184	5	2.48	29.75	3.00E-6	7.4	7.6	29	34	127	582			
9.300	30.512	4	2.60	25.92	3.00E-8	6.9	7.0				1405	1.76	1.75	7.9
9.400	30.840	4	2.69	19.77	3.00E-8	5.6	5.7				1098	1.35	1.33	6.0
9.500	31.168	4	2.71	18.05	3.00E-8	5.1	5.2				1016	1.24	1.21	5.4
9.600	31.496	4	2.70	19.25	3.00E-8	5.5	5.6				1086	1.33	1.29	5.8
9.700	31.824	4	2.82	17.37	3.00E-8	5.3	5.4				995	1.21	1.16	5.2
9.800	32.152	3	2.96	14.27	1.00E-9	4.8	4.8				839	1.00	0.95	4.3
9.900	32.480	4	2.69	22.62	3.00E-8	6.5	6.5				1288	1.60	1.51	6.8
10.000	32.808	3	2.94	15.25	1.00E-9	5.2	5.2				904	1.09	1.02	4.6
10.100	33.136	4	2.79	19.45	3.00E-8	6.1	6.0				1136	1.39	1.29	5.8
10.200	33.465	3	3.00	17.49	1.00E-9	6.0	6.0				1039	1.26	1.16	5.2
10.300	33.793	4	2.67	42.71	3.00E-8	12.6	12.4				2415	3.10	2.83	12.7
10.400	34.121	5	2.16	110.40	3.00E-6	25.5	24.9	56	41	488	940			
10.500	34.449	4	2.63	49.59	3.00E-8	14.5	14.1				2830	3.65	3.27	14.7
10.600	34.777	4	2.64	43.68	3.00E-8	13.1	12.7				2520	3.23	2.88	12.9
10.700	35.105	4	2.49	41.02	3.00E-8	11.4	11.0				2381	3.05	2.69	12.1
10.800	35.433	5	2.38	51.24	3.00E-6	13.4	12.9	38	37	237	747			
10.900	35.761	5	2.18	88.71	3.00E-6	21.2	20.3	50	40	405	895			
11.000	36.089	5	2.38	67.47	3.00E-6	18.0	17.2	44	38	313	824			
11.100	36.417	5	2.21	80.06	3.00E-6	19.7	18.8	48	39	370	874			
11.200	36.745	5	2.39	45.64	3.00E-6	12.5	11.8	36	36	217	733			
11.300	37.073	3	3.02	13.51	1.00E-9	5.6	5.3				894	1.06	0.89	4.0
11.400	37.402	3	3.45	5.68	1.00E-9	3.6	3.3				441	0.45	0.38	1.7
11.500	37.730	3	3.13	8.90	1.00E-9	4.1	3.8				634	0.71	0.59	2.7
11.600	38.058	2	3.71	3.96	3.00E-7	3.2	3.0				344	0.32	0.26	1.2
11.700	38.386	2	3.46	7.62	3.00E-7	4.3	4.0				569	0.62	0.51	2.3
11.800	38.714	3	2.82	26.26	1.00E-9	9.2	8.6				1681	2.10	1.71	7.7
11.900	39.042	4	2.75	28.98	3.00E-8	9.8	9.1				1851	2.33	1.88	8.5
12.000	39.370	3	2.98	21.55	1.00E-9	8.5	7.8				1426	1.76	1.41	6.4
12.100	39.698	3	3.00	22.69	1.00E-9	9.3	8.5				1506	1.86	1.49	6.7
12.200	40.026	3	3.01	20.14	1.00E-9	8.4	7.7				1358	1.66	1.32	5.9
12.300	40.354	3	2.89	20.90	1.00E-9	8.0	7.3				1406	1.73	1.36	6.1
12.400	40.682	3	2.86	22.43	1.00E-9	8.5	7.7				1507	1.86	1.46	6.6
12.500	41.011	4	2.49	43.03	3.00E-8	13.0	11.8				2748	3.51	2.74	12.3
12.600	41.339	5	2.22	65.69	3.00E-6	17.3	15.6	43	38	327	868			
12.700	41.667	5	2.22	65.52	3.00E-6	17.3	15.6	43	38	328	870			
12.800	41.995	5	2.24	73.01	3.00E-6	19.7	17.7	46	38	367	906			
12.900	42.323	5	2.40	56.70	3.00E-6	16.8	15.1	40	37	291	840			
13.000	42.651	5	2.25	75.17	3.00E-6	20.5	18.3	46	39	381	921			
13.100	42.979	5	2.15	100.09	3.00E-6	26.2	23.3	53	40	503	1013			

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i
Depth	Depth	qc	fs	u	Other	qt	Rf	SBT	Unit Weight, γ	Total Overburden Stress, σv	Insitu pore pressure, uo	Effective overburden stress, σ'v	Normalized cone resistance, Qtl	Normalized Friction raio, Fr	Normalized pore pressure ratio, Bq
(m)	(ft)	(tsf)	(tsf)	(psi)		(tsf)	(%)		(pcf)	(tsf)	(tsf)	(tsf)			
13.200	43.307	76.297	2.033	32.789		76.77	2.65	6	115	2.386	1.039	1.347	55.22	2.73	0.02
13.300	43.635	33.424	1.337	74.216		34.49	3.88	5	115	2.405	1.049	1.356	23.67	4.17	0.13
13.400	43.963	16.099	1.064	72.884		17.15	6.21	3	111	2.423	1.060	1.364	10.80	7.23	0.28
13.500	44.291	12.485	1.118	78.915		13.62	8.21	3	111	2.442	1.070	1.372	8.15	10.00	0.41
13.600	44.619	26.599	1.744	86.727		27.85	6.26	3	111	2.460	1.080	1.380	18.40	6.87	0.20
13.700	44.948	60.955	1.855	16.214		61.19	3.03	6	115	2.479	1.090	1.388	42.29	3.16	0.00
13.800	45.276	67.251	1.110	78.167		68.38	1.62	7	118	2.498	1.101	1.397	47.14	1.68	0.07
13.900	45.604	40.989	0.802	119.488		42.71	1.88	6	115	2.517	1.111	1.406	28.59	1.99	0.19
14.000	45.932	52.284	0.892	150.237		54.45	1.64	7	118	2.536	1.121	1.415	36.69	1.72	0.19
14.100	46.260	48.603	1.041	177.675		51.16	2.03	7	118	2.555	1.131	1.424	34.13	2.14	0.24
14.200	46.588	35.097	1.096	212.678		38.16	2.87	6	115	2.574	1.141	1.433	24.84	3.08	0.40
14.300	46.916	38.653	1.098	209.531		41.67	2.63	6	115	2.593	1.152	1.441	27.11	2.81	0.36
14.400	47.244	39.336	1.071	212.251		42.39	2.53	6	115	2.612	1.162	1.450	27.44	2.69	0.35
14.500	47.572	45.796	1.143	205.743		48.76	2.34	6	115	2.631	1.172	1.458	31.63	2.48	0.30
14.600	47.900	45.786	1.239	212.971		48.85	2.54	6	115	2.649	1.182	1.467	31.50	2.68	0.31
14.700	48.228	40.960	1.277	228.410		44.25	2.89	6	115	2.668	1.193	1.475	28.18	3.07	0.37
14.800	48.556	81.892	1.709	227.398		85.17	2.01	7	118	2.687	1.203	1.485	55.56	2.07	0.18
14.900	48.885	158.670	3.044	170.526		161.13	1.89	8	121	2.707	1.213	1.494	106.02	1.92	0.07
15.000	49.213	142.789	4.870	82.152		143.97	3.38	6	115	2.726	1.223	1.503	93.99	3.45	0.03
15.100	49.541	105.578	5.428	90.588		106.88	5.08	11	131	2.747	1.234	1.514	68.79	5.21	0.05
15.200	49.869	186.508	4.898	64.111		187.43	2.61	7	118	2.767	1.244	1.523	121.25	2.65	0.02

Col 1i	Col 2i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth	Depth	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Qtn	Estimated permeability, kSBT	SPT N60	SPT (N1)60	Relative Density, Dr	Friction Angle, φ'	Young's modulus, Es	Small strain shear modulus, Go	Undrained shear strength, su	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
(m)	(ft)				(ft/sec)	(blows/ft)	(blows/ft)	(%)	(degrees)	(tsf)	(tsf)	(tsf)		
13.200	43.307	5	2.39	58.99	3.00E-6	17.7	15.7	41	37	307	861			
13.300	43.635	4	2.79	24.60	3.00E-8	9.4	8.3				1725	2.14	1.58	7.1
13.400	43.963	3	3.20	10.88	1.00E-9	5.9	5.2				857	0.98	0.72	3.2
13.500	44.291	2	3.39	8.15	3.00E-7	5.3	4.6				681	0.75	0.54	2.4
13.600	44.619	3	3.02	18.83	1.00E-9	8.6	7.5				1392	1.69	1.23	5.5
13.700	44.948	4	2.52	45.08	3.00E-8	15.0	13.1				3059	3.91	2.82	12.7
13.800	45.276	5	2.31	51.25	3.00E-6	15.0	13.1	38	36	274	839			
13.900	45.604	5	2.52	30.56	3.00E-6	10.1	8.8	30	33	171	718			
14.000	45.932	5	2.40	39.71	3.00E-6	12.1	10.5	34	35	218	780			
14.100	46.260	5	2.48	36.74	3.00E-6	11.7	10.1	32	34	205	766			
14.200	46.588	4	2.69	26.28	3.00E-8	9.4	8.1				1908	2.37	1.66	7.5
14.300	46.916	4	2.63	28.86	3.00E-8	10.1	8.6				2084	2.61	1.81	8.1
14.400	47.244	4	2.62	29.29	3.00E-8	10.1	8.7				2120	2.65	1.83	8.2
14.500	47.572	4	2.55	34.03	3.00E-8	11.4	9.7				2438	3.08	2.11	9.5
14.600	47.900	4	2.57	33.86	3.00E-8	11.5	9.8				2443	3.08	2.10	9.4
14.700	48.228	4	2.64	30.10	3.00E-8	10.7	9.1				2212	2.77	1.88	8.5
14.800	48.556	5	2.31	61.48	3.00E-6	18.3	15.4	42	37	341	921			
14.900	48.885	5	2.09	120.32	3.00E-6	32.3	27.2	59	41	645	1141			
15.000	49.213	5	2.31	104.40	3.00E-6	31.9	26.7	55	40	576	1101			
15.100	49.541	9	2.53	74.75	1.00E-8	26.1	21.8					6.94	4.59	20.6
15.200	49.869	5	2.15	137.58	3.00E-6	38.9	32.5	63	42	750	1208			

Treadwell&Rollo

ATTACHMENT C

LABORATORY REPORTS


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 219232
ANALYTICAL REPORT

Treadwell & Rollo	Project : 4954.01
555 Montgomery Street	Location : 5885 Hollis
San Francisco, CA 94111	Level : II

Sample ID	Lab ID	Sample ID	Lab ID
TRCPT-9-GW-17.0	219232-001	TRCPT-3-5.0	219232-018
TRCPT-8-GW-20	219232-002	TRCPT-5-16.0	219232-019
TRCPT-8-10.0	219232-003	TRCPT-5-16.5	219232-020
TRCPT-8-10.5	219232-004	TRCPT-4-10.0	219232-021
TRCPT-8-19.0	219232-005	TRCPT-4-10.5	219232-022
TRCPT-8-19.5	219232-006	TRCPT-4-18.0	219232-023
TRCPT-7-6.0	219232-007	TRCPT-4-18.5	219232-024
TRCPT-7-6.5	219232-008	TRCPT-4-2.5	219232-025
TRCPT-7-GW-9.0	219232-009	TRCPT-4-5.0	219232-026
TRCPT-7-16.0	219232-010	TRCPT-3-9.0	219232-027
TRCPT-7-16.5	219232-011	TRCPT-3-9.5	219232-028
TRCPT-6-GW-11	219232-012	TRCPT-5-GW-20.0	219232-029
TRCPT-6-19.0	219232-013	TRCPT-3-GW-20.0	219232-030
TRCPT-6-19.5	219232-014	TRCPT-6-7.0	219232-031
TRCPT-5-5.0	219232-015	TRCPT-6-7.5	219232-032
TRCPT-5-5.5	219232-016	TRCPT-3-18.0	219232-033
TRCPT-3-2.5	219232-017	TRCPT-3-18.5	219232-034

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 04/09/2010
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**219232**
Client:	**Treadwell & Rollo**
Project:	**4954.01**
Location:	**5885 Hollis**
Request Date:	**04/02/10**
Samples Received:	**04/02/10**

This data package contains sample and QC results for six water samples, requested for the above referenced project on 04/02/10. The samples were received cold and intact.

TPH-Extractables by GC (EPA 8015B):
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):
TRCPT-8-GW-20 (lab # 219232-002) and TRCPT-7-GW-9.0 (lab # 219232-009) had pH greater than 2. TRCPT-8-GW-20 (lab # 219232-002) had multiple vials combined due to sediment. TRCPT-7-GW-9.0 (lab # 219232-009) had multiple vials combined due to sediment. No other analytical problems were encountered.

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

C & T LOGIN #: 219232

Project No.: 4954.01
Project Name: 5885 Hollis
Project P.O.:
Turnaround Time: 5-day

Sampler: Louis Arighi
Report To: Matt Hall
Company: Treadwell & Rollo
Telephone: 415-955-9040
Fax: 415-955-9041

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste		# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	None	Analysis: VOCs	TPH-g	TPH-d w/ SGC	TPH-mo w/ SGC	Hold
1	TRCPT-9-GW-17.0	4/1/10 0820		X			4	3			X	-	X	X	X	X	
2	TRCPT-8-GW-20	4/1/10 1101		X			4	3			X	1	X	X	X	X	
3	TRCPT-8-10.0	1126	X								X						X
4	TRCPT-8-10.5	1126	X								X						X
5	TRCPT-8-19.0	1131	X								X						X
6	TRCPT-8-19.5	1131	X								X						X
7	TRCPT-7-6.0	1334	X								X						X
8	TRCPT-7-6.5	1334	X								X						X
9	TRCPT-7-GW-9.0										X		X	X	X	X	~~X~~
10	TRCPT-7-16.0	1421	X								X						X
11	TRCPT-7-16.5	1421	X								X						X
12	TRCPT-6-GW-11	4/2/10		X			4	3			X	1	X	X	X	X	
13	TRCPT-6-19.0	4/2/10 0735	X								X						X

Notes:

SAMPLE RECEIPT
☐ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:
SIGNATURE — 4/2/10 1830 DATE / TIME
DATE / TIME
DATE / TIME

RECEIVED BY:
4/2/10 18:30 DATE / TIME
DATE / TIME
DATE / TIME

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
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(510) 486-0900 Phone
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CHAIN OF CUSTODY

C & T LOGIN #: 219232

Sampler: Louis Arighi
Project No.: 4954.01
Report To: Matt Hall
Project Name: 5885 Hollis
Company: Treadwell & Rollo
Project P.O.:
Telephone:
Turnaround Time: 5-day
Fax:

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	Analysis: Hold
14	TRCPT-6-19.5	4/2/10 0735	X								
15	TRCPT-5-5.0	0923	X								
16	TRCPT-5-5.5	0923	X								
17	TRCPT-3-2.5	1005	X								
18	TRCPT-3-5.0	1005	X								
19	TRCPT-5-16.0	1030	X								
20	TRCPT-5-16.5	1030	X								
21	TRCPT-4-10.0	1205	X								
22	TRCPT-4-10.5	1205	X								
23	TRCPT-4-18.0	1320	X								
24	TRCPT-4-18.5	1320	X								
25	TRCPT-4-2.5	1420	X								
26	TRCPT-4-5.0	1420	X								

Notes:

SAMPLE RECEIPT
☐ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:

SIGNATURE — 4/2/10 1830 DATE / TIME

DATE / TIME

DATE / TIME

RECEIVED BY:

SIGNATURE — 4/2/10 18:30 DATE / TIME

DATE / TIME

DATE / TIME

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

C & T LOGIN #: 219232

Sampler: Louis Angheli

Project No.: 4954.01 | Report To: Matt Hall

Project Name: 5885 Hollis | Company: Treadwell & Rollo

Project P.O.: | Telephone:

Turnaround Time: 5-day | Fax:

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	None	Analysis: VOCs	PAHs	TPH-g	TPH-d w/SGC	TPH-mo w/SGC	Hold
27	TRCPT-3-9.0	4/2/10 1525	X							X							X
28	TRCPT-3-9.5	1535	X							X							X
29	TRCPT-5-GW-20.0	1625		X		4	3			X	1	X		X	X	X	
30	TRCPT-3-GW-20.0	1730		X		3	3			X	1	X					

Notes:

SAMPLE RECEIPT
☐ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:

SIGNATURE — 4/2/10 1830 DATE / TIME

DATE / TIME

DATE / TIME

RECEIVED BY:

SIGNATURE — 4/2/10 18:30 DATE / TIME

DATE / TIME

DATE / TIME

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 219232 Date Received 4/2/10 Number of coolers 1
Client TREADWELL & ROLLO Project 5885 HOLLIS

Date Opened 4/2/10 By (print) M. VILLANUEVA (sign)
Date Logged in 4/5/10 By (print) S. EMMS (sign)

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
Shipping info _____

2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☐ (NO)
How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ___ (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☑ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☑ Paper towels

7. Temperature documentation:

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) _____

☑ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
11. Are sample labels present, in good condition and complete? _____ (YES) NO
12. Do the sample labels agree with custody papers? _____ YES (NO)
13. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
14. Are the samples appropriately preserved? _____ (YES) NO N/A
15. Are bubbles > 6mm absent in VOA samples? _____ (YES) NO N/A
16. Was the client contacted concerning this sample delivery? _____ YES NO
If YES, Who was called? _____ By _____ Date: _____

COMMENTS

#031-IRCPT - 6 - 7.0 4/1/10 1639 SAMPLE #'s 0031-0034 NOT
#032-IRCPT - 6 - 7.5 4/1/10 1639 ON COC, LOGGED IN ON HOLD
#033-IRCPT - 3 - 16.0 4/2/10 1605
#034-IRCPT - 3 - 16.5 4/2/10 1605

SAMPLE #004 VERY LIMITED SAMPLE

SOP Volume: Client Services
Section: 1.1.2
Page: 1 of 1

Rev. 6 Number 1 of 3
Effective: 23 July 2008
Z:\qc\forms\checklists\Cooler Receipt Checklist_rv6.doc

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3520C
Project#:	4954.01	Analysis:	EPA 8015B
Matrix:	Water	Received:	04/02/10
Units:	ug/L	Prepared:	04/06/10
Diln Fac:	1.000	Analyzed:	04/07/10
Batch#:	161706		

Field ID: TRCPT-9-GW-17.0 Sampled: 04/01/10
Type: SAMPLE Cleanup Method: EPA 3630C
Lab ID: 219232-001

Analyte	Result	RL
Diesel C12-C24	ND	100
Motor Oil C24-C36	ND	600

Surrogate	%REC	Limits
o-Terphenyl	84	65-135

Field ID: TRCPT-8-GW-20 Sampled: 04/01/10
Type: SAMPLE Cleanup Method: EPA 3630C
Lab ID: 219232-002

Analyte	Result	RL
Diesel C12-C24	ND	100
Motor Oil C24-C36	ND	600

Surrogate	%REC	Limits
o-Terphenyl	77	65-135

Field ID: TRCPT-7-GW-9.0 Sampled: 04/01/10
Type: SAMPLE Cleanup Method: EPA 3630C
Lab ID: 219232-009

Analyte	Result	RL
Diesel C12-C24	ND	500
Motor Oil C24-C36	ND	3,000

Surrogate	%REC	Limits
o-Terphenyl	110	65-135

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3520C
Project#:	4954.01	Analysis:	EPA 8015B
Matrix:	Water	Received:	04/02/10
Units:	ug/L	Prepared:	04/06/10
Diln Fac:	1.000	Analyzed:	04/07/10
Batch#:	161706		

Field ID: TRCPT-6-GW-11 Sampled: 04/02/10
Type: SAMPLE Cleanup Method: EPA 3630C
Lab ID: 219232-012

Analyte	Result	RL
Diesel C12-C24	240 Y	63
Motor Oil C24-C36	1,700	380

Surrogate	%REC	Limits
o-Terphenyl	78	65-135

Field ID: TRCPT-5-GW-20.0 Sampled: 04/02/10
Type: SAMPLE Cleanup Method: EPA 3630C
Lab ID: 219232-029

Analyte	Result	RL
Diesel C12-C24	210 Y	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	108	65-135

Type: BLANK Cleanup Method: EPA 3630C
Lab ID: QC539282

Analyte	Result	RL
Diesel C12-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	119	65-135

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3520C
Project#:	4954.01	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	161706
Units:	ug/L	Prepared:	04/06/10
Diln Fac:	1.000	Analyzed:	04/08/10

Type: BS
Lab ID: QC539283
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C12-C24	2,500	2,825	113	65-135

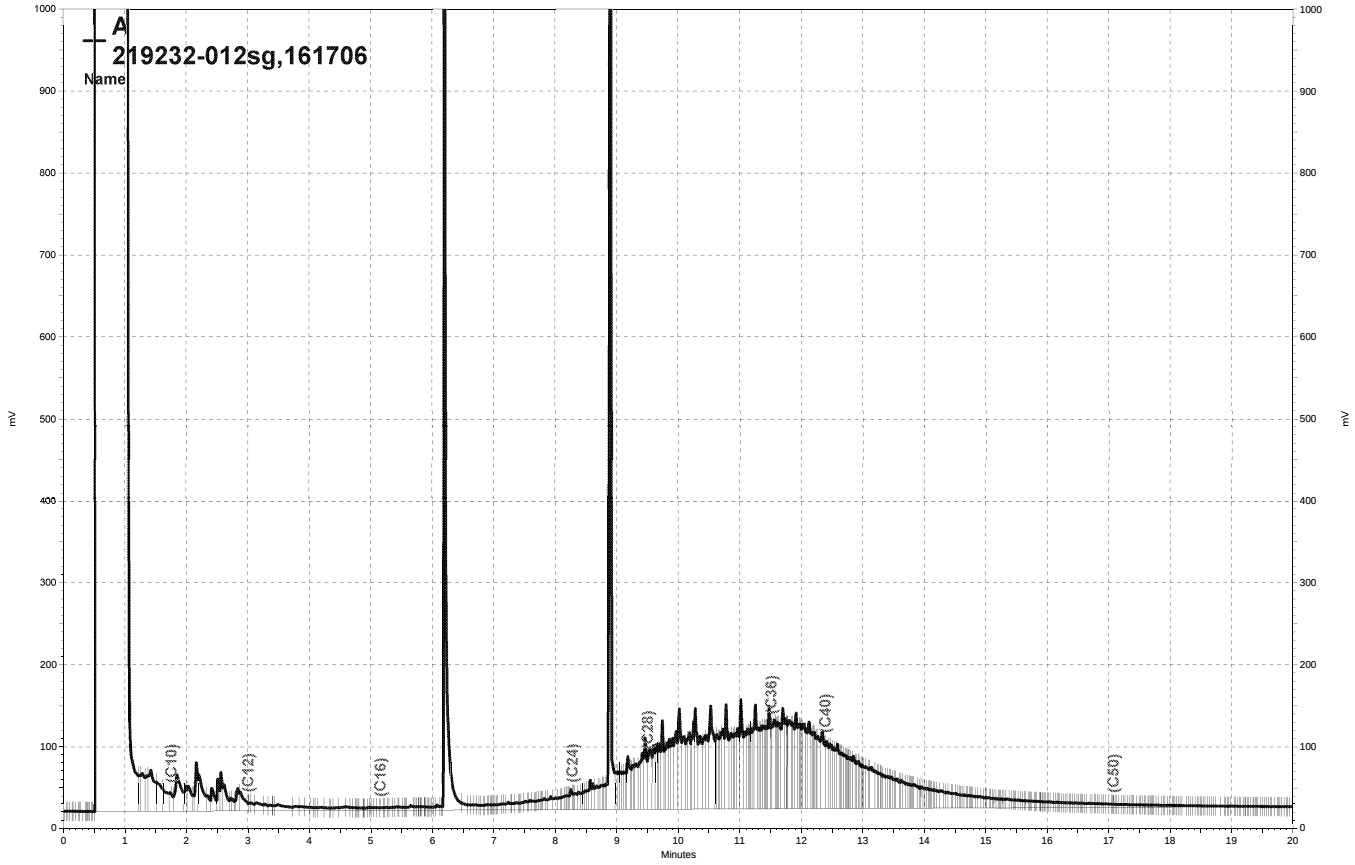
Surrogate	%REC	Limits
o-Terphenyl	115	65-135

Type: BSD
Lab ID: QC539284
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C12-C24	2,500	2,707	108	65-135	4	35

Surrogate	%REC	Limits
o-Terphenyl	112	65-135

RPD= Relative Percent Difference



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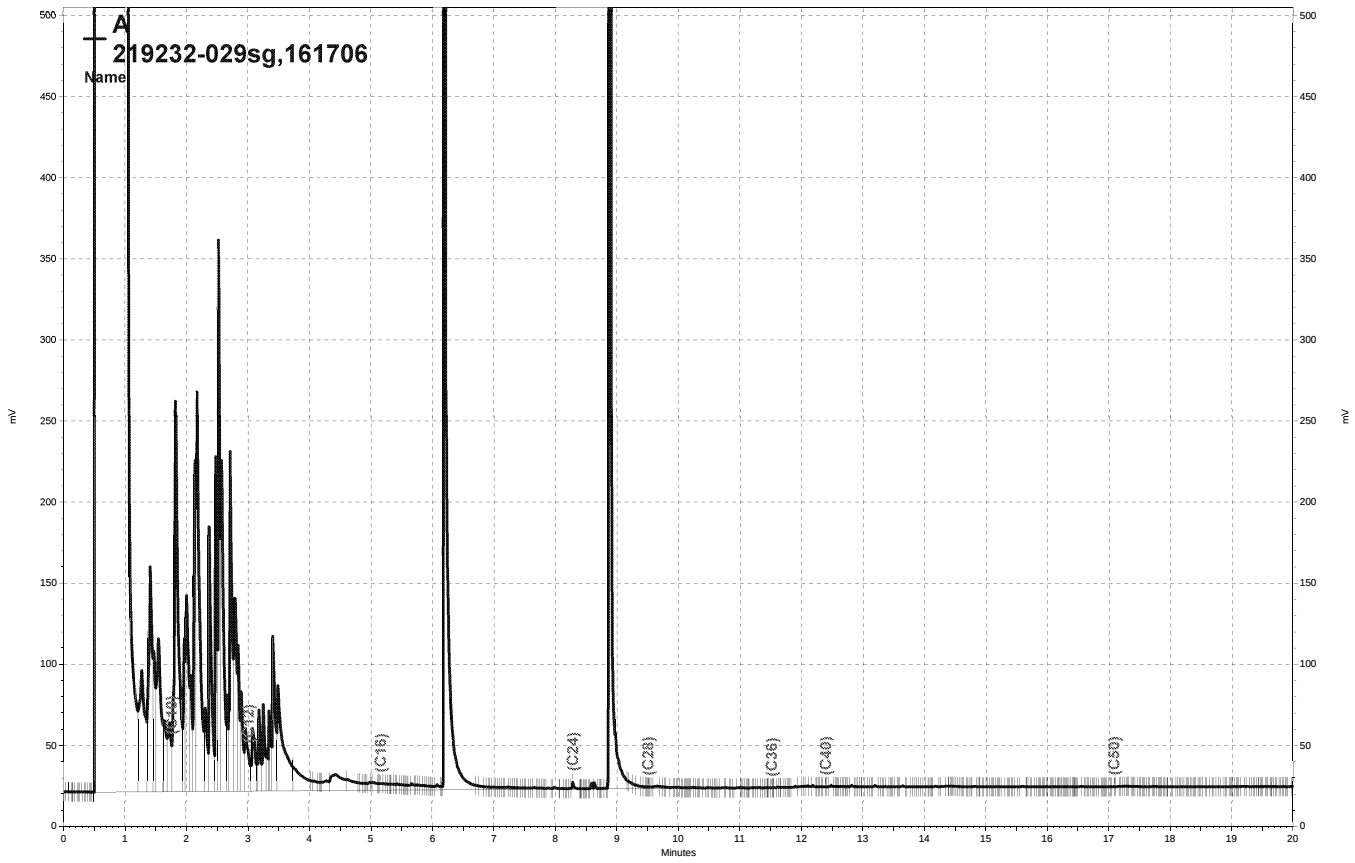

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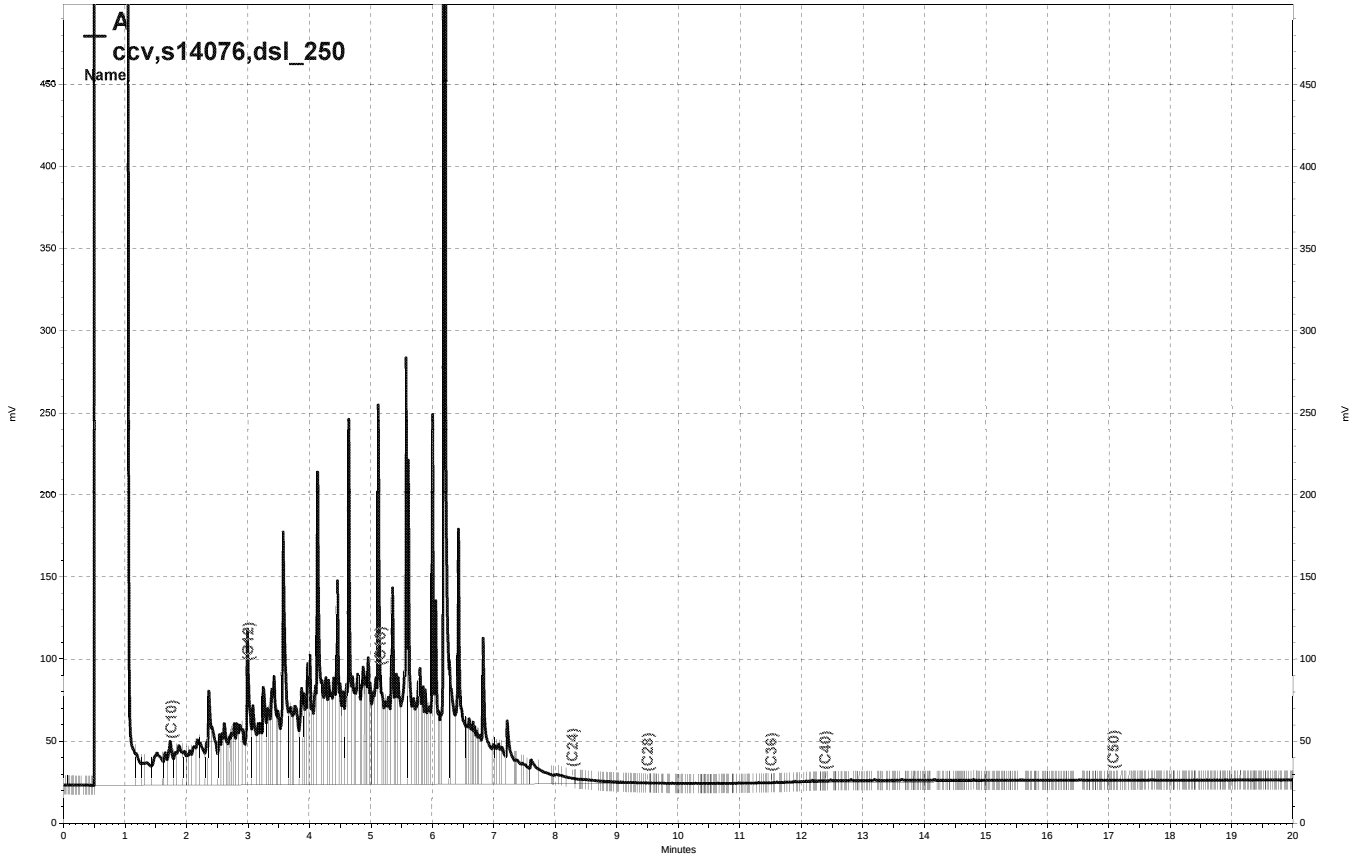

