

January 11, 2010

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Alameda County  
Environmental Health

Mr. Mark Detterman  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway  
Alameda, CA 94502-6577

RE: Subsurface Site Characterization  
15796 E. 14<sup>th</sup> Street, San Leandro, California  
ACEH Case No. RO0000168

Dear Mr. Detterman:

Enclosed please find one copy of the Subsurface Investigation Report for the property located at 15796 E. 14<sup>th</sup> Street, San Leandro, California. The general goals of this investigation were to: 1) define subsurface conditions for purposes of estimating migration potential and preparing an initial Conceptual Site Model (CSM); 2) determine the current degree and approximate horizontal and vertical extent of residual total petroleum hydrocarbons as gasoline (TPHg), and benzene, toluene, ethylbenzene, and total xylenes (BTEX), and methyl tert-butyl ether (MTBE) in soil and groundwater; and 3) prepare a report for submission to Alameda County Environmental Health (ACEH) as the lead regulatory agency. In addition, ERS will coordinate uploading all pertinent available documents for the project to the State Water Resources Control Board (SWRCB) GEOTRACKER database.

If you have any questions about this report, please contact me at (925) 938-1600, extension 109 or email me at [ddement@erscorp.us](mailto:ddement@erscorp.us).

Sincerely,



David DeMent, PG  
Senior Geologist

cc: Mr. Clifford Welch

Enclosure

# SUBSURFACE INVESTIGATION REPORT

15796 E. 14th Street  
San Leandro, California

*Prepared for:*

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

*Prepared by:*

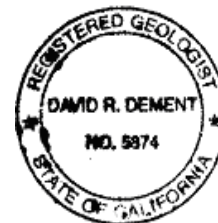
Environmental Risk Specialties Corporation  
Walnut Creek, California

January 11, 2010

Reviewed By:



David DeMent, PG  
Senior Geologist



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## 1.0 INTRODUCTION

This *Subsurface Investigation Report* has been prepared by Environmental Risk Specialties Corporation (ERS) at the request of Mr. Clifford Welch (Client). This Report describes subsurface investigation work performed at 15796 E. 14<sup>th</sup> Street, San Francisco, California (Site). The general goals of this investigation were to: 1) define subsurface conditions for purposes of estimating migration potential and preparing an initial Conceptual Site Model (CSM); 2) determine the current degree and estimate the approximate horizontal and vertical extent of residual total petroleum hydrocarbons as gasoline (TPHg), and benzene, toluene, ethylbenzene, and total xylenes (BTEX), and methyl tert-butyl ether (MTBE) in soil and groundwater; and 3) prepare a report for submission to Alameda County Environmental Health (ACEH) as the lead regulatory agency. In addition, ERS will coordinate uploading all pertinent available documents for the project to the State Water Resources Control Board (SWRCB) GEOTRACKER database.

This investigation consisted of advancing seven exploratory soil borings to depths ranging from 12.0 to 20.0 feet below ground surface (bgs), logging encountered soils, collecting representative soil and grab groundwater samples from the borings, and analyzing the samples for constituents of concern as TPHg, BTEX, and MTBE.

## 2.0 BACKGROUND

The site is located on west side of E. 14<sup>th</sup> Street in the northeast corner of the intersection with Thrush Avenue in San Leandro, California (Figure 1). The Site is occupied by Clyde's Electronics and Ace Moving Company. The roughly triangular-shaped Site is approximately 30 feet long along Thrush Avenue and 60 feet long along E. 14<sup>th</sup> Street. The USTs were reportedly installed prior to 1950 but were not used after the late 1970's.

### 2.1 UST Removal and Replacement

According to information available on ACEH's FTP database, Semco removed one 200-gallon gasoline and two 2,000-gallon gasoline USTs on December 16, 1999. Tank T1, located southwest of 15798 E. 14<sup>th</sup> Street near Thrush Avenue, reported 610 milligrams per kilogram (mg/kg) TPHg and 1.6 mg/kg benzene at 8.5 feet bgs. Tank T2, located at the approximate border of 15796 and 15798 E. 14<sup>th</sup> Street, reported 590 mg/kg TPHg at 10 feet bgs at the north end of the tank and 650 mg/kg TPHg at 9 feet at the south end of the tank, and 1.3 and 0.96 mg/kg benzene in the two samples, respectively. Tank T3, located immediately northwest of the border of 15796 E. 14<sup>th</sup> Street and tank T2, reported 620 mg/kg TPHg at 10 feet bgs at the north end of the tank and 1,300 mg/kg

TPHg at 9 feet bgs at the south end of the tank, and 2.9 mg/kg benzene in the south soil sample.

Photographs indicate the two 2,000-gallon USTs were oriented northwest to southeast directly in front of 15796 and 15798 E. 14<sup>th</sup> Street (Figure 1), and tank T1 was located based on an interview with the owner of Ace Moving Company who witnessed the tank removals. The excavation was subsequently backfilled and the Site restored; however, the area of the former tanks has remained unpaved since 1999. Soil sample analytical results and stockpiled soil analytical results are summarized in Table 1.

**TABLE 1 – TANK REMOVAL SAMPLE ANALYTICAL RESULTS**

Sample ID	Depth (ft bgs)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)
T1-1	8.5	610	1.6	1.6	3.5	6.8	<0.25
T2-N	10.5	590	1.3	0.8	3.0	5.8	<0.25
T2-S	9.5	650	0.96	1.8	2.1	8.0	<0.25
T3-N	9.75	620	<0.125	1.5	9.8	6.8	<0.25
T3-S	9.25	1,300	2.9	2.9	22	130	<0.25
SP-1	--	250	<0.125	0.56	1.0	4.8	<0.125
SP-2	--	120	<0.125	0.67	0.13	0.61	<0.125

Notes: mg/kg = milligrams per kilogram (approximately equivalent to ppm)  
< = Concentration is below the laboratory reporting limit

## 2.2 Subsurface Conditions

According to subsurface investigation reported for the 76 Service Station at 15803 E. 14<sup>th</sup> Street, located 265 feet southeast of the Site, soils consist of clays, silty clays, and sandy clays to the depth of 25 feet bgs. Soil boring logs prepared by ATC Associates Inc. (ATC) reported predominantly CL and CH clays or MH clayey silts with moderate to high plasticity to 20 feet bgs. Groundwater was encountered in silty clays between 12 to 20 feet bgs. Depth to water in nearby monitoring wells indicates groundwater is semi-confined in the area. At 15803 E. 14<sup>th</sup> Street, the calculated groundwater flow direction and gradient has primarily been north at approximately 0.002 foot per foot.

### **2.3 Initial Conceptual Site Model**

Based on Site history and reported subsurface conditions, the CSM appears to be relatively straightforward. The exact release scenario is unknown but observations made during UST removal indicate that gasoline may have been released from small corrosion holes in the steel tanks. Soil sample analytical results suggest the release primarily occurred at the southeastern end of the 2,000-gallon UST designated T3 (Figure 2). The size of the Site is relatively small due to the loss of approximately 12 feet of property along E. 14<sup>th</sup> Street and several feet of property along Thrush during previous road widening activities. The manhole on Figure 2 is also shown on Semco's Site Map produced during the UST removal.

Nearby subsurface investigation reports that native soils in the vicinity of the UST pit primarily consists of moderately plastic clays. Therefore, residual petroleum hydrocarbons should be localized in fine-grain clayey soils immediately adjacent to the former USTs to a minimum depth of 20 feet bgs. Previous soil sample analysis reported relatively low BTEX compared to the reported TPHg indicating that significant weathering has occurred. This is consistent with the former USTs being out of service for approximately 30 years. No groundwater was encountered during UST removal and saturated soils were not observed shallower than 10 feet bgs. This is consistent with reported groundwater elevations reported at 15803 E. 14<sup>th</sup> Street.

Based on current Site use and the estimated distribution of TPH in the subsurface soil and groundwater, the only known complete exposure pathway is worker exposure (dermal, inhalation) during potential future soil excavation activities. Since the site has remained unpaved since the USTs were removed in 1999, significant natural attenuation of any residual petroleum hydrocarbons is anticipated, and gravel and soil backfill above the former UST excavation should provide a preferential pathway for any volatile constituents in soil gas.