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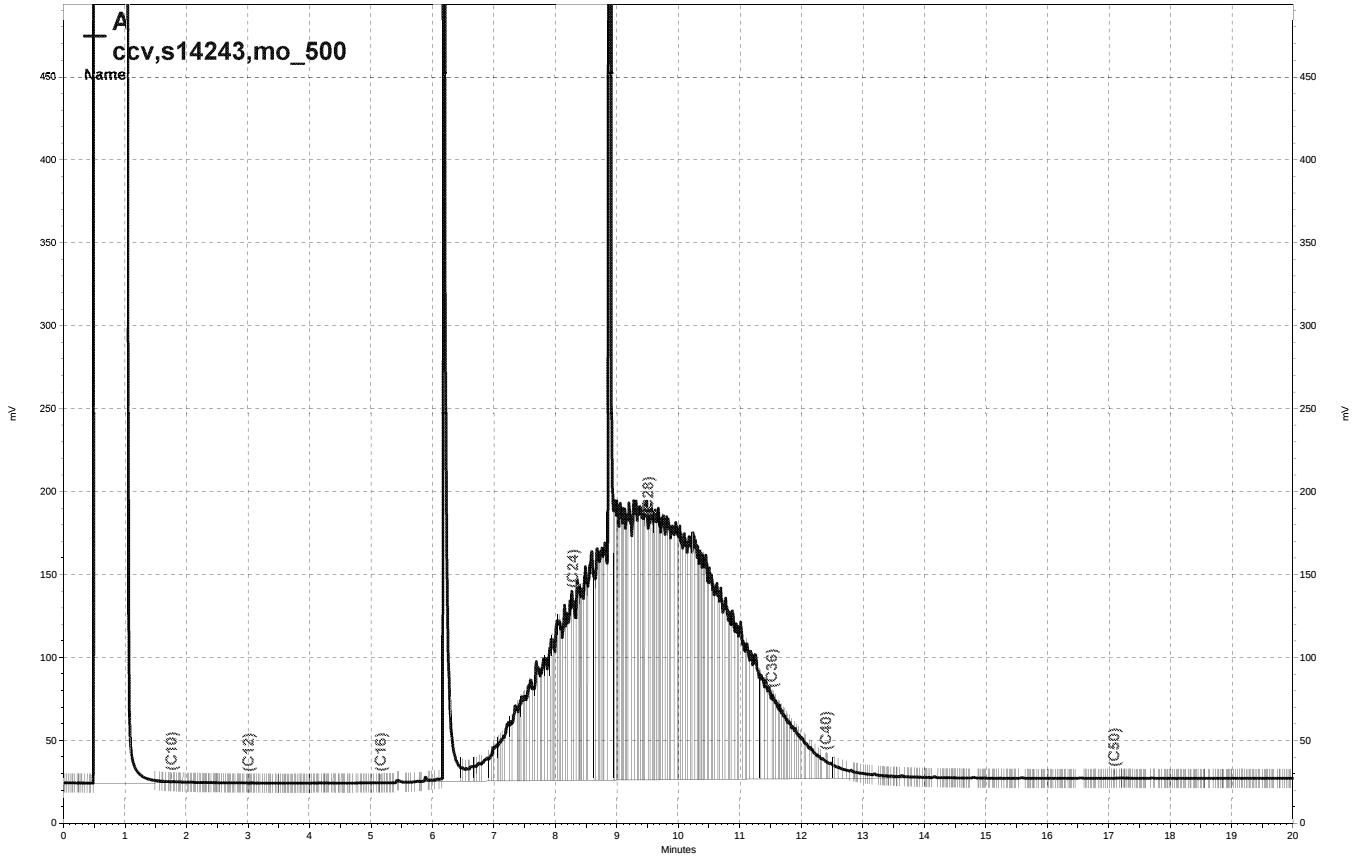

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Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-9-GW-17.0	Diln Fac:	1.000
Lab ID:	219232-001	Sampled:	04/01/10
Matrix:	Water	Received:	04/02/10
Units:	ug/L		

Analyte	Result	RL	Batch#	Analyzed
Gasoline C7-C12	830 Y	50	161731	04/07/10
Freon 12	ND	1.0	161795	04/08/10
Chloromethane	ND	1.0	161795	04/08/10
Vinyl Chloride	ND	0.5	161795	04/08/10
Bromomethane	ND	1.0	161795	04/08/10
Chloroethane	ND	1.0	161795	04/08/10
Trichlorofluoromethane	ND	1.0	161795	04/08/10
Acetone	53	10	161795	04/08/10
Freon 113	ND	2.0	161795	04/08/10
1,1-Dichloroethene	ND	0.5	161795	04/08/10
Methylene Chloride	ND	10	161795	04/08/10
Carbon Disulfide	ND	0.5	161795	04/08/10
MTBE	0.6	0.5	161795	04/08/10
trans-1,2-Dichloroethene	ND	0.5	161795	04/08/10
Vinyl Acetate	ND	10	161795	04/08/10
1,1-Dichloroethane	ND	0.5	161795	04/08/10
2-Butanone	21	10	161795	04/08/10
cis-1,2-Dichloroethene	ND	0.5	161795	04/08/10
2,2-Dichloropropane	ND	0.5	161795	04/08/10
Chloroform	ND	0.5	161795	04/08/10
Bromochloromethane	ND	0.5	161795	04/08/10
1,1,1-Trichloroethane	ND	0.5	161795	04/08/10
1,1-Dichloropropene	ND	0.5	161795	04/08/10
Carbon Tetrachloride	ND	0.5	161795	04/08/10
1,2-Dichloroethane	1.4	0.5	161795	04/08/10
Benzene	24	0.5	161795	04/08/10
Trichloroethene	ND	0.5	161795	04/08/10
1,2-Dichloropropane	ND	0.5	161795	04/08/10
Bromodichloromethane	ND	0.5	161795	04/08/10
Dibromomethane	ND	0.5	161795	04/08/10
4-Methyl-2-Pentanone	ND	10	161795	04/08/10
cis-1,3-Dichloropropene	ND	0.5	161795	04/08/10
Toluene	ND	0.5	161795	04/08/10
trans-1,3-Dichloropropene	ND	0.5	161795	04/08/10
1,1,2-Trichloroethane	ND	0.5	161795	04/08/10
2-Hexanone	ND	10	161795	04/08/10
1,3-Dichloropropane	ND	0.5	161795	04/08/10

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-9-GW-17.0	Diln Fac:	1.000
Lab ID:	219232-001	Sampled:	04/01/10
Matrix:	Water	Received:	04/02/10
Units:	ug/L		

Analyte	Result	RL	Batch#	Analyzed
Tetrachloroethene	ND	0.5	161795	04/08/10
Dibromochloromethane	ND	0.5	161795	04/08/10
1,2-Dibromoethane	ND	0.5	161795	04/08/10
Chlorobenzene	ND	0.5	161795	04/08/10
1,1,1,2-Tetrachloroethane	ND	0.5	161795	04/08/10
Ethylbenzene	6.5	0.5	161795	04/08/10
m,p-Xylenes	0.6	0.5	161795	04/08/10
o-Xylene	ND	0.5	161795	04/08/10
Styrene	ND	0.5	161795	04/08/10
Bromoform	ND	1.0	161795	04/08/10
Isopropylbenzene	5.3	0.5	161795	04/08/10
1,1,2,2-Tetrachloroethane	ND	0.5	161795	04/08/10
1,2,3-Trichloropropane	ND	0.5	161795	04/08/10
Propylbenzene	5.9	0.5	161795	04/08/10
Bromobenzene	ND	0.5	161795	04/08/10
1,3,5-Trimethylbenzene	1.7	0.5	161795	04/08/10
2-Chlorotoluene	ND	0.5	161795	04/08/10
4-Chlorotoluene	ND	0.5	161795	04/08/10
tert-Butylbenzene	ND	0.5	161795	04/08/10
1,2,4-Trimethylbenzene	0.6	0.5	161795	04/08/10
sec-Butylbenzene	1.4	0.5	161795	04/08/10
para-Isopropyl Toluene	2.1	0.5	161795	04/08/10
1,3-Dichlorobenzene	ND	0.5	161795	04/08/10
1,4-Dichlorobenzene	ND	0.5	161795	04/08/10
n-Butylbenzene	2.0	0.5	161795	04/08/10
1,2-Dichlorobenzene	ND	0.5	161795	04/08/10
1,2-Dibromo-3-Chloropropane	ND	2.0	161795	04/08/10
1,2,4-Trichlorobenzene	ND	0.5	161795	04/08/10
Hexachlorobutadiene	ND	2.0	161795	04/08/10
Naphthalene	ND	2.0	161795	04/08/10
1,2,3-Trichlorobenzene	ND	0.5	161795	04/08/10

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	95	81-124	161795	04/08/10
1,2-Dichloroethane-d4	103	73-140	161795	04/08/10
Toluene-d8	97	88-113	161795	04/08/10
Bromofluorobenzene	95	80-127	161795	04/08/10

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-8-GW-20	Batch#:	161731
Lab ID:	219232-002	Sampled:	04/01/10
Matrix:	Water	Received:	04/02/10
Units:	ug/L	Analyzed:	04/07/10
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-8-GW-20	Batch#:	161731
Lab ID:	219232-002	Sampled:	04/01/10
Matrix:	Water	Received:	04/02/10
Units:	ug/L	Analyzed:	04/07/10
Diln Fac:	1.000		

Analyte	Result	RL
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	99	81-124
1,2-Dichloroethane-d4	109	73-140
Toluene-d8	97	88-113
Bromofluorobenzene	95	80-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-7-GW-9.0	Batch#:	161731
Lab ID:	219232-009	Sampled:	04/01/10
Matrix:	Water	Received:	04/02/10
Units:	ug/L	Analyzed:	04/07/10
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	460 Y	50
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	61	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	11	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	0.6	0.5
m,p-Xylenes	0.5	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	5.5	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	8.2	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-7-GW-9.0	Batch#:	161731
Lab ID:	219232-009	Sampled:	04/01/10
Matrix:	Water	Received:	04/02/10
Units:	ug/L	Analyzed:	04/07/10
Diln Fac:	1.000		

Analyte	Result	RL
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	1.7	0.5
para-Isopropyl Toluene	2.5	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	3.2	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	96	81-124
1,2-Dichloroethane-d4	107	73-140
Toluene-d8	98	88-113
Bromofluorobenzene	97	80-127

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-6-GW-11	Batch#:	161731
Lab ID:	219232-012	Sampled:	04/02/10
Matrix:	Water	Received:	04/02/10
Units:	ug/L	Analyzed:	04/07/10
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	300 Y	50
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	34	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	0.8	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	11	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	0.6	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	0.6	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	0.8	0.5
m,p-Xylenes	1.6	0.5
o-Xylene	0.7	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	2.6	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	4.1	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	0.6	0.5

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-6-GW-11	Batch#:	161731
Lab ID:	219232-012	Sampled:	04/02/10
Matrix:	Water	Received:	04/02/10
Units:	ug/L	Analyzed:	04/07/10
Diln Fac:	1.000		

Analyte	Result	RL
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	2.0	0.5
sec-Butylbenzene	0.7	0.5
para-Isopropyl Toluene	1.0	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	1.4	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	98	81-124
1,2-Dichloroethane-d4	105	73-140
Toluene-d8	98	88-113
Bromofluorobenzene	97	80-127

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-5-GW-20.0	Units:	ug/L
Lab ID:	219232-029	Sampled:	04/02/10
Matrix:	Water	Received:	04/02/10

Analyte	Result	RL	Diln Fac	Batch#	Analyzed
Gasoline C7-C12	2,500 Y	50	1.000	161731	04/07/10
Freon 12	ND	1.0	1.000	161731	04/07/10
Chloromethane	ND	1.0	1.000	161731	04/07/10
Vinyl Chloride	ND	0.5	1.000	161731	04/07/10
Bromomethane	ND	1.0	1.000	161731	04/07/10
Chloroethane	ND	1.0	1.000	161731	04/07/10
Trichlorofluoromethane	ND	1.0	1.000	161731	04/07/10
Acetone	42	10	1.000	161731	04/07/10
Freon 113	ND	2.0	1.000	161731	04/07/10
1,1-Dichloroethene	ND	0.5	1.000	161731	04/07/10
Methylene Chloride	ND	10	1.000	161731	04/07/10
Carbon Disulfide	ND	0.5	1.000	161731	04/07/10
MTBE	ND	0.5	1.000	161731	04/07/10
trans-1,2-Dichloroethene	ND	0.5	1.000	161731	04/07/10
Vinyl Acetate	ND	10	1.000	161731	04/07/10
1,1-Dichloroethane	ND	0.5	1.000	161731	04/07/10
2-Butanone	17	10	1.000	161731	04/07/10
cis-1,2-Dichloroethene	ND	0.5	1.000	161731	04/07/10
2,2-Dichloropropane	ND	0.5	1.000	161731	04/07/10
Chloroform	ND	0.5	1.000	161731	04/07/10
Bromochloromethane	ND	0.5	1.000	161731	04/07/10
1,1,1-Trichloroethane	ND	0.5	1.000	161731	04/07/10
1,1-Dichloropropene	ND	0.5	1.000	161731	04/07/10
Carbon Tetrachloride	ND	0.5	1.000	161731	04/07/10
1,2-Dichloroethane	ND	0.5	1.000	161731	04/07/10
Benzene	140	1.0	2.000	161795	04/08/10
Trichloroethene	ND	0.5	1.000	161731	04/07/10
1,2-Dichloropropane	ND	0.5	1.000	161731	04/07/10
Bromodichloromethane	ND	0.5	1.000	161731	04/07/10
Dibromomethane	ND	0.5	1.000	161731	04/07/10
4-Methyl-2-Pentanone	ND	10	1.000	161731	04/07/10
cis-1,3-Dichloropropene	ND	0.5	1.000	161731	04/07/10
Toluene	0.7	0.5	1.000	161731	04/07/10
trans-1,3-Dichloropropene	ND	0.5	1.000	161731	04/07/10
1,1,2-Trichloroethane	ND	0.5	1.000	161731	04/07/10
2-Hexanone	ND	10	1.000	161731	04/07/10
1,3-Dichloropropane	ND	0.5	1.000	161731	04/07/10
Tetrachloroethene	ND	0.5	1.000	161731	04/07/10

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-5-GW-20.0	Units:	ug/L
Lab ID:	219232-029	Sampled:	04/02/10
Matrix:	Water	Received:	04/02/10

Analyte	Result	RL	Diln Fac	Batch#	Analyzed
Dibromochloromethane	ND	0.5	1.000	161731	04/07/10
1,2-Dibromoethane	ND	0.5	1.000	161731	04/07/10
Chlorobenzene	ND	0.5	1.000	161731	04/07/10
1,1,1,2-Tetrachloroethane	ND	0.5	1.000	161731	04/07/10
Ethylbenzene	100	1.0	2.000	161795	04/08/10
m,p-Xylenes	10	0.5	1.000	161731	04/07/10
o-Xylene	1.0	0.5	1.000	161731	04/07/10
Styrene	ND	0.5	1.000	161731	04/07/10
Bromoform	ND	1.0	1.000	161731	04/07/10
Isopropylbenzene	23	0.5	1.000	161731	04/07/10
1,1,2,2-Tetrachloroethane	ND	0.5	1.000	161731	04/07/10
1,2,3-Trichloropropane	ND	0.5	1.000	161731	04/07/10
Propylbenzene	56	0.5	1.000	161731	04/07/10
Bromobenzene	ND	0.5	1.000	161731	04/07/10
1,3,5-Trimethylbenzene	4.0	0.5	1.000	161731	04/07/10
2-Chlorotoluene	ND	0.5	1.000	161731	04/07/10
4-Chlorotoluene	ND	0.5	1.000	161731	04/07/10
tert-Butylbenzene	ND	0.5	1.000	161731	04/07/10
1,2,4-Trimethylbenzene	6.6	0.5	1.000	161731	04/07/10
sec-Butylbenzene	6.8	0.5	1.000	161731	04/07/10
para-Isopropyl Toluene	3.8	0.5	1.000	161731	04/07/10
1,3-Dichlorobenzene	ND	0.5	1.000	161731	04/07/10
1,4-Dichlorobenzene	ND	0.5	1.000	161731	04/07/10
n-Butylbenzene	23	0.5	1.000	161731	04/07/10
1,2-Dichlorobenzene	ND	0.5	1.000	161731	04/07/10
1,2-Dibromo-3-Chloropropane	ND	2.0	1.000	161731	04/07/10
1,2,4-Trichlorobenzene	ND	0.5	1.000	161731	04/07/10
Hexachlorobutadiene	ND	2.0	1.000	161731	04/07/10
Naphthalene	46	4.0	2.000	161795	04/08/10
1,2,3-Trichlorobenzene	ND	0.5	1.000	161731	04/07/10

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	95	81-124	1.000	161731	04/07/10
1,2-Dichloroethane-d4	97	73-140	1.000	161731	04/07/10
Toluene-d8	97	88-113	1.000	161731	04/07/10
Bromofluorobenzene	96	80-127	1.000	161731	04/07/10

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-3-GW-20.0	Batch#:	161795
Lab ID:	219232-030	Sampled:	04/02/10
Matrix:	Water	Received:	04/02/10
Units:	ug/L	Analyzed:	04/08/10
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	21	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	0.6	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-3-GW-20.0	Batch#:	161795
Lab ID:	219232-030	Sampled:	04/02/10
Matrix:	Water	Received:	04/02/10
Units:	ug/L	Analyzed:	04/08/10
Diln Fac:	1.000		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	0.7	0.5
m,p-Xylenes	2.3	0.5
o-Xylene	1.2	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	1.3	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	3.4	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	0.7	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	93	81-124
1,2-Dichloroethane-d4	103	73-140
Toluene-d8	98	88-113
Bromofluorobenzene	92	80-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	161731
Units:	ug/L	Analyzed:	04/07/10
Diln Fac:	1.000		

Type: BS Lab ID: QC539392

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	24.88	100	71-136
Benzene	25.00	25.42	102	81-122
Trichloroethene	25.00	27.68	111	80-124
Toluene	25.00	25.35	101	82-122
Chlorobenzene	25.00	25.26	101	84-118

Surrogate	%REC	Limits
Dibromofluoromethane	98	81-124
1,2-Dichloroethane-d4	102	73-140
Toluene-d8	99	88-113
Bromofluorobenzene	95	80-127

Type: BSD Lab ID: QC539393

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	23.93	96	71-136	4	15
Benzene	25.00	25.18	101	81-122	1	12
Trichloroethene	25.00	26.59	106	80-124	4	13
Toluene	25.00	24.53	98	82-122	3	12
Chlorobenzene	25.00	24.85	99	84-118	2	11

Surrogate	%REC	Limits
Dibromofluoromethane	96	81-124
1,2-Dichloroethane-d4	101	73-140
Toluene-d8	100	88-113
Bromofluorobenzene	95	80-127

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC539394	Batch#:	161731
Matrix:	Water	Analyzed:	04/07/10
Units:	ug/L		

Analyte	Result	RL
Gasoline C7-C12	ND	50
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC539394	Batch#:	161731
Matrix:	Water	Analyzed:	04/07/10
Units:	ug/L		

Analyte	Result	RL
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	98	81-124
1,2-Dichloroethane-d4	108	73-140
Toluene-d8	97	88-113
Bromofluorobenzene	95	80-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	161731
Units:	ug/L	Analyzed:	04/07/10
Diln Fac:	1.000		

Type: BS Lab ID: QC539395

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	750.0	754.5	101	70-130

Surrogate	%REC	Limits
Dibromofluoromethane	97	81-124
1,2-Dichloroethane-d4	104	73-140
Toluene-d8	99	88-113
Bromofluorobenzene	95	80-127

Type: BSD Lab ID: QC539396

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	750.0	749.2	100	70-130	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	95	81-124
1,2-Dichloroethane-d4	105	73-140
Toluene-d8	97	88-113
Bromofluorobenzene	94	80-127

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC539647	Batch#:	161795
Matrix:	Water	Analyzed:	04/08/10
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC539647	Batch#:	161795
Matrix:	Water	Analyzed:	04/08/10
Units:	ug/L		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	93	81-124
1,2-Dichloroethane-d4	103	73-140
Toluene-d8	96	88-113
Bromofluorobenzene	93	80-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219232	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	161795
Units:	ug/L	Analyzed:	04/08/10
Diln Fac:	1.000		

Type: BS Lab ID: QC539648

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	20.00	18.17	91	71-136
Benzene	20.00	19.51	98	81-122
Trichloroethene	20.00	20.49	102	80-124
Toluene	20.00	19.16	96	82-122
Chlorobenzene	20.00	19.91	100	84-118

Surrogate	%REC	Limits
Dibromofluoromethane	94	81-124
1,2-Dichloroethane-d4	102	73-140
Toluene-d8	97	88-113
Bromofluorobenzene	95	80-127

Type: BSD Lab ID: QC539649

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	20.00	17.18	86	71-136	6	15
Benzene	20.00	19.25	96	81-122	1	12
Trichloroethene	20.00	20.28	101	80-124	1	13
Toluene	20.00	19.67	98	82-122	3	12
Chlorobenzene	20.00	20.24	101	84-118	2	11

Surrogate	%REC	Limits
Dibromofluoromethane	93	81-124
1,2-Dichloroethane-d4	99	73-140
Toluene-d8	98	88-113
Bromofluorobenzene	94	80-127

RPD= Relative Percent Difference

Data File: \\Gcmsserver\DD\chem\MSVOA10.i\040710.b\JD714TVH.D

Date : 07-APR-2010 15:26

Client ID: DYNA P&T

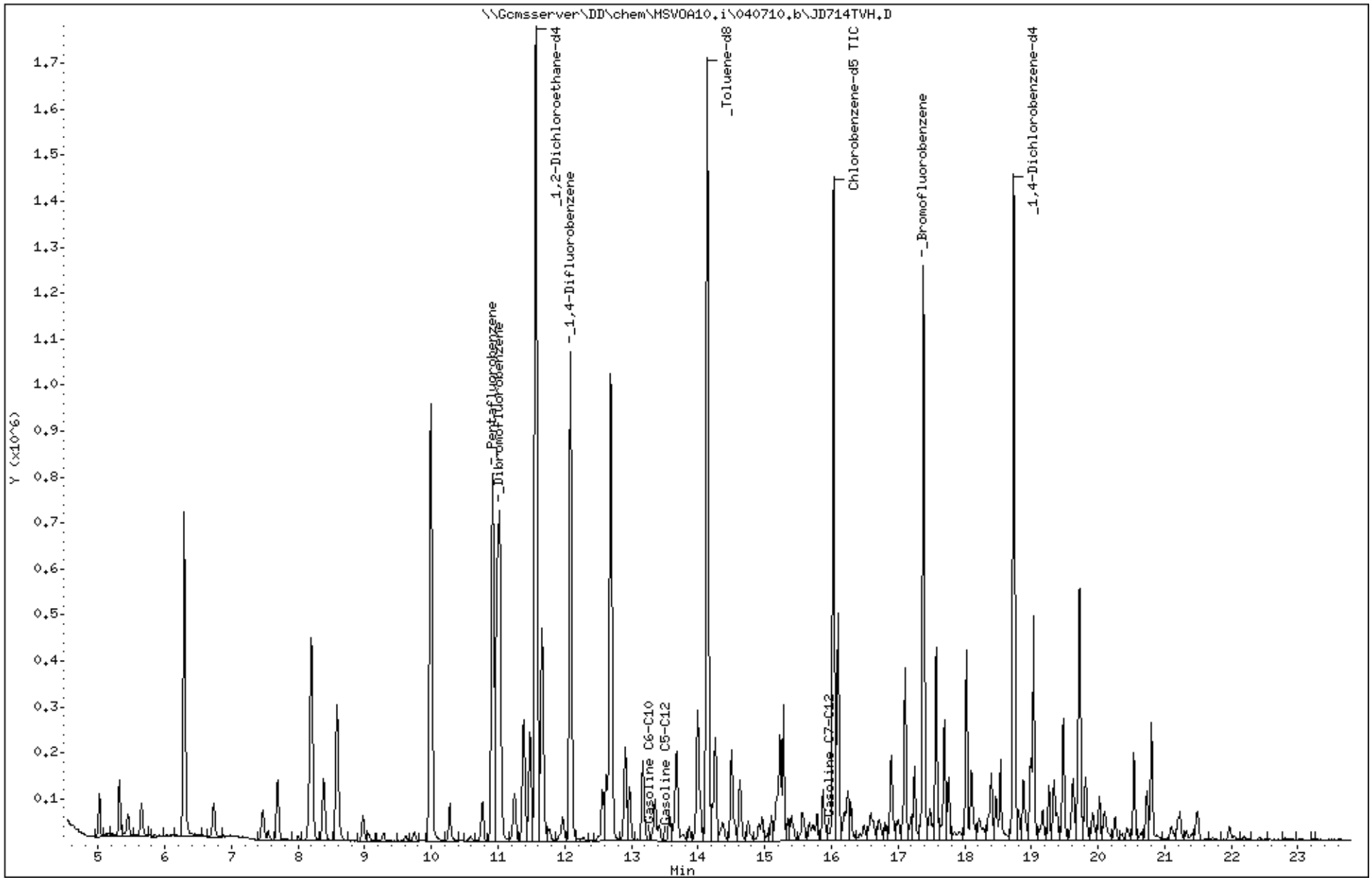
Instrument: MSVOA10.i

Sample Info: s,219232-001,

Operator: VOA

Column phase:

Column diameter: 2.00



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Date : 07-APR-2010 16:35

Client ID: DYNA P&T

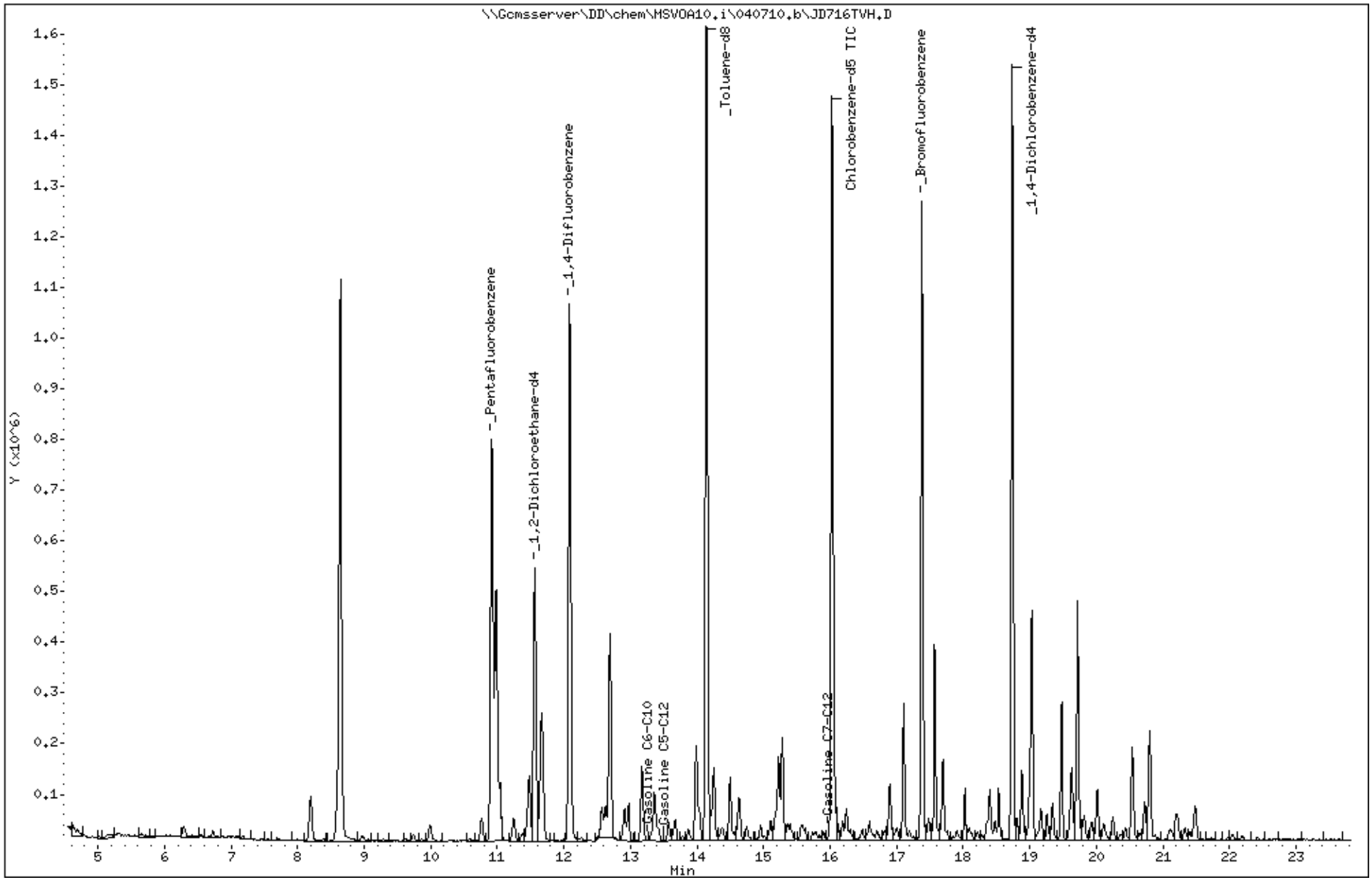
Instrument: MSVOA10.i

Sample Info: s,219232-009,

Operator: VOA

Column phase:

Column diameter: 2.00



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Date : 07-APR-2010 17:11

Client ID: DYNA P&T

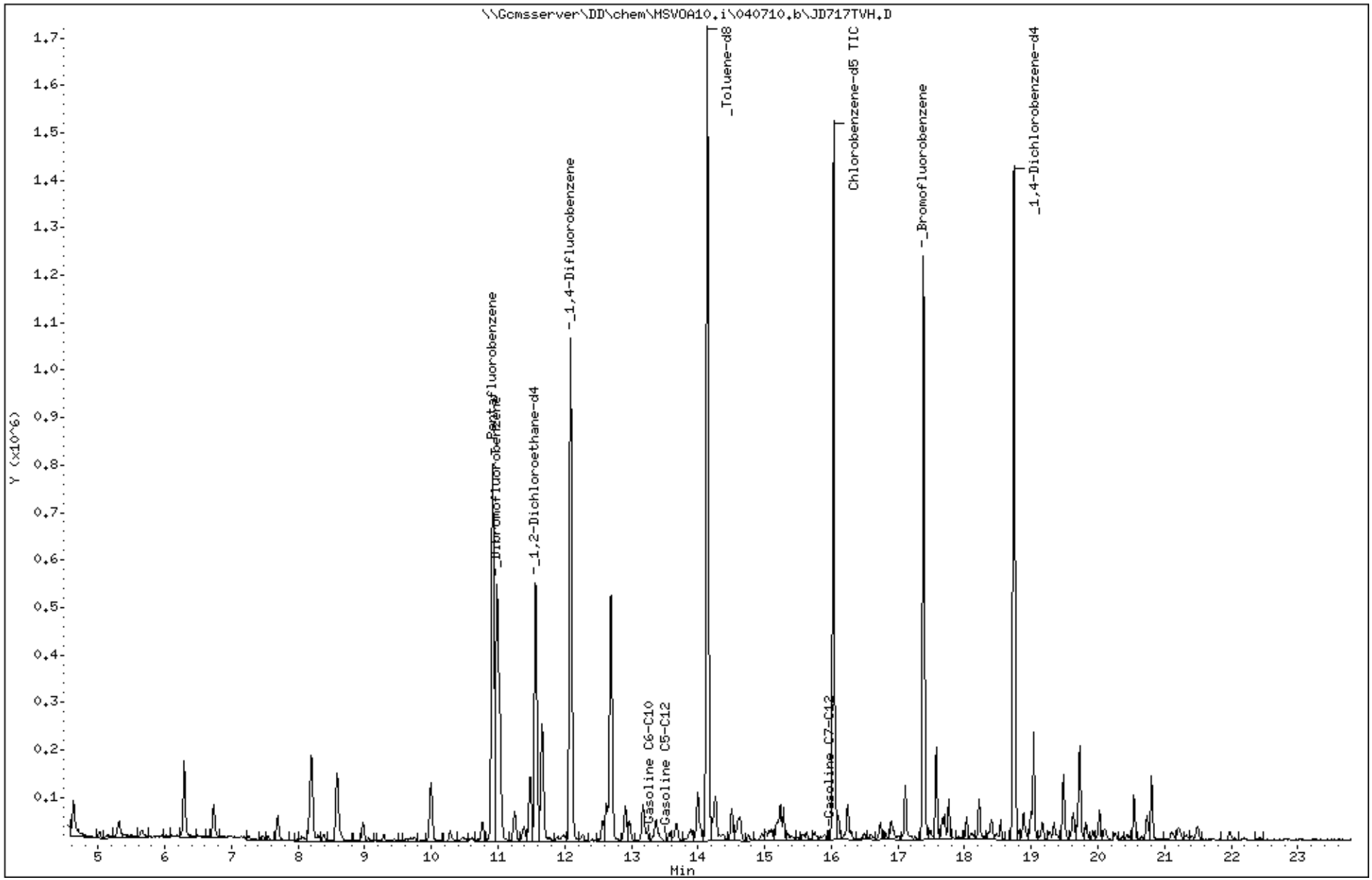
Instrument: MSVOA10.i

Sample Info: s,219232-012,

Operator: VOA

Column phase:

Column diameter: 2.00



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Date : 07-APR-2010 17:46

Client ID: DYNA P&T

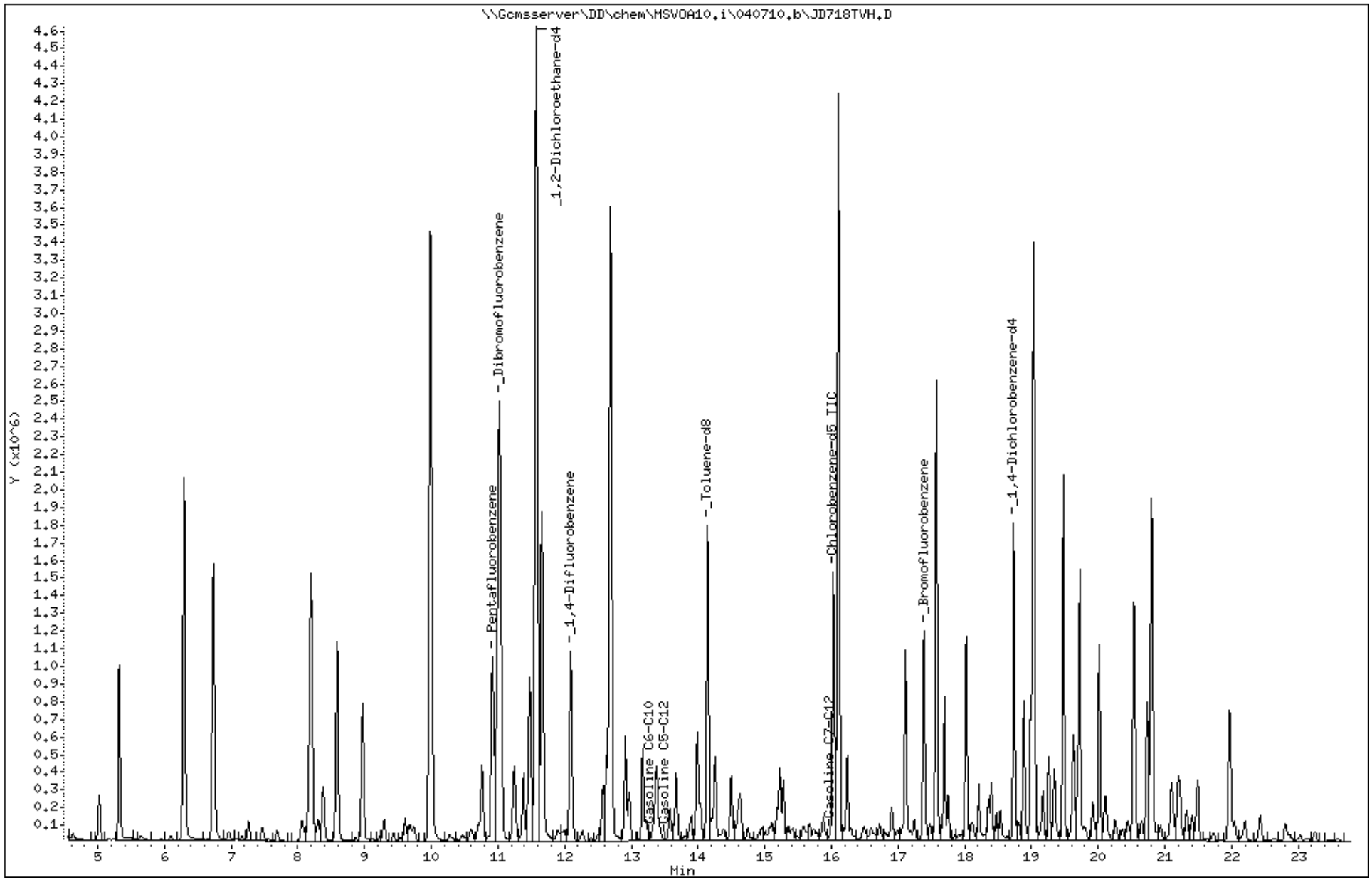
Instrument: MSVOA10.i

Sample Info: s,219232-029,

Operator: VOA

Column phase:

Column diameter: 2.00



Data File: \\Gcmsserver\DD\chem\MSVOA10.i\040710.b\JD706TVH.D

Date : 07-APR-2010 10:37

Client ID: DYNA P&T

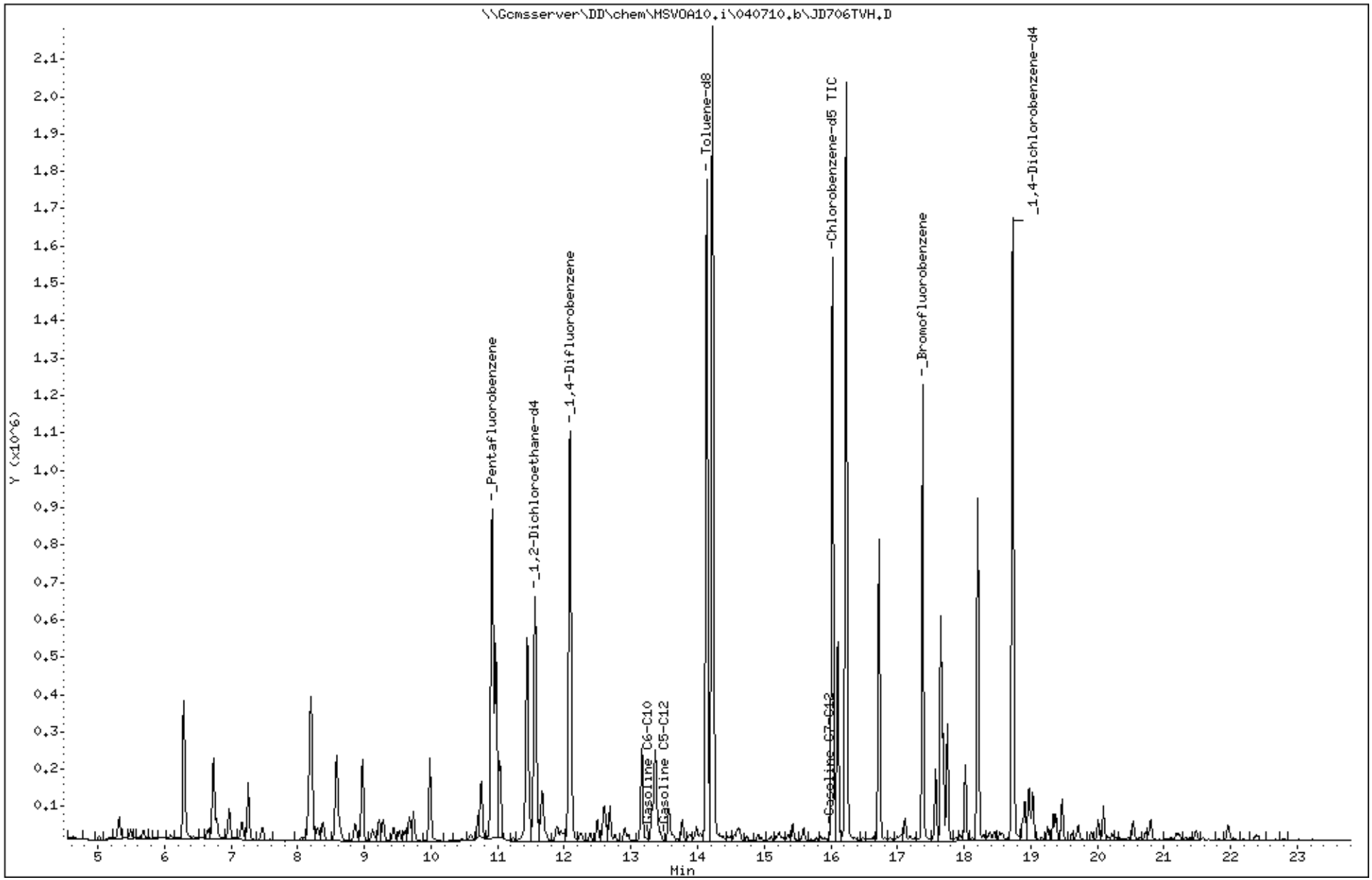
Instrument: MSVOA10.i

Sample Info: ccv/bs,qc539395,161731

Operator: VOA

Column phase:

Column diameter: 2.00




Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 219235
ANALYTICAL REPORT

Treadwell & Rollo	Project : 4954.01
555 Montgomery Street	Location : 5885 Hollis
San Francisco, CA 94111	Level : II

Sample ID	Lab ID
TRCPT-3-GW-20.0	219235-001
TRCPT-2-9.0	219235-002
TRCPT-2-9.5	219235-003
TRCPT-2-18.0	219235-004
TRCPT-2-18.5	219235-005
TRCPT-1-2.5	219235-006
TRCPT-1-5.0	219235-007
TRCPT-2-2.5	219235-008
TRCPT-2-5.0	219235-009
TRCPT-1-9.0	219235-010
TRCPT-1-9.5	219235-011
HA-1-2.0	219235-012
HA-2-2.0	219235-013
HA-3-2.0	219235-014
HA-4-2.0	219235-015
TRCPT-2-GW-20	219235-016
TRCPT-1-18.0	219235-017
TRCPT-1-18.5	219235-018

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 04/12/2010
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**219235**
Client:	**Treadwell & Rollo**
Project:	**4954.01**
Location:	**5885 Hollis**
Request Date:	**04/05/10**
Samples Received:	**04/05/10**

This data package contains sample and QC results for four soil samples and two water samples, requested for the above referenced project on 04/05/10. The samples were received on ice and intact, directly from the field.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.

Semivolatile Organics by GC/MS (EPA 8270C):
High RPD was observed for 4-nitrophenol and pentachlorophenol in the MS/MSD of HA-4-2.0 (lab # 219235-015); these analytes were not detected at or above the RL in the associated samples. No other analytical problems were encountered.

Semivolatile Organics by GC/MS SIM (EPA 8270C-SIM):
No analytical problems were encountered.

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

C & T LOGIN #: 219235

Sampler: Louis Arighi
Project No.: 4954.01
Report To: Matt Hall
Project Name: 5885 Hollis St
Company: Treadwell & Rollo
Project P.O.:
Telephone: 415-955-9040
Turnaround Time: 5-day
Fax: 415-955-9041

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste		# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	None
1	TRCPT-3-GW-20.0	4/5/10 0740		X			4	3			X	1
2	TRCPT-2-9.0	0910	X								X	
3	TRCPT-2-9.5	0910	X								X	
4	TRCPT-2-18.0	1005	X								X	
5	TRCPT-2-18.5	1005	X								X	
6	TRCPT-1-2.5	0935	X								X	
7	TRCPT-1-5.0	0939	X								X	
8	TRCPT-2-2.5	1055	X								X	
9	TRCPT-2-5.0	1059	X								X	
10	TRCPT-1-9.0	1205	X								X	
11	TRCPT-1-9.5	1205	X								X	
12	HA-1-2.0	1344	X								X	
13	HA-2-2.0	1353	X								X	

Analysis

VOCs	PAHs by 8270-SIM	SVOCs by 8270	Hold
X	X		
			X
			X
			X
			X
			X
			X
			X
			X
			X
			X
		X	
		X	

Notes:

SAMPLE RECEIPT
☐ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:

SIGNATURE — 4/5/10 1620 DATE / TIME

DATE / TIME

DATE / TIME

RECEIVED BY:

Pat Langley — 4/5/10a 1620 DATE / TIME

DATE / TIME

DATE / TIME

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

C & T LOGIN #: 21923S

Project No.: 4954.01
Project Name: 5885 Hollis St
Project P.O.:
Turnaround Time: 5-day

Sampler: Louis Anjeh
Report To: Matt Hall
Company: Treadwell & Rollo
Telephone:
Fax:

Lab No.	Sample ID.	Sampling Date	Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	none	Analysis: VOCs	PAHs by 8270-SIM	SVOCs by 8270
14	HA-3-2.0	4/5/10	1402	X							X			X	
15	HA-4-2.0	↓	1410								X			X	
16	TRCPT-2-GW-20	↓	1500		X		4	3			X	1	X	X	
17	TRCPT-1-18.0	4/5/10	1375	X											
18	TRCPT-1-18.5	↓	↓												

Notes:

SAMPLE RECEIPT
☐ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:
Eric Miyahira — 4/5/10 1620 DATE / TIME
DATE / TIME
DATE / TIME

RECEIVED BY:
Pat Hanly — 4/5/10 1620 DATE / TIME
DATE / TIME
DATE / TIME

SIGNATURE

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 214235 Date Received 4-5-10 Number of coolers 1
Client TREADWELL + ROLLO Project 5885 HOLLIS ST

Date Opened 4-5-10 By (print) S. EVANS (sign)
Date Logged in " By (print) " (sign) "

1. Did cooler come with a shipping slip (airbill, etc) YES (NO)
Shipping info

2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☒ NO
How many Name Date
2B. Were custody seals intact upon arrival? YES NO (N/A)
3. Were custody papers dry and intact when received? (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe)

☐ Bubble Wrap ☐ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☒ Paper towels

7. Temperature documentation:

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) 6.7

☐ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES (NO)
If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? (YES) NO
10. Are samples in the appropriate containers for indicated tests? (YES) NO
11. Are sample labels present, in good condition and complete? (YES) NO
12. Do the sample labels agree with custody papers? (YES) NO
13. Was sufficient amount of sample sent for tests requested? (YES) NO
14. Are the samples appropriately preserved? (YES) NO N/A
15. Are bubbles > 6mm absent in VOA samples? (YES) NO N/A
16. Was the client contacted concerning this sample delivery? YES NO
If YES, Who was called? By Date:

COMMENTS

- SAMPLE # 017 + 018 ARE NOT ON COC, ADDED TO COC + LOGGED IN ON HAND.

- SAMPLE #001, DIDNOT RECEIVE VOA SAMPLES.

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-2-GW-20	Batch#:	161683
Lab ID:	219235-016	Sampled:	04/05/10
Matrix:	Water	Received:	04/05/10
Units:	ug/L	Analyzed:	04/06/10
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-2-GW-20	Batch#:	161683
Lab ID:	219235-016	Sampled:	04/05/10
Matrix:	Water	Received:	04/05/10
Units:	ug/L	Analyzed:	04/06/10
Diln Fac:	1.000		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	103	81-124
1,2-Dichloroethane-d4	106	73-140
Toluene-d8	102	88-113
Bromofluorobenzene	102	80-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	161683
Units:	ug/L	Analyzed:	04/06/10
Diln Fac:	1.000		

Type: BS Lab ID: QC539206

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	25.14	101	71-136
Benzene	25.00	26.12	104	81-122
Trichloroethene	25.00	24.23	97	80-124
Toluene	25.00	26.07	104	82-122
Chlorobenzene	25.00	26.14	105	84-118

Surrogate	%REC	Limits
Dibromofluoromethane	106	81-124
1,2-Dichloroethane-d4	106	73-140
Toluene-d8	103	88-113
Bromofluorobenzene	100	80-127

Type: BSD Lab ID: QC539207

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	24.79	99	71-136	1	15
Benzene	25.00	26.20	105	81-122	0	12
Trichloroethene	25.00	23.96	96	80-124	1	13
Toluene	25.00	25.91	104	82-122	1	12
Chlorobenzene	25.00	26.08	104	84-118	0	11

Surrogate	%REC	Limits
Dibromofluoromethane	106	81-124
1,2-Dichloroethane-d4	105	73-140
Toluene-d8	103	88-113
Bromofluorobenzene	100	80-127

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC539208	Batch#:	161683
Matrix:	Water	Analyzed:	04/06/10
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC539208	Batch#:	161683
Matrix:	Water	Analyzed:	04/06/10
Units:	ug/L		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	104	81-124
1,2-Dichloroethane-d4	105	73-140
Toluene-d8	103	88-113
Bromofluorobenzene	104	80-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C
Field ID:	HA-1-2.0	Batch#:	161733
Lab ID:	219235-012	Sampled:	04/05/10
Matrix:	Soil	Received:	04/05/10
Units:	ug/Kg	Prepared:	04/07/10
Basis:	as received	Analyzed:	04/07/10
Diln Fac:	1.000		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	330
Phenol	ND	330
bis(2-Chloroethyl)ether	ND	330
2-Chlorophenol	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
Benzyl alcohol	ND	330
1,2-Dichlorobenzene	ND	330
2-Methylphenol	ND	330
bis(2-Chloroisopropyl) ether	ND	330
4-Methylphenol	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
2-Nitrophenol	ND	670
2,4-Dimethylphenol	ND	330
Benzoic acid	ND	1,700
bis(2-Chloroethoxy)methane	ND	330
2,4-Dichlorophenol	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	67
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
4-Chloro-3-methylphenol	ND	330
2-Methylnaphthalene	ND	67
Hexachlorocyclopentadiene	ND	670
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	670
Dimethylphthalate	ND	330
Acenaphthylene	ND	67
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	670
Acenaphthene	ND	67
2,4-Dinitrophenol	ND	670
4-Nitrophenol	ND	670
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
Fluorene	ND	67
4-Chlorophenyl-phenylether	ND	330
4-Nitroaniline	ND	670
4,6-Dinitro-2-methylphenol	ND	670
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Pentachlorophenol	ND	670
Phenanthrene	ND	67
Anthracene	ND	67
Di-n-butylphthalate	ND	330

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C
Field ID:	HA-1-2.0	Batch#:	161733
Lab ID:	219235-012	Sampled:	04/05/10
Matrix:	Soil	Received:	04/05/10
Units:	ug/Kg	Prepared:	04/07/10
Basis:	as received	Analyzed:	04/07/10
Diln Fac:	1.000		

Analyte	Result	RL
Fluoranthene	ND	67
Pyrene	ND	67
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	670
Benzo(a)anthracene	ND	67
Chrysene	ND	67
bis(2-Ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo(b)fluoranthene	ND	67
Benzo(k)fluoranthene	ND	67
Benzo(a)pyrene	ND	67
Indeno(1,2,3-cd)pyrene	ND	67
Dibenz(a,h)anthracene	ND	67
Benzo(g,h,i)perylene	ND	67

Surrogate	%REC	Limits
2-Fluorophenol	74	14-124
Phenol-d5	72	12-123
2,4,6-Tribromophenol	87	10-118
Nitrobenzene-d5	68	27-106
2-Fluorobiphenyl	72	30-113
Terphenyl-d14	85	18-133

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C
Field ID:	HA-2-2.0	Batch#:	161733
Lab ID:	219235-013	Sampled:	04/05/10
Matrix:	Soil	Received:	04/05/10
Units:	ug/Kg	Prepared:	04/07/10
Basis:	as received	Analyzed:	04/07/10
Diln Fac:	1.000		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	330
Phenol	ND	330
bis(2-Chloroethyl)ether	ND	330
2-Chlorophenol	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
Benzyl alcohol	ND	330
1,2-Dichlorobenzene	ND	330
2-Methylphenol	ND	330
bis(2-Chloroisopropyl) ether	ND	330
4-Methylphenol	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	330
Benzoic acid	ND	1,700
bis(2-Chloroethoxy)methane	ND	330
2,4-Dichlorophenol	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	66
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
4-Chloro-3-methylphenol	ND	330
2-Methylnaphthalene	ND	66
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	660
Dimethylphthalate	ND	330
Acenaphthylene	ND	66
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	660
Acenaphthene	ND	66
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
Fluorene	ND	66
4-Chlorophenyl-phenylether	ND	330
4-Nitroaniline	ND	660
4,6-Dinitro-2-methylphenol	ND	660
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Pentachlorophenol	ND	660
Phenanthrene	ND	66
Anthracene	ND	66
Di-n-butylphthalate	ND	330

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C
Field ID:	HA-2-2.0	Batch#:	161733
Lab ID:	219235-013	Sampled:	04/05/10
Matrix:	Soil	Received:	04/05/10
Units:	ug/Kg	Prepared:	04/07/10
Basis:	as received	Analyzed:	04/07/10
Diln Fac:	1.000		

Analyte	Result	RL
Fluoranthene	ND	66
Pyrene	ND	66
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	66
Chrysene	ND	66
bis(2-Ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo(b)fluoranthene	ND	66
Benzo(k)fluoranthene	ND	66
Benzo(a)pyrene	ND	66
Indeno(1,2,3-cd)pyrene	ND	66
Dibenz(a,h)anthracene	ND	66
Benzo(g,h,i)perylene	ND	66

Surrogate	%REC	Limits
2-Fluorophenol	86	14-124
Phenol-d5	93	12-123
2,4,6-Tribromophenol	92	10-118
Nitrobenzene-d5	67	27-106
2-Fluorobiphenyl	73	30-113
Terphenyl-d14	88	18-133

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C
Field ID:	HA-3-2.0	Batch#:	161733
Lab ID:	219235-014	Sampled:	04/05/10
Matrix:	Soil	Received:	04/05/10
Units:	ug/Kg	Prepared:	04/07/10
Basis:	as received	Analyzed:	04/07/10
Diln Fac:	1.000		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	330
Phenol	ND	330
bis(2-Chloroethyl)ether	ND	330
2-Chlorophenol	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
Benzyl alcohol	ND	330
1,2-Dichlorobenzene	ND	330
2-Methylphenol	ND	330
bis(2-Chloroisopropyl) ether	ND	330
4-Methylphenol	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	330
Benzoic acid	ND	1,600
bis(2-Chloroethoxy)methane	ND	330
2,4-Dichlorophenol	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	66
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
4-Chloro-3-methylphenol	ND	330
2-Methylnaphthalene	ND	66
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	660
Dimethylphthalate	ND	330
Acenaphthylene	ND	66
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	660
Acenaphthene	ND	66
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
Fluorene	ND	66
4-Chlorophenyl-phenylether	ND	330
4-Nitroaniline	ND	660
4,6-Dinitro-2-methylphenol	ND	660
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Pentachlorophenol	ND	660
Phenanthrene	ND	66
Anthracene	ND	66
Di-n-butylphthalate	ND	330

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C
Field ID:	HA-3-2.0	Batch#:	161733
Lab ID:	219235-014	Sampled:	04/05/10
Matrix:	Soil	Received:	04/05/10
Units:	ug/Kg	Prepared:	04/07/10
Basis:	as received	Analyzed:	04/07/10
Diln Fac:	1.000		

Analyte	Result	RL
Fluoranthene	ND	66
Pyrene	ND	66
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	66
Chrysene	ND	66
bis(2-Ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo(b)fluoranthene	ND	66
Benzo(k)fluoranthene	ND	66
Benzo(a)pyrene	ND	66
Indeno(1,2,3-cd)pyrene	ND	66
Dibenz(a,h)anthracene	ND	66
Benzo(g,h,i)perylene	ND	66

Surrogate	%REC	Limits
2-Fluorophenol	96	14-124
Phenol-d5	96	12-123
2,4,6-Tribromophenol	72	10-118
Nitrobenzene-d5	55	27-106
2-Fluorobiphenyl	63	30-113
Terphenyl-d14	70	18-133

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C
Field ID:	HA-4-2.0	Batch#:	161733
Lab ID:	219235-015	Sampled:	04/05/10
Matrix:	Soil	Received:	04/05/10
Units:	ug/Kg	Prepared:	04/07/10
Basis:	as received	Analyzed:	04/07/10
Diln Fac:	1.000		

Analyte	Result	RL
N-Nitrosodimethylamine	ND	330
Phenol	ND	330
bis(2-Chloroethyl)ether	ND	330
2-Chlorophenol	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
Benzyl alcohol	ND	330
1,2-Dichlorobenzene	ND	330
2-Methylphenol	ND	330
bis(2-Chloroisopropyl) ether	ND	330
4-Methylphenol	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	330
Benzoic acid	ND	1,600
bis(2-Chloroethoxy)methane	ND	330
2,4-Dichlorophenol	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	66
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
4-Chloro-3-methylphenol	ND	330
2-Methylnaphthalene	ND	66
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	660
Dimethylphthalate	ND	330
Acenaphthylene	ND	66
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	660
Acenaphthene	ND	66
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
Fluorene	ND	66
4-Chlorophenyl-phenylether	ND	330
4-Nitroaniline	ND	660
4,6-Dinitro-2-methylphenol	ND	660
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Pentachlorophenol	ND	660
Phenanthrene	ND	66
Anthracene	ND	66
Di-n-butylphthalate	ND	330

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C
Field ID:	HA-4-2.0	Batch#:	161733
Lab ID:	219235-015	Sampled:	04/05/10
Matrix:	Soil	Received:	04/05/10
Units:	ug/Kg	Prepared:	04/07/10
Basis:	as received	Analyzed:	04/07/10
Diln Fac:	1.000		

Analyte	Result	RL
Fluoranthene	ND	66
Pyrene	ND	66
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	66
Chrysene	ND	66
bis(2-Ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo(b)fluoranthene	ND	66
Benzo(k)fluoranthene	ND	66
Benzo(a)pyrene	ND	66
Indeno(1,2,3-cd)pyrene	ND	66
Dibenz(a,h)anthracene	ND	66
Benzo(g,h,i)perylene	ND	66

Surrogate	%REC	Limits
2-Fluorophenol	57	14-124
Phenol-d5	59	12-123
2,4,6-Tribromophenol	59	10-118
Nitrobenzene-d5	59	27-106
2-Fluorobiphenyl	65	30-113
Terphenyl-d14	74	18-133

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C
Type:	BLANK	Dil'n Fac:	1.000
Lab ID:	QC539400	Batch#:	161733
Matrix:	Soil	Prepared:	04/07/10
Units:	ug/Kg	Analyzed:	04/07/10

Analyte	Result	RL
N-Nitrosodimethylamine	ND	330
Phenol	ND	330
bis(2-Chloroethyl)ether	ND	330
2-Chlorophenol	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
Benzyl alcohol	ND	330
1,2-Dichlorobenzene	ND	330
2-Methylphenol	ND	330
bis(2-Chloroisopropyl) ether	ND	330
4-Methylphenol	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
2-Nitrophenol	ND	660
2,4-Dimethylphenol	ND	330
Benzoic acid	ND	1,700
bis(2-Chloroethoxy)methane	ND	330
2,4-Dichlorophenol	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	66
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
4-Chloro-3-methylphenol	ND	330
2-Methylnaphthalene	ND	66
Hexachlorocyclopentadiene	ND	660
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	660
Dimethylphthalate	ND	330
Acenaphthylene	ND	66
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	660
Acenaphthene	ND	66
2,4-Dinitrophenol	ND	660
4-Nitrophenol	ND	660
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
Fluorene	ND	66
4-Chlorophenyl-phenylether	ND	330
4-Nitroaniline	ND	660
4,6-Dinitro-2-methylphenol	ND	660
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Pentachlorophenol	ND	660
Phenanthrene	ND	66
Anthracene	ND	66
Di-n-butylphthalate	ND	330
Fluoranthene	ND	66

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC539400	Batch#:	161733
Matrix:	Soil	Prepared:	04/07/10
Units:	ug/Kg	Analyzed:	04/07/10

Analyte	Result	RL
Pyrene	ND	66
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	660
Benzo(a)anthracene	ND	66
Chrysene	ND	66
bis(2-Ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo(b)fluoranthene	ND	66
Benzo(k)fluoranthene	ND	66
Benzo(a)pyrene	ND	66
Indeno(1,2,3-cd)pyrene	ND	66
Dibenz(a,h)anthracene	ND	66
Benzo(g,h,i)perylene	ND	66

Surrogate	%REC	Limits
2-Fluorophenol	67	14-124
Phenol-d5	65	12-123
2,4,6-Tribromophenol	42	10-118
Nitrobenzene-d5	61	27-106
2-Fluorobiphenyl	64	30-113
Terphenyl-d14	78	18-133

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC539401	Batch#:	161733
Matrix:	Soil	Prepared:	04/07/10
Units:	ug/Kg	Analyzed:	04/07/10

Analyte	Spiked	Result	%REC	Limits
Phenol	2,655	1,910	72	28-115
2-Chlorophenol	2,655	1,952	74	36-114
1,4-Dichlorobenzene	2,655	1,825	69	36-112
N-Nitroso-di-n-propylamine	2,655	1,798	68	23-119
1,2,4-Trichlorobenzene	2,655	1,973	74	39-110
4-Chloro-3-methylphenol	2,655	2,009	76	38-115
Acenaphthene	995.7	829.1	83	35-118
4-Nitrophenol	2,655	2,089	79	26-115
2,4-Dinitrotoluene	2,655	2,161	81	30-128
Pentachlorophenol	2,655	2,273	86	8-116
Pyrene	995.7	824.0	83	28-136

Surrogate	%REC	Limits
2-Fluorophenol	76	14-124
Phenol-d5	76	12-123
2,4,6-Tribromophenol	98	10-118
Nitrobenzene-d5	74	27-106
2-Fluorobiphenyl	80	30-113
Terphenyl-d14	91	18-133

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C
Field ID:	HA-4-2.0	Batch#:	161733
MSS Lab ID:	219235-015	Sampled:	04/05/10
Matrix:	Soil	Received:	04/05/10
Units:	ug/Kg	Prepared:	04/07/10
Basis:	as received	Analyzed:	04/07/10
Diln Fac:	1.000		

Type: MS Lab ID: QC539402

Analyte	MSS Result	Spiked	Result	%REC	Limits
Phenol	<65.65	2,645	1,533	58	26-108
2-Chlorophenol	<76.00	2,645	1,582	60	29-109
1,4-Dichlorobenzene	<82.37	2,645	1,412	53	33-105
N-Nitroso-di-n-propylamine	<64.96	2,645	1,443	55	26-113
1,2,4-Trichlorobenzene	<83.68	2,645	1,601	61	34-104
4-Chloro-3-methylphenol	<69.02	2,645	1,584	60	32-110
Acenaphthene	<15.01	991.7	605.5	61	28-114
4-Nitrophenol	<58.68	2,645	1,594	60	17-107
2,4-Dinitrotoluene	<71.55	2,645	1,717	65	26-112
Pentachlorophenol	<69.67	2,645	1,783	67	1-111
Pyrene	<12.70	991.7	685.7	69	20-135

Surrogate	%REC	Limits
2-Fluorophenol	59	14-124
Phenol-d5	59	12-123
2,4,6-Tribromophenol	75	10-118
Nitrobenzene-d5	57	27-106
2-Fluorobiphenyl	62	30-113
Terphenyl-d14	71	18-133

Type: MSD Lab ID: QC539403

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Phenol	2,639	1,199	45	26-108	24	48
2-Chlorophenol	2,639	1,220	46	29-109	26	46
1,4-Dichlorobenzene	2,639	1,043	40	33-105	30	44
N-Nitroso-di-n-propylamine	2,639	1,195	45	26-113	19	53
1,2,4-Trichlorobenzene	2,639	1,231	47	34-104	26	43
4-Chloro-3-methylphenol	2,639	1,264	48	32-110	22	44
Acenaphthene	989.8	477.4	48	28-114	23	44
4-Nitrophenol	2,639	763.8	29	17-107	70 *	50
2,4-Dinitrotoluene	2,639	1,425	54	26-112	18	44
Pentachlorophenol	2,639	714.7	27	1-111	85 *	63
Pyrene	989.8	572.2	58	20-135	18	58

Surrogate	%REC	Limits
2-Fluorophenol	42	14-124
Phenol-d5	46	12-123
2,4,6-Tribromophenol	57	10-118
Nitrobenzene-d5	45	27-106
2-Fluorobiphenyl	53	30-113
Terphenyl-d14	60	18-133

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3520C
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Field ID:	TRCPT-3-GW-20.0	Batch#:	161662
Lab ID:	219235-001	Sampled:	04/05/10
Matrix:	Water	Received:	04/05/10
Units:	ug/L	Prepared:	04/06/10
Diln Fac:	1.000	Analyzed:	04/08/10

Analyte	Result	RL
Naphthalene	0.3	0.1
Acenaphthylene	ND	0.1
Acenaphthene	ND	0.1
Fluorene	ND	0.1
Phenanthrene	0.1	0.1
Anthracene	ND	0.1
Fluoranthene	ND	0.1
Pyrene	ND	0.1
Benzo(a)anthracene	ND	0.1
Chrysene	ND	0.1
Benzo(b)fluoranthene	ND	0.1
Benzo(k)fluoranthene	ND	0.1
Benzo(a)pyrene	ND	0.1
Indeno(1,2,3-cd)pyrene	ND	0.1
Dibenz(a,h)anthracene	ND	0.1
Benzo(g,h,i)perylene	ND	0.1

Surrogate	%REC	Limits
Nitrobenzene-d5	68	8-165
2-Fluorobiphenyl	73	32-114
Terphenyl-d14	12	1-129

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3520C
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Field ID:	TRCPT-2-GW-20	Batch#:	161662
Lab ID:	219235-016	Sampled:	04/05/10
Matrix:	Water	Received:	04/05/10
Units:	ug/L	Prepared:	04/06/10
Diln Fac:	1.000	Analyzed:	04/07/10

Analyte	Result	RL
Naphthalene	ND	0.1
Acenaphthylene	ND	0.1
Acenaphthene	ND	0.1
Fluorene	ND	0.1
Phenanthrene	ND	0.1
Anthracene	ND	0.1
Fluoranthene	ND	0.1
Pyrene	ND	0.1
Benzo(a)anthracene	ND	0.1
Chrysene	ND	0.1
Benzo(b)fluoranthene	ND	0.1
Benzo(k)fluoranthene	ND	0.1
Benzo(a)pyrene	ND	0.1
Indeno(1,2,3-cd)pyrene	ND	0.1
Dibenz(a,h)anthracene	ND	0.1
Benzo(g,h,i)perylene	ND	0.1

Surrogate	%REC	Limits
Nitrobenzene-d5	74	8-165
2-Fluorobiphenyl	71	32-114
Terphenyl-d14	23	1-129

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3520C
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC539113	Batch#:	161662
Matrix:	Water	Prepared:	04/05/10
Units:	ug/L	Analyzed:	04/06/10

Analyte	Result	RL
Naphthalene	ND	0.1
Acenaphthylene	ND	0.1
Acenaphthene	ND	0.1
Fluorene	ND	0.1
Phenanthrene	ND	0.1
Anthracene	ND	0.1
Fluoranthene	ND	0.1
Pyrene	ND	0.1
Benzo(a)anthracene	ND	0.1
Chrysene	ND	0.1
Benzo(b)fluoranthene	ND	0.1
Benzo(k)fluoranthene	ND	0.1
Benzo(a)pyrene	ND	0.1
Indeno(1,2,3-cd)pyrene	ND	0.1
Dibenz(a,h)anthracene	ND	0.1
Benzo(g,h,i)perylene	ND	0.1

Surrogate	%REC	Limits
Nitrobenzene-d5	86	8-165
2-Fluorobiphenyl	95	32-114
Terphenyl-d14	105	1-129

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	219235	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3520C
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Matrix:	Water	Batch#:	161662
Units:	ug/L	Prepared:	04/05/10
Diln Fac:	1.000	Analyzed:	04/06/10

Type: BS Lab ID: QC539114

Analyte	Spiked	Result	%REC	Limits
Acenaphthene	1.000	0.8155	82	31-127
Pyrene	1.000	0.8064	81	19-130

Surrogate	%REC	Limits
Nitrobenzene-d5	91	8-165
2-Fluorobiphenyl	89	32-114
Terphenyl-d14	91	1-129

Type: BSD Lab ID: QC539115

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Acenaphthene	1.000	0.8295	83	31-127	2	39
Pyrene	1.000	0.8076	81	19-130	0	34

Surrogate	%REC	Limits
Nitrobenzene-d5	89	8-165
2-Fluorobiphenyl	90	32-114
Terphenyl-d14	91	1-129