### **3.0 FIELD PROCEDURES**

On December 17, 2009, ERS advanced seven exploratory soil borings B1 through B7 at selected representative locations adjacent to the former USTs. Some of these soil borings were specifically advanced at selected locations to further characterize the estimated vertical and lateral extent of suspect constituents of concern, some soil borings were advanced to address ACEH concerns summarized in its November 20, 2009 letter, and some of these soil borings were advanced to confirm analytical results reported during UST removal. Soil boring locations were marked with white paint and Underground

Service Alert was notified at least 48 hours prior to commencing work. A soil boring permit was obtained from the Alameda County Public Works and a copy of the permit is included in Appendix 1.

The continuously cored borings were advanced using a four-foot long, hydraulically driven, limited-access track-mounted Geoprobe® sampling tool equipped with 2-inch inside-diameter clear acetate liners. The sampling probe and rods were pre-cleaned prior to use and between sample drives by washing them with a trisodium phosphate and potable water solution, and a potable water rinse. Upon removal from the sampler, each recovered soil core was visually inspected and logged. The sample intervals were primarily logged to determine relative permeability and evaluate migration potential at that soil boring location. Soil samples were collected from each soil boring. Soil at approximate 4-foot intervals was screened with the use of a miniRAE photo-ionization detector (PID) and PID readings were utilized to assist in choosing soil samples for chemical analysis. The soil cores were collected with acetate liners and specific soil core intervals chosen for analysis were capped with Teflon® sheeting and tight-fitting plastic end caps, labeled, and immediately placed in a pre-chilled insulated container. Sample locations are shown on Figure 2.

Grab groundwater samples were collected in soil borings B1, B2, and B4 by advancing the probe into the water bearing formation, installing five feet of new polyvinyl chloride (PVC) slotted casing and retrieving first-encountered groundwater in the PVC casing utilizing a disposable polyethylene bailer. Grab groundwater samples were obtained from minimally disturbed groundwater and collected in laboratory-supplied 40-milliliter VOA vials without headspace. Following collection, the grab groundwater samples were labeled, transferred to a pre-chilled insulated container, and then transported to ERS's Walnut Creek Office pending courier service pick-up by AccuTest, a state certified laboratory for analysis. A copy of the laboratory analytical results and chain of custody is included in Appendix 2.

Drilling was performed under the direction of ERS's Staff Geologist, and the subsurface materials in the borings were identified using visual and manual methods. Soils in soil borings B1 through B7 were logged and classified during drilling operations according to the Unified Soil Classification System (USCS). Lithologic logs of the soil borings are included as Appendix 3. Following drilling and sample collection, each boring location was abandoned with neat cement using a tremie pipe and the surface sealed with concrete.

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## 4.0 FINDINGS

### 4.1 Subsurface Conditions

As shown on Figure 2, the surface of the Site in the area of investigation is currently covered with pea gravel in the area of the former USTs and concrete or asphalt pavement in the remaining portions of the Site. Pavement is underlain by baserock to an approximate depth of 1.0 feet bgs. Encountered soils were consistent across the Site and comprised primarily of uniform, stiff clays and sandy clays to the maximum explored depth of 20.0 feet bgs. Sandy clay with approximately 10 to 20 percent disseminated very fine to fine grain sand was observed at varying thicknesses from 11 to 15 feet bgs. This first-encountered water-bearing zone was underlain by stiff, uniform clays to 20 feet bgs, the depth of investigation. A slight petroleum odor was noted in most of the encountered soil within the soil borings, and yellow brown gravel/silt/clay fill material was observed in the soil borings advanced adjacent to the former tank excavation. Groundwater was encountered at a depth of approximately 13.5 to 14.0 feet bgs. Additional details are included in the soil boring logs included in Appendix 3.

### 4.2 Analytical Results

Representative soil samples were obtained in soil borings B1 through B7 and analyzed for constituents of concern as TPHg, BTEX, and MTBE. TPHg was reported in 10 of 11 soil samples analyzed in concentrations ranging from 0.049 mg/kg to 544 mg/kg. With the exception of three soil samples, BTEX and MTBE concentrations were not reported above their respective laboratory reporting limits. Ethylbenzene and xylenes were reported in three soil samples at concentrations ranging from 0.0083 to 7.21 mg/kg. Soil sample analytical results are summarized in Table 2. A copy of the analytical results and chain of custody record is included as Appendix 2.

Grab groundwater samples were collected from soil borings B1, B2, and B4 and analyzed for TPHg, BTEX, and MTBE. Grab groundwater samples reported TPHg concentrations ranging from 2,750 to 20,900 micrograms per Liter ( $\mu\text{g/L}$ ). Reported BTEX concentrations were generally low or below laboratory reporting limits. Benzene ranged from 17.6 to 27.6  $\mu\text{g/L}$ , ethylbenzene ranged from 9.4 to 75.7  $\mu\text{g/L}$ , and xylenes ranged from nondetect to 4.0  $\mu\text{g/L}$ . Toluene was not reported above its respective laboratory reporting limits. Grab groundwater sample results are summarized in Table 3. A copy of the analytical results and chain of custody record is included as Appendix 2.



**TABLE 2 – SOIL SAMPLE ANALYTICAL RESULTS**

Sample ID	Depth (ft bgs)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)
B1-4.0	4.0	<b>321</b>	<2.4	<2.4	<2.4	<4.8	<2.4
B1-8.0	8.0	<b>298</b>	<2.4	<2.4	<2.4	<4.9	<2.4
B1-12.0	12.0	<b>544</b>	<5.0	<5.0	<b>6.68</b>	<10	<5.0
B2-8.0	8.0	<b>504</b>	<1.5	<1.5	<b>7.21</b>	<4.0	<1.0
B2-12.0	12.0	<12	<0.61	<0.61	<0.61	<1.2	<0.61
B3-12.0	12.0	<b>361</b>	<2.5	<2.5	<2.5	<5.0	<2.5
B3-16.0	16.0	<0.099	<0.0049	<0.0049	<0.0049	<0.099	<0.0049
B4-12.0	12.0	112	<0.990	<0.990	<0.990	<2.0	<0.990
B5-12.0	12.0	0.122	<0.0049	<0.0049	0.0083	<0.098	<0.0049
B6-8.0	8.0	22.7	<0.25	<0.25	<0.25	<0.50	<0.25
B6-12.0	12.0	<b>258</b>	<2.4	<2.4	1.59	2.77	<2.4
B7-7.5	7.5	0.049	<0.0049	<0.0049	<0.0049	<0.098	<0.0049
<b>Residential ESL</b>							
<b>Table B</b>		<b>100</b>	<b>0.12</b>	<b>9.3</b>	<b>2.3</b>	<b>11</b>	<b>8.4</b>
<b>Table D</b>		<b>180</b>	<b>2.0</b>	<b>9.3</b>	<b>4.7</b>	<b>11</b>	<b>8.4</b>
<b>Commercial ESL</b>							
<b>Table B</b>		<b>180</b>	<b>0.27</b>	<b>9.3</b>	<b>4.7</b>	<b>11</b>	<b>8.4</b>
<b>Table D</b>		<b>180</b>	<b>2.0</b>	<b>9.3</b>	<b>4.7</b>	<b>11</b>	<b>8.4</b>

Note: milligrams per kilogram (mg/kg) approximately equal to parts per million (ppm)

ESL = Environmental Screening Level (San Francisco Bay RWQCB)

< = Reported below respective laboratory reporting limit (see reports)

**BOLD** values exceed the commercial ESL

**TABLE 3 – GRAB GROUNDWATER SAMPLE ANALYTICAL RESULTS**

Sample ID	Depth (ft bgs)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
B1-W	14-16	<b>2,750</b>	27.6	<5.0	<b>75.7</b>	4.0	<5.0
B2-W	13-15	<b>20,900</b>	17.6	<40	22.8	<80	<40
B4-W	13-15	<b>6,940</b>	<20	<20	9.4	<40	<20
<b>ESL - Tables B &amp; D</b>		<b>210</b>	<b>46</b>	<b>130</b>	<b>43</b>	<b>100</b>	<b>1,800</b>

Note: micrograms per Liter (µg/L) approximately equal to parts per billion (ppb)

## 5.0 DISCUSSION

Petroleum hydrocarbon impacts were reported in soil during UST removal in December 1999. The general purpose of this work was to determine current subsurface conditions, further define suspect petroleum hydrocarbon impacts in soil and groundwater, estimate the migration potential, and document expected petroleum hydrocarbon degradation/attenuation during the last 10 years. Additional goals of this investigation were to estimate the human health risk associated with identified residual petroleum hydrocarbons in subsurface media, determine if additional investigation is warranted, and evaluate if sufficient data is available to approve regulatory closure.

ERS advanced exploratory soil borings B1 through B7 in select locations relative to the former USTs and product dispenser pad as the primary sources of petroleum hydrocarbon impacts to the subsurface. Collected soil samples and grab groundwater samples are generally indicative of “worst case” conditions and significant reductions in the concentrations of residual petroleum hydrocarbons can be expected away from these known “sources.” Soil boring B1 was advanced immediately adjacent to the former product dispenser after a soil boring attempt through the concrete pad had to be abandoned. The location of UST T1 reported in the August 18, 2009 Work Plan was incorrect. Soil boring B2 was advanced at the correct location of UST T1, as illustrated on Figure 2, based on a new eyewitness account and a characteristic repair in the asphalt pavement observed at the Site that was covered by an automobile during site reconnaissance. Soil boring B3 was specifically advanced in the estimated location of previously reported soil samples “T3-S” and “T2-N” after field indications of petroleum hydrocarbon impact were noted in soil borings B1 and B2. Soil boring B4 was advanced adjacent to the northern edge of former UST T3 and soil sample “T3-N.” Soil borings B5, B6, and B7 were advanced along the edges of the former UST excavation to further assess petroleum hydrocarbon impacts in adjacent soil.

Soil boring B1 reported concentrations of TPHg from 4 to 12 feet bgs, soil boring B2 reported TPHg at 8 feet bgs, and soil boring B3 reported TPHg at 12 feet bgs. Due to field indications of impact (characteristic gasoline odor, characteristic soil discoloration, and PID reading) in the initial three soil borings in clayey soils adjacent to the two former UST excavations, the locations of soil borings B4 through B7 were changed slightly. Soil boring B4 was advanced along the northwest excavation boundary to assess soil and groundwater, and confirm previous TPHg reported in soil sample T3-N. Soil borings B5 and B7 were advanced along the northeast excavation boundary to assess soil, and soil boring B7 was specifically advanced to assess soil adjacent to

Clyde's Electronics. Soil boring B6 was advanced along the southwest excavation boundary adjacent to former tank T2 to assess soil in this area.

Grab groundwater samples were collected in soil borings B1, B2, and B4 to characterize groundwater across the general Site. Grab groundwater sample B1-W was collected at the former product dispenser, grab groundwater sample B2-W was collected in the immediate vicinity of former UST T1, and grab groundwater sample B3-W was collected at the northwest end of UST T3. Analytical results indicate that TPHg in groundwater varies dramatically but BTEX concentrations were consistently low to non-detect. Traces of emulsified petroleum hydrocarbon product were observed in water in soil boring B2. ERS attempted to collect a sample free of the amber-colored product particles but analytical results indicate some product particles most likely remained in grab groundwater sample B2-W prior to analysis. Even with traces of free product in the grab groundwater sample, benzene was less than 18 µg/L and the remaining BTEX concentrations were relatively low. Consistent with the soil analytical results obtained in 1999, residual petroleum hydrocarbons are degrading.

Logging encountered soils confirmed that uniform, stiff, high to moderate plastic clays are the predominant soil type to approximately 12 to 13 feet bgs. Sand content in the clay increases from approximately 12 to 15 feet bgs and this sandy clay was generally saturated from approximately 14 to 15 feet bgs. Soil from 16 to 20 feet consists of very stiff, uniform, damp clay, and likely represents an aquitard. Generally, encountered soils at the Site exhibited low estimated permeability, no significant preferential migration pathways were observed, and potential migration in the low to moderately permeable saturated sandy clay zone is likely limited to simple diffusion.

## 5.1 Tier 1 Risk Evaluation

TPHg concentrations reported in soil in soil borings B1, B2, B3, and B6 exceeded the commercial ESL. With the exception of ethylbenzene in grab sample B1-W, BTEX in the grab groundwater samples were generally non-detect or a small fraction of their respective ESL. In addition, significant TPHg reductions were reported in soil sample B3-12.0 compared to tank removal sample T3-S, and in soil sample B4-12.0 compared to tank removal sample T3-N. Generally, sample analytical results demonstrate that petroleum hydrocarbons are attenuating and BTEX is decreasing preferentially.

Grab groundwater samples were collected in soil borings B1, B2, and B4. TPHg in each grab groundwater exceeded the commercial ESL. With the exception of ethylbenzene in sample B1-W, none of the BTEX concentrations exceeded their respective commercial

ESLs. MTBE was not reported above its respective laboratory reporting limits and is not considered a constituent of concern. Based on the age of the release(s), the general lack of BTEX, and apparent attenuation in soil between samples collected in December 1999 and samples collected in December 2009, suggest that natural attenuation processes are actively reducing TPHg and BTEX concentrations in soil and groundwater.

Potential indoor inhalation is minimal to non-existent. Clayey soils present at the Site, the estimated distribution of TPHg in soil immediately adjacent to the former USTs, and the lack of asphalt or cement pavement over the former USTs hinder or prevent potential migration into indoor air. Generally, potential human health risk is decreasing with time as residual petroleum hydrocarbons attenuate in subsurface soil and groundwater.

## 5.2 Conceptual Site Model (CSM)

Based on Site history and subsurface investigation findings, the CSM appears to be relatively straightforward. The exact release scenario is unknown, but original soil sample analytical results and observations made during this investigation suggest that both the USTs and product dispenser leaked gasoline fuel into the subsurface prior to their removals in 1999 (Figure 2).

Groundwater was consistently observed between approximately 13.5 to 14.5 feet bgs during this soil boring investigation. Logged, continuously-cored soil borings indicated that 1.5 to 5 feet of sandy clay soil is capable of becoming saturated from approximately 11 to 16 feet bgs; therefore, impacted groundwater could potentially migrate horizontally in groundwater. The potential that residual petroleum hydrocarbons can “smear” additional soil due to fluctuations in groundwater elevation are low. Potential horizontal and vertical migration in soil and groundwater is limited in fine grain soils, and the first-encountered water-bearing zone is simply disseminated sand in a clay matrix.

The primary constituent of concern is TPHg-range petroleum hydrocarbons. BTEX and MTBE are no longer considered constituents of concern and low residual concentrations should fall below detection limits in a reasonable timeframe. Lateral TPHg migration in groundwater is unknown but low permeability saturated soils suggest that petroleum hydrocarbon impacts to groundwater are limited to the immediate vicinity of the two former UST excavations.

During tank removal, remedial excavation of approximately 60 to 80 cubic yards of soil removed some portion of TPH-impacted soil. Based on current Site use, the only complete exposure pathway is worker exposure (dermal, inhalation) during soil excavation activities. Since apparent residual petroleum hydrocarbons in soil are at depth, contain no reportable BTEX, soil excavation is typically short-term, and work would be conducted under a Health & Safety Plan, potential worker exposure is minimal. Groundwater use in this area is unlikely in the near future due to high quality, municipal public water sources and generally poor quality, shallow groundwater in the area.

Residual petroleum hydrocarbons in soil and groundwater are generally found at depth. While all three grab groundwater samples reported concentrations of TPHg above the ESL of 210 µg/L, the potential that this water will be ingested or dissolved TPHg can volatilize upward through 10 to 12 feet of clay is negligible. Based on grab groundwater sampling results, the limited estimated lateral extent of TPHg-impacted groundwater, apparent natural attenuation occurring at the Site, and the reported TPHg concentrations in representative soil and groundwater samples, residual petroleum hydrocarbons at the Site likely do not pose a significant threat to human health.