RPD= Relative Percent Difference


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 219280
ANALYTICAL REPORT

Treadwell & Rollo	Project : 4954.01
555 Montgomery Street	Location : 5885 Hollis
San Francisco, CA 94111	Level : II

Sample ID	Lab ID
TRCPT-1-GW-20.0	219280-001

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 04/13/2010
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**219280**
Client:	**Treadwell & Rollo**
Project:	**4954.01**
Location:	**5885 Hollis**
Request Date:	**04/06/10**
Samples Received:	**04/06/10**

This data package contains sample and QC results for one water sample, requested for the above referenced project on 04/06/10. The sample was received cold and intact.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

C & T LOGIN #: 24080

Project No.: 4954.01
Project Name: 5885 Hollis
Project P.O.:
Turnaround Time: 5-day

Sampler: Louis Arighi
Report To: Matt Hall
Company: Treadwell & Rollo
Telephone: 415-955-9040
Fax:

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Matrix: Water	Matrix: Waste	# of Containers	Preservative: HCL	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: ICE	Preservative: none	Analysis: VOCs	Analysis: PAHs - 8270 SIM
	TRCPT-1-GW-20.0	4/6/10 1535		X		4	3			X	1	X	X
	Dispose				X								

Notes:

SAMPLE RECEIPT
☐ Intact ☐ Cold
☒ On Ice ☐ Ambient

Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:

SIGNATURE — 4/6/10 1640 DATE / TIME

DATE / TIME

DATE / TIME

RECEIVED BY:

SIGNATURE — 4/6/10 1640 DATE / TIME

DATE / TIME

DATE / TIME

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 71980 Date Received 4/6/10 Number of coolers 1
Client TREADWELL & ROLLO Project 5885 HOLLIS

Date Opened 4/6/10 By (print) M. VILLANUEVA (sign)
Date Logged in 4/7/10 By (print) S. EVANS (sign)

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
Shipping info _____

2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☐ (NO)
How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ___ (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☒ Paper towels

7. Temperature documentation:

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) _____

☒ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
11. Are sample labels present, in good condition and complete? _____ (YES) NO
12. Do the sample labels agree with custody papers? _____ (YES) NO
13. Was sufficient amount of sample sent for tests requested? _____ YES (NO)
14. Are the samples appropriately preserved? _____ (YES) NO N/A
15. Are bubbles > 6mm absent in VOA samples? _____ (YES) NO N/A
16. Was the client contacted concerning this sample delivery? _____ YES NO
If YES, Who was called? _____ By _____ Date: _____

COMMENTS
NOT enough volume sent for PAH TEST

SOP Volume: Client Services
Section: 1.1.2
Page: 1 of 1

Rev. 6 Number 1 of 3
Effective: 23 July 2008
Z:\qc\forms\checklists\Cooler Receipt Checklist_rv6.doc

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219280	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-1-GW-20.0	Batch#:	161832
Lab ID:	219280-001	Sampled:	04/06/10
Matrix:	Water	Received:	04/06/10
Units:	ug/L	Analyzed:	04/09/10
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219280	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-1-GW-20.0	Batch#:	161832
Lab ID:	219280-001	Sampled:	04/06/10
Matrix:	Water	Received:	04/06/10
Units:	ug/L	Analyzed:	04/09/10
Diln Fac:	1.000		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	95	81-124
1,2-Dichloroethane-d4	106	73-140
Toluene-d8	96	88-113
Bromofluorobenzene	93	80-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219280	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	161832
Units:	ug/L	Analyzed:	04/09/10
Diln Fac:	1.000		

Type: BS Lab ID: QC539791

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	23.63	95	71-136
Benzene	25.00	25.05	100	81-122
Trichloroethene	25.00	26.33	105	80-124
Toluene	25.00	24.61	98	82-122
Chlorobenzene	25.00	24.80	99	84-118

Surrogate	%REC	Limits
Dibromofluoromethane	92	81-124
1,2-Dichloroethane-d4	101	73-140
Toluene-d8	96	88-113
Bromofluorobenzene	92	80-127

Type: BSD Lab ID: QC539792

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	21.39	86	71-136	10	15
Benzene	25.00	22.76	91	81-122	10	12
Trichloroethene	25.00	24.69	99	80-124	6	13
Toluene	25.00	22.72	91	82-122	8	12
Chlorobenzene	25.00	23.71	95	84-118	5	11

Surrogate	%REC	Limits
Dibromofluoromethane	93	81-124
1,2-Dichloroethane-d4	99	73-140
Toluene-d8	95	88-113
Bromofluorobenzene	94	80-127

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219280	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC539793	Batch#:	161832
Matrix:	Water	Analyzed:	04/09/10
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	5.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219280	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC539793	Batch#:	161832
Matrix:	Water	Analyzed:	04/09/10
Units:	ug/L		

Analyte	Result	RL
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	93	81-124
1,2-Dichloroethane-d4	101	73-140
Toluene-d8	96	88-113
Bromofluorobenzene	94	80-127

ND= Not Detected
RL= Reporting Limit


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 219369
ANALYTICAL REPORT

Treadwell & Rollo	Project : 4954.01
555 Montgomery Street	Location : 5885 Hollis
San Francisco, CA 94111	Level : II

Sample ID	Lab ID
TRCPT-1-5.0	219369-001
TRCPT-1-9.5	219369-002
TRCPT-1-18.0	219369-003
TRCPT-2-5.0	219369-004
TRCPT-2-9.5	219369-005
TRCPT-2-18.0	219369-006
TRCPT-3-5.0	219369-007
TRCPT-3-9.5	219369-008
TRCPT-3-18.0	219369-009
TRCPT-4-5.0	219369-010
TRCPT-4-10.0	219369-011
TRCPT-4-18.0	219369-012
TRCPT-5-5.0	219369-013
TRCPT-5-16.0	219369-014
TRCPT-6-7.0	219369-015
TRCPT-6-19.0	219369-016
TRCPT-7-6.0	219369-017
TRCPT-7-16.0	219369-018
TRCPT-8-10.0	219369-019
TRCPT-8-19.0	219369-020
TRCPT-9-10.0	219369-021
TRCPT-9-22.0	219369-022

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 04/16/2010
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**219369**
Client:	**Treadwell & Rollo**
Project:	**4954.01**
Location:	**5885 Hollis**
Request Date:	**04/09/10**
Samples Received:	**03/31/10, 04/02/10, 04/05/10**

This data package contains sample and QC results for twenty two soil samples, requested for the above referenced project on 04/09/10. The samples were received on ice and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):
Matrix spikes QC540270,QC540271 (batch 161961) were not reported because the parent sample was reanalyzed in another batch. No other analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):
Matrix spikes QC540200,QC540201 (batch 161944) were not reported because the parent sample required a dilution that would have diluted out the spikes. No other analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):
TRCPT-5-5.0 (lab # 219369-013) was diluted due to high hydrocarbons.
TRCPT-7-6.0 (lab # 219369-017) was diluted due to high non-target analytes.
No other analytical problems were encountered.

Semivolatile Organics by GC/MS SIM (EPA 8270C-SIM):
No analytical problems were encountered.

219369

Micah Smith

From: "Louis Arighi" <lmarighi@treadwellrollo.com>
To: "Micah Smith" <micah.smith@ctberk.com>
Sent: Friday, April 09, 2010 4:54 PM
Subject: soil analyses

Micah,
For T&R project # 4954.01, I would like to request the following analyses of the soil samples currently on hold:
For PAH's (low-level) and VOCs:
TRCPT-1-5.0
TRCPT-1-9.5
TRCPT-1-18.0
TRCPT-2-5.0
TRCPT-2-9.5
TRCPT-2-18.0
TRCPT-3-5.0
TRCPT-3-9.5
TRCPT-3-18.0
TRCPT-4-5.0
TRCPT-4-10.0
TRCPT-4-18.0

For TPH-g, TPH-d (with SGC) and TPH-mo (with SGC), and VOCs:
TRCPT-5-5.0
TRCPT-5-16.0
TRCPT-6-7.0
TRCPT-6-19.0
TRCPT-7-6.0
TRCPT-7-16.0
TRCPT-8-10.0
TRCPT-8-19.0
TRCPT-9-10.0
TRCPT-9-22.0

Please let me know if you have any questions.
Thanks,
Louis

Louis Arighi, P.G.
Senior Staff Geologist

Treadwell & Rollo, Inc. | A Green Business
Environmental and Geotechnical Consultants
See our blog at: **blog.treadwellrollo.com**
501 14th Street, 3rd Floor
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Mobile: (510) 316-4375
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www.treadwellrollo.com

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(510) 486-0532 Fax

CHAIN OF CUSTODY

C & T LOGIN #: 219235

Project No.: 4954.01
Project Name: 5885 Hollis St
Project P.O.:
Turnaround Time: 5-day

Sampler: Louis Arighi
Report To: Matt Hall
Company: Treadwell & Rollo
Telephone: 415-955-9040
Fax: 415-955-9041

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	None	Analysis: VOCs	PAHs by 8270-SIM	SVOCs by 8270	Hold
1	TRCPT-3-GW-20.0	4/5/10 0740		X		4	3			X	1	X	X		
2	TRCPT-2-9.0	0910	X							X					X
3	TRCPT-2-9.5	0910	X							X					X
4	TRCPT-2-18.0	1005	X							X					X
5	TRCPT-2-18.5	1005	X							X					X
6	TRCPT-1-2.5	0935	X							X					X
7	TRCPT-1-5.0	0939	X							X					X
8	TRCPT-2-2.5	1055	X							X					X
9	TRCPT-2-5.0	1059	X							X					X
10	TRCPT-1-9.0	1205	X							X					X
11	TRCPT-1-9.5	1205	X							X					X
12	HA-1-2.0	1344	X							X					X
13	HA-2-2.0	1353	X							X					X

Notes:

SAMPLE RECEIPT
☐ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:
4/5/10 1620 DATE / TIME
DATE / TIME
DATE / TIME

RECEIVED BY:
Pat Langley 4/5/10 1620 DATE / TIME
DATE / TIME
DATE / TIME

SIGNATURE

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Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

C & T LOGIN #: 219235

Project No.: 4954.01
Project Name: 5885 Hollis St
Project P.O.:
Turnaround Time: 5-day

Sampler: Louis Anichi
Report To: Matt Hall
Company: Treadwell & Rollo
Telephone:
Fax:

Lab No.	Sample ID.	Sampling Date	Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	none	Analysis: VOCs	PAHs by 8270-SIM	5 VOCs by 8170
14	HA-3-2.0	4/5/10	1402	X							X				X
15	HA-4-2.0	↓	1410								X				X
16	TRCPT-2-GW-20	↓	1500		X		4	3			X	1	X	X	
17	TRCPT-1-18.0	4/5/10	1375	X											
18	TRCPT-1-18.5	↓	↓												

Notes:

SAMPLE RECEIPT
☐ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:

SIGNATURE	DATE / TIME
Eric Miller	4/5/10 1620
	DATE / TIME
	DATE / TIME

RECEIVED BY:

SIGNATURE	DATE / TIME
Pat Murphy	4/5/10 1620
	DATE / TIME
	DATE / TIME

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 214235 Date Received 4-5-10 Number of coolers 1
Client TREADWELL + ROLLO Project 5885 HOLLIS ST

Date Opened 4-5-10 By (print) S. EVANS (sign)
Date Logged in " By (print) " (sign) "

1. Did cooler come with a shipping slip (airbill, etc) YES (NO)
Shipping info

2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☒ NO
How many Name Date
2B. Were custody seals intact upon arrival? YES NO (N/A)
3. Were custody papers dry and intact when received? (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe)

☐ Bubble Wrap ☐ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☒ Paper towels

7. Temperature documentation:

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) 6.7

☐ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES (NO)
If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? (YES) NO
10. Are samples in the appropriate containers for indicated tests? (YES) NO
11. Are sample labels present, in good condition and complete? (YES) NO
12. Do the sample labels agree with custody papers? (YES) NO
13. Was sufficient amount of sample sent for tests requested? (YES) NO
14. Are the samples appropriately preserved? (YES) NO N/A
15. Are bubbles > 6mm absent in VOA samples? (YES) NO N/A
16. Was the client contacted concerning this sample delivery? YES NO
If YES, Who was called? By Date:

COMMENTS

- SAMPLE # 017 + 018 ARE NOT ON COC, ADDED TO COC + LOGGED IN ON HOLD.

- SAMPLE #001, DIDN'T RECEIVE VOA SAMPLES.

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CHAIN OF CUSTODY

C & T LOGIN #: 219232

Project No.: 4954.01
Project Name: 5885 Hollis
Project P.O.:
Turnaround Time: 5-day

Sampler: Louis Arighi
Report To: Matt Hall
Company: Treadwell & Rollo
Telephone: 415-955-9040
Fax: 415-955-9041

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste		# of Containers	Preservative: HCl	H_2SO_4	HNO_3	ICE	Extra	Analysis: VOCs	TPH-g	TPH-d w/ SGC	TPH-mo w/ SGC	Hold
1	TRCPT-9-GW-17.0	4/1/10 0820		X			4	3			X	-	X	X	X	X	
2	TRCPT-8-GW-20	4/1/10 1101		X			4	3			X	1	X	X	X	X	
3	TRCPT-8-10.0	1126	X								X						X
4	TRCPT-8-10.5	1126	X								X						X
5	TRCPT-8-19.0	1131	X								X						X
6	TRCPT-8-19.5	1131	X								X						X
7	TRCPT-7-6.0	1334	X								X						X
8	TRCPT-7-6.5	1334	X								X						X
9	TRCPT-7-GW-9.0										X		X	X	X	X	X
10	TRCPT-7-16.0	1421	X								X						X
11	TRCPT-7-16.5	1421	X								X						X
12	TRCPT-6-GW-11	4/2/10		X			4	3			X	1	X	X	X	X	
13	TRCPT-6-19.0	4/2/10 0735	X								X						X

Notes:

SAMPLE RECEIPT
☐ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY: [signature] 4/2/10 1830 DATE / TIME

RECEIVED BY: [signature] 4/2/10 18:30 DATE / TIME

DATE / TIME

DATE / TIME

DATE / TIME

DATE / TIME

SIGNATURE

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CHAIN OF CUSTODY

C & T LOGIN #: 219232

Project No.: 4954.01
Project Name: 5885 Hollis
Project P.O.:
Turnaround Time: 5-day

Sampler: Louis Arighi
Report To: Matt Hall
Company: Treadwell & Rollo
Telephone:
Fax:

Analysis

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	Hold
14	TRCPT-6-19.5	4/1/10 0735	X								
15	TRCPT-5-5.0	0923	X								
16	TRCPT-5-5.5	0923	X								
17	TRCPT-3-2.5	1005	X								
18	TRCPT-3-5.0	1005	X								
19	TRCPT-5-16.0	1030	X								
20	TRCPT-5-16.5	1030	X								
21	TRCPT-4-10.0	1205	X								
22	TRCPT-4-10.5	1205	X								
23	TRCPT-4-18.0	1320	X								
24	TRCPT-4-18.5	1320	X								
25	TRCPT-4-2.5	1420	X								
26	TRCPT-4-5.0	1420	X								

Notes:

SAMPLE RECEIPT
☐ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:	RECEIVED BY:
SIGNATURE	SIGNATURE
4/2/10 1830 DATE / TIME	4/2/10 18:30 DATE / TIME
DATE / TIME	DATE / TIME
DATE / TIME	DATE / TIME

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CHAIN OF CUSTODY

C & T LOGIN #: 219232

Project No.: 4954.01
Project Name: 5885 Hollis
Project P.O.:
Turnaround Time: 5-day

Sampler: Louis Angeli
Report To: Matt Hall
Company: Treadwell & Rollo
Telephone:
Fax:

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	none	Analysis: VOCs	PAHs	TPH-g	TPH-d w/SGC	TPH-mo w/SGC	Hold
17	TRCPT-3-9.0	4/2/10 1525	X							X							X
28	TRCPT-3-9.5	1525	X							X							X
29	TRCPT-5-GW-20.0	1625		X		4	3			X	1	X		X	X	X	
30	TRCPT-3-GW-20.0	1730		X		~~3~~	3			X	~~3~~	X					

Notes:

SAMPLE RECEIPT
☐ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:	RECEIVED BY:
SIGNATURE	SIGNATURE
4/2/10 1830 DATE / TIME	4/2/10 18:30 DATE / TIME
DATE / TIME	DATE / TIME
DATE / TIME	DATE / TIME

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 219232 Date Received 4/2/10 Number of coolers 1
Client TREADWELL & ROLLO Project 5885 HOLLIS

Date Opened 4/2/10 By (print) M. VILLANUEVA (sign)
Date Logged in 4/5/10 By (print) S. EVANS (sign)

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
Shipping info _____

2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☐ (NO)
How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (NA)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ___ (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☑ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☑ Paper towels

7. Temperature documentation:

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) _____

☑ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
11. Are sample labels present, in good condition and complete? _____ (YES) NO
12. Do the sample labels agree with custody papers? _____ YES (NO)
13. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
14. Are the samples appropriately preserved? _____ (YES) NO N/A
15. Are bubbles > 6mm absent in VOA samples? _____ (YES) NO N/A
16. Was the client contacted concerning this sample delivery? _____ YES NO
If YES, Who was called? _____ By _____ Date: _____

COMMENTS

#031-IRCPT - 6 - 7.0 4/1/10 1639 SAMPLE #'s 0031-0034 NOT
#032-IRCPT - 6 - 7.5 4/1/10 1639 ON COC, LOGGED IN ON HOLD
#033-IRCPT - 3 - 18.0 4/2/10 1605 BY JJ
#034-IRCPT - 3 - 18.5 4/2/10 1605

SAMPLE #004 VERY LIMITED SAMPLE

SOP Volume: Client Services
Section: 1.1.2
Page: 1 of 1

Rev. 6 Number 1 of 3
Effective: 23 July 2008
Z:\qc\forms\checklists\Cooler Receipt Checklist_rv6.doc

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CHAIN OF CUSTODY

C & T LOGIN #: 219166

Project No.: 4954.01
Project Name: 5885 Hollis
Project P.O.:
Turnaround Time: 5-day

Sampler: Louis Bright
Report To: Matt Hall mthall@treadwellrollo.com
Company: Treadwell & Rollo
Telephone: ~~510~~ 415-955-9040
Fax: 415-955-9041

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	None	Analysis: TPH-g	TPH-d w/ SGC	TPH-mo w/ SGC	VOCs	Hold
1	TRCPT-4 10.0	3/31/10 1447	X			1										X
2	TRCPT-9-10.5	1447	X													X
3	TRCPT-9-22.0	1457	X													X
4	TRCPT-9-22.5	1457	X													X
5	TRCPT-9-37.0	1508	X													X
6	TRCPT-9-37.5	1508	X													X
7	TRCPT-9-45.0	1520	X													X
8	TRCPT-9-45.5	1520	X													X
9	TRCPT-9-50	1605		X		4	X			X	1	X	X	X	X	

Notes:

SAMPLE RECEIPT
☐ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:
Louis Bright 3/31/10 17:55 DATE / TIME
DATE / TIME
DATE / TIME

RECEIVED BY:
Pat Hanafy 3/31/10 1755 DATE / TIME
DATE / TIME
DATE / TIME

SIGNATURE

Micah Smith

From: "Matt Hall" <mbhall@treadwellrollo.com>
To: "Micah Smith" <micah.smith@ctberk.com>
Sent: Thursday, April 01, 2010 2:36 PM
Subject: RE: 4954.01 - C&T Login Summary (219166)

Hi Micah –

Could you change lab sample number 9 to read – "TRCPT-9-GW-50"

Also, you may run the TPH-g by 8260.

Thanks,
Matt

From: Micah Smith [mailto:micah.smith@ctberk.com]
Sent: Thursday, April 01, 2010 2:23 PM
To: Matt Hall; Thomas Campitelli
Subject: 4954.01 - C&T Login Summary (219166)

C&T Login Summary for 219166

Project: 4954.01 **Site:** 5885 Hollis **Lab Login #:** 219166 **Report Level:** II **Report Due:** 04/07/10 **PO#:** **C&T Proj Mgr:** Micah Smith	**Report To:** Treadwell & Rollo 555 Montgomery Street Suite 1300 San Francisco, CA 94111 ATTN: Matt Hall (415) 955-9040	**Bill To:** Treadwell & Rollo 555 Montgomery Street Suite 1300 San Francisco, CA 941 ATTN: Matt Hall (415) 955-9040

Client ID	Lab ID	Sampled	Received	Matrix	Analyses	COC #	Comments
TRCPT-9-10.0	001	03/31	03/31				
				Soil	HOLD		
TRCPT-9-10.5	002	03/31	03/31				
				Soil	HOLD		
TRCPT-9-22.0	003	03/31	03/31				
				Soil	HOLD		
TRCPT-9-22.5	004	03/31	03/31				
				Soil	HOLD		
TRCPT-9-37.0	005	03/31	03/31				
				Soil	HOLD		
TRCPT-9-37.5	006	03/31	03/31				

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 219164 Date Received 3/31/10 Number of coolers 1
Client TRC/DOWELL & ROLLO Project 5885 HOLLIS

Date Opened 3/31/10 By (print) M. VILLANUEVA (sign)
Date Logged in / By (print) / (sign)

1. Did cooler come with a shipping slip (airbill, etc) YES NO
Shipping info

2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☐ NO
How many Name Date
2B. Were custody seals intact upon arrival? YES NO N/A
3. Were custody papers dry and intact when received? YES NO
4. Were custody papers filled out properly (ink, signed, etc)? YES NO
5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO
6. Indicate the packing in cooler: (if other, describe)

☐ Bubble Wrap ☐ Foam blocks ☑ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☑ Paper towels

7. Temperature documentation:

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C)

☑ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES NO
If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? YES NO
10. Are samples in the appropriate containers for indicated tests? YES NO
11. Are sample labels present, in good condition and complete? YES NO
12. Do the sample labels agree with custody papers? YES NO
13. Was sufficient amount of sample sent for tests requested? YES NO
14. Are the samples appropriately preserved? YES NO N/A
15. Are bubbles > 6mm absent in VOA samples? YES NO N/A
16. Was the client contacted concerning this sample delivery? YES NO
If YES, Who was called? By Date:

COMMENTS

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8015B
Matrix:	Soil	Basis:	as received
Units:	mg/Kg		

Field ID:	TRCPT-5-5.0	Batch#:	161961
Type:	SAMPLE	Sampled:	04/02/10
Lab ID:	219369-013	Received:	04/02/10
Diln Fac:	50.00	Analyzed:	04/14/10

Analyte	Result	RL
Gasoline C7-C12	680 Y	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	142	38-168
Bromofluorobenzene (FID)	152	27-175

Field ID:	TRCPT-5-16.0	Batch#:	161906
Type:	SAMPLE	Sampled:	04/02/10
Lab ID:	219369-014	Received:	04/02/10
Diln Fac:	1.000	Analyzed:	04/12/10

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	38-168
Bromofluorobenzene (FID)	105	27-175

Field ID:	TRCPT-6-7.0	Batch#:	161906
Type:	SAMPLE	Sampled:	04/01/10
Lab ID:	219369-015	Received:	04/02/10
Diln Fac:	1.000	Analyzed:	04/13/10

Analyte	Result	RL
Gasoline C7-C12	ND	0.99

Surrogate	%REC	Limits
Trifluorotoluene (FID)	98	38-168
Bromofluorobenzene (FID)	102	27-175

Field ID:	TRCPT-6-19.0	Batch#:	161906
Type:	SAMPLE	Sampled:	04/02/10
Lab ID:	219369-016	Received:	04/02/10
Diln Fac:	1.000	Analyzed:	04/13/10

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	101	38-168
Bromofluorobenzene (FID)	102	27-175

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8015B
Matrix:	Soil	Basis:	as received
Units:	mg/Kg		

Field ID:	TRCPT-7-6.0	Batch#:	161961
Type:	SAMPLE	Sampled:	04/01/10
Lab ID:	219369-017	Received:	04/02/10
Diln Fac:	50.00	Analyzed:	04/14/10

Analyte	Result	RL
Gasoline C7-C12	690 Y	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	146	38-168
Bromofluorobenzene (FID)	147	27-175

Field ID:	TRCPT-7-16.0	Batch#:	161906
Type:	SAMPLE	Sampled:	04/01/10
Lab ID:	219369-018	Received:	04/02/10
Diln Fac:	1.000	Analyzed:	04/13/10

Analyte	Result	RL
Gasoline C7-C12	ND	0.96

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	38-168
Bromofluorobenzene (FID)	103	27-175

Field ID:	TRCPT-8-10.0	Batch#:	161906
Type:	SAMPLE	Sampled:	04/01/10
Lab ID:	219369-019	Received:	04/02/10
Diln Fac:	1.000	Analyzed:	04/13/10

Analyte	Result	RL
Gasoline C7-C12	ND	0.95

Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	38-168
Bromofluorobenzene (FID)	105	27-175

Field ID:	TRCPT-8-19.0	Batch#:	161906
Type:	SAMPLE	Sampled:	04/01/10
Lab ID:	219369-020	Received:	04/02/10
Diln Fac:	1.000	Analyzed:	04/12/10

Analyte	Result	RL
Gasoline C7-C12	ND	0.98

Surrogate	%REC	Limits
Trifluorotoluene (FID)	94	38-168
Bromofluorobenzene (FID)	97	27-175

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8015B
Matrix:	Soil	Basis:	as received
Units:	mg/Kg		

Field ID:	TRCPT-9-10.0	Batch#:	161906
Type:	SAMPLE	Sampled:	03/31/10
Lab ID:	219369-021	Received:	03/31/10
Diln Fac:	1.000	Analyzed:	04/13/10

Analyte	Result	RL
Gasoline C7-C12	5.5	1.1

Surrogate	%REC	Limits
Trifluorotoluene (FID)	156	38-168
Bromofluorobenzene (FID)	130	27-175

Field ID:	TRCPT-9-22.0	Batch#:	161906
Type:	SAMPLE	Sampled:	03/31/10
Lab ID:	219369-022	Received:	03/31/10
Diln Fac:	1.000	Analyzed:	04/13/10

Analyte	Result	RL
Gasoline C7-C12	ND	0.93

Surrogate	%REC	Limits
Trifluorotoluene (FID)	94	38-168
Bromofluorobenzene (FID)	96	27-175

Type:	BLANK	Batch#:	161906
Lab ID:	QC540065	Analyzed:	04/12/10
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	0.20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	101	38-168
Bromofluorobenzene (FID)	100	27-175

Type:	BLANK	Batch#:	161961
Lab ID:	QC540268	Analyzed:	04/13/10
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	0.20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	97	38-168
Bromofluorobenzene (FID)	98	27-175

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC540066	Batch#:	161906
Matrix:	Soil	Analyzed:	04/12/10
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	0.9530	95	74-123

Surrogate	%REC	Limits
Trifluorotoluene (FID)	109	38-168
Bromofluorobenzene (FID)	100	27-175

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8015B
Field ID:	TRCPT-8-19.0	Diln Fac:	1.000
MSS Lab ID:	219369-020	Batch#:	161906
Matrix:	Soil	Sampled:	04/01/10
Units:	mg/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/12/10

Type: MS Lab ID: QC540067

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.07791	10.20	9.106	88	14-138

Surrogate	%REC	Limits
Trifluorotoluene (FID)	130	38-168
Bromofluorobenzene (FID)	102	27-175

Type: MSD Lab ID: QC540068

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	9.901	8.696	87	14-138	2	52

Surrogate	%REC	Limits
Trifluorotoluene (FID)	127	38-168
Bromofluorobenzene (FID)	104	27-175

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC540269	Batch#:	161961
Matrix:	Soil	Analyzed:	04/13/10
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	0.9661	97	74-123

Surrogate	%REC	Limits
Trifluorotoluene (FID)	115	38-168
Bromofluorobenzene (FID)	98	27-175

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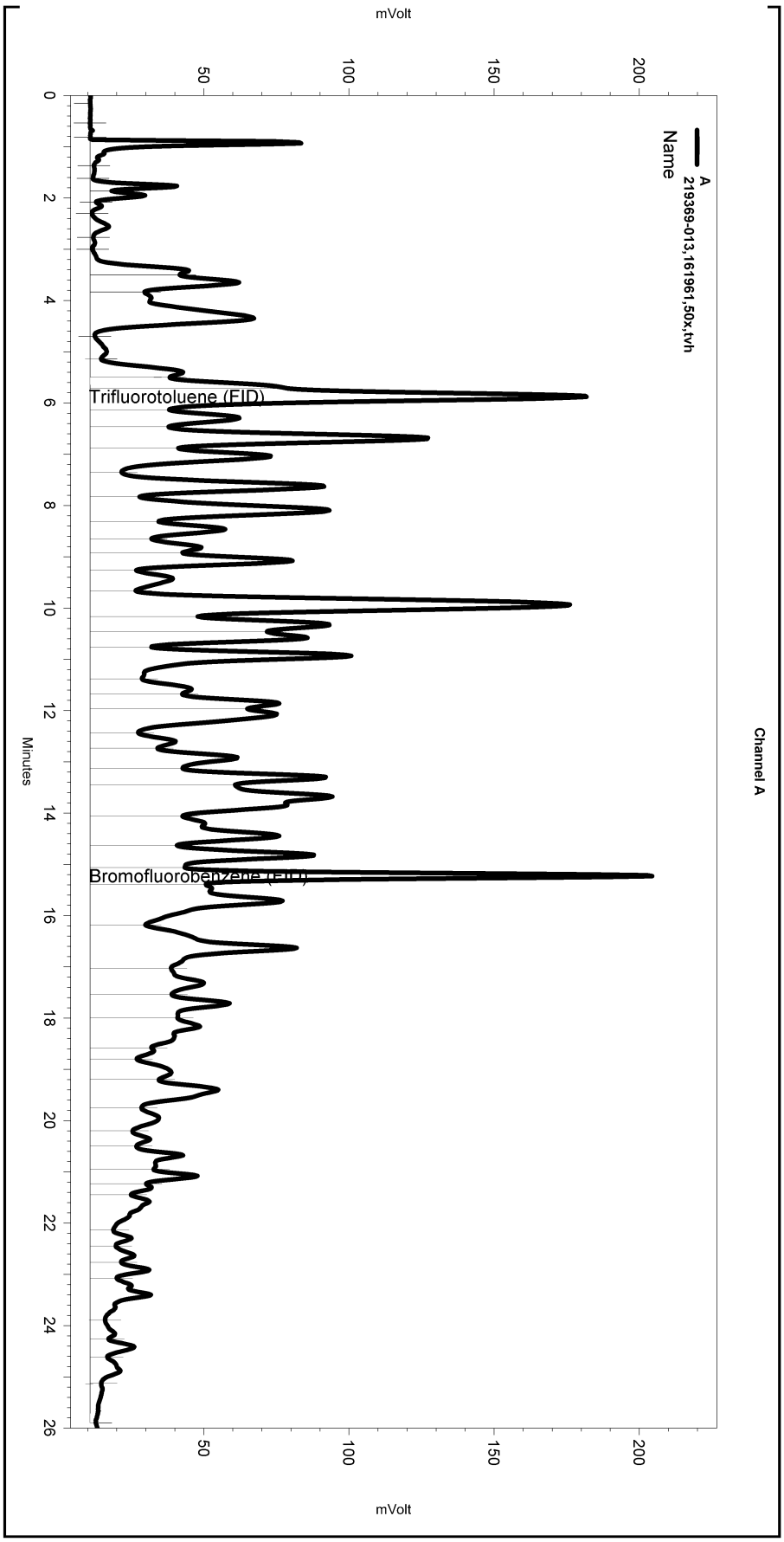
Sample Name: **219369-013,161961,50x,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC07\Data\103_018**
Instrument: GC07 (Offline) Vial: N/A Operator: Tvh 1. Analyst (lims2k3\tvh1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC07\Method\tvhbtxe091.met

Software Version 3.1.7
Run Date: 4/14/2010 2:19:13 AM
Analysis Date: 4/14/2010 9:51:56 AM
Sample Amount: 1 Multiplier: 1
Vial & pH or Core ID: a



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC07\Data\103_018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Lowest Point Horizontal Baseli	0	26.017	0
Yes	Split Peak	5.717	0	0

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Sample Name: **219369-017,161961,50x,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC07\Data\103_020**
Instrument: GC07 (Offline) Vial: N/A Operator: Tvh 1. Analyst (lims2k3\tvh1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC07\Method\tvhbtxe091.met

Software Version 3.1.7
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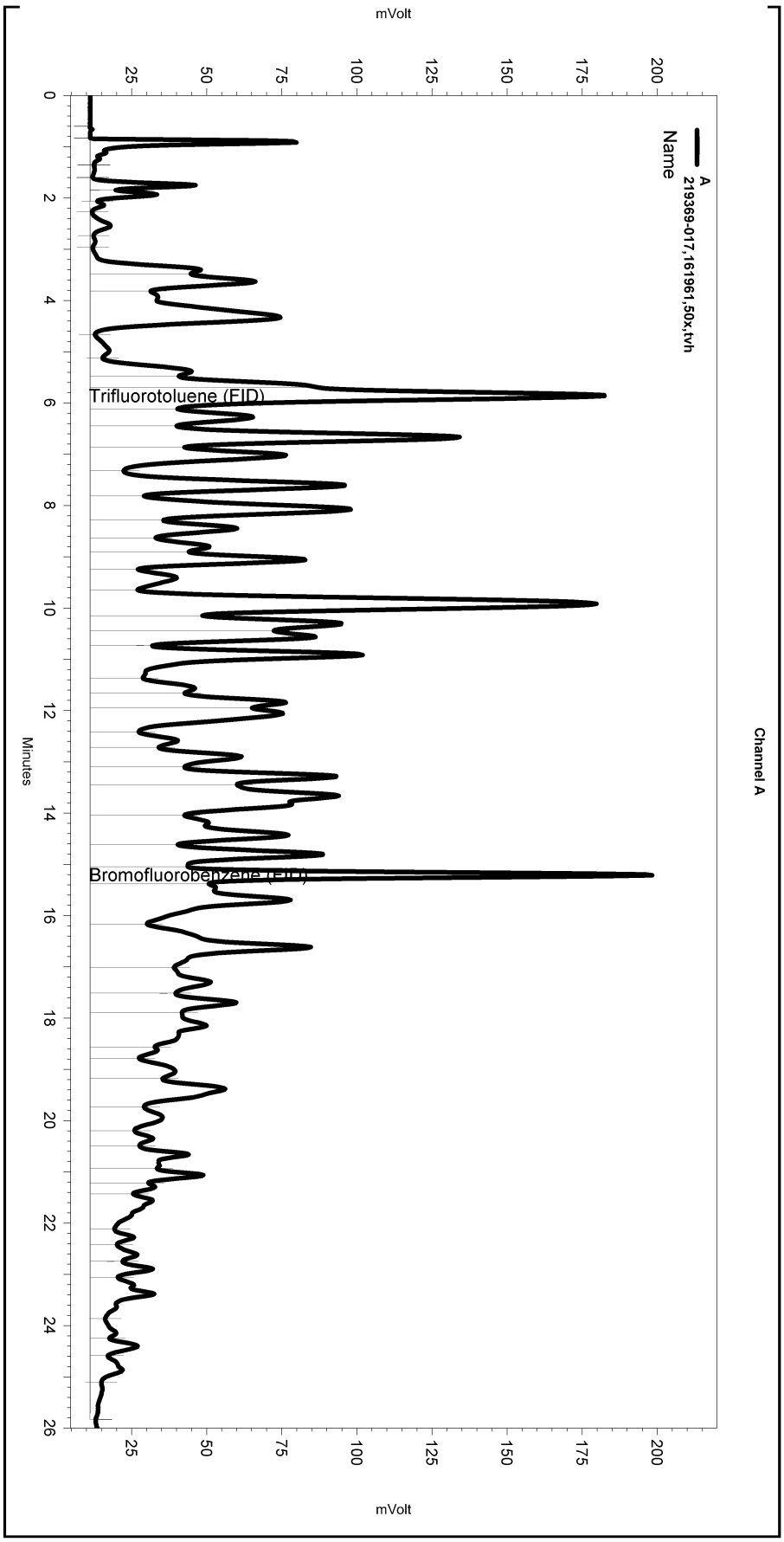
Analysis Date: 4/14/2010 9:52:08 AM
Sample Amount: 1 Multiplier: 1
Vial & pH or Core ID: a



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC07\Data\103_020

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Lowest Point Horizontal Baseli	0	26.017	0
Yes	Split Peak	5.699	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC07\Sequence\102.seq**
Sample Name: **219369-021,161906,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC07\Data\102_025**
Instrument: GC07 (Offline) Vial: N/A Operator: RSK-175 Analyst (lims2k3\rsk175)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC07\Method\tvhbtxe091.met

Software Version 3.1.7
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Analysis Date: 4/13/2010 2:03:57 PM
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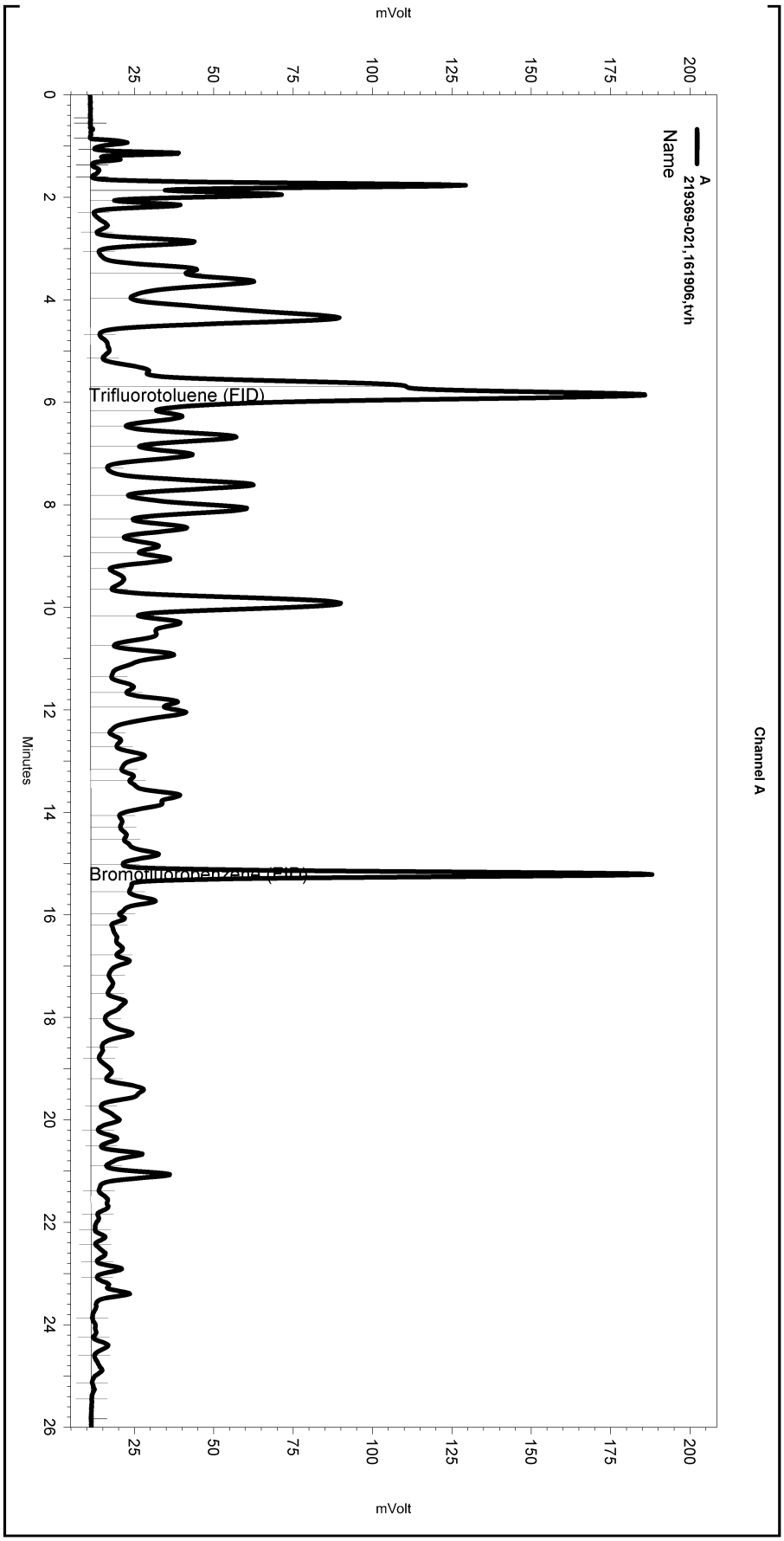
Vial & pH or Core ID: a



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No items selected for this section

Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC07\Data\102_025

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	5.707	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC07\Sequence\102.seq**
Sample Name: **ccv/lcs,qc540066,161906,tvh,s14154,2.5/5000**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC07\Data\102_003**
Instrument: GC07 (Offline) Vial: N/A Operator: RSK-175 Analyst (lims2k3\rsk175)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC07\Method\tvhbtxe091.met

Software Version 3.1.7
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Analysis Date: 4/13/2010 12:12:24 PM
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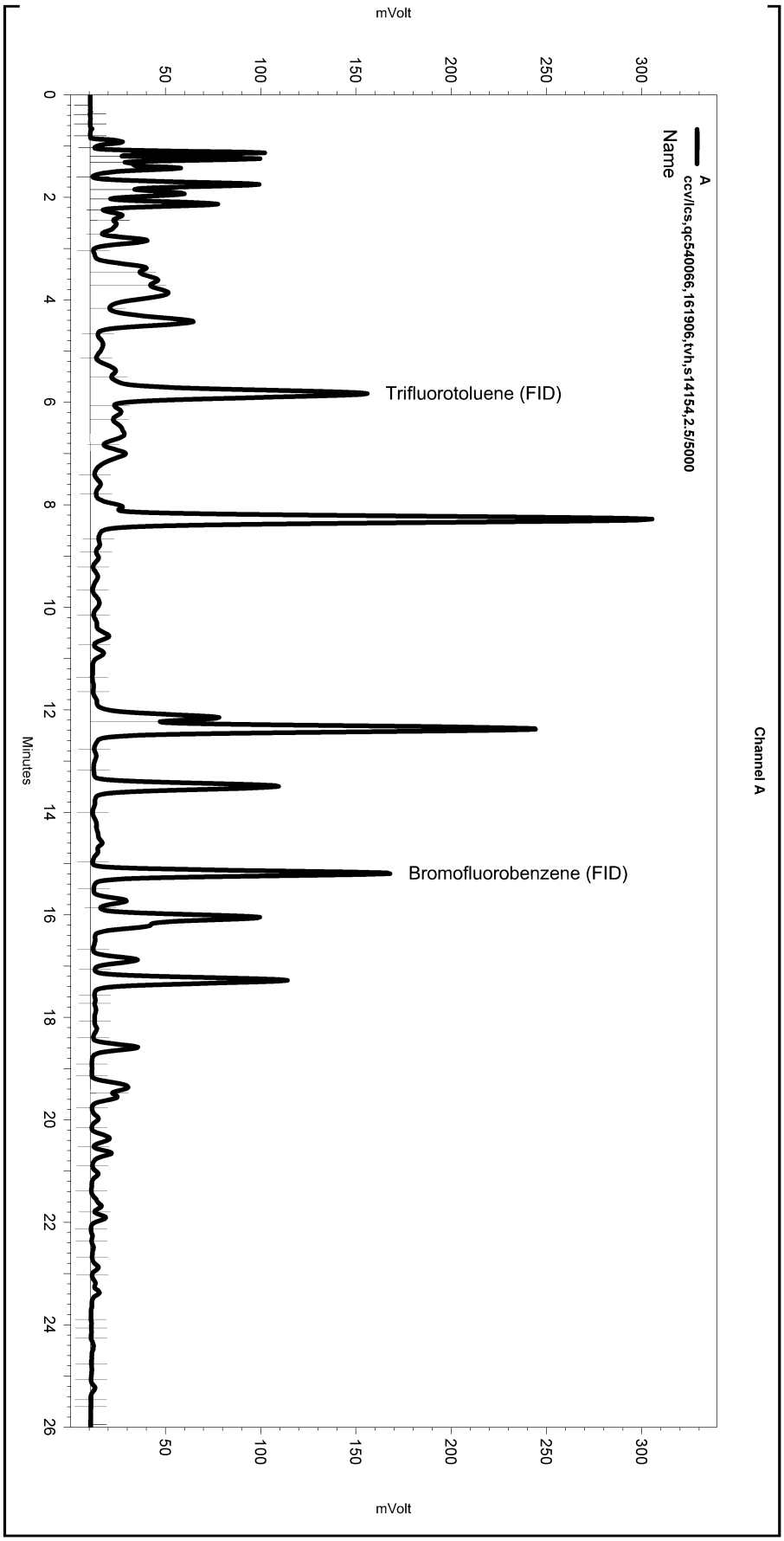
Vial & pH or Core ID: {Data Description}



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC07\Data\102_003

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Analysis:	EPA 8015B
Project#:	4954.01		
Matrix:	Soil	Basis:	as received
Units:	mg/Kg	Diln Fac:	1.000

Field ID:	TRCPT-5-5.0	Received:	04/02/10
Type:	SAMPLE	Prepared:	04/11/10
Lab ID:	219369-013	Analyzed:	04/13/10
Batch#:	161877	Prep:	EPA 3550B
Sampled:	04/02/10	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	67	0.99
Motor Oil C24-C36	6.3	5.0

Surrogate	%REC	Limits
o-Terphenyl	85	16-164

Field ID:	TRCPT-5-16.0	Received:	04/02/10
Type:	SAMPLE	Prepared:	04/11/10
Lab ID:	219369-014	Analyzed:	04/13/10
Batch#:	161877	Prep:	EPA 3550B
Sampled:	04/02/10	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	0.99
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	63	16-164

Field ID:	TRCPT-6-7.0	Received:	04/02/10
Type:	SAMPLE	Prepared:	04/11/10
Lab ID:	219369-015	Analyzed:	04/13/10
Batch#:	161877	Prep:	EPA 3550B
Sampled:	04/01/10	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	58	16-164

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Analysis:	EPA 8015B
Project#:	4954.01		
Matrix:	Soil	Basis:	as received
Units:	mg/Kg	Diln Fac:	1.000

Field ID:	TRCPT-6-19.0	Received:	04/02/10
Type:	SAMPLE	Prepared:	04/11/10
Lab ID:	219369-016	Analyzed:	04/13/10
Batch#:	161877	Prep:	EPA 3550B
Sampled:	04/02/10	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	0.99
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	71	16-164

Field ID:	TRCPT-7-6.0	Received:	04/02/10
Type:	SAMPLE	Prepared:	04/13/10
Lab ID:	219369-017	Analyzed:	04/14/10
Batch#:	161944	Prep:	SHAKER TABLE
Sampled:	04/01/10	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	220	2.0
Motor Oil C24-C36	80	10

Surrogate	%REC	Limits
o-Terphenyl	128	16-164

Field ID:	TRCPT-7-16.0	Received:	04/02/10
Type:	SAMPLE	Prepared:	04/13/10
Lab ID:	219369-018	Analyzed:	04/14/10
Batch#:	161944	Prep:	SHAKER TABLE
Sampled:	04/01/10	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	0.99
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	115	16-164

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Analysis:	EPA 8015B
Project#:	4954.01		
Matrix:	Soil	Basis:	as received
Units:	mg/Kg	Diln Fac:	1.000

Field ID:	TRCPT-8-10.0	Received:	04/02/10
Type:	SAMPLE	Prepared:	04/13/10
Lab ID:	219369-019	Analyzed:	04/14/10
Batch#:	161944	Prep:	SHAKER TABLE
Sampled:	04/01/10	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	108	16-164

Field ID:	TRCPT-8-19.0	Received:	04/02/10
Type:	SAMPLE	Prepared:	04/13/10
Lab ID:	219369-020	Analyzed:	04/14/10
Batch#:	161944	Prep:	SHAKER TABLE
Sampled:	04/01/10	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	119	16-164

Field ID:	TRCPT-9-10.0	Received:	03/31/10
Type:	SAMPLE	Prepared:	04/13/10
Lab ID:	219369-021	Analyzed:	04/14/10
Batch#:	161944	Prep:	SHAKER TABLE
Sampled:	03/31/10	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	2.5	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	119	16-164

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Analysis:	EPA 8015B
Project#:	4954.01		
Matrix:	Soil	Basis:	as received
Units:	mg/Kg	Diln Fac:	1.000

Field ID:	TRCPT-9-22.0	Received:	03/31/10
Type:	SAMPLE	Prepared:	04/13/10
Lab ID:	219369-022	Analyzed:	04/15/10
Batch#:	161944	Prep:	SHAKER TABLE
Sampled:	03/31/10	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	106	16-164

Type:	BLANK	Analyzed:	04/13/10
Lab ID:	QC539949	Prep:	EPA 3550B
Batch#:	161877	Cleanup Method:	EPA 3630C
Prepared:	04/11/10		

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	93	16-164

Type:	BLANK	Analyzed:	04/14/10
Lab ID:	QC540198	Prep:	SHAKER TABLE
Batch#:	161944	Cleanup Method:	EPA 3630C
Prepared:	04/13/10		

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	120	16-164

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC539950	Batch#:	161877
Matrix:	Soil	Prepared:	04/11/10
Units:	mg/Kg	Analyzed:	04/12/10

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.97	30.78	62	36-151

Surrogate	%REC	Limits
o-Terphenyl	66	16-164

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	161877
MSS Lab ID:	219370-004	Sampled:	04/09/10
Matrix:	Soil	Received:	04/09/10
Units:	mg/Kg	Prepared:	04/11/10
Basis:	as received	Analyzed:	04/12/10
Diln Fac:	1.000		

Type: MS Lab ID: QC539951

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	10.99	49.81	55.98	90	3-174

Surrogate	%REC	Limits
o-Terphenyl	93	16-164

Type: MSD Lab ID: QC539952

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.71	50.62	80	3-174	10	54

Surrogate	%REC	Limits
o-Terphenyl	96	16-164

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

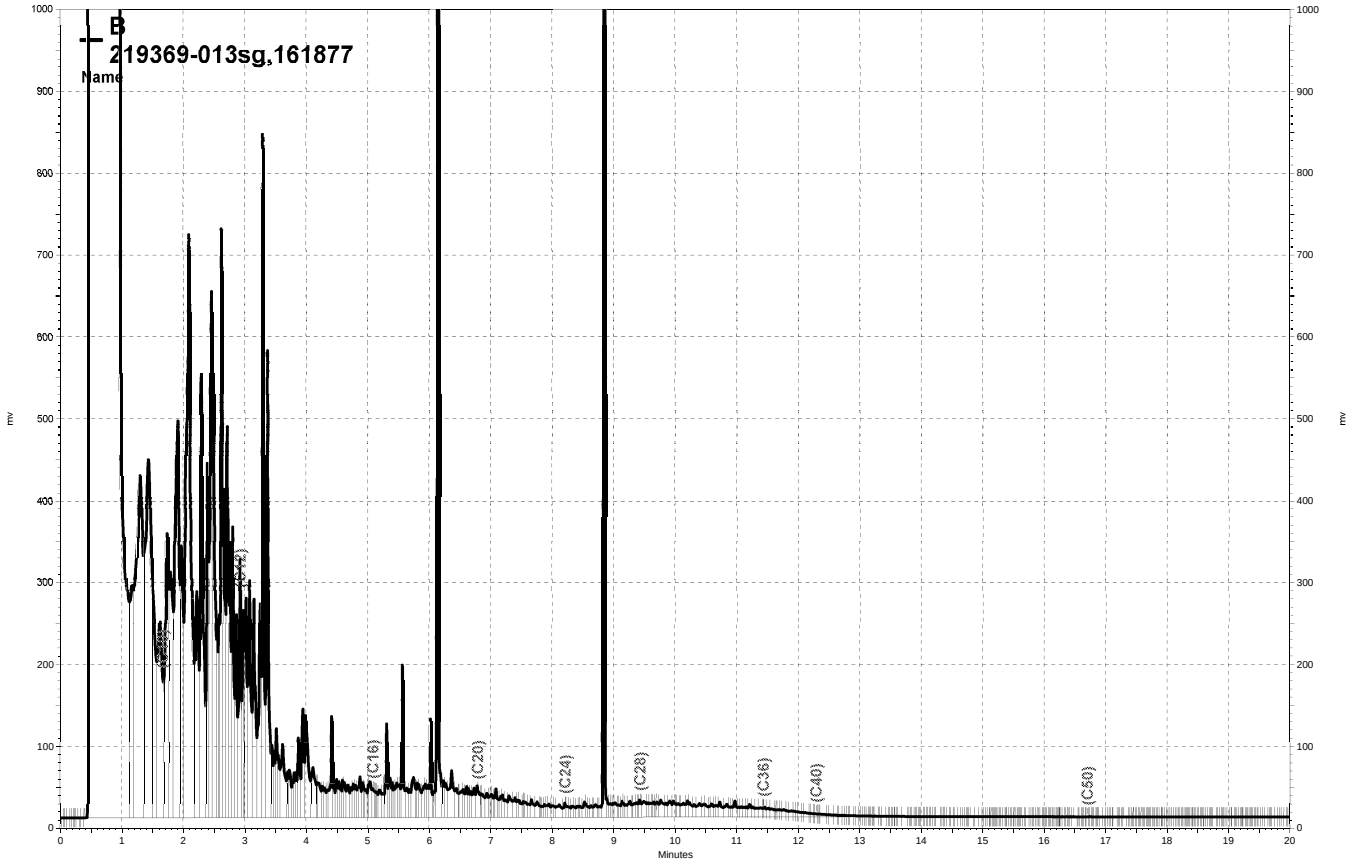
Total Extractable Hydrocarbons

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	SHAKER TABLE
Project#:	4954.01	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC540199	Batch#:	161944
Matrix:	Soil	Prepared:	04/13/10
Units:	mg/Kg	Analyzed:	04/14/10

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.97	58.69	117	36-151

Surrogate	%REC	Limits
o-Terphenyl	122	16-164



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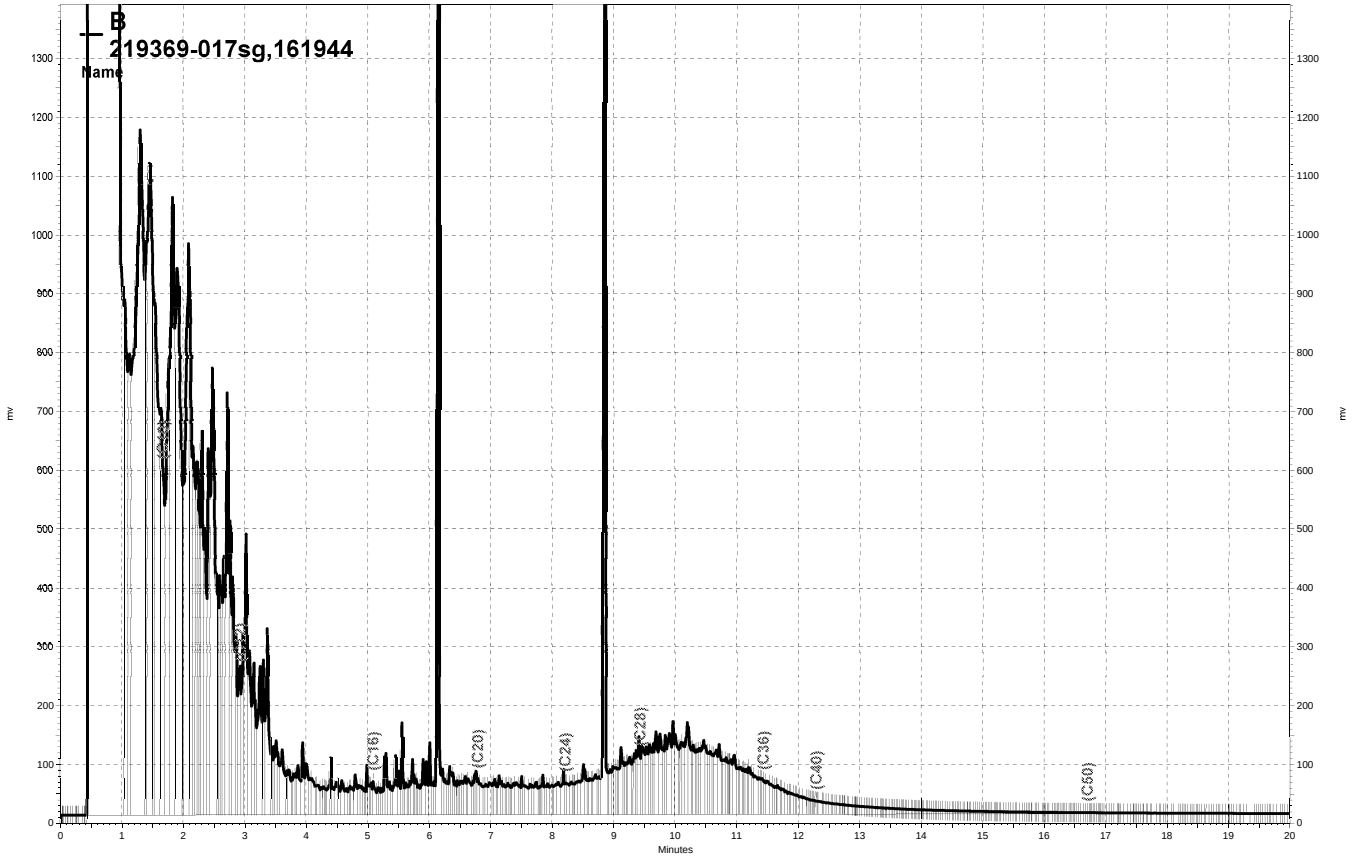

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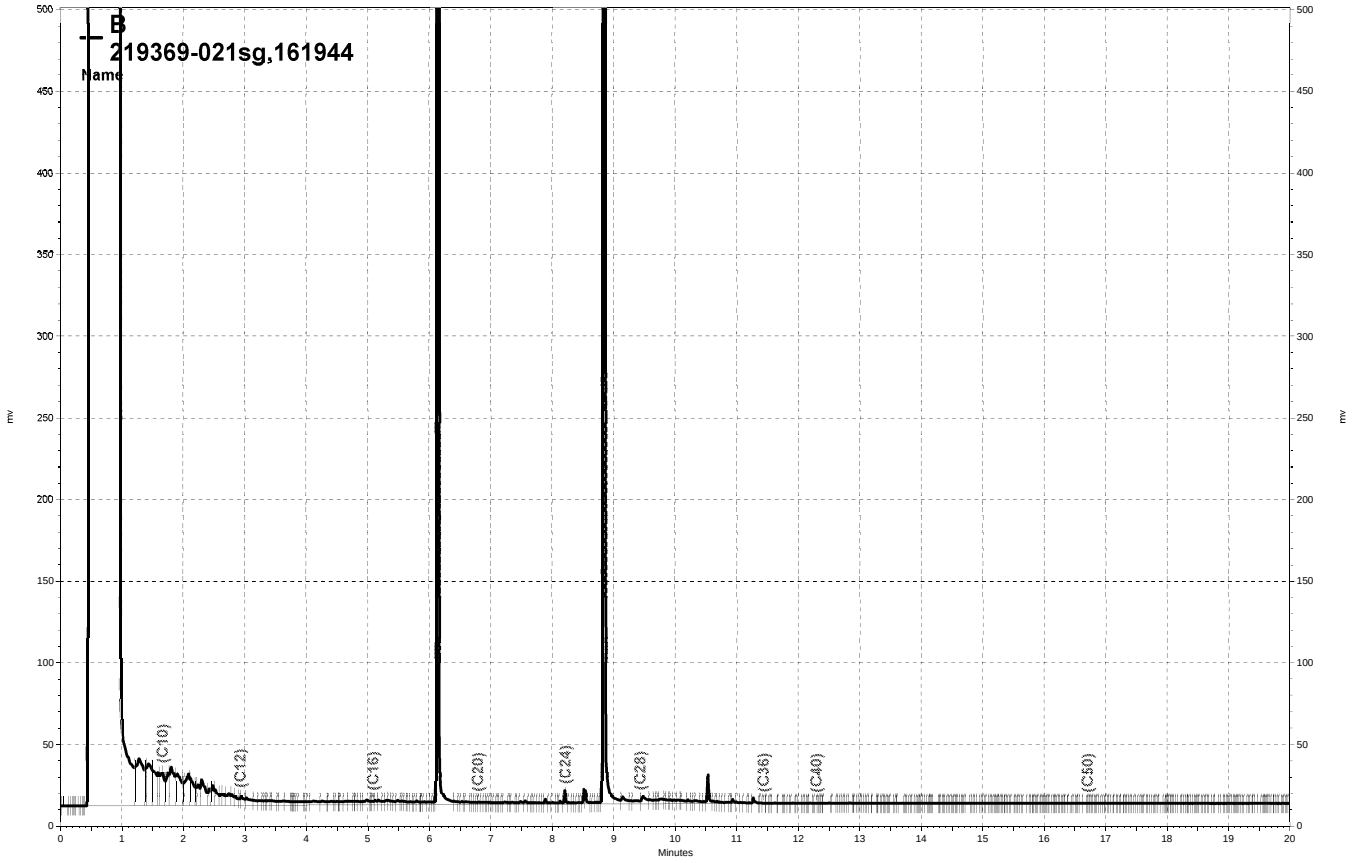

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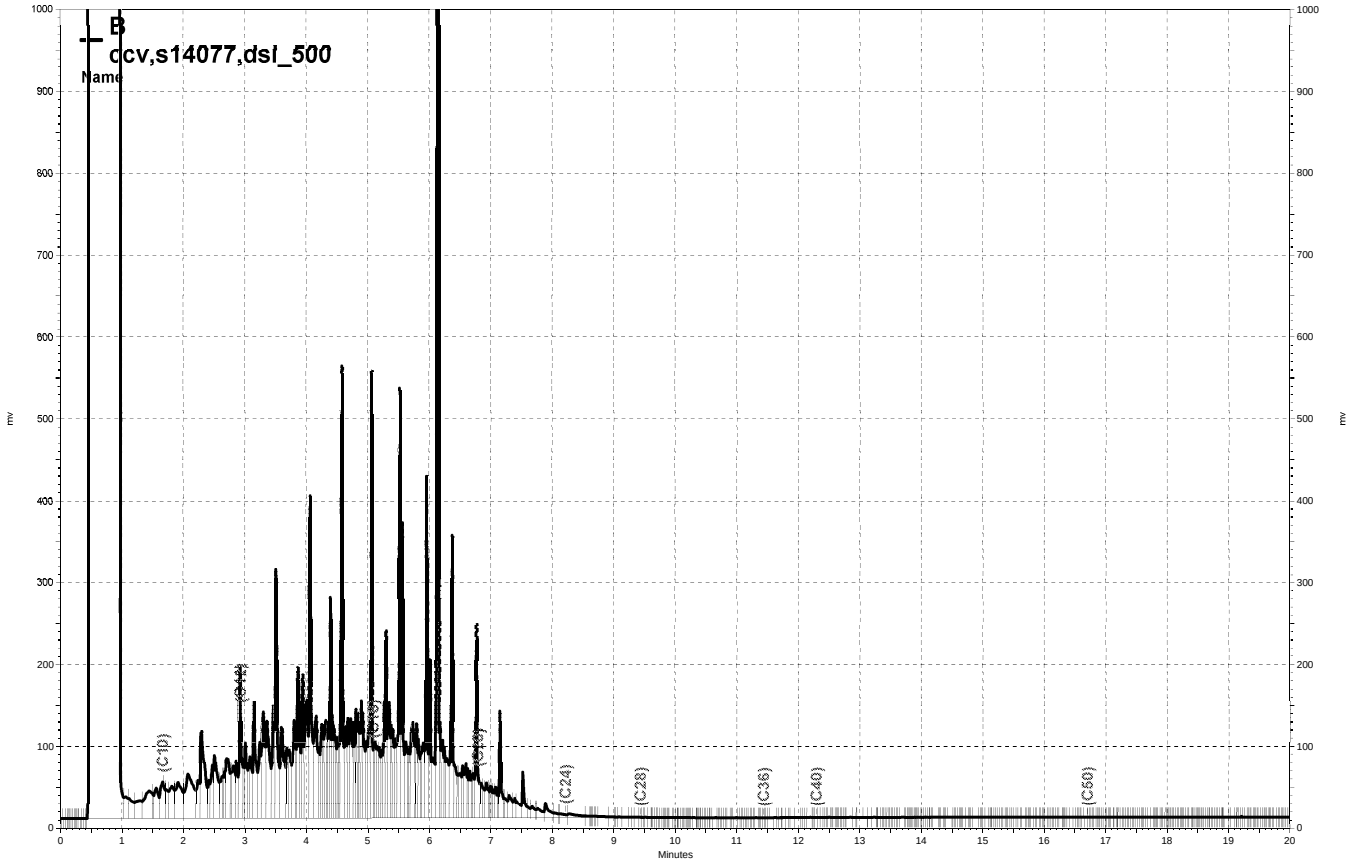

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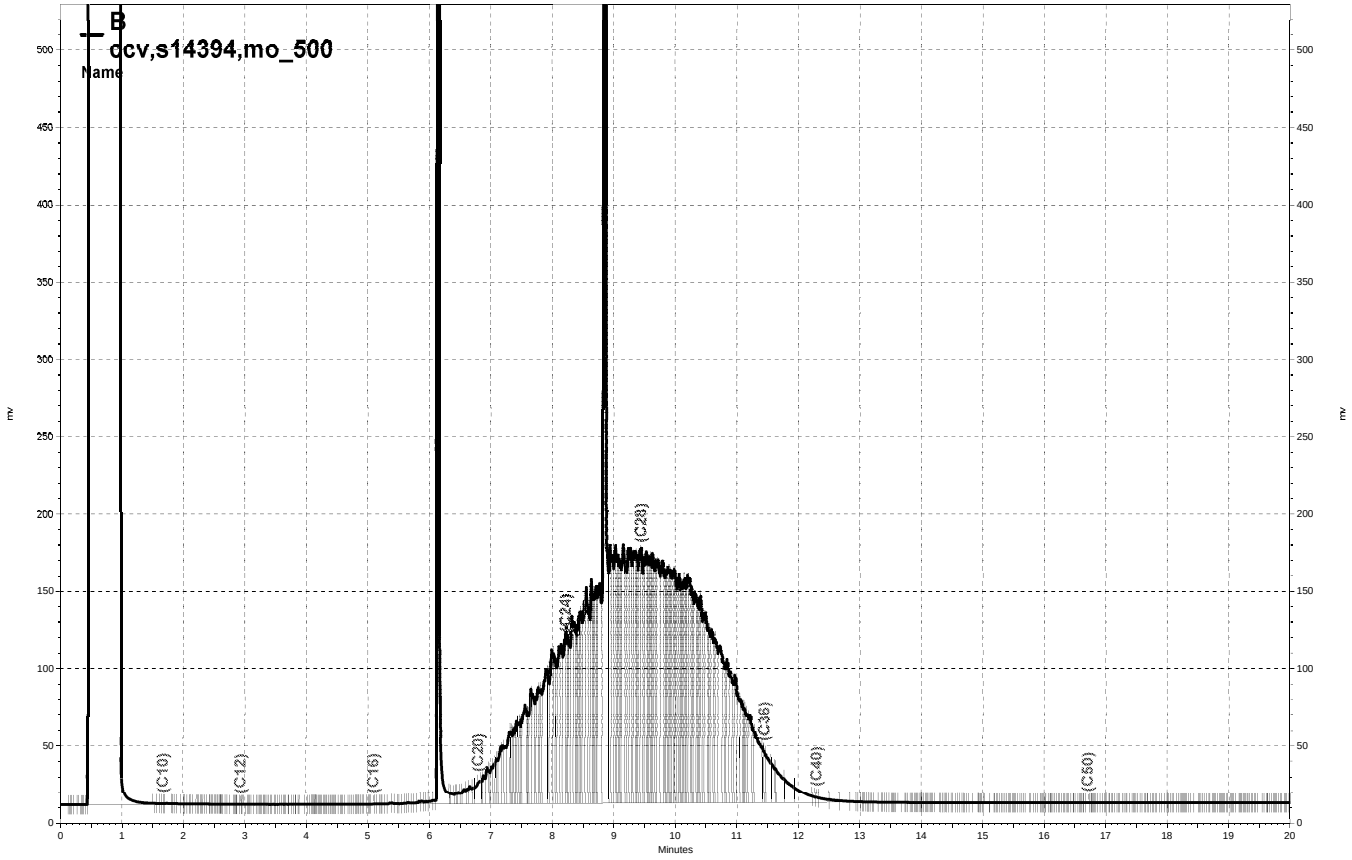