## 6.0 CONCLUSIONS

Based on sample analytical results and field observations, ERS has concluded the following:

- Soils at the Site to 12 to 15 feet bgs are primarily stiff, uniform, low permeability clays;
- Site history and the general lack of BTEX in soil and grab groundwater samples demonstrate that residual petroleum hydrocarbons are highly weathered and decreasing steadily with time;
- As evidenced by representative soil and grab groundwater sample analytical results, a residual source of TPHg impact to groundwater is present in the immediate vicinity of the two former UST excavations;
- Evidence of petroleum hydrocarbon impact was not noted below the depth of the first-encountered water-bearing zone, or approximately 16 feet bgs;

- BTEX and MTBE concentrations were generally low or not reported above laboratory reporting limits and are no longer considered constituents of concern;
- TPHg concentrations were reported above the commercial ESL in soil samples collected adjacent to the former product dispenser and the edges of the two former UST excavations, and significantly lower TPHg concentrations were reported in soil samples collected along the northeast edge of the excavation in proximity to the buildings at the Site;
- TPHg-range petroleum hydrocarbons in grab groundwater samples were reported above the ESL in all three samples but generally BTEX concentrations were non-detect or below their applicable ESLs;
- Field indications of petroleum hydrocarbon impact were not noted in the gravel/sand/silt excavation backfill material, indicating that apparent ongoing “sources” of impact are limited and residual TPHg is adsorbed into clay soils;
- Further subsurface investigation would provide little additional information about subsurface conditions and most likely simply provide additional data about the exact distribution of residual petroleum hydrocarbons in subsurface media; and
- Apparent reductions in TPHg in soils adjacent to the former UST excavation and relatively minor concentrations of BTEX in soil and grab groundwater samples indicate that natural attenuation processes are active at the Site and active remediation is not necessary to protect human health or required prior to approving regulatory closure.

## 7.0 RECOMMENDATIONS

Based on conclusions of this investigation, ERS recommends that ACEH consider this case for regulatory closure as a “low risk groundwater case.” If regulatory closure cannot be approved at this time, ERS recommends that the client immediately apply to the UST Cleanup Fund.

On behalf of Mr. Clifford Welch, ERS recommends that the Site be evaluated for commercial site closure in regards to the former USTs. The six criteria for case closure as presented by the RWQCB in its January 5, 1996 Memorandum to local oversight agencies have been satisfied, or estimated, with a high degree of confidence, and the Site qualifies as a “low risk groundwater case.”

**#1 - The source has been removed.**

The three USTs, associated piping, and an estimated 50 cubic yards of potentially impacted soil were removed during UST removal in December 1999. Impacts to groundwater will likely occur for some time due to residual petroleum hydrocarbons leaching from impacted clayey soil immediately adjacent to the former USTs between 8 and 15 feet bgs. This residual source of impact is not cost beneficial to remove and any impacts in groundwater should remain localized in the area of the former USTs.

Soil and grab groundwater samples collected at the Site demonstrate that natural attenuation has been occurring and residual petroleum hydrocarbon residues do not pose a significant human health risk.

**#2 - The site has been adequately characterized.**

ERS believes that the Site has been adequately characterized to evaluate the migration potential and document current “worst case” concentrations of residual petroleum hydrocarbons in subsurface soil and groundwater. Field observations and soil samples collected during this investigation confirm that soil remediation following UST removal was somewhat successful and residual TPHg impacts exist primarily at depth between 8 to 14 feet bgs around the former UST excavation.

While the extent of TPHg impact in groundwater has not been defined, it can be estimated with confidence. Groundwater gradient in the area is low (0.002 foot / foot), migration potential in the saturated zone is low, and BTEX and MTBE constituents that typically have the greatest migration potential are low to non-detect. Potential TPHg migration in groundwater is typically retarded and significant retardation can be expected in the poor quality first-encountered water-bearing zone observed at the Site.

**#3 - The dissolved hydrocarbon plume is not migrating.**

Geologic conditions at the Site demonstrate that vertical and horizontal TPHg migration is hindered by low permeability, fine grain clay soils. While the sand content increases sufficiently to allow some soils at depth to become saturated, this first-encountered water-bearing zone exhibits poor quality aquifer characteristics and groundwater movement in this zone likely approximates simple diffusion.

Since the former USTs were removed in 1999, the only source of TPHg-impact to groundwater is ongoing leaching from soil and some dissolution from minor amounts

of emulsified product observed in groundwater in soil boring B2. Under this subsurface scenario, a localized plume develops and natural degradation processes limit its size. The plume quickly becomes stable over time and gradually decreases as original source is depleted. Groundwater monitoring using wells should not be necessary to demonstrate plume stability in such a simple scenario.

**#4 - No water wells or other sensitive receptors are likely to be impacted.**

No surveys were performed for this Site and no significant offsite groundwater impacts are suspected. Based on several lines of evidence and well survey work completed at the 76 Service Station at 15803 E. 14<sup>th</sup> Street (located 265 feet southeast of the Site), no wells or sensitive receptors are likely to be impacted by this relatively localized release. Property use surrounding the Site is primarily commercial for a minimum of 100 to 500 feet and high quality drinking water is supplied to the region by municipal water providers.

**#5 - The site presents no significant risk to human health.**

Site history, UST removal, and soil and groundwater sampling has demonstrated that residual petroleum hydrocarbon impacts exist in soil primarily from 8 to 14 feet bgs and impacted groundwater is generally deeper than 14 feet bgs. Residual TPHg concentrations should continue to decrease in groundwater due to natural attenuation processes and BTEX was not reported in onsite grab groundwater samples to any significant degree. Present Site use and documented soil conditions indicate that no significant migration can occur from soil gas into indoor air and the associated human health risk is minimal to non-existent. Should Site use change, potential exposures could occur and warrant notification of identified residual petroleum hydrocarbons in any closure documentation and in the deed.

**#6 - The site presents no significant risk to the environment.**

With the exception of residual impacts in soil from 10 to 14 feet bgs in the area around the former USTs and product dispenser, petroleum hydrocarbon sources have been removed from the Site. Groundwater flow direction at the 76 Service Station at 15803 E. 14<sup>th</sup> Street has consistently been calculated at relatively flat gradients approximating 0.002 foot per foot, and no significant offsite migration is suspected. There are no surface waters present within 500 feet of the Site and residual impacts from the former USTs and product dispenser at the Site do not present a significant risk to the environment.



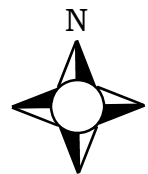
## **8.0 LIMITATIONS**

The service performed by ERS has been conducted in a manner consistent with the levels of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area. No other warranty, expressed or implied, is made.

The conclusions presented in this report are professional opinions based on the indicated data described in this report and applicable regulations and guidelines currently in place. They are intended only for the purpose, site, and project indicated. Opinions and recommendations presented herein apply to site conditions existing at the time of our study.

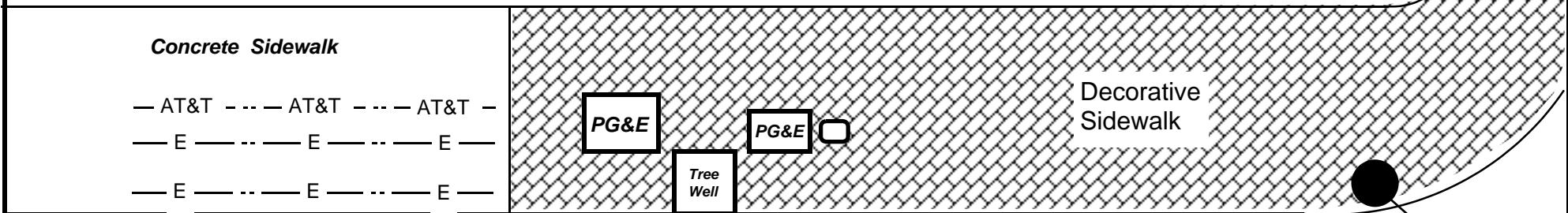
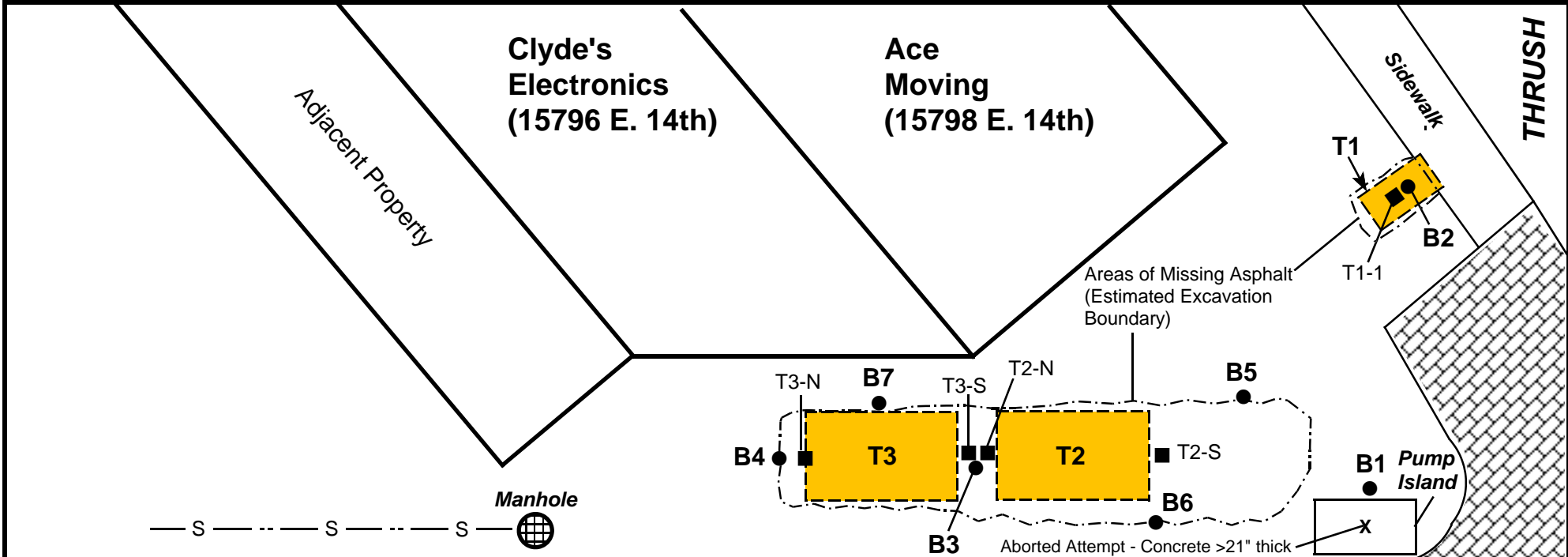
ERS has included analytical results from a state-certified laboratory, which performs analyses according to procedures suggested by the U.S. Environmental Protection Agency and the State of California. ERS is not responsible for laboratory errors in procedure or result reporting.

# FIGURES



**Location Map**  
**15796 E. 14th Street**  
**San Leandro, California**  
Source: National Geographic TOPO!

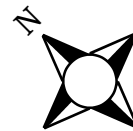
**Figure**  
**1**  
**ers**



# LEGEND

- Decorative Inlaid Sidewalk
- T1-1 Tank Removal Soil Sample
- Former UST
- B1 Completed Boring Location

**E. 14TH STREET**



**Site Plan**  
**15796 E. 14th St., San Leandro, California**  
 Source: ERS Field Measurements (Rev. 12/18/09)

**Figure 2**

# **APPENDIX 1**

# 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: 12/01/2009 By jamesy

Permit Numbers: W2009-1065  
Permits Valid from 12/17/2009 to 12/18/2009

Application Id: 1259108780678  
Site Location: 15796 E. 14th Street  
Project Start Date: 12/17/2009  
Assigned Inspector: Contact John Shouldice at (510) 670-5424 or johns@acpwa.org

City of Project Site: San Leandro

Completion Date: 12/18/2009

Applicant: Environmental Risk Specialties - Yola Bayram  
1600 Riviera Ave, Suite 310, Walnut Creek, CA 94596

Phone: 925-938-1600 x106

Property Owner: Clifford Welsh  
15796 E. 14th Street, San Leandro, CA 94578

Phone: --

Client: \*\* same as Property Owner \*\*

Total Due: \$265.00  
Receipt Number: WR2009-0429 Total Amount Paid: \$265.00  
Payer Name : Environmental Risk Specialties Paid By: VISA PAID IN FULL

## Works Requesting Permits:

Borehole(s) for Geo Probes-Sampling 24 to 72 hours only - 9 Boreholes  
Driller: Environmental Control Associates - Lic #: 695970 - Method: DP

Work Total: \$265.00

### Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2009-1065	12/01/2009	03/17/2010	9	2.00 in.	16.00 ft

### Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.
2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.
3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.
4. Applicant shall contact 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.
5. 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

## Alameda County Public Works Agency - Water Resources Well Permit

waterways or be allowed to move off the property where work is being completed.

6. 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.

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

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.

---

## **APPENDIX 2**





## Technical Report for

### ERS Corporation

T0600102125-15796 E. 14th St, San Leandro, CA

Accutest Job Number: C8916

Sampling Date: 12/17/09

### Report to:

ERS Corporation

ddement@erscorp.us

ATTN: David Dement

Total number of pages in report: **24**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

**Laurie Glantz-Murphy**  
Laboratory Director

Client Service contact: Anne Kathain 408-588-0200

Certifications: CA (08258CA)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.  
Test results relate only to samples analyzed.



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## Sample Summary

ERS Corporation

Job No: C8916

T0600102125-15796 E. 14th St, San Leandro, CA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
C8916-1	12/17/09	10:40 DD	12/18/09	SO	Soil	B1-4.0
C8916-2	12/17/09	10:45 DD	12/18/09	SO	Soil	B1-8.0
C8916-3	12/17/09	08:30 DD	12/18/09	SO	Soil	B2-8.0
C8916-4	12/17/09	08:35 DD	12/18/09	SO	Soil	B2-12.0
C8916-5	12/17/09	11:50 DD	12/18/09	SO	Soil	B3-12.0
C8916-6	12/17/09	12:00 DD	12/18/09	SO	Soil	B3-16.0
C8916-7	12/17/09	13:03 DD	12/18/09	SO	Soil	B4-12.0
C8916-8	12/17/09	14:05 DD	12/18/09	SO	Soil	B5-12.0
C8916-9	12/17/09	14:25 DD	12/18/09	SO	Soil	B6-12.0
C8916-10	12/17/09	15:00 DD	12/18/09	SO	Soil	B7-7.5
C8916-11	12/17/09	11:10 DD	12/18/09	AQ	Ground Water	B1-W
C8916-12	12/17/09	09:00 DD	12/18/09	AQ	Ground Water	B2-W
C8916-13	12/17/09	13:20 DD	12/18/09	AQ	Ground Water	B4-W

---

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



### Sample Summary (continued)

ERS Corporation

Job No: C8916

T0600102125-15796 E. 14th St, San Leandro, CA

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
C8916-14	12/17/09	10:50 DD	12/18/09	SO	Soil	B1-12.0
C8916-15	12/17/09	14:20 DD	12/18/09	SO	Soil	B6-8.0

---

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



## Sample Results

---

## Report of Analysis

---

## Report of Analysis

<b>Client Sample ID:</b> B1-4.0		<b>Date Sampled:</b> 12/17/09
<b>Lab Sample ID:</b> C8916-1		<b>Date Received:</b> 12/18/09
<b>Matrix:</b> SO - Soil		<b>Percent Solids:</b> n/a <sup>a</sup>
<b>Method:</b> SW846 8260B		
<b>Project:</b> T0600102125-15796 E. 14th St, San Leandro, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M11352.D	1	12/24/09	XB	n/a	n/a	VM372
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.21 g	5.0 ml	10.0 ul
Run #2			

**Purgeable Aromatics, MTBE**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2400	720	ug/kg	
108-88-3	Toluene	ND	2400	720	ug/kg	
100-41-4	Ethylbenzene	ND	2400	720	ug/kg	
1330-20-7	Xylene (total)	ND	4800	1900	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2400	480	ug/kg	
	TPH-GRO (C6-C10)	321000	48000	24000	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		60-130%
2037-26-5	Toluene-D8	97%		60-130%
460-00-4	4-Bromofluorobenzene	108%		60-130%

(a) All results reported on wet weight basis.