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Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-1-5.0	Diln Fac:	0.9634
Lab ID:	219369-001	Batch#:	161932
Matrix:	Soil	Sampled:	04/05/10
Units:	ug/Kg	Received:	04/05/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	9.6
Chloromethane	ND	9.6
Vinyl Chloride	ND	9.6
Bromomethane	ND	9.6
Chloroethane	ND	9.6
Trichlorofluoromethane	ND	4.8
Acetone	ND	19
Freon 113	ND	4.8
1,1-Dichloroethene	ND	4.8
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.8
MTBE	ND	4.8
trans-1,2-Dichloroethene	ND	4.8
Vinyl Acetate	ND	48
1,1-Dichloroethane	ND	4.8
2-Butanone	ND	9.6
cis-1,2-Dichloroethene	ND	4.8
2,2-Dichloropropane	ND	4.8
Chloroform	ND	4.8
Bromochloromethane	ND	4.8
1,1,1-Trichloroethane	ND	4.8
1,1-Dichloropropene	ND	4.8
Carbon Tetrachloride	ND	4.8
1,2-Dichloroethane	ND	4.8
Benzene	ND	4.8
Trichloroethene	ND	4.8
1,2-Dichloropropane	ND	4.8
Bromodichloromethane	ND	4.8
Dibromomethane	ND	4.8
4-Methyl-2-Pentanone	ND	9.6
cis-1,3-Dichloropropene	ND	4.8
Toluene	ND	4.8
trans-1,3-Dichloropropene	ND	4.8
1,1,2-Trichloroethane	ND	4.8
2-Hexanone	ND	9.6
1,3-Dichloropropane	ND	4.8
Tetrachloroethene	ND	4.8

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-1-5.0	Diln Fac:	0.9634
Lab ID:	219369-001	Batch#:	161932
Matrix:	Soil	Sampled:	04/05/10
Units:	ug/Kg	Received:	04/05/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	4.8
1,2-Dibromoethane	ND	4.8
Chlorobenzene	ND	4.8
1,1,1,2-Tetrachloroethane	ND	4.8
Ethylbenzene	ND	4.8
m,p-Xylenes	ND	4.8
o-Xylene	ND	4.8
Styrene	ND	4.8
Bromoform	ND	4.8
Isopropylbenzene	ND	4.8
1,1,2,2-Tetrachloroethane	ND	4.8
1,2,3-Trichloropropane	ND	4.8
Propylbenzene	ND	4.8
Bromobenzene	ND	4.8
1,3,5-Trimethylbenzene	ND	4.8
2-Chlorotoluene	ND	4.8
4-Chlorotoluene	ND	4.8
tert-Butylbenzene	ND	4.8
1,2,4-Trimethylbenzene	ND	4.8
sec-Butylbenzene	ND	4.8
para-Isopropyl Toluene	ND	4.8
1,3-Dichlorobenzene	ND	4.8
1,4-Dichlorobenzene	ND	4.8
n-Butylbenzene	ND	4.8
1,2-Dichlorobenzene	ND	4.8
1,2-Dibromo-3-Chloropropane	ND	4.8
1,2,4-Trichlorobenzene	ND	4.8
Hexachlorobutadiene	ND	4.8
Naphthalene	ND	4.8
1,2,3-Trichlorobenzene	ND	4.8

Surrogate	%REC	Limits
Dibromofluoromethane	104	59-139
1,2-Dichloroethane-d4	110	54-153
Toluene-d8	102	83-118
Bromofluorobenzene	103	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-1-9.5	Diln Fac:	0.9346
Lab ID:	219369-002	Batch#:	161932
Matrix:	Soil	Sampled:	04/05/10
Units:	ug/Kg	Received:	04/05/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	9.3
Chloromethane	ND	9.3
Vinyl Chloride	ND	9.3
Bromomethane	ND	9.3
Chloroethane	ND	9.3
Trichlorofluoromethane	ND	4.7
Acetone	ND	19
Freon 113	ND	4.7
1,1-Dichloroethene	ND	4.7
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.7
MTBE	ND	4.7
trans-1,2-Dichloroethene	ND	4.7
Vinyl Acetate	ND	47
1,1-Dichloroethane	ND	4.7
2-Butanone	ND	9.3
cis-1,2-Dichloroethene	ND	4.7
2,2-Dichloropropane	ND	4.7
Chloroform	ND	4.7
Bromochloromethane	ND	4.7
1,1,1-Trichloroethane	ND	4.7
1,1-Dichloropropene	ND	4.7
Carbon Tetrachloride	ND	4.7
1,2-Dichloroethane	ND	4.7
Benzene	ND	4.7
Trichloroethene	ND	4.7
1,2-Dichloropropane	ND	4.7
Bromodichloromethane	ND	4.7
Dibromomethane	ND	4.7
4-Methyl-2-Pentanone	ND	9.3
cis-1,3-Dichloropropene	ND	4.7
Toluene	ND	4.7
trans-1,3-Dichloropropene	ND	4.7
1,1,2-Trichloroethane	ND	4.7
2-Hexanone	ND	9.3
1,3-Dichloropropane	ND	4.7
Tetrachloroethene	ND	4.7

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-1-9.5	Diln Fac:	0.9346
Lab ID:	219369-002	Batch#:	161932
Matrix:	Soil	Sampled:	04/05/10
Units:	ug/Kg	Received:	04/05/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	4.7
1,2-Dibromoethane	ND	4.7
Chlorobenzene	ND	4.7
1,1,1,2-Tetrachloroethane	ND	4.7
Ethylbenzene	ND	4.7
m,p-Xylenes	ND	4.7
o-Xylene	ND	4.7
Styrene	ND	4.7
Bromoform	ND	4.7
Isopropylbenzene	ND	4.7
1,1,2,2-Tetrachloroethane	ND	4.7
1,2,3-Trichloropropane	ND	4.7
Propylbenzene	ND	4.7
Bromobenzene	ND	4.7
1,3,5-Trimethylbenzene	ND	4.7
2-Chlorotoluene	ND	4.7
4-Chlorotoluene	ND	4.7
tert-Butylbenzene	ND	4.7
1,2,4-Trimethylbenzene	ND	4.7
sec-Butylbenzene	ND	4.7
para-Isopropyl Toluene	ND	4.7
1,3-Dichlorobenzene	ND	4.7
1,4-Dichlorobenzene	ND	4.7
n-Butylbenzene	ND	4.7
1,2-Dichlorobenzene	ND	4.7
1,2-Dibromo-3-Chloropropane	ND	4.7
1,2,4-Trichlorobenzene	ND	4.7
Hexachlorobutadiene	ND	4.7
Naphthalene	ND	4.7
1,2,3-Trichlorobenzene	ND	4.7

Surrogate	%REC	Limits
Dibromofluoromethane	105	59-139
1,2-Dichloroethane-d4	111	54-153
Toluene-d8	102	83-118
Bromofluorobenzene	104	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-1-18.0	Diln Fac:	0.9259
Lab ID:	219369-003	Batch#:	161932
Matrix:	Soil	Sampled:	04/05/10
Units:	ug/Kg	Received:	04/05/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	9.3
Chloromethane	ND	9.3
Vinyl Chloride	ND	9.3
Bromomethane	ND	9.3
Chloroethane	ND	9.3
Trichlorofluoromethane	ND	4.6
Acetone	ND	19
Freon 113	ND	4.6
1,1-Dichloroethene	ND	4.6
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.6
MTBE	ND	4.6
trans-1,2-Dichloroethene	ND	4.6
Vinyl Acetate	ND	46
1,1-Dichloroethane	ND	4.6
2-Butanone	ND	9.3
cis-1,2-Dichloroethene	ND	4.6
2,2-Dichloropropane	ND	4.6
Chloroform	ND	4.6
Bromochloromethane	ND	4.6
1,1,1-Trichloroethane	ND	4.6
1,1-Dichloropropene	ND	4.6
Carbon Tetrachloride	ND	4.6
1,2-Dichloroethane	ND	4.6
Benzene	ND	4.6
Trichloroethene	ND	4.6
1,2-Dichloropropane	ND	4.6
Bromodichloromethane	ND	4.6
Dibromomethane	ND	4.6
4-Methyl-2-Pentanone	ND	9.3
cis-1,3-Dichloropropene	ND	4.6
Toluene	ND	4.6
trans-1,3-Dichloropropene	ND	4.6
1,1,2-Trichloroethane	ND	4.6
2-Hexanone	ND	9.3
1,3-Dichloropropane	ND	4.6
Tetrachloroethene	ND	4.6

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-1-18.0	Diln Fac:	0.9259
Lab ID:	219369-003	Batch#:	161932
Matrix:	Soil	Sampled:	04/05/10
Units:	ug/Kg	Received:	04/05/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	4.6
1,2-Dibromoethane	ND	4.6
Chlorobenzene	ND	4.6
1,1,1,2-Tetrachloroethane	ND	4.6
Ethylbenzene	ND	4.6
m,p-Xylenes	ND	4.6
o-Xylene	ND	4.6
Styrene	ND	4.6
Bromoform	ND	4.6
Isopropylbenzene	ND	4.6
1,1,2,2-Tetrachloroethane	ND	4.6
1,2,3-Trichloropropane	ND	4.6
Propylbenzene	ND	4.6
Bromobenzene	ND	4.6
1,3,5-Trimethylbenzene	ND	4.6
2-Chlorotoluene	ND	4.6
4-Chlorotoluene	ND	4.6
tert-Butylbenzene	ND	4.6
1,2,4-Trimethylbenzene	ND	4.6
sec-Butylbenzene	ND	4.6
para-Isopropyl Toluene	ND	4.6
1,3-Dichlorobenzene	ND	4.6
1,4-Dichlorobenzene	ND	4.6
n-Butylbenzene	ND	4.6
1,2-Dichlorobenzene	ND	4.6
1,2-Dibromo-3-Chloropropane	ND	4.6
1,2,4-Trichlorobenzene	ND	4.6
Hexachlorobutadiene	ND	4.6
Naphthalene	ND	4.6
1,2,3-Trichlorobenzene	ND	4.6

Surrogate	%REC	Limits
Dibromofluoromethane	104	59-139
1,2-Dichloroethane-d4	112	54-153
Toluene-d8	103	83-118
Bromofluorobenzene	102	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-2-5.0	Diln Fac:	0.9960
Lab ID:	219369-004	Batch#:	161932
Matrix:	Soil	Sampled:	04/05/10
Units:	ug/Kg	Received:	04/05/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-2-5.0	Diln Fac:	0.9960
Lab ID:	219369-004	Batch#:	161932
Matrix:	Soil	Sampled:	04/05/10
Units:	ug/Kg	Received:	04/05/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	104	59-139
1,2-Dichloroethane-d4	114	54-153
Toluene-d8	103	83-118
Bromofluorobenzene	104	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-2-9.5	Diln Fac:	0.9728
Lab ID:	219369-005	Batch#:	161932
Matrix:	Soil	Sampled:	04/05/10
Units:	ug/Kg	Received:	04/05/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	9.7
Chloromethane	ND	9.7
Vinyl Chloride	ND	9.7
Bromomethane	ND	9.7
Chloroethane	ND	9.7
Trichlorofluoromethane	ND	4.9
Acetone	ND	19
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.9
MTBE	ND	4.9
trans-1,2-Dichloroethene	ND	4.9
Vinyl Acetate	ND	49
1,1-Dichloroethane	ND	4.9
2-Butanone	ND	9.7
cis-1,2-Dichloroethene	ND	4.9
2,2-Dichloropropane	ND	4.9
Chloroform	ND	4.9
Bromochloromethane	ND	4.9
1,1,1-Trichloroethane	ND	4.9
1,1-Dichloropropene	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
Dibromomethane	ND	4.9
4-Methyl-2-Pentanone	ND	9.7
cis-1,3-Dichloropropene	ND	4.9
Toluene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
2-Hexanone	ND	9.7
1,3-Dichloropropane	ND	4.9
Tetrachloroethene	ND	4.9

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-2-9.5	Diln Fac:	0.9728
Lab ID:	219369-005	Batch#:	161932
Matrix:	Soil	Sampled:	04/05/10
Units:	ug/Kg	Received:	04/05/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	4.9
1,2-Dibromoethane	ND	4.9
Chlorobenzene	ND	4.9
1,1,1,2-Tetrachloroethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9
Styrene	ND	4.9
Bromoform	ND	4.9
Isopropylbenzene	ND	4.9
1,1,2,2-Tetrachloroethane	ND	4.9
1,2,3-Trichloropropane	ND	4.9
Propylbenzene	ND	4.9
Bromobenzene	ND	4.9
1,3,5-Trimethylbenzene	ND	4.9
2-Chlorotoluene	ND	4.9
4-Chlorotoluene	ND	4.9
tert-Butylbenzene	ND	4.9
1,2,4-Trimethylbenzene	ND	4.9
sec-Butylbenzene	ND	4.9
para-Isopropyl Toluene	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
n-Butylbenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
1,2-Dibromo-3-Chloropropane	ND	4.9
1,2,4-Trichlorobenzene	ND	4.9
Hexachlorobutadiene	ND	4.9
Naphthalene	ND	4.9
1,2,3-Trichlorobenzene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	103	59-139
1,2-Dichloroethane-d4	107	54-153
Toluene-d8	102	83-118
Bromofluorobenzene	101	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-2-18.0	Diln Fac:	0.9653
Lab ID:	219369-006	Batch#:	161932
Matrix:	Soil	Sampled:	04/05/10
Units:	ug/Kg	Received:	04/05/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	9.7
Chloromethane	ND	9.7
Vinyl Chloride	ND	9.7
Bromomethane	ND	9.7
Chloroethane	ND	9.7
Trichlorofluoromethane	ND	4.8
Acetone	ND	19
Freon 113	ND	4.8
1,1-Dichloroethene	ND	4.8
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.8
MTBE	ND	4.8
trans-1,2-Dichloroethene	ND	4.8
Vinyl Acetate	ND	48
1,1-Dichloroethane	ND	4.8
2-Butanone	ND	9.7
cis-1,2-Dichloroethene	ND	4.8
2,2-Dichloropropane	ND	4.8
Chloroform	ND	4.8
Bromochloromethane	ND	4.8
1,1,1-Trichloroethane	ND	4.8
1,1-Dichloropropene	ND	4.8
Carbon Tetrachloride	ND	4.8
1,2-Dichloroethane	ND	4.8
Benzene	ND	4.8
Trichloroethene	ND	4.8
1,2-Dichloropropane	ND	4.8
Bromodichloromethane	ND	4.8
Dibromomethane	ND	4.8
4-Methyl-2-Pentanone	ND	9.7
cis-1,3-Dichloropropene	ND	4.8
Toluene	ND	4.8
trans-1,3-Dichloropropene	ND	4.8
1,1,2-Trichloroethane	ND	4.8
2-Hexanone	ND	9.7
1,3-Dichloropropane	ND	4.8
Tetrachloroethene	ND	4.8

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-2-18.0	Diln Fac:	0.9653
Lab ID:	219369-006	Batch#:	161932
Matrix:	Soil	Sampled:	04/05/10
Units:	ug/Kg	Received:	04/05/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	4.8
1,2-Dibromoethane	ND	4.8
Chlorobenzene	ND	4.8
1,1,1,2-Tetrachloroethane	ND	4.8
Ethylbenzene	ND	4.8
m,p-Xylenes	ND	4.8
o-Xylene	ND	4.8
Styrene	ND	4.8
Bromoform	ND	4.8
Isopropylbenzene	ND	4.8
1,1,2,2-Tetrachloroethane	ND	4.8
1,2,3-Trichloropropane	ND	4.8
Propylbenzene	ND	4.8
Bromobenzene	ND	4.8
1,3,5-Trimethylbenzene	ND	4.8
2-Chlorotoluene	ND	4.8
4-Chlorotoluene	ND	4.8
tert-Butylbenzene	ND	4.8
1,2,4-Trimethylbenzene	ND	4.8
sec-Butylbenzene	ND	4.8
para-Isopropyl Toluene	ND	4.8
1,3-Dichlorobenzene	ND	4.8
1,4-Dichlorobenzene	ND	4.8
n-Butylbenzene	ND	4.8
1,2-Dichlorobenzene	ND	4.8
1,2-Dibromo-3-Chloropropane	ND	4.8
1,2,4-Trichlorobenzene	ND	4.8
Hexachlorobutadiene	ND	4.8
Naphthalene	ND	4.8
1,2,3-Trichlorobenzene	ND	4.8

Surrogate	%REC	Limits
Dibromofluoromethane	105	59-139
1,2-Dichloroethane-d4	112	54-153
Toluene-d8	102	83-118
Bromofluorobenzene	102	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-3-5.0	Diln Fac:	0.9398
Lab ID:	219369-007	Batch#:	161932
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	9.4
Chloromethane	ND	9.4
Vinyl Chloride	ND	9.4
Bromomethane	ND	9.4
Chloroethane	ND	9.4
Trichlorofluoromethane	ND	4.7
Acetone	ND	19
Freon 113	ND	4.7
1,1-Dichloroethene	ND	4.7
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.7
MTBE	ND	4.7
trans-1,2-Dichloroethene	ND	4.7
Vinyl Acetate	ND	47
1,1-Dichloroethane	ND	4.7
2-Butanone	ND	9.4
cis-1,2-Dichloroethene	ND	4.7
2,2-Dichloropropane	ND	4.7
Chloroform	ND	4.7
Bromochloromethane	ND	4.7
1,1,1-Trichloroethane	ND	4.7
1,1-Dichloropropene	ND	4.7
Carbon Tetrachloride	ND	4.7
1,2-Dichloroethane	ND	4.7
Benzene	ND	4.7
Trichloroethene	ND	4.7
1,2-Dichloropropane	ND	4.7
Bromodichloromethane	ND	4.7
Dibromomethane	ND	4.7
4-Methyl-2-Pentanone	ND	9.4
cis-1,3-Dichloropropene	ND	4.7
Toluene	ND	4.7
trans-1,3-Dichloropropene	ND	4.7
1,1,2-Trichloroethane	ND	4.7
2-Hexanone	ND	9.4
1,3-Dichloropropane	ND	4.7
Tetrachloroethene	ND	4.7

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-3-5.0	Diln Fac:	0.9398
Lab ID:	219369-007	Batch#:	161932
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	4.7
1,2-Dibromoethane	ND	4.7
Chlorobenzene	ND	4.7
1,1,1,2-Tetrachloroethane	ND	4.7
Ethylbenzene	ND	4.7
m,p-Xylenes	ND	4.7
o-Xylene	ND	4.7
Styrene	ND	4.7
Bromoform	ND	4.7
Isopropylbenzene	ND	4.7
1,1,2,2-Tetrachloroethane	ND	4.7
1,2,3-Trichloropropane	ND	4.7
Propylbenzene	ND	4.7
Bromobenzene	ND	4.7
1,3,5-Trimethylbenzene	ND	4.7
2-Chlorotoluene	ND	4.7
4-Chlorotoluene	ND	4.7
tert-Butylbenzene	ND	4.7
1,2,4-Trimethylbenzene	ND	4.7
sec-Butylbenzene	ND	4.7
para-Isopropyl Toluene	ND	4.7
1,3-Dichlorobenzene	ND	4.7
1,4-Dichlorobenzene	ND	4.7
n-Butylbenzene	ND	4.7
1,2-Dichlorobenzene	ND	4.7
1,2-Dibromo-3-Chloropropane	ND	4.7
1,2,4-Trichlorobenzene	ND	4.7
Hexachlorobutadiene	ND	4.7
Naphthalene	ND	4.7
1,2,3-Trichlorobenzene	ND	4.7

Surrogate	%REC	Limits
Dibromofluoromethane	104	59-139
1,2-Dichloroethane-d4	112	54-153
Toluene-d8	103	83-118
Bromofluorobenzene	102	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-3-9.5	Diln Fac:	0.9208
Lab ID:	219369-008	Batch#:	161935
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	9.2
Chloromethane	ND	9.2
Vinyl Chloride	ND	9.2
Bromomethane	ND	9.2
Chloroethane	ND	9.2
Trichlorofluoromethane	ND	4.6
Acetone	ND	18
Freon 113	ND	4.6
1,1-Dichloroethene	ND	4.6
Methylene Chloride	ND	18
Carbon Disulfide	ND	4.6
MTBE	ND	4.6
trans-1,2-Dichloroethene	ND	4.6
Vinyl Acetate	ND	46
1,1-Dichloroethane	ND	4.6
2-Butanone	ND	9.2
cis-1,2-Dichloroethene	ND	4.6
2,2-Dichloropropane	ND	4.6
Chloroform	ND	4.6
Bromochloromethane	ND	4.6
1,1,1-Trichloroethane	ND	4.6
1,1-Dichloropropene	ND	4.6
Carbon Tetrachloride	ND	4.6
1,2-Dichloroethane	ND	4.6
Benzene	ND	4.6
Trichloroethene	ND	4.6
1,2-Dichloropropane	ND	4.6
Bromodichloromethane	ND	4.6
Dibromomethane	ND	4.6
4-Methyl-2-Pentanone	ND	9.2
cis-1,3-Dichloropropene	ND	4.6
Toluene	ND	4.6
trans-1,3-Dichloropropene	ND	4.6
1,1,2-Trichloroethane	ND	4.6
2-Hexanone	ND	9.2
1,3-Dichloropropane	ND	4.6
Tetrachloroethene	ND	4.6

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-3-9.5	Diln Fac:	0.9208
Lab ID:	219369-008	Batch#:	161935
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	4.6
1,2-Dibromoethane	ND	4.6
Chlorobenzene	ND	4.6
1,1,1,2-Tetrachloroethane	ND	4.6
Ethylbenzene	ND	4.6
m,p-Xylenes	ND	4.6
o-Xylene	ND	4.6
Styrene	ND	4.6
Bromoform	ND	4.6
Isopropylbenzene	ND	4.6
1,1,2,2-Tetrachloroethane	ND	4.6
1,2,3-Trichloropropane	ND	4.6
Propylbenzene	ND	4.6
Bromobenzene	ND	4.6
1,3,5-Trimethylbenzene	ND	4.6
2-Chlorotoluene	ND	4.6
4-Chlorotoluene	ND	4.6
tert-Butylbenzene	ND	4.6
1,2,4-Trimethylbenzene	ND	4.6
sec-Butylbenzene	ND	4.6
para-Isopropyl Toluene	ND	4.6
1,3-Dichlorobenzene	ND	4.6
1,4-Dichlorobenzene	ND	4.6
n-Butylbenzene	ND	4.6
1,2-Dichlorobenzene	ND	4.6
1,2-Dibromo-3-Chloropropane	ND	4.6
1,2,4-Trichlorobenzene	ND	4.6
Hexachlorobutadiene	ND	4.6
Naphthalene	ND	4.6
1,2,3-Trichlorobenzene	ND	4.6

Surrogate	%REC	Limits
Dibromofluoromethane	104	59-139
1,2-Dichloroethane-d4	100	54-153
Toluene-d8	96	83-118
Bromofluorobenzene	103	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-3-18.0	Diln Fac:	0.9363
Lab ID:	219369-009	Batch#:	161935
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	9.4
Chloromethane	ND	9.4
Vinyl Chloride	ND	9.4
Bromomethane	ND	9.4
Chloroethane	ND	9.4
Trichlorofluoromethane	ND	4.7
Acetone	ND	19
Freon 113	ND	4.7
1,1-Dichloroethene	ND	4.7
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.7
MTBE	ND	4.7
trans-1,2-Dichloroethene	ND	4.7
Vinyl Acetate	ND	47
1,1-Dichloroethane	ND	4.7
2-Butanone	ND	9.4
cis-1,2-Dichloroethene	ND	4.7
2,2-Dichloropropane	ND	4.7
Chloroform	ND	4.7
Bromochloromethane	ND	4.7
1,1,1-Trichloroethane	ND	4.7
1,1-Dichloropropene	ND	4.7
Carbon Tetrachloride	ND	4.7
1,2-Dichloroethane	ND	4.7
Benzene	ND	4.7
Trichloroethene	ND	4.7
1,2-Dichloropropane	ND	4.7
Bromodichloromethane	ND	4.7
Dibromomethane	ND	4.7
4-Methyl-2-Pentanone	ND	9.4
cis-1,3-Dichloropropene	ND	4.7
Toluene	ND	4.7
trans-1,3-Dichloropropene	ND	4.7
1,1,2-Trichloroethane	ND	4.7
2-Hexanone	ND	9.4
1,3-Dichloropropane	ND	4.7
Tetrachloroethene	ND	4.7

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-3-18.0	Diln Fac:	0.9363
Lab ID:	219369-009	Batch#:	161935
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	4.7
1,2-Dibromoethane	ND	4.7
Chlorobenzene	ND	4.7
1,1,1,2-Tetrachloroethane	ND	4.7
Ethylbenzene	ND	4.7
m,p-Xylenes	ND	4.7
o-Xylene	ND	4.7
Styrene	ND	4.7
Bromoform	ND	4.7
Isopropylbenzene	ND	4.7
1,1,2,2-Tetrachloroethane	ND	4.7
1,2,3-Trichloropropane	ND	4.7
Propylbenzene	ND	4.7
Bromobenzene	ND	4.7
1,3,5-Trimethylbenzene	ND	4.7
2-Chlorotoluene	ND	4.7
4-Chlorotoluene	ND	4.7
tert-Butylbenzene	ND	4.7
1,2,4-Trimethylbenzene	ND	4.7
sec-Butylbenzene	ND	4.7
para-Isopropyl Toluene	ND	4.7
1,3-Dichlorobenzene	ND	4.7
1,4-Dichlorobenzene	ND	4.7
n-Butylbenzene	ND	4.7
1,2-Dichlorobenzene	ND	4.7
1,2-Dibromo-3-Chloropropane	ND	4.7
1,2,4-Trichlorobenzene	ND	4.7
Hexachlorobutadiene	ND	4.7
Naphthalene	ND	4.7
1,2,3-Trichlorobenzene	ND	4.7

Surrogate	%REC	Limits
Dibromofluoromethane	100	59-139
1,2-Dichloroethane-d4	100	54-153
Toluene-d8	97	83-118
Bromofluorobenzene	104	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-4-5.0	Diln Fac:	1.000
Lab ID:	219369-010	Batch#:	161935
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-4-5.0	Diln Fac:	1.000
Lab ID:	219369-010	Batch#:	161935
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	100	59-139
1,2-Dichloroethane-d4	99	54-153
Toluene-d8	96	83-118
Bromofluorobenzene	103	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-4-10.0	Diln Fac:	0.9921
Lab ID:	219369-011	Batch#:	161972
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/14/10

Analyte	Result	RL
Freon 12	ND	9.9
Chloromethane	ND	9.9
Vinyl Chloride	ND	9.9
Bromomethane	ND	9.9
Chloroethane	ND	9.9
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	9.9
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	9.9
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	9.9
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-4-10.0	Diln Fac:	0.9921
Lab ID:	219369-011	Batch#:	161972
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/14/10

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	102	59-139
1,2-Dichloroethane-d4	104	54-153
Toluene-d8	99	83-118
Bromofluorobenzene	104	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-4-18.0	Diln Fac:	0.9747
Lab ID:	219369-012	Batch#:	161972
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/14/10

Analyte	Result	RL
Freon 12	ND	9.7
Chloromethane	ND	9.7
Vinyl Chloride	ND	9.7
Bromomethane	ND	9.7
Chloroethane	ND	9.7
Trichlorofluoromethane	ND	4.9
Acetone	ND	19
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.9
MTBE	ND	4.9
trans-1,2-Dichloroethene	ND	4.9
Vinyl Acetate	ND	49
1,1-Dichloroethane	ND	4.9
2-Butanone	ND	9.7
cis-1,2-Dichloroethene	ND	4.9
2,2-Dichloropropane	ND	4.9
Chloroform	ND	4.9
Bromochloromethane	ND	4.9
1,1,1-Trichloroethane	ND	4.9
1,1-Dichloropropene	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
Dibromomethane	ND	4.9
4-Methyl-2-Pentanone	ND	9.7
cis-1,3-Dichloropropene	ND	4.9
Toluene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
2-Hexanone	ND	9.7
1,3-Dichloropropane	ND	4.9
Tetrachloroethene	ND	4.9

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-4-18.0	Diln Fac:	0.9747
Lab ID:	219369-012	Batch#:	161972
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/14/10

Analyte	Result	RL
Dibromochloromethane	ND	4.9
1,2-Dibromoethane	ND	4.9
Chlorobenzene	ND	4.9
1,1,1,2-Tetrachloroethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9
Styrene	ND	4.9
Bromoform	ND	4.9
Isopropylbenzene	ND	4.9
1,1,2,2-Tetrachloroethane	ND	4.9
1,2,3-Trichloropropane	ND	4.9
Propylbenzene	ND	4.9
Bromobenzene	ND	4.9
1,3,5-Trimethylbenzene	ND	4.9
2-Chlorotoluene	ND	4.9
4-Chlorotoluene	ND	4.9
tert-Butylbenzene	ND	4.9
1,2,4-Trimethylbenzene	ND	4.9
sec-Butylbenzene	ND	4.9
para-Isopropyl Toluene	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
n-Butylbenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
1,2-Dibromo-3-Chloropropane	ND	4.9
1,2,4-Trichlorobenzene	ND	4.9
Hexachlorobutadiene	ND	4.9
Naphthalene	ND	4.9
1,2,3-Trichlorobenzene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	103	59-139
1,2-Dichloroethane-d4	105	54-153
Toluene-d8	97	83-118
Bromofluorobenzene	103	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-5-5.0	Diln Fac:	100.0
Lab ID:	219369-013	Batch#:	161973
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/14/10

Analyte	Result	RL
Freon 12	ND	1,000
Chloromethane	ND	1,000
Vinyl Chloride	ND	1,000
Bromomethane	ND	1,000
Chloroethane	ND	1,000
Trichlorofluoromethane	ND	500
Acetone	ND	2,000
Freon 113	ND	500
1,1-Dichloroethene	ND	500
Methylene Chloride	ND	2,000
Carbon Disulfide	ND	500
MTBE	ND	500
trans-1,2-Dichloroethene	ND	500
Vinyl Acetate	ND	5,000
1,1-Dichloroethane	ND	500
2-Butanone	ND	1,000
cis-1,2-Dichloroethene	ND	500
2,2-Dichloropropane	ND	500
Chloroform	ND	500
Bromochloromethane	ND	500
1,1,1-Trichloroethane	ND	500
1,1-Dichloropropene	ND	500
Carbon Tetrachloride	ND	500
1,2-Dichloroethane	ND	500
Benzene	ND	500
Trichloroethene	ND	500
1,2-Dichloropropane	ND	500
Bromodichloromethane	ND	500
Dibromomethane	ND	500
4-Methyl-2-Pentanone	ND	1,000
cis-1,3-Dichloropropene	ND	500
Toluene	ND	500
trans-1,3-Dichloropropene	ND	500
1,1,2-Trichloroethane	ND	500
2-Hexanone	ND	1,000
1,3-Dichloropropane	ND	500
Tetrachloroethene	ND	500

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-5-5.0	Diln Fac:	100.0
Lab ID:	219369-013	Batch#:	161973
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/14/10

Analyte	Result	RL
Dibromochloromethane	ND	500
1,2-Dibromoethane	ND	500
Chlorobenzene	ND	500
1,1,1,2-Tetrachloroethane	ND	500
Ethylbenzene	4,000	500
m,p-Xylenes	ND	500
o-Xylene	ND	500
Styrene	ND	500
Bromoform	ND	500
Isopropylbenzene	1,300	500
1,1,2,2-Tetrachloroethane	ND	500
1,2,3-Trichloropropane	ND	500
Propylbenzene	4,800	500
Bromobenzene	ND	500
1,3,5-Trimethylbenzene	1,100	500
2-Chlorotoluene	ND	500
4-Chlorotoluene	ND	500
tert-Butylbenzene	ND	500
1,2,4-Trimethylbenzene	ND	500
sec-Butylbenzene	1,000	500
para-Isopropyl Toluene	ND	500
1,3-Dichlorobenzene	ND	500
1,4-Dichlorobenzene	ND	500
n-Butylbenzene	4,600	500
1,2-Dichlorobenzene	ND	500
1,2-Dibromo-3-Chloropropane	ND	500
1,2,4-Trichlorobenzene	ND	500
Hexachlorobutadiene	ND	500
Naphthalene	4,900	500
1,2,3-Trichlorobenzene	ND	500

Surrogate	%REC	Limits
Dibromofluoromethane	93	59-139
1,2-Dichloroethane-d4	103	54-153
Toluene-d8	100	83-118
Bromofluorobenzene	100	61-146
Trifluorotoluene (MeOH)	114	25-170

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-5-16.0	Diln Fac:	0.9785
Lab ID:	219369-014	Batch#:	161972
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/14/10

Analyte	Result	RL
Freon 12	ND	9.8
Chloromethane	ND	9.8
Vinyl Chloride	ND	9.8
Bromomethane	ND	9.8
Chloroethane	ND	9.8
Trichlorofluoromethane	ND	4.9
Acetone	ND	20
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	20
Carbon Disulfide	ND	4.9
MTBE	ND	4.9
trans-1,2-Dichloroethene	ND	4.9
Vinyl Acetate	ND	49
1,1-Dichloroethane	ND	4.9
2-Butanone	ND	9.8
cis-1,2-Dichloroethene	ND	4.9
2,2-Dichloropropane	ND	4.9
Chloroform	ND	4.9
Bromochloromethane	ND	4.9
1,1,1-Trichloroethane	ND	4.9
1,1-Dichloropropene	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
Dibromomethane	ND	4.9
4-Methyl-2-Pentanone	ND	9.8
cis-1,3-Dichloropropene	ND	4.9
Toluene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
2-Hexanone	ND	9.8
1,3-Dichloropropane	ND	4.9
Tetrachloroethene	ND	4.9

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-5-16.0	Diln Fac:	0.9785
Lab ID:	219369-014	Batch#:	161972
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/14/10

Analyte	Result	RL
Dibromochloromethane	ND	4.9
1,2-Dibromoethane	ND	4.9
Chlorobenzene	ND	4.9
1,1,1,2-Tetrachloroethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9
Styrene	ND	4.9
Bromoform	ND	4.9
Isopropylbenzene	ND	4.9
1,1,2,2-Tetrachloroethane	ND	4.9
1,2,3-Trichloropropane	ND	4.9
Propylbenzene	ND	4.9
Bromobenzene	ND	4.9
1,3,5-Trimethylbenzene	ND	4.9
2-Chlorotoluene	ND	4.9
4-Chlorotoluene	ND	4.9
tert-Butylbenzene	ND	4.9
1,2,4-Trimethylbenzene	ND	4.9
sec-Butylbenzene	ND	4.9
para-Isopropyl Toluene	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
n-Butylbenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
1,2-Dibromo-3-Chloropropane	ND	4.9
1,2,4-Trichlorobenzene	ND	4.9
Hexachlorobutadiene	ND	4.9
Naphthalene	ND	4.9
1,2,3-Trichlorobenzene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	104	59-139
1,2-Dichloroethane-d4	102	54-153
Toluene-d8	101	83-118
Bromofluorobenzene	104	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-6-7.0	Diln Fac:	0.9766
Lab ID:	219369-015	Batch#:	161935
Matrix:	Soil	Sampled:	04/01/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	9.8
Chloromethane	ND	9.8
Vinyl Chloride	ND	9.8
Bromomethane	ND	9.8
Chloroethane	ND	9.8
Trichlorofluoromethane	ND	4.9
Acetone	ND	20
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	20
Carbon Disulfide	ND	4.9
MTBE	ND	4.9
trans-1,2-Dichloroethene	ND	4.9
Vinyl Acetate	ND	49
1,1-Dichloroethane	ND	4.9
2-Butanone	ND	9.8
cis-1,2-Dichloroethene	ND	4.9
2,2-Dichloropropane	ND	4.9
Chloroform	ND	4.9
Bromochloromethane	ND	4.9
1,1,1-Trichloroethane	ND	4.9
1,1-Dichloropropene	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
Dibromomethane	ND	4.9
4-Methyl-2-Pentanone	ND	9.8
cis-1,3-Dichloropropene	ND	4.9
Toluene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
2-Hexanone	ND	9.8
1,3-Dichloropropane	ND	4.9
Tetrachloroethene	ND	4.9

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-6-7.0	Diln Fac:	0.9766
Lab ID:	219369-015	Batch#:	161935
Matrix:	Soil	Sampled:	04/01/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	4.9
1,2-Dibromoethane	ND	4.9
Chlorobenzene	ND	4.9
1,1,1,2-Tetrachloroethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9
Styrene	ND	4.9
Bromoform	ND	4.9
Isopropylbenzene	ND	4.9
1,1,2,2-Tetrachloroethane	ND	4.9
1,2,3-Trichloropropane	ND	4.9
Propylbenzene	ND	4.9
Bromobenzene	ND	4.9
1,3,5-Trimethylbenzene	ND	4.9
2-Chlorotoluene	ND	4.9
4-Chlorotoluene	ND	4.9
tert-Butylbenzene	ND	4.9
1,2,4-Trimethylbenzene	ND	4.9
sec-Butylbenzene	ND	4.9
para-Isopropyl Toluene	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
n-Butylbenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
1,2-Dibromo-3-Chloropropane	ND	4.9
1,2,4-Trichlorobenzene	ND	4.9
Hexachlorobutadiene	ND	4.9
Naphthalene	ND	4.9
1,2,3-Trichlorobenzene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	104	59-139
1,2-Dichloroethane-d4	105	54-153
Toluene-d8	99	83-118
Bromofluorobenzene	105	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-6-19.0	Diln Fac:	0.9804
Lab ID:	219369-016	Batch#:	161935
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	9.8
Chloromethane	ND	9.8
Vinyl Chloride	ND	9.8
Bromomethane	ND	9.8
Chloroethane	ND	9.8
Trichlorofluoromethane	ND	4.9
Acetone	ND	20
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	20
Carbon Disulfide	ND	4.9
MTBE	ND	4.9
trans-1,2-Dichloroethene	ND	4.9
Vinyl Acetate	ND	49
1,1-Dichloroethane	ND	4.9
2-Butanone	ND	9.8
cis-1,2-Dichloroethene	ND	4.9
2,2-Dichloropropane	ND	4.9
Chloroform	ND	4.9
Bromochloromethane	ND	4.9
1,1,1-Trichloroethane	ND	4.9
1,1-Dichloropropene	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
Dibromomethane	ND	4.9
4-Methyl-2-Pentanone	ND	9.8
cis-1,3-Dichloropropene	ND	4.9
Toluene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
2-Hexanone	ND	9.8
1,3-Dichloropropane	ND	4.9
Tetrachloroethene	ND	4.9

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-6-19.0	Diln Fac:	0.9804
Lab ID:	219369-016	Batch#:	161935
Matrix:	Soil	Sampled:	04/02/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	4.9
1,2-Dibromoethane	ND	4.9
Chlorobenzene	ND	4.9
1,1,1,2-Tetrachloroethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9
Styrene	ND	4.9
Bromoform	ND	4.9
Isopropylbenzene	ND	4.9
1,1,2,2-Tetrachloroethane	ND	4.9
1,2,3-Trichloropropane	ND	4.9
Propylbenzene	ND	4.9
Bromobenzene	ND	4.9
1,3,5-Trimethylbenzene	ND	4.9
2-Chlorotoluene	ND	4.9
4-Chlorotoluene	ND	4.9
tert-Butylbenzene	ND	4.9
1,2,4-Trimethylbenzene	ND	4.9
sec-Butylbenzene	ND	4.9
para-Isopropyl Toluene	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
n-Butylbenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
1,2-Dibromo-3-Chloropropane	ND	4.9
1,2,4-Trichlorobenzene	ND	4.9
Hexachlorobutadiene	ND	4.9
Naphthalene	ND	4.9
1,2,3-Trichlorobenzene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	112	59-139
1,2-Dichloroethane-d4	105	54-153
Toluene-d8	99	83-118
Bromofluorobenzene	103	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-7-6.0	Diln Fac:	50.00
Lab ID:	219369-017	Batch#:	161973
Matrix:	Soil	Sampled:	04/01/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/14/10

Analyte	Result	RL
Freon 12	ND	500
Chloromethane	ND	500
Vinyl Chloride	ND	500
Bromomethane	ND	500
Chloroethane	ND	500
Trichlorofluoromethane	ND	250
Acetone	ND	1,000
Freon 113	ND	250
1,1-Dichloroethene	ND	250
Methylene Chloride	ND	1,000
Carbon Disulfide	ND	250
MTBE	ND	250
trans-1,2-Dichloroethene	ND	250
Vinyl Acetate	ND	2,500
1,1-Dichloroethane	ND	250
2-Butanone	ND	500
cis-1,2-Dichloroethene	ND	250
2,2-Dichloropropane	ND	250
Chloroform	ND	250
Bromochloromethane	ND	250
1,1,1-Trichloroethane	ND	250
1,1-Dichloropropene	ND	250
Carbon Tetrachloride	ND	250
1,2-Dichloroethane	ND	250
Benzene	ND	250
Trichloroethene	ND	250
1,2-Dichloropropane	ND	250
Bromodichloromethane	ND	250
Dibromomethane	ND	250
4-Methyl-2-Pentanone	ND	500
cis-1,3-Dichloropropene	ND	250
Toluene	ND	250
trans-1,3-Dichloropropene	ND	250
1,1,2-Trichloroethane	ND	250
2-Hexanone	ND	500
1,3-Dichloropropane	ND	250
Tetrachloroethene	ND	250

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-7-6.0	Diln Fac:	50.00
Lab ID:	219369-017	Batch#:	161973
Matrix:	Soil	Sampled:	04/01/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/14/10

Analyte	Result	RL
Dibromochloromethane	ND	250
1,2-Dibromoethane	ND	250
Chlorobenzene	ND	250
1,1,1,2-Tetrachloroethane	ND	250
Ethylbenzene	ND	250
m,p-Xylenes	ND	250
o-Xylene	ND	250
Styrene	ND	250
Bromoform	ND	250
Isopropylbenzene	390	250
1,1,2,2-Tetrachloroethane	ND	250
1,2,3-Trichloropropane	ND	250
Propylbenzene	890	250
Bromobenzene	ND	250
1,3,5-Trimethylbenzene	340	250
2-Chlorotoluene	ND	250
4-Chlorotoluene	ND	250
tert-Butylbenzene	ND	250
1,2,4-Trimethylbenzene	ND	250
sec-Butylbenzene	520	250
para-Isopropyl Toluene	640	250
1,3-Dichlorobenzene	ND	250
1,4-Dichlorobenzene	ND	250
n-Butylbenzene	1,200	250
1,2-Dichlorobenzene	ND	250
1,2-Dibromo-3-Chloropropane	ND	250
1,2,4-Trichlorobenzene	ND	250
Hexachlorobutadiene	ND	250
Naphthalene	ND	250
1,2,3-Trichlorobenzene	ND	250

Surrogate	%REC	Limits
Dibromofluoromethane	95	59-139
1,2-Dichloroethane-d4	110	54-153
Toluene-d8	95	83-118
Bromofluorobenzene	139	61-146
Trifluorotoluene (MeOH)	111	25-170

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-7-16.0	Diln Fac:	0.9615
Lab ID:	219369-018	Batch#:	161935
Matrix:	Soil	Sampled:	04/01/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	9.6
Chloromethane	ND	9.6
Vinyl Chloride	ND	9.6
Bromomethane	ND	9.6
Chloroethane	ND	9.6
Trichlorofluoromethane	ND	4.8
Acetone	ND	19
Freon 113	ND	4.8
1,1-Dichloroethene	ND	4.8
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.8
MTBE	ND	4.8
trans-1,2-Dichloroethene	ND	4.8
Vinyl Acetate	ND	48
1,1-Dichloroethane	ND	4.8
2-Butanone	ND	9.6
cis-1,2-Dichloroethene	ND	4.8
2,2-Dichloropropane	ND	4.8
Chloroform	ND	4.8
Bromochloromethane	ND	4.8
1,1,1-Trichloroethane	ND	4.8
1,1-Dichloropropene	ND	4.8
Carbon Tetrachloride	ND	4.8
1,2-Dichloroethane	ND	4.8
Benzene	ND	4.8
Trichloroethene	ND	4.8
1,2-Dichloropropane	ND	4.8
Bromodichloromethane	ND	4.8
Dibromomethane	ND	4.8
4-Methyl-2-Pentanone	ND	9.6
cis-1,3-Dichloropropene	ND	4.8
Toluene	ND	4.8
trans-1,3-Dichloropropene	ND	4.8
1,1,2-Trichloroethane	ND	4.8
2-Hexanone	ND	9.6
1,3-Dichloropropane	ND	4.8
Tetrachloroethene	ND	4.8

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-7-16.0	Diln Fac:	0.9615
Lab ID:	219369-018	Batch#:	161935
Matrix:	Soil	Sampled:	04/01/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	4.8
1,2-Dibromoethane	ND	4.8
Chlorobenzene	ND	4.8
1,1,1,2-Tetrachloroethane	ND	4.8
Ethylbenzene	ND	4.8
m,p-Xylenes	ND	4.8
o-Xylene	ND	4.8
Styrene	ND	4.8
Bromoform	ND	4.8
Isopropylbenzene	ND	4.8
1,1,2,2-Tetrachloroethane	ND	4.8
1,2,3-Trichloropropane	ND	4.8
Propylbenzene	ND	4.8
Bromobenzene	ND	4.8
1,3,5-Trimethylbenzene	ND	4.8
2-Chlorotoluene	ND	4.8
4-Chlorotoluene	ND	4.8
tert-Butylbenzene	ND	4.8
1,2,4-Trimethylbenzene	ND	4.8
sec-Butylbenzene	ND	4.8
para-Isopropyl Toluene	ND	4.8
1,3-Dichlorobenzene	ND	4.8
1,4-Dichlorobenzene	ND	4.8
n-Butylbenzene	ND	4.8
1,2-Dichlorobenzene	ND	4.8
1,2-Dibromo-3-Chloropropane	ND	4.8
1,2,4-Trichlorobenzene	ND	4.8
Hexachlorobutadiene	ND	4.8
Naphthalene	ND	4.8
1,2,3-Trichlorobenzene	ND	4.8

Surrogate	%REC	Limits
Dibromofluoromethane	106	59-139
1,2-Dichloroethane-d4	103	54-153
Toluene-d8	100	83-118
Bromofluorobenzene	101	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-8-10.0	Diln Fac:	0.9363
Lab ID:	219369-019	Batch#:	161935
Matrix:	Soil	Sampled:	04/01/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	9.4
Chloromethane	ND	9.4
Vinyl Chloride	ND	9.4
Bromomethane	ND	9.4
Chloroethane	ND	9.4
Trichlorofluoromethane	ND	4.7
Acetone	ND	19
Freon 113	ND	4.7
1,1-Dichloroethene	ND	4.7
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.7
MTBE	ND	4.7
trans-1,2-Dichloroethene	ND	4.7
Vinyl Acetate	ND	47
1,1-Dichloroethane	ND	4.7
2-Butanone	ND	9.4
cis-1,2-Dichloroethene	ND	4.7
2,2-Dichloropropane	ND	4.7
Chloroform	ND	4.7
Bromochloromethane	ND	4.7
1,1,1-Trichloroethane	ND	4.7
1,1-Dichloropropene	ND	4.7
Carbon Tetrachloride	ND	4.7
1,2-Dichloroethane	ND	4.7
Benzene	ND	4.7
Trichloroethene	ND	4.7
1,2-Dichloropropane	ND	4.7
Bromodichloromethane	ND	4.7
Dibromomethane	ND	4.7
4-Methyl-2-Pentanone	ND	9.4
cis-1,3-Dichloropropene	ND	4.7
Toluene	ND	4.7
trans-1,3-Dichloropropene	ND	4.7
1,1,2-Trichloroethane	ND	4.7
2-Hexanone	ND	9.4
1,3-Dichloropropane	ND	4.7
Tetrachloroethene	ND	4.7

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-8-10.0	Diln Fac:	0.9363
Lab ID:	219369-019	Batch#:	161935
Matrix:	Soil	Sampled:	04/01/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	4.7
1,2-Dibromoethane	ND	4.7
Chlorobenzene	ND	4.7
1,1,1,2-Tetrachloroethane	ND	4.7
Ethylbenzene	ND	4.7
m,p-Xylenes	ND	4.7
o-Xylene	ND	4.7
Styrene	ND	4.7
Bromoform	ND	4.7
Isopropylbenzene	ND	4.7
1,1,2,2-Tetrachloroethane	ND	4.7
1,2,3-Trichloropropane	ND	4.7
Propylbenzene	ND	4.7
Bromobenzene	ND	4.7
1,3,5-Trimethylbenzene	ND	4.7
2-Chlorotoluene	ND	4.7
4-Chlorotoluene	ND	4.7
tert-Butylbenzene	ND	4.7
1,2,4-Trimethylbenzene	ND	4.7
sec-Butylbenzene	ND	4.7
para-Isopropyl Toluene	ND	4.7
1,3-Dichlorobenzene	ND	4.7
1,4-Dichlorobenzene	ND	4.7
n-Butylbenzene	ND	4.7
1,2-Dichlorobenzene	ND	4.7
1,2-Dibromo-3-Chloropropane	ND	4.7
1,2,4-Trichlorobenzene	ND	4.7
Hexachlorobutadiene	ND	4.7
Naphthalene	ND	4.7
1,2,3-Trichlorobenzene	ND	4.7

Surrogate	%REC	Limits
Dibromofluoromethane	106	59-139
1,2-Dichloroethane-d4	105	54-153
Toluene-d8	98	83-118
Bromofluorobenzene	104	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-8-19.0	Diln Fac:	0.9311
Lab ID:	219369-020	Batch#:	161935
Matrix:	Soil	Sampled:	04/01/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	9.3
Chloromethane	ND	9.3
Vinyl Chloride	ND	9.3
Bromomethane	ND	9.3
Chloroethane	ND	9.3
Trichlorofluoromethane	ND	4.7
Acetone	ND	19
Freon 113	ND	4.7
1,1-Dichloroethene	ND	4.7
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.7
MTBE	ND	4.7
trans-1,2-Dichloroethene	ND	4.7
Vinyl Acetate	ND	47
1,1-Dichloroethane	ND	4.7
2-Butanone	ND	9.3
cis-1,2-Dichloroethene	ND	4.7
2,2-Dichloropropane	ND	4.7
Chloroform	ND	4.7
Bromochloromethane	ND	4.7
1,1,1-Trichloroethane	ND	4.7
1,1-Dichloropropene	ND	4.7
Carbon Tetrachloride	ND	4.7
1,2-Dichloroethane	ND	4.7
Benzene	ND	4.7
Trichloroethene	ND	4.7
1,2-Dichloropropane	ND	4.7
Bromodichloromethane	ND	4.7
Dibromomethane	ND	4.7
4-Methyl-2-Pentanone	ND	9.3
cis-1,3-Dichloropropene	ND	4.7
Toluene	ND	4.7
trans-1,3-Dichloropropene	ND	4.7
1,1,2-Trichloroethane	ND	4.7
2-Hexanone	ND	9.3
1,3-Dichloropropane	ND	4.7
Tetrachloroethene	ND	4.7

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-8-19.0	Diln Fac:	0.9311
Lab ID:	219369-020	Batch#:	161935
Matrix:	Soil	Sampled:	04/01/10
Units:	ug/Kg	Received:	04/02/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	4.7
1,2-Dibromoethane	ND	4.7
Chlorobenzene	ND	4.7
1,1,1,2-Tetrachloroethane	ND	4.7
Ethylbenzene	ND	4.7
m,p-Xylenes	ND	4.7
o-Xylene	ND	4.7
Styrene	ND	4.7
Bromoform	ND	4.7
Isopropylbenzene	ND	4.7
1,1,2,2-Tetrachloroethane	ND	4.7
1,2,3-Trichloropropane	ND	4.7
Propylbenzene	ND	4.7
Bromobenzene	ND	4.7
1,3,5-Trimethylbenzene	ND	4.7
2-Chlorotoluene	ND	4.7
4-Chlorotoluene	ND	4.7
tert-Butylbenzene	ND	4.7
1,2,4-Trimethylbenzene	ND	4.7
sec-Butylbenzene	ND	4.7
para-Isopropyl Toluene	ND	4.7
1,3-Dichlorobenzene	ND	4.7
1,4-Dichlorobenzene	ND	4.7
n-Butylbenzene	ND	4.7
1,2-Dichlorobenzene	ND	4.7
1,2-Dibromo-3-Chloropropane	ND	4.7
1,2,4-Trichlorobenzene	ND	4.7
Hexachlorobutadiene	ND	4.7
Naphthalene	ND	4.7
1,2,3-Trichlorobenzene	ND	4.7

Surrogate	%REC	Limits
Dibromofluoromethane	110	59-139
1,2-Dichloroethane-d4	106	54-153
Toluene-d8	96	83-118
Bromofluorobenzene	103	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-9-10.0	Basis:	as received
Lab ID:	219369-021	Sampled:	03/31/10
Matrix:	Soil	Received:	03/31/10
Units:	ug/Kg		

Analyte	Result	RL	Diln Fac	Batch#	Analyzed
Freon 12	ND	9.6	0.9579	161934	04/13/10
Chloromethane	ND	9.6	0.9579	161934	04/13/10
Vinyl Chloride	ND	9.6	0.9579	161934	04/13/10
Bromomethane	ND	9.6	0.9579	161934	04/13/10
Chloroethane	ND	9.6	0.9579	161934	04/13/10
Trichlorofluoromethane	ND	4.8	0.9579	161934	04/13/10
Acetone	280	200	10.00	161972	04/14/10
Freon 113	ND	4.8	0.9579	161934	04/13/10
1,1-Dichloroethene	ND	4.8	0.9579	161934	04/13/10
Methylene Chloride	ND	19	0.9579	161934	04/13/10
Carbon Disulfide	ND	4.8	0.9579	161934	04/13/10
MTBE	ND	4.8	0.9579	161934	04/13/10
trans-1,2-Dichloroethene	ND	4.8	0.9579	161934	04/13/10
Vinyl Acetate	ND	48	0.9579	161934	04/13/10
1,1-Dichloroethane	ND	4.8	0.9579	161934	04/13/10
2-Butanone	62	9.6	0.9579	161934	04/13/10
cis-1,2-Dichloroethene	ND	4.8	0.9579	161934	04/13/10
2,2-Dichloropropane	ND	4.8	0.9579	161934	04/13/10
Chloroform	ND	4.8	0.9579	161934	04/13/10
Bromochloromethane	ND	4.8	0.9579	161934	04/13/10
1,1,1-Trichloroethane	ND	4.8	0.9579	161934	04/13/10
1,1-Dichloropropene	ND	4.8	0.9579	161934	04/13/10
Carbon Tetrachloride	ND	4.8	0.9579	161934	04/13/10
1,2-Dichloroethane	ND	4.8	0.9579	161934	04/13/10
Benzene	ND	4.8	0.9579	161934	04/13/10
Trichloroethene	ND	4.8	0.9579	161934	04/13/10
1,2-Dichloropropane	ND	4.8	0.9579	161934	04/13/10
Bromodichloromethane	ND	4.8	0.9579	161934	04/13/10
Dibromomethane	ND	4.8	0.9579	161934	04/13/10
4-Methyl-2-Pentanone	ND	9.6	0.9579	161934	04/13/10
cis-1,3-Dichloropropene	ND	4.8	0.9579	161934	04/13/10
Toluene	ND	4.8	0.9579	161934	04/13/10
trans-1,3-Dichloropropene	ND	4.8	0.9579	161934	04/13/10
1,1,2-Trichloroethane	ND	4.8	0.9579	161934	04/13/10
2-Hexanone	ND	9.6	0.9579	161934	04/13/10
1,3-Dichloropropane	ND	4.8	0.9579	161934	04/13/10
Tetrachloroethene	ND	4.8	0.9579	161934	04/13/10
Dibromochloromethane	ND	4.8	0.9579	161934	04/13/10

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-9-10.0	Basis:	as received
Lab ID:	219369-021	Sampled:	03/31/10
Matrix:	Soil	Received:	03/31/10
Units:	ug/Kg		

Analyte	Result	RL	Diln Fac	Batch#	Analyzed
1,2-Dibromoethane	ND	4.8	0.9579	161934	04/13/10
Chlorobenzene	ND	4.8	0.9579	161934	04/13/10
1,1,1,2-Tetrachloroethane	ND	4.8	0.9579	161934	04/13/10
Ethylbenzene	ND	4.8	0.9579	161934	04/13/10
m,p-Xylenes	ND	4.8	0.9579	161934	04/13/10
o-Xylene	ND	4.8	0.9579	161934	04/13/10
Styrene	ND	4.8	0.9579	161934	04/13/10
Bromoform	ND	4.8	0.9579	161934	04/13/10
Isopropylbenzene	ND	4.8	0.9579	161934	04/13/10
1,1,2,2-Tetrachloroethane	ND	4.8	0.9579	161934	04/13/10
1,2,3-Trichloropropane	ND	4.8	0.9579	161934	04/13/10
Propylbenzene	ND	4.8	0.9579	161934	04/13/10
Bromobenzene	ND	4.8	0.9579	161934	04/13/10
1,3,5-Trimethylbenzene	ND	4.8	0.9579	161934	04/13/10
2-Chlorotoluene	ND	4.8	0.9579	161934	04/13/10
4-Chlorotoluene	ND	4.8	0.9579	161934	04/13/10
tert-Butylbenzene	ND	4.8	0.9579	161934	04/13/10
1,2,4-Trimethylbenzene	ND	4.8	0.9579	161934	04/13/10
sec-Butylbenzene	ND	4.8	0.9579	161934	04/13/10
para-Isopropyl Toluene	ND	4.8	0.9579	161934	04/13/10
1,3-Dichlorobenzene	ND	4.8	0.9579	161934	04/13/10
1,4-Dichlorobenzene	ND	4.8	0.9579	161934	04/13/10
n-Butylbenzene	ND	4.8	0.9579	161934	04/13/10
1,2-Dichlorobenzene	ND	4.8	0.9579	161934	04/13/10
1,2-Dibromo-3-Chloropropane	ND	4.8	0.9579	161934	04/13/10
1,2,4-Trichlorobenzene	ND	4.8	0.9579	161934	04/13/10
Hexachlorobutadiene	ND	4.8	0.9579	161934	04/13/10
Naphthalene	ND	4.8	0.9579	161934	04/13/10
1,2,3-Trichlorobenzene	ND	4.8	0.9579	161934	04/13/10

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	114	59-139	0.9579	161934	04/13/10
1,2-Dichloroethane-d4	140	54-153	0.9579	161934	04/13/10
Toluene-d8	96	83-118	0.9579	161934	04/13/10
Bromofluorobenzene	124	61-146	0.9579	161934	04/13/10

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-9-22.0	Diln Fac:	0.9363
Lab ID:	219369-022	Batch#:	161934
Matrix:	Soil	Sampled:	03/31/10
Units:	ug/Kg	Received:	03/31/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Freon 12	ND	9.4
Chloromethane	ND	9.4
Vinyl Chloride	ND	9.4
Bromomethane	ND	9.4
Chloroethane	ND	9.4
Trichlorofluoromethane	ND	4.7
Acetone	ND	19
Freon 113	ND	4.7
1,1-Dichloroethene	ND	4.7
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.7
MTBE	ND	4.7
trans-1,2-Dichloroethene	ND	4.7
Vinyl Acetate	ND	47
1,1-Dichloroethane	ND	4.7
2-Butanone	ND	9.4
cis-1,2-Dichloroethene	ND	4.7
2,2-Dichloropropane	ND	4.7
Chloroform	ND	4.7
Bromochloromethane	ND	4.7
1,1,1-Trichloroethane	ND	4.7
1,1-Dichloropropene	ND	4.7
Carbon Tetrachloride	ND	4.7
1,2-Dichloroethane	ND	4.7
Benzene	ND	4.7
Trichloroethene	ND	4.7
1,2-Dichloropropane	ND	4.7
Bromodichloromethane	ND	4.7
Dibromomethane	ND	4.7
4-Methyl-2-Pentanone	ND	9.4
cis-1,3-Dichloropropene	ND	4.7
Toluene	ND	4.7
trans-1,3-Dichloropropene	ND	4.7
1,1,2-Trichloroethane	ND	4.7
2-Hexanone	ND	9.4
1,3-Dichloropropane	ND	4.7
Tetrachloroethene	ND	4.7

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-9-22.0	Diln Fac:	0.9363
Lab ID:	219369-022	Batch#:	161934
Matrix:	Soil	Sampled:	03/31/10
Units:	ug/Kg	Received:	03/31/10
Basis:	as received	Analyzed:	04/13/10

Analyte	Result	RL
Dibromochloromethane	ND	4.7
1,2-Dibromoethane	ND	4.7
Chlorobenzene	ND	4.7
1,1,1,2-Tetrachloroethane	ND	4.7
Ethylbenzene	ND	4.7
m,p-Xylenes	ND	4.7
o-Xylene	ND	4.7
Styrene	ND	4.7
Bromoform	ND	4.7
Isopropylbenzene	ND	4.7
1,1,2,2-Tetrachloroethane	ND	4.7
1,2,3-Trichloropropane	ND	4.7
Propylbenzene	ND	4.7
Bromobenzene	ND	4.7
1,3,5-Trimethylbenzene	ND	4.7
2-Chlorotoluene	ND	4.7
4-Chlorotoluene	ND	4.7
tert-Butylbenzene	ND	4.7
1,2,4-Trimethylbenzene	ND	4.7
sec-Butylbenzene	ND	4.7
para-Isopropyl Toluene	ND	4.7
1,3-Dichlorobenzene	ND	4.7
1,4-Dichlorobenzene	ND	4.7
n-Butylbenzene	ND	4.7
1,2-Dichlorobenzene	ND	4.7
1,2-Dibromo-3-Chloropropane	ND	4.7
1,2,4-Trichlorobenzene	ND	4.7
Hexachlorobutadiene	ND	4.7
Naphthalene	ND	4.7
1,2,3-Trichlorobenzene	ND	4.7

Surrogate	%REC	Limits
Dibromofluoromethane	125	59-139
1,2-Dichloroethane-d4	142	54-153
Toluene-d8	98	83-118
Bromofluorobenzene	136	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Matrix:	Soil	Batch#:	161932
Units:	ug/Kg	Analyzed:	04/13/10
Diln Fac:	1.000		

Type: BS Lab ID: QC540163

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	20.60	82	61-145
Benzene	25.00	23.40	94	73-134
Trichloroethene	25.00	22.54	90	71-137
Toluene	25.00	28.79	115	72-134
Chlorobenzene	25.00	24.55	98	76-126

Surrogate	%REC	Limits
Dibromofluoromethane	99	59-139
1,2-Dichloroethane-d4	102	54-153
Toluene-d8	102	83-118
Bromofluorobenzene	100	61-146

Type: BSD Lab ID: QC540164

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	23.62	94	61-145	14	22
Benzene	25.00	24.88	100	73-134	6	19
Trichloroethene	25.00	24.00	96	71-137	6	19
Toluene	25.00	28.98	116	72-134	1	19
Chlorobenzene	25.00	25.65	103	76-126	4	21

Surrogate	%REC	Limits
Dibromofluoromethane	100	59-139
1,2-Dichloroethane-d4	100	54-153
Toluene-d8	103	83-118
Bromofluorobenzene	103	61-146

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC540165	Batch#:	161932
Matrix:	Soil	Analyzed:	04/13/10
Units:	ug/Kg		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC540165	Batch#:	161932
Matrix:	Soil	Analyzed:	04/13/10
Units:	ug/Kg		

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	99	59-139
1,2-Dichloroethane-d4	104	54-153
Toluene-d8	103	83-118
Bromofluorobenzene	102	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Matrix:	Soil	Batch#:	161934
Units:	ug/Kg	Analyzed:	04/13/10
Diln Fac:	1.000		

Type: BS Lab ID: QC540167

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	26.49	106	61-145
Benzene	25.00	24.61	98	73-134
Trichloroethene	25.00	26.06	104	71-137
Toluene	25.00	31.32	125	72-134
Chlorobenzene	25.00	26.27	105	76-126

Surrogate	%REC	Limits
Dibromofluoromethane	111	59-139
1,2-Dichloroethane-d4	120	54-153
Toluene-d8	103	83-118
Bromofluorobenzene	117	61-146

Type: BSD Lab ID: QC540168

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	24.12	96	61-145	9	22
Benzene	25.00	25.22	101	73-134	2	19
Trichloroethene	25.00	26.50	106	71-137	2	19
Toluene	25.00	30.01	120	72-134	4	19
Chlorobenzene	25.00	26.64	107	76-126	1	21

Surrogate	%REC	Limits
Dibromofluoromethane	110	59-139
1,2-Dichloroethane-d4	122	54-153
Toluene-d8	102	83-118
Bromofluorobenzene	110	61-146

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC540169	Batch#:	161934
Matrix:	Soil	Analyzed:	04/13/10
Units:	ug/Kg		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC540169	Batch#:	161934
Matrix:	Soil	Analyzed:	04/13/10
Units:	ug/Kg		

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	107	59-139
1,2-Dichloroethane-d4	124	54-153
Toluene-d8	100	83-118
Bromofluorobenzene	117	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Matrix:	Soil	Batch#:	161935
Units:	ug/Kg	Analyzed:	04/13/10
Diln Fac:	1.000		

Type: BS Lab ID: QC540170

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	29.57	118	61-145
Benzene	25.00	27.44	110	73-134
Trichloroethene	25.00	28.09	112	71-137
Toluene	25.00	32.56	130	72-134
Chlorobenzene	25.00	27.27	109	76-126

Surrogate	%REC	Limits
Dibromofluoromethane	94	59-139
1,2-Dichloroethane-d4	93	54-153
Toluene-d8	99	83-118
Bromofluorobenzene	103	61-146

Type: BSD Lab ID: QC540171

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	27.33	109	61-145	8	22
Benzene	25.00	26.40	106	73-134	4	19
Trichloroethene	25.00	27.07	108	71-137	4	19
Toluene	25.00	30.55	122	72-134	6	19
Chlorobenzene	25.00	26.25	105	76-126	4	21

Surrogate	%REC	Limits
Dibromofluoromethane	95	59-139
1,2-Dichloroethane-d4	91	54-153
Toluene-d8	99	83-118
Bromofluorobenzene	103	61-146

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC540172	Batch#:	161935
Matrix:	Soil	Analyzed:	04/13/10
Units:	ug/Kg		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC540172	Batch#:	161935
Matrix:	Soil	Analyzed:	04/13/10
Units:	ug/Kg		

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	101	59-139
1,2-Dichloroethane-d4	101	54-153
Toluene-d8	95	83-118
Bromofluorobenzene	104	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	161932
MSS Lab ID:	219414-006	Sampled:	04/08/10
Matrix:	Soil	Received:	04/12/10
Units:	ug/Kg	Analyzed:	04/13/10
Basis:	as received		

Type: MS Diln Fac: 0.9524
Lab ID: QC540247

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.7965	47.62	49.27	103	47-163
Benzene	<0.5989	47.62	49.03	103	53-139
Trichloroethene	<0.7254	47.62	47.99	101	40-167
Toluene	<0.6181	47.62	49.19	103	49-139
Chlorobenzene	<0.6148	47.62	47.74	100	40-138

Surrogate	%REC	Limits
Dibromofluoromethane	103	59-139
1,2-Dichloroethane-d4	105	54-153
Toluene-d8	103	83-118
Bromofluorobenzene	100	61-146

Type: MSD Diln Fac: 0.9747
Lab ID: QC540248

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	48.73	48.45	99	47-163	4	37
Benzene	48.73	46.10	95	53-139	8	35
Trichloroethene	48.73	45.08	93	40-167	9	31
Toluene	48.73	46.52	95	49-139	8	33
Chlorobenzene	48.73	44.21	91	40-138	10	37

Surrogate	%REC	Limits
Dibromofluoromethane	103	59-139
1,2-Dichloroethane-d4	106	54-153
Toluene-d8	102	83-118
Bromofluorobenzene	99	61-146

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-6-7.0	Batch#:	161935
MSS Lab ID:	219369-015	Sampled:	04/01/10
Matrix:	Soil	Received:	04/02/10
Units:	ug/Kg	Analyzed:	04/13/10
Basis:	as received		

Type: MS Diln Fac: 0.9634
Lab ID: QC540249

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<1.127	48.17	49.88	104	47-163
Benzene	<0.5749	48.17	47.40	98	53-139
Trichloroethene	<0.5737	48.17	48.25	100	40-167
Toluene	0.6921	48.17	47.65	97	49-139
Chlorobenzene	<0.5424	48.17	46.88	97	40-138

Surrogate	%REC	Limits
Dibromofluoromethane	91	59-139
1,2-Dichloroethane-d4	87	54-153
Toluene-d8	97	83-118
Bromofluorobenzene	97	61-146

Type: MSD Diln Fac: 0.9728
Lab ID: QC540250

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	48.64	49.16	101	47-163	2	37
Benzene	48.64	45.33	93	53-139	5	35
Trichloroethene	48.64	45.82	94	40-167	6	31
Toluene	48.64	45.84	93	49-139	5	33
Chlorobenzene	48.64	44.58	92	40-138	6	37

Surrogate	%REC	Limits
Dibromofluoromethane	92	59-139
1,2-Dichloroethane-d4	86	54-153
Toluene-d8	96	83-118
Bromofluorobenzene	97	61-146

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-9-22.0	Batch#:	161934
MSS Lab ID:	219369-022	Sampled:	03/31/10
Matrix:	Soil	Received:	03/31/10
Units:	ug/Kg	Analyzed:	04/13/10
Basis:	as received		

Type: MS Diln Fac: 0.9294
Lab ID: QC540251

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.8273	46.47	42.67	92	47-163
Benzene	<0.3805	46.47	43.21	93	53-139
Trichloroethene	<0.4590	46.47	47.90	103	40-167
Toluene	<1.041	46.47	41.92	90	49-139
Chlorobenzene	<0.2849	46.47	43.26	93	40-138

Surrogate	%REC	Limits
Dibromofluoromethane	112	59-139
1,2-Dichloroethane-d4	129	54-153
Toluene-d8	97	83-118
Bromofluorobenzene	106	61-146

Type: MSD Diln Fac: 0.9747
Lab ID: QC540252

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	48.73	43.28	89	47-163	3	37
Benzene	48.73	42.76	88	53-139	6	35
Trichloroethene	48.73	45.26	93	40-167	10	31
Toluene	48.73	43.65	90	49-139	1	33
Chlorobenzene	48.73	42.82	88	40-138	6	37

Surrogate	%REC	Limits
Dibromofluoromethane	107	59-139
1,2-Dichloroethane-d4	117	54-153
Toluene-d8	95	83-118
Bromofluorobenzene	103	61-146

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC540312	Batch#:	161972
Matrix:	Soil	Analyzed:	04/14/10
Units:	ug/Kg		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	24.45	98	61-145
Benzene	25.00	25.41	102	73-134
Trichloroethene	25.00	25.05	100	71-137
Toluene	25.00	26.81	107	72-134
Chlorobenzene	25.00	25.26	101	76-126

Surrogate	%REC	Limits
Dibromofluoromethane	96	59-139
1,2-Dichloroethane-d4	97	54-153
Toluene-d8	101	83-118
Bromofluorobenzene	101	61-146

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC540313	Batch#:	161972
Matrix:	Soil	Analyzed:	04/14/10
Units:	ug/Kg		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC540313	Batch#:	161972
Matrix:	Soil	Analyzed:	04/14/10
Units:	ug/Kg		

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	100	59-139
1,2-Dichloroethane-d4	100	54-153
Toluene-d8	98	83-118
Bromofluorobenzene	103	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC540314	Batch#:	161973
Matrix:	Soil	Analyzed:	04/14/10
Units:	ug/Kg		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	25.24	101	61-145
Benzene	25.00	26.51	106	73-134
Trichloroethene	25.00	25.10	100	71-137
Toluene	25.00	28.41	114	72-134
Chlorobenzene	25.00	26.01	104	76-126

Surrogate	%REC	Limits
Dibromofluoromethane	101	59-139
1,2-Dichloroethane-d4	103	54-153
Toluene-d8	102	83-118
Bromofluorobenzene	101	61-146

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC540315	Batch#:	161973
Matrix:	Soil	Analyzed:	04/14/10
Units:	ug/Kg		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC540315	Batch#:	161973
Matrix:	Soil	Analyzed:	04/14/10
Units:	ug/Kg		

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	104	59-139
1,2-Dichloroethane-d4	108	54-153
Toluene-d8	103	83-118
Bromofluorobenzene	103	61-146

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-4-10.0	Batch#:	161972
MSS Lab ID:	219369-011	Sampled:	04/02/10
Matrix:	Soil	Received:	04/02/10
Units:	ug/Kg	Analyzed:	04/14/10
Basis:	as received		

Type: MS Diln Fac: 0.9542
Lab ID: QC540408

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<1.145	47.71	46.32	97	47-163
Benzene	<0.5841	47.71	44.19	93	53-139
Trichloroethene	<0.5828	47.71	45.57	96	40-167
Toluene	0.7921	47.71	45.11	93	49-139
Chlorobenzene	<0.5510	47.71	43.42	91	40-138

Surrogate	%REC	Limits
Dibromofluoromethane	89	59-139
1,2-Dichloroethane-d4	85	54-153
Toluene-d8	95	83-118
Bromofluorobenzene	90	61-146

Type: MSD Diln Fac: 0.9785
Lab ID: QC540409

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	48.92	47.26	97	47-163	1	37
Benzene	48.92	45.66	93	53-139	1	35
Trichloroethene	48.92	46.61	95	40-167	0	31
Toluene	48.92	45.51	91	49-139	2	33
Chlorobenzene	48.92	44.36	91	40-138	0	37

Surrogate	%REC	Limits
Dibromofluoromethane	84	59-139
1,2-Dichloroethane-d4	85	54-153
Toluene-d8	93	83-118
Bromofluorobenzene	95	61-146

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	161973
MSS Lab ID:	219420-003	Sampled:	04/12/10
Matrix:	Soil	Received:	04/13/10
Units:	ug/Kg	Analyzed:	04/14/10
Basis:	as received		

Type: MS Diln Fac: 1.157
Lab ID: QC540410

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.7871	57.87	63.15	109	47-163
Benzene	<0.5918	57.87	60.33	104	53-139
Trichloroethene	2.206	57.87	68.16	114	40-167
Toluene	1.380	57.87	65.53	111	49-139
Chlorobenzene	<0.6075	57.87	64.26	111	40-138

Surrogate	%REC	Limits
Dibromofluoromethane	95	59-139
1,2-Dichloroethane-d4	90	54-153
Toluene-d8	101	83-118
Bromofluorobenzene	98	61-146

Type: MSD Diln Fac: 1.168
Lab ID: QC540411

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	58.41	63.51	109	47-163	0	37
Benzene	58.41	60.62	104	53-139	0	35
Trichloroethene	58.41	67.92	113	40-167	1	31
Toluene	58.41	64.83	109	49-139	2	33
Chlorobenzene	58.41	64.03	110	40-138	1	37

Surrogate	%REC	Limits
Dibromofluoromethane	95	59-139
1,2-Dichloroethane-d4	91	54-153
Toluene-d8	101	83-118
Bromofluorobenzene	98	61-146

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Field ID:	TRCPT-1-5.0	Batch#:	161945
Lab ID:	219369-001	Sampled:	04/05/10
Matrix:	Soil	Received:	04/05/10
Units:	ug/Kg	Prepared:	04/13/10
Basis:	as received	Analyzed:	04/13/10
Diln Fac:	1.000		

Analyte	Result	RL
Naphthalene	ND	4.9
Acenaphthylene	ND	4.9
Acenaphthene	ND	4.9
Fluorene	ND	4.9
Phenanthrene	ND	4.9
Anthracene	ND	4.9
Fluoranthene	ND	4.9
Pyrene	ND	4.9
Benzo(a)anthracene	ND	4.9
Chrysene	ND	4.9
Benzo(b)fluoranthene	ND	4.9
Benzo(k)fluoranthene	ND	4.9
Benzo(a)pyrene	ND	4.9
Indeno(1,2,3-cd)pyrene	ND	4.9
Dibenz(a,h)anthracene	ND	4.9
Benzo(g,h,i)perylene	ND	4.9

Surrogate	%REC	Limits
Nitrobenzene-d5	35	1-156
2-Fluorobiphenyl	53	23-112
Terphenyl-d14	92	16-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Field ID:	TRCPT-1-9.5	Batch#:	161945
Lab ID:	219369-002	Sampled:	04/05/10
Matrix:	Soil	Received:	04/05/10
Units:	ug/Kg	Prepared:	04/13/10
Basis:	as received	Analyzed:	04/13/10
Diln Fac:	1.000		

Analyte	Result	RL
Naphthalene	ND	5.0
Acenaphthylene	ND	5.0
Acenaphthene	ND	5.0
Fluorene	ND	5.0
Phenanthrene	ND	5.0
Anthracene	ND	5.0
Fluoranthene	ND	5.0
Pyrene	ND	5.0
Benzo(a)anthracene	ND	5.0
Chrysene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzo(a)pyrene	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0

Surrogate	%REC	Limits
Nitrobenzene-d5	33	1-156
2-Fluorobiphenyl	46	23-112
Terphenyl-d14	71	16-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Field ID:	TRCPT-1-18.0	Batch#:	161945
Lab ID:	219369-003	Sampled:	04/05/10
Matrix:	Soil	Received:	04/05/10
Units:	ug/Kg	Prepared:	04/13/10
Basis:	as received	Analyzed:	04/13/10
Diln Fac:	1.000		

Analyte	Result	RL
Naphthalene	ND	5.0
Acenaphthylene	ND	5.0
Acenaphthene	ND	5.0
Fluorene	ND	5.0
Phenanthrene	ND	5.0
Anthracene	ND	5.0
Fluoranthene	ND	5.0
Pyrene	ND	5.0
Benzo(a)anthracene	ND	5.0
Chrysene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzo(a)pyrene	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0

Surrogate	%REC	Limits
Nitrobenzene-d5	43	1-156
2-Fluorobiphenyl	57	23-112
Terphenyl-d14	90	16-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Field ID:	TRCPT-2-5.0	Batch#:	161945
Lab ID:	219369-004	Sampled:	04/05/10
Matrix:	Soil	Received:	04/05/10
Units:	ug/Kg	Prepared:	04/13/10
Basis:	as received	Analyzed:	04/13/10
Diln Fac:	1.000		

Analyte	Result	RL
Naphthalene	ND	4.9
Acenaphthylene	ND	4.9
Acenaphthene	ND	4.9
Fluorene	ND	4.9
Phenanthrene	ND	4.9
Anthracene	ND	4.9
Fluoranthene	ND	4.9
Pyrene	ND	4.9
Benzo(a)anthracene	ND	4.9
Chrysene	ND	4.9
Benzo(b)fluoranthene	ND	4.9
Benzo(k)fluoranthene	ND	4.9
Benzo(a)pyrene	ND	4.9
Indeno(1,2,3-cd)pyrene	ND	4.9
Dibenz(a,h)anthracene	ND	4.9
Benzo(g,h,i)perylene	ND	4.9

Surrogate	%REC	Limits
Nitrobenzene-d5	34	1-156
2-Fluorobiphenyl	60	23-112
Terphenyl-d14	75	16-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Field ID:	TRCPT-2-9.5	Batch#:	161945
Lab ID:	219369-005	Sampled:	04/05/10
Matrix:	Soil	Received:	04/05/10
Units:	ug/Kg	Prepared:	04/13/10
Basis:	as received	Analyzed:	04/14/10
Diln Fac:	1.000		

Analyte	Result	RL
Naphthalene	ND	5.0
Acenaphthylene	ND	5.0
Acenaphthene	ND	5.0
Fluorene	ND	5.0
Phenanthrene	ND	5.0
Anthracene	ND	5.0
Fluoranthene	ND	5.0
Pyrene	ND	5.0
Benzo(a)anthracene	ND	5.0
Chrysene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzo(a)pyrene	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0

Surrogate	%REC	Limits
Nitrobenzene-d5	32	1-156
2-Fluorobiphenyl	49	23-112
Terphenyl-d14	66	16-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Field ID:	TRCPT-2-18.0	Batch#:	161945
Lab ID:	219369-006	Sampled:	04/05/10
Matrix:	Soil	Received:	04/05/10
Units:	ug/Kg	Prepared:	04/13/10
Basis:	as received	Analyzed:	04/14/10
Diln Fac:	1.000		

Analyte	Result	RL
Naphthalene	ND	4.9
Acenaphthylene	ND	4.9
Acenaphthene	ND	4.9
Fluorene	ND	4.9
Phenanthrene	ND	4.9
Anthracene	ND	4.9
Fluoranthene	ND	4.9
Pyrene	ND	4.9
Benzo(a)anthracene	ND	4.9
Chrysene	ND	4.9
Benzo(b)fluoranthene	ND	4.9
Benzo(k)fluoranthene	ND	4.9
Benzo(a)pyrene	ND	4.9
Indeno(1,2,3-cd)pyrene	ND	4.9
Dibenz(a,h)anthracene	ND	4.9
Benzo(g,h,i)perylene	ND	4.9

Surrogate	%REC	Limits
Nitrobenzene-d5	31	1-156
2-Fluorobiphenyl	49	23-112
Terphenyl-d14	53	16-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Field ID:	TRCPT-3-5.0	Batch#:	161945
Lab ID:	219369-007	Sampled:	04/02/10
Matrix:	Soil	Received:	04/02/10
Units:	ug/Kg	Prepared:	04/13/10
Basis:	as received	Analyzed:	04/14/10
Diln Fac:	1.000		

Analyte	Result	RL
Naphthalene	ND	5.0
Acenaphthylene	ND	5.0
Acenaphthene	ND	5.0
Fluorene	ND	5.0
Phenanthrene	ND	5.0
Anthracene	ND	5.0
Fluoranthene	ND	5.0
Pyrene	ND	5.0
Benzo(a)anthracene	ND	5.0
Chrysene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzo(a)pyrene	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0

Surrogate	%REC	Limits
Nitrobenzene-d5	32	1-156
2-Fluorobiphenyl	49	23-112
Terphenyl-d14	56	16-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Field ID:	TRCPT-3-9.5	Batch#:	161945
Lab ID:	219369-008	Sampled:	04/02/10
Matrix:	Soil	Received:	04/02/10
Units:	ug/Kg	Prepared:	04/13/10
Basis:	as received	Analyzed:	04/14/10
Diln Fac:	1.000		

Analyte	Result	RL
Naphthalene	ND	4.9
Acenaphthylene	ND	4.9
Acenaphthene	ND	4.9
Fluorene	ND	4.9
Phenanthrene	ND	4.9
Anthracene	ND	4.9
Fluoranthene	ND	4.9
Pyrene	ND	4.9
Benzo(a)anthracene	ND	4.9
Chrysene	ND	4.9
Benzo(b)fluoranthene	ND	4.9
Benzo(k)fluoranthene	ND	4.9
Benzo(a)pyrene	ND	4.9
Indeno(1,2,3-cd)pyrene	ND	4.9
Dibenz(a,h)anthracene	ND	4.9
Benzo(g,h,i)perylene	ND	4.9

Surrogate	%REC	Limits
Nitrobenzene-d5	38	1-156
2-Fluorobiphenyl	59	23-112
Terphenyl-d14	92	16-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Field ID:	TRCPT-3-18.0	Batch#:	161945
Lab ID:	219369-009	Sampled:	04/02/10
Matrix:	Soil	Received:	04/02/10
Units:	ug/Kg	Prepared:	04/13/10
Basis:	as received	Analyzed:	04/14/10
Diln Fac:	1.000		

Analyte	Result	RL
Naphthalene	ND	4.9
Acenaphthylene	ND	4.9
Acenaphthene	ND	4.9
Fluorene	ND	4.9
Phenanthrene	ND	4.9
Anthracene	ND	4.9
Fluoranthene	ND	4.9
Pyrene	ND	4.9
Benzo(a)anthracene	ND	4.9
Chrysene	ND	4.9
Benzo(b)fluoranthene	ND	4.9
Benzo(k)fluoranthene	ND	4.9
Benzo(a)pyrene	ND	4.9
Indeno(1,2,3-cd)pyrene	ND	4.9
Dibenz(a,h)anthracene	ND	4.9
Benzo(g,h,i)perylene	ND	4.9

Surrogate	%REC	Limits
Nitrobenzene-d5	66	1-156
2-Fluorobiphenyl	59	23-112
Terphenyl-d14	66	16-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Field ID:	TRCPT-4-5.0	Batch#:	161945
Lab ID:	219369-010	Sampled:	04/02/10
Matrix:	Soil	Received:	04/02/10
Units:	ug/Kg	Prepared:	04/13/10
Basis:	as received	Analyzed:	04/14/10
Diln Fac:	1.000		

Analyte	Result	RL
Naphthalene	ND	4.9
Acenaphthylene	ND	4.9
Acenaphthene	ND	4.9
Fluorene	ND	4.9
Phenanthrene	ND	4.9
Anthracene	ND	4.9
Fluoranthene	ND	4.9
Pyrene	ND	4.9
Benzo(a)anthracene	ND	4.9
Chrysene	ND	4.9
Benzo(b)fluoranthene	ND	4.9
Benzo(k)fluoranthene	ND	4.9
Benzo(a)pyrene	ND	4.9
Indeno(1,2,3-cd)pyrene	ND	4.9
Dibenz(a,h)anthracene	ND	4.9
Benzo(g,h,i)perylene	ND	4.9

Surrogate	%REC	Limits
Nitrobenzene-d5	77	1-156
2-Fluorobiphenyl	71	23-112
Terphenyl-d14	77	16-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Field ID:	TRCPT-4-10.0	Batch#:	161945
Lab ID:	219369-011	Sampled:	04/02/10
Matrix:	Soil	Received:	04/02/10
Units:	ug/Kg	Prepared:	04/13/10
Basis:	as received	Analyzed:	04/14/10
Diln Fac:	1.000		

Analyte	Result	RL
Naphthalene	ND	5.0
Acenaphthylene	ND	5.0
Acenaphthene	ND	5.0
Fluorene	ND	5.0
Phenanthrene	ND	5.0
Anthracene	ND	5.0
Fluoranthene	ND	5.0
Pyrene	ND	5.0
Benzo(a)anthracene	ND	5.0
Chrysene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzo(a)pyrene	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0

Surrogate	%REC	Limits
Nitrobenzene-d5	26	1-156
2-Fluorobiphenyl	28	23-112
Terphenyl-d14	59	16-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Field ID:	TRCPT-4-18.0	Batch#:	161945
Lab ID:	219369-012	Sampled:	04/02/10
Matrix:	Soil	Received:	04/02/10
Units:	ug/Kg	Prepared:	04/13/10
Basis:	as received	Analyzed:	04/14/10
Diln Fac:	1.000		

Analyte	Result	RL
Naphthalene	ND	5.0
Acenaphthylene	ND	5.0
Acenaphthene	ND	5.0
Fluorene	ND	5.0
Phenanthrene	ND	5.0
Anthracene	ND	5.0
Fluoranthene	ND	5.0
Pyrene	ND	5.0
Benzo(a)anthracene	ND	5.0
Chrysene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzo(a)pyrene	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0

Surrogate	%REC	Limits
Nitrobenzene-d5	69	1-156
2-Fluorobiphenyl	66	23-112
Terphenyl-d14	69	16-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC540204	Batch#:	161945
Matrix:	Soil	Prepared:	04/13/10
Units:	ug/Kg	Analyzed:	04/13/10

Analyte	Result	RL
Naphthalene	ND	5.0
Acenaphthylene	ND	5.0
Acenaphthene	ND	5.0
Fluorene	ND	5.0
Phenanthrene	ND	5.0
Anthracene	ND	5.0
Fluoranthene	ND	5.0
Pyrene	ND	5.0
Benzo(a)anthracene	ND	5.0
Chrysene	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzo(a)pyrene	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Dibenz(a,h)anthracene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0

Surrogate	%REC	Limits
Nitrobenzene-d5	82	1-156
2-Fluorobiphenyl	81	23-112
Terphenyl-d14	89	16-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC540205	Batch#:	161945
Matrix:	Soil	Prepared:	04/13/10
Units:	ug/Kg	Analyzed:	04/13/10

Analyte	Spiked	Result	%REC	Limits
Acenaphthene	33.20	21.12	64	22-116
Pyrene	33.20	19.80	60	23-113

Surrogate	%REC	Limits
Nitrobenzene-d5	71	1-156
2-Fluorobiphenyl	72	23-112
Terphenyl-d14	70	16-121

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	219369	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3550B
Project#:	4954.01	Analysis:	EPA 8270C-SIM
Field ID:	ZZZZZZZZZZ	Batch#:	161945
MSS Lab ID:	219336-015	Sampled:	04/08/10
Matrix:	Soil	Received:	04/08/10
Units:	ug/Kg	Prepared:	04/13/10
Basis:	as received	Analyzed:	04/13/10
Diln Fac:	1.000		

Type: MS Lab ID: QC540206

Analyte	MSS Result	Spiked	Result	%REC	Limits
Acenaphthene	<0.9891	33.30	20.07	60	19-127
Pyrene	15.97	33.30	24.44	25	1-152

Surrogate	%REC	Limits
Nitrobenzene-d5	67	1-156
2-Fluorobiphenyl	66	23-112
Terphenyl-d14	71	16-121

Type: MSD Lab ID: QC540207

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Acenaphthene	33.03	22.12	67	19-127	11	41
Pyrene	33.03	25.78	30	1-152	6	73

Surrogate	%REC	Limits
Nitrobenzene-d5	82	1-156
2-Fluorobiphenyl	75	23-112
Terphenyl-d14	84	16-121

RPD= Relative Percent Difference


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 219166
ANALYTICAL REPORT

Treadwell & Rollo	Project : 4954.01
555 Montgomery Street	Location : 5885 Hollis
San Francisco, CA 94111	Level : II

Sample ID	Lab ID
TRCPT-9-10.0	219166-001
TRCPT-9-10.5	219166-002
TRCPT-9-22.0	219166-003
TRCPT-9-22.5	219166-004
TRCPT-9-37.0	219166-005
TRCPT-9-37.5	219166-006
TRCPT-9-45.0	219166-007
TRCPT-9-45.5	219166-008
TRCPT-9-GW-50	219166-009

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 04/07/2010
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**219166**
Client:	**Treadwell & Rollo**
Project:	**4954.01**
Location:	**5885 Hollis**
Request Date:	**03/31/10**
Samples Received:	**03/31/10**

This data package contains sample and QC results for one water sample, requested for the above referenced project on 03/31/10. The sample was received cold and intact.

TPH-Extractables by GC (EPA 8015B):
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

C & T LOGIN #: 219164

Project No.: 4954.01
Project Name: 5885 Hollis
Project P.O.:
Turnaround Time: 5-day

Sampler: Louis Bright
Report To: Matt Hall mhall@treadwellrollo.com
Company: Treadwell & Rollo
Telephone: ~~Fax~~ 415-955-9040
Fax: 415-955-9041

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste		# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	None	Analysis: TPH-g	TPH-d w/ SGC	TPH-mo w/ SGC	VOCs	Holds
1	TRCPT-4 10.0	3/31/10 1447	X				1										X
2	TRCPT-9-10.5	1447	X														X
3	TRCPT-9-22.0	1457	X														X
4	TRCPT-9-22.5	1457	X														X
5	TRCPT-9-37.0	1508	X														X
6	TRCPT-9-37.5	1508	X														X
7	TRCPT-9-45.0	1520	X														X
8	TRCPT-9-45.5	1520	X														X
9	TRCPT-9-50	1605		X			4	X			X	1	X	X	X	X	

Notes:

SAMPLE RECEIPT
☐ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:
Louis Bright 3/31/10 17:55 DATE / TIME
DATE / TIME
DATE / TIME
SIGNATURE

RECEIVED BY:
Pat Hanafy 3/31/10 1755 DATE / TIME
DATE / TIME
DATE / TIME

Micah Smith

From: "Matt Hall" <mbhall@treadwellrollo.com>
To: "Micah Smith" <micah.smith@ctberk.com>
Sent: Thursday, April 01, 2010 2:36 PM
Subject: RE: 4954.01 - C&T Login Summary (219166)

Hi Micah –

Could you change lab sample number 9 to read – "TRCPT-9-GW-50"

Also, you may run the TPH-g by 8260.

Thanks,
Matt

From: Micah Smith [mailto:micah.smith@ctberk.com]
Sent: Thursday, April 01, 2010 2:23 PM
To: Matt Hall; Thomas Campitelli
Subject: 4954.01 - C&T Login Summary (219166)

C&T Login Summary for 219166

Project: 4954.01 **Site:** 5885 Hollis **Lab Login #:** 219166 **Report Level:** II **Report Due:** 04/07/10 **PO#:** **C&T Proj Mgr:** Micah Smith	**Report To:** Treadwell & Rollo 555 Montgomery Street Suite 1300 San Francisco, CA 94111 ATTN: Matt Hall (415) 955-9040	**Bill To:** Treadwell & Rollo 555 Montgomery Street Suite 1300 San Francisco, CA 941 ATTN: Matt Hall (415) 955-9040

Client ID	Lab ID	Sampled	Received	Matrix	Analyses	COC #	Comments
TRCPT-9-10.0	001	03/31	03/31				
				Soil	HOLD		
TRCPT-9-10.5	002	03/31	03/31				
				Soil	HOLD		
TRCPT-9-22.0	003	03/31	03/31				
				Soil	HOLD		
TRCPT-9-22.5	004	03/31	03/31				
				Soil	HOLD		
TRCPT-9-37.0	005	03/31	03/31				
				Soil	HOLD		
TRCPT-9-37.5	006	03/31	03/31				

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 219164 Date Received 3/31/10 Number of coolers 1
Client TRC SOLUTIONS Project 5885 HOLLIS

Date Opened 3/31/10 By (print) M. VILLANUEVA (sign)
Date Logged in By (print) (sign)

1. Did cooler come with a shipping slip (airbill, etc) YES NO
Shipping info

2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☐ NO
How many Name Date
2B. Were custody seals intact upon arrival? YES NO N/A
3. Were custody papers dry and intact when received? YES NO
4. Were custody papers filled out properly (ink, signed, etc)? YES NO
5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO
6. Indicate the packing in cooler: (if other, describe)

☐ Bubble Wrap ☐ Foam blocks ☑ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☑ Paper towels

7. Temperature documentation:

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C)

☑ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES NO
If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? YES NO
10. Are samples in the appropriate containers for indicated tests? YES NO
11. Are sample labels present, in good condition and complete? YES NO
12. Do the sample labels agree with custody papers? YES NO
13. Was sufficient amount of sample sent for tests requested? YES NO
14. Are the samples appropriately preserved? YES NO N/A
15. Are bubbles > 6mm absent in VOA samples? YES NO N/A
16. Was the client contacted concerning this sample delivery? YES NO
If YES, Who was called? By Date:

COMMENTS

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	219166	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3520C
Project#:	4954.01	Analysis:	EPA 8015B
Field ID:	TRCPT-9-GW-50	Sampled:	03/31/10
Matrix:	Water	Received:	03/31/10
Units:	ug/L	Prepared:	04/02/10
Diln Fac:	1.000	Analyzed:	04/06/10
Batch#:	161607		

Type: SAMPLE Cleanup Method: EPA 3630C
Lab ID: 219166-009

Analyte	Result	RL
Diesel C12-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	95	65-135

Type: BLANK Cleanup Method: EPA 3630C
Lab ID: QC538882

Analyte	Result	RL
Diesel C12-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	102	65-135

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	219166	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 3520C
Project#:	4954.01	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	161607
Units:	ug/L	Prepared:	04/02/10
Diln Fac:	1.000	Analyzed:	04/06/10

Type: BS Cleanup Method: EPA 3630C
Lab ID: QC538883

Analyte	Spiked	Result	%REC	Limits
Diesel C12-C24	2,500	1,958	78	65-135

Surrogate	%REC	Limits
o-Terphenyl	86	65-135

Type: BSD Cleanup Method: EPA 3630C
Lab ID: QC538884

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C12-C24	2,500	2,474	99	65-135	23	35

Surrogate	%REC	Limits
o-Terphenyl	114	65-135

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219166	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-9-GW-50	Batch#:	161558
Lab ID:	219166-009	Sampled:	03/31/10
Matrix:	Water	Received:	03/31/10
Units:	ug/L	Analyzed:	04/02/10
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219166	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Field ID:	TRCPT-9-GW-50	Batch#:	161558
Lab ID:	219166-009	Sampled:	03/31/10
Matrix:	Water	Received:	03/31/10
Units:	ug/L	Analyzed:	04/02/10
Diln Fac:	1.000		

Analyte	Result	RL
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	111	81-124
1,2-Dichloroethane-d4	92	73-140
Toluene-d8	93	88-113
Bromofluorobenzene	100	80-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219166	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	161558
Units:	ug/L	Analyzed:	04/02/10
Diln Fac:	1.000		

Type: BS Lab ID: QC538674

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	29.26	117	71-136
Benzene	25.00	26.74	107	81-122
Trichloroethene	25.00	23.87	95	80-124
Toluene	25.00	22.57	90	82-122
Chlorobenzene	25.00	22.25	89	84-118

Surrogate	%REC	Limits
Dibromofluoromethane	115	81-124
1,2-Dichloroethane-d4	103	73-140
Toluene-d8	97	88-113
Bromofluorobenzene	103	80-127

Type: BSD Lab ID: QC538675

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	31.77	127	71-136	8	15
Benzene	25.00	28.34	113	81-122	6	12
Trichloroethene	25.00	25.23	101	80-124	6	13
Toluene	25.00	23.94	96	82-122	6	12
Chlorobenzene	25.00	23.34	93	84-118	5	11

Surrogate	%REC	Limits
Dibromofluoromethane	113	81-124
1,2-Dichloroethane-d4	94	73-140
Toluene-d8	95	88-113
Bromofluorobenzene	102	80-127

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219166	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC538676	Batch#:	161558
Matrix:	Water	Analyzed:	04/02/10
Units:	ug/L		

Analyte	Result	RL
Gasoline C7-C12	ND	50
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219166	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC538676	Batch#:	161558
Matrix:	Water	Analyzed:	04/02/10
Units:	ug/L		

Analyte	Result	RL
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	109	81-124
1,2-Dichloroethane-d4	91	73-140
Toluene-d8	94	88-113
Bromofluorobenzene	102	80-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	219166	Location:	5885 Hollis
Client:	Treadwell & Rollo	Prep:	EPA 5030B
Project#:	4954.01	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	161558
Units:	ug/L	Analyzed:	04/02/10
Diln Fac:	1.000		

Type: BS Lab ID: QC538784

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,004	100	70-130

Surrogate	%REC	Limits
Dibromofluoromethane	114	81-124
1,2-Dichloroethane-d4	93	73-140
Toluene-d8	94	88-113
Bromofluorobenzene	101	80-127

Type: BSD Lab ID: QC538785

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	999.2	100	70-130	0	20

Surrogate	%REC	Limits
Dibromofluoromethane	109	81-124
1,2-Dichloroethane-d4	88	73-140
Toluene-d8	96	88-113
Bromofluorobenzene	97	80-127

RPD= Relative Percent Difference