---

ND = Not detected      MDL - Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B1-8.0		<b>Date Sampled:</b> 12/17/09
<b>Lab Sample ID:</b> C8916-2		<b>Date Received:</b> 12/18/09
<b>Matrix:</b> SO - Soil		<b>Percent Solids:</b> n/a <sup>a</sup>
<b>Method:</b> SW846 8260B		
<b>Project:</b> T0600102125-15796 E. 14th St, San Leandro, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M11353.D	1	12/24/09	XB	n/a	n/a	VM372
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.15 g	5.0 ml	10.0 ul
Run #2			

**Purgeable Aromatics, MTBE**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2400	730	ug/kg	
108-88-3	Toluene	ND	2400	730	ug/kg	
100-41-4	Ethylbenzene	ND	2400	730	ug/kg	
1330-20-7	Xylene (total)	ND	4900	1900	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2400	490	ug/kg	
	TPH-GRO (C6-C10)	298000	49000	24000	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		60-130%
2037-26-5	Toluene-D8	98%		60-130%
460-00-4	4-Bromofluorobenzene	102%		60-130%

(a) All results reported on wet weight basis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B2-8.0		<b>Date Sampled:</b> 12/17/09
<b>Lab Sample ID:</b> C8916-3		<b>Date Received:</b> 12/18/09
<b>Matrix:</b> SO - Soil		<b>Percent Solids:</b> n/a <sup>a</sup>
<b>Method:</b> SW846 8260B		
<b>Project:</b> T0600102125-15796 E. 14th St, San Leandro, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M11354.D	1	12/24/09	XB	n/a	n/a	VM372
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.02 g	5.0 ml	5.0 ul
Run #2			

**Purgeable Aromatics, MTBE**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5000	1500	ug/kg	
108-88-3	Toluene	ND	5000	1500	ug/kg	
100-41-4	Ethylbenzene	7210	5000	1500	ug/kg	
1330-20-7	Xylene (total)	ND	10000	4000	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	5000	1000	ug/kg	
	TPH-GRO (C6-C10)	504000	100000	50000	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		60-130%
2037-26-5	Toluene-D8	98%		60-130%
460-00-4	4-Bromofluorobenzene	102%		60-130%

(a) All results reported on wet weight basis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b> B2-12.0		<b>Date Sampled:</b> 12/17/09
<b>Lab Sample ID:</b> C8916-4		<b>Date Received:</b> 12/18/09
<b>Matrix:</b> SO - Soil		<b>Percent Solids:</b> n/a <sup>a</sup>
<b>Method:</b> SW846 8260B		
<b>Project:</b> T0600102125-15796 E. 14th St, San Leandro, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>b</sup>	M11388.D	1	12/25/09	XB	n/a	n/a	VM373
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.09 g	5.0 ml	40.0 ul
Run #2			

**Purgeable Aromatics, MTBE**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	610	180	ug/kg	
108-88-3	Toluene	ND	610	180	ug/kg	
100-41-4	Ethylbenzene	ND	610	180	ug/kg	
1330-20-7	Xylene (total)	ND	1200	490	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	610	120	ug/kg	
	TPH-GRO (C6-C10)	ND	12000	6100	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		60-130%
2037-26-5	Toluene-D8	94%		60-130%
460-00-4	4-Bromofluorobenzene	103%		60-130%

- (a) All results reported on wet weight basis.  
 (b) Dilution required due to high concentration of non-target hydrocarbons.

---

ND = Not detected      MDL - Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	B3-12.0	<b>Date Sampled:</b>	12/17/09
<b>Lab Sample ID:</b>	C8916-5	<b>Date Received:</b>	12/18/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	n/a <sup>a</sup>
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	T0600102125-15796 E. 14th St, San Leandro, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M11355.D	1	12/24/09	XB	n/a	n/a	VM372
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.02 g	5.0 ml	10.0 ul
Run #2			

### Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2500	750	ug/kg	
108-88-3	Toluene	ND	2500	750	ug/kg	
100-41-4	Ethylbenzene	ND	2500	750	ug/kg	
1330-20-7	Xylene (total)	ND	5000	2000	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	2500	500	ug/kg	
	TPH-GRO (C6-C10)	361000	50000	25000	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		60-130%
2037-26-5	Toluene-D8	98%		60-130%
460-00-4	4-Bromofluorobenzene	101%		60-130%

(a) All results reported on wet weight basis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	B3-16.0	<b>Date Sampled:</b>	12/17/09
<b>Lab Sample ID:</b>	C8916-6	<b>Date Received:</b>	12/18/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	n/a <sup>a</sup>
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	T0600102125-15796 E. 14th St, San Leandro, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M11314.D	1	12/23/09	XB	n/a	n/a	VM371
Run #2							

Run #	Initial Weight
Run #1	5.07 g
Run #2	

### Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	4.9	1.5	ug/kg	
108-88-3	Toluene	ND	4.9	1.5	ug/kg	
100-41-4	Ethylbenzene	ND	4.9	1.5	ug/kg	
1330-20-7	Xylene (total)	ND	9.9	3.9	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	4.9	0.99	ug/kg	
	TPH-GRO (C6-C10)	ND	99	49	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	119%		60-130%
2037-26-5	Toluene-D8	96%		60-130%
460-00-4	4-Bromofluorobenzene	107%		60-130%

(a) All results reported on wet weight basis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	B4-12.0	<b>Date Sampled:</b>	12/17/09
<b>Lab Sample ID:</b>	C8916-7	<b>Date Received:</b>	12/18/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	n/a <sup>a</sup>
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	T0600102125-15796 E. 14th St, San Leandro, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M11384.D	1	12/25/09	XB	n/a	n/a	VM373
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.04 g	5.0 ml	25.0 ul
Run #2			

### Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	990	300	ug/kg	
108-88-3	Toluene	ND	990	300	ug/kg	
100-41-4	Ethylbenzene	ND	990	300	ug/kg	
1330-20-7	Xylene (total)	ND	2000	790	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	990	200	ug/kg	
	TPH-GRO (C6-C10)	112000	20000	9900	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		60-130%
2037-26-5	Toluene-D8	99%		60-130%
460-00-4	4-Bromofluorobenzene	118%		60-130%

(a) All results reported on wet weight basis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	B5-12.0	<b>Date Sampled:</b>	12/17/09
<b>Lab Sample ID:</b>	C8916-8	<b>Date Received:</b>	12/18/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	n/a <sup>a</sup>
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	T0600102125-15796 E. 14th St, San Leandro, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M11357.D	1	12/24/09	XB	n/a	n/a	VM372
Run #2							

Run #	Initial Weight
Run #1	5.09 g
Run #2	

### Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	4.9	1.5	ug/kg	
108-88-3	Toluene	ND	4.9	1.5	ug/kg	
100-41-4	Ethylbenzene	8.3	4.9	1.5	ug/kg	
1330-20-7	Xylene (total)	ND	9.8	3.9	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	4.9	0.98	ug/kg	
	TPH-GRO (C6-C10)	122	98	49	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		60-130%
2037-26-5	Toluene-D8	96%		60-130%
460-00-4	4-Bromofluorobenzene	102%		60-130%

(a) All results reported on wet weight basis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	B6-12.0	<b>Date Sampled:</b>	12/17/09
<b>Lab Sample ID:</b>	C8916-9	<b>Date Received:</b>	12/18/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	n/a <sup>a</sup>
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	T0600102125-15796 E. 14th St, San Leandro, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M11385.D	1	12/25/09	XB	n/a	n/a	VM373
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.15 g	5.0 ml	10.0 ul
Run #2			

### Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2400	730	ug/kg	
108-88-3	Toluene	ND	2400	730	ug/kg	
100-41-4	Ethylbenzene	1590	2400	730	ug/kg	J
1330-20-7	Xylene (total)	2770	4900	1900	ug/kg	J
1634-04-4	Methyl Tert Butyl Ether	ND	2400	490	ug/kg	
	TPH-GRO (C6-C10)	258000	49000	24000	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		60-130%
2037-26-5	Toluene-D8	95%		60-130%
460-00-4	4-Bromofluorobenzene	108%		60-130%

(a) All results reported on wet weight basis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	B7-7.5	<b>Date Sampled:</b>	12/17/09
<b>Lab Sample ID:</b>	C8916-10	<b>Date Received:</b>	12/18/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	n/a <sup>a</sup>
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	T0600102125-15796 E. 14th St, San Leandro, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M11356.D	1	12/24/09	XB	n/a	n/a	VM372
Run #2							

Run #	Initial Weight
Run #1	5.08 g
Run #2	

### Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	4.9	1.5	ug/kg	
108-88-3	Toluene	ND	4.9	1.5	ug/kg	
100-41-4	Ethylbenzene	ND	4.9	1.5	ug/kg	
1330-20-7	Xylene (total)	ND	9.8	3.9	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	4.9	0.98	ug/kg	
	TPH-GRO (C6-C10)	49.0	98	49	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		60-130%
2037-26-5	Toluene-D8	96%		60-130%
460-00-4	4-Bromofluorobenzene	101%		60-130%

(a) All results reported on wet weight basis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	B1-W	<b>Date Sampled:</b>	12/17/09
<b>Lab Sample ID:</b>	C8916-11	<b>Date Received:</b>	12/18/09
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	T0600102125-15796 E. 14th St, San Leandro, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N12017.D	5	12/29/09	TF	n/a	n/a	VN400
Run #2							

Run #	Purge Volume
Run #1	10.0 ml
Run #2	

## Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	27.6	5.0	1.5	ug/l	
108-88-3	Toluene	ND	5.0	2.5	ug/l	
100-41-4	Ethylbenzene	75.7	5.0	1.5	ug/l	
1330-20-7	Xylene (total)	4.0	10	3.5	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	ND	5.0	2.5	ug/l	
	TPH-GRO (C6-C10)	2750	250	130	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		60-130%
2037-26-5	Toluene-D8	100%		60-130%
460-00-4	4-Bromofluorobenzene	99%		60-130%

ND = Not detected      MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



## Report of Analysis

<b>Client Sample ID:</b>	B2-W	<b>Date Sampled:</b>	12/17/09
<b>Lab Sample ID:</b>	C8916-12	<b>Date Received:</b>	12/18/09
<b>Matrix:</b>	AQ - Ground Water	<b>Percent Solids:</b>	n/a
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	T0600102125-15796 E. 14th St, San Leandro, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	N12033.D	40	12/29/09	TF	n/a	n/a	VN400
Run #2							

Run #	Purge Volume
Run #1	10.0 ml
Run #2	

## Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	17.6	40	12	ug/l	J
108-88-3	Toluene	ND	40	20	ug/l	
100-41-4	Ethylbenzene	22.8	40	12	ug/l	J
1330-20-7	Xylene (total)	ND	80	28	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	40	20	ug/l	
	TPH-GRO (C6-C10)	20900	2000	1000	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		60-130%
2037-26-5	Toluene-D8	97%		60-130%
460-00-4	4-Bromofluorobenzene	100%		60-130%

(a) Sample vial contained floating product. Results may not be reproducible.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b> B4-W		
<b>Lab Sample ID:</b> C8916-13		<b>Date Sampled:</b> 12/17/09
<b>Matrix:</b> AQ - Ground Water		<b>Date Received:</b> 12/18/09
<b>Method:</b> SW846 8260B		<b>Percent Solids:</b> n/a
<b>Project:</b> T0600102125-15796 E. 14th St, San Leandro, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	N12032.D	20	12/29/09	TF	n/a	n/a	VN400
Run #2							

Run #	Purge Volume
Run #1	10.0 ml
Run #2	

### Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	20	6.0	ug/l	
108-88-3	Toluene	ND	20	10	ug/l	
100-41-4	Ethylbenzene	9.4	20	6.0	ug/l	J
1330-20-7	Xylene (total)	ND	40	14	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	20	10	ug/l	
	TPH-GRO (C6-C10)	6940	1000	500	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		60-130%
2037-26-5	Toluene-D8	98%		60-130%
460-00-4	4-Bromofluorobenzene	99%		60-130%

(a) Sample vial contained floating product. Results may not be reproducible.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	B1-12.0	<b>Date Sampled:</b>	12/17/09
<b>Lab Sample ID:</b>	C8916-14	<b>Date Received:</b>	12/18/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	n/a <sup>a</sup>
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	T0600102125-15796 E. 14th St, San Leandro, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M11386.D	1	12/25/09	XB	n/a	n/a	VM373
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.00 g	5.0 ml	5.0 ul
Run #2			

### Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	5000	1500	ug/kg	
108-88-3	Toluene	ND	5000	1500	ug/kg	
100-41-4	Ethylbenzene	6680	5000	1500	ug/kg	
1330-20-7	Xylene (total)	ND	10000	4000	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	5000	1000	ug/kg	
	TPH-GRO (C6-C10)	544000	100000	50000	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		60-130%
2037-26-5	Toluene-D8	96%		60-130%
460-00-4	4-Bromofluorobenzene	108%		60-130%

(a) All results reported on wet weight basis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

<b>Client Sample ID:</b>	B6-8.0	<b>Date Sampled:</b>	12/17/09
<b>Lab Sample ID:</b>	C8916-15	<b>Date Received:</b>	12/18/09
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	n/a <sup>a</sup>
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	T0600102125-15796 E. 14th St, San Leandro, CA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M11387.D	1	12/25/09	XB	n/a	n/a	VM373
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.05 g	5.0 ml	100 ul
Run #2			

## Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	250	74	ug/kg	
108-88-3	Toluene	ND	250	74	ug/kg	
100-41-4	Ethylbenzene	ND	250	74	ug/kg	
1330-20-7	Xylene (total)	ND	500	200	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	250	50	ug/kg	
	TPH-GRO (C6-C10)	22700	5000	2500	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		60-130%
2037-26-5	Toluene-D8	97%		60-130%
460-00-4	4-Bromofluorobenzene	100%		60-130%

(a) All results reported on wet weight basis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Misc. Forms

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### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody



# CHAIN OF CUSTODY

2105 Lundy Avenue, San Jose, CA 95131  
408-588-0200 FAX: 408-588-0201

1062

Client / Reporting Information		Project Information		FED-EX Tracking #		Bottle Order Control #	
Company Name <b>ERS Corporation</b>		Project Name: <b>300 Hegenberger Road</b>		Accutest Quote #		Accutest Job # <b>CB916</b>	
Address <b>1600 Riviera Ave, Suite 310</b>		Street <b>15796 E. 14th Street</b>		Requested Analysis		Matrix Codes	
City <b>Walnut Creek CA 94596</b>		City <b>San Leandro CA</b>		DW- Drinking Water WW- Water		SW- Surface Water SO- Soil SL- Sludge OI- Oil	
Project Contact: <b>Dave DeMent</b>		Project #		LIQ- Other Liquid		AIR- Air	
Phone # <b>925-938-1600 X109</b>		Fax # <b>925-938-1610</b>		SOL- Other Solid WP- Wipe		LAB USE ONLY	
Sampler's Name <b>Dave DeMent ddement@erscorp.us</b>		Client Purchase Order #		8280 <input type="checkbox"/> 824 <input type="checkbox"/> 8201 <input type="checkbox"/> 602 <input type="checkbox"/> MTBE <input type="checkbox"/> BTEX <input type="checkbox"/> NAP <input type="checkbox"/> TBA <input type="checkbox"/> PPL <input type="checkbox"/> STARS <input type="checkbox"/> PRL <input type="checkbox"/> STARCO <input type="checkbox"/> TOL <input type="checkbox"/> 605 <input type="checkbox"/> TOL <input type="checkbox"/> PRL <input type="checkbox"/> STARCO <input type="checkbox"/> ASBNC <input type="checkbox"/> AED <input type="checkbox"/> BNC <input type="checkbox"/> PANIC <input type="checkbox"/> TIC <input type="checkbox"/>			
Accutest	SUMMA #	Collection				Number of preserved Bottles	
Sample #	Field ID / Point of Collection	MEOH Vial #	Date	Time	Sampled by	Matrix	# of bottles
-1	B1-4.0		12/17/09	10:40	DWD	S	1
-2	B1-8.0			10:45			1
-3	B2-8.0			8:30			1
-4	B2-12.0			8:35			1
-5	B3-12.0			11:50			1
-6	B3-16.0			12:00			1
-7	B4-12.0			13:03			1
-8	B5-12.0			14:05			1
-9	B6-12.0			14:25			1
-10	B7-7.5			15:00			1
Turnaround Time ( Business days)		Data Deliverable Information				Comments / Remarks	
<input type="checkbox"/> 5 Day STANDARD <input checked="" type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> Other		Approved By/ Date:		<input type="checkbox"/> Commercial "A" <input type="checkbox"/> Commercial "B" <input type="checkbox"/> NJ Reduced <input type="checkbox"/> NJ Full <input type="checkbox"/> Other		<input type="checkbox"/> FULL CLP <input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format	
Emergency T/A data available VIA Lablink		Commercial "A" = Results Only				Every soil sample has gasoline odor and discoloration (6x2") Acetate Lines (X12) 3 vials each (01HCL) (X3)	
Sample Custody must be documented below each time samples change possession, including courier delivery.							
Relinquished by:	Date Time:	Received By:	Date Time:	Relinquished By:	Date Time:	Received By:	
1 <i>Dave DeMent</i>	12/18/09 10:15	1 <i>[Signature]</i>		2 <i>[Signature]</i>	12/18/09 16:16	2 <i>[Signature]</i>	
3		3		4		4	
Relinquished by:	Date Time:	Received By:	Date Time:	Custody Seal #	Preserved where applicable	On Ice	Cooler Temp.
		5			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2.2+0.4 = 2.6°C

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CB916: Chain of Custody

Page 1 of 3



# CHAIN OF CUSTODY

2105 Lundy Avenue, San Jose, CA 95131  
408-588-0200 FAX: 408-588-0201

2 of 2

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # <b>C8916</b>

Client / Reporting Information				Project Information				Requested Analysis										Matrix Codes	
Company Name <b>ERS Corporation</b>				Project Name: <b>300 Hegenberger Road</b>				<div style="display: flex; justify-content: space-between;"> <div style="font-size: 12px;"> <input type="checkbox"/> 602  <input checked="" type="checkbox"/> 602P  <input type="checkbox"/> 602T  <input type="checkbox"/> 602X  <input type="checkbox"/> 604  <input type="checkbox"/> 624  <input type="checkbox"/> 624P  <input type="checkbox"/> 624T  <input type="checkbox"/> 624X  <input type="checkbox"/> 624Y  <input type="checkbox"/> 624Z  <input type="checkbox"/> 624AA  <input type="checkbox"/> 624AB  <input type="checkbox"/> 624AC  <input type="checkbox"/> 624AD  <input type="checkbox"/> 624AE  <input type="checkbox"/> 624AF  <input type="checkbox"/> 624AG  <input type="checkbox"/> 624AH  <input type="checkbox"/> 624AI  <input type="checkbox"/> 624AJ  <input type="checkbox"/> 624AK  <input type="checkbox"/> 624AL  <input type="checkbox"/> 624AM  <input type="checkbox"/> 624AN  <input type="checkbox"/> 624AO  <input type="checkbox"/> 624AP  <input type="checkbox"/> 624AQ  <input type="checkbox"/> 624AR  <input type="checkbox"/> 624AS  <input type="checkbox"/> 624AT  <input type="checkbox"/> 624AU  <input type="checkbox"/> 624AV  <input type="checkbox"/> 624AW  <input type="checkbox"/> 624AX  <input type="checkbox"/> 624AY  <input type="checkbox"/> 624AZ         </div> <div style="font-size: 12px;"> <input type="checkbox"/> PPL  <input type="checkbox"/> STARS  <input type="checkbox"/> MTBE  <input type="checkbox"/> BTEX  <input type="checkbox"/> MTBE  <input type="checkbox"/> TBA  <input type="checkbox"/> NAP  <input type="checkbox"/> +10  <input type="checkbox"/> +15  <input type="checkbox"/> +20  <input type="checkbox"/> +25  <input type="checkbox"/> +30  <input type="checkbox"/> +35  <input type="checkbox"/> +40  <input type="checkbox"/> +45  <input type="checkbox"/> +50  <input type="checkbox"/> +55  <input type="checkbox"/> +60  <input type="checkbox"/> +65  <input type="checkbox"/> +70  <input type="checkbox"/> +75  <input type="checkbox"/> +80  <input type="checkbox"/> +85  <input type="checkbox"/> +90  <input type="checkbox"/> +95  <input type="checkbox"/> +100         </div> </div>										DW- Drinking Water GW- Ground Water WW- Water SW- Surface Water SO- Soil SL- Sludge OL- Oil LIQ- Other Liquid AIR- Air SOL- Other Solid WP- Wipe LAB USE ONLY	
Address <b>1600 Riviera Ave, Suite 310</b>				Street <b>15796 E. 14th Street</b>															
City <b>Walnut Creek</b>				City <b>San Leandro</b>															
State <b>CA</b>				State <b>CA</b>															
Zip <b>94596</b>				Project #				<b>HOLD</b>											
E-mail <b>ddement@erscorp.us</b>				Project #															
Phone # <b>925-938-1600 X109</b>				Fax # <b>925-938-1610</b>															
Sampler's Name <b>Dave DeMent</b>				Client Purchase Order #															

Accutest Sample #	Field ID / Point of Collection	SUMMA #	MEOH Vial #	Collection				Number of preserved Bottles													Comments / Remarks																				
				Date	Time	Sampled by	Matrix	# of bottles	HC	MEOH	NAP	STARS	DE	MTBE	MECH	WIP	SOIL	SLUDGE	LIQ	AIR		SOL	WP																		
-11	B1-W			12/17/09	11:10	DW	W	3	X																																
-12	B2-W			↓	9:00	↓	↓	3	X																																
-13	B4-W			↓	13:20	↓	↓	3	X																																
-14	B1-12.0			12/17/09	10:50	DEP	S	1																																	
-15	B6-8.0			↓	14:20	DEP	S	1																																	

Turnaround Time ( Business days)		Approved By/ Date:		Data Deliverable Information				Comments / Remarks															
<input type="checkbox"/> 5 Day STANDARD <input checked="" type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> Other				<input type="checkbox"/> Commercial "A" <input type="checkbox"/> FULL CLP <input checked="" type="checkbox"/> Commercial "B" <input type="checkbox"/> NYASP Category A <input type="checkbox"/> NJ Reduced <input type="checkbox"/> NYASP Category B <input type="checkbox"/> NJ Full <input type="checkbox"/> State Forms <input type="checkbox"/> Other <input type="checkbox"/> EDD Format				Sample B2-W had traces of free product Sample B4-W had sheen Sample B1-W had odor <del>Hold samples B7-12.0 &amp; B6-8.0</del>															
Emergency T/A data available VIA Lablink																							
Sample Custody must be documented below each time samples change possession, including courier delivery.																							
1	Relinquished By:	Date Time:	1	Received By:	Date Time:	2	Relinquished By:	Date Time:	2	Received By:	Date Time:	3	Relinquished By:	Date Time:	3	Received By:	Date Time:	4	Relinquished By:	Date Time:	4	Received By:	Date Time:
5	Relinquished By:	Date Time:	5	Received By:	Date Time:	Custody Seal #		Preserved where applicable		On Ice		Cooler Temp.											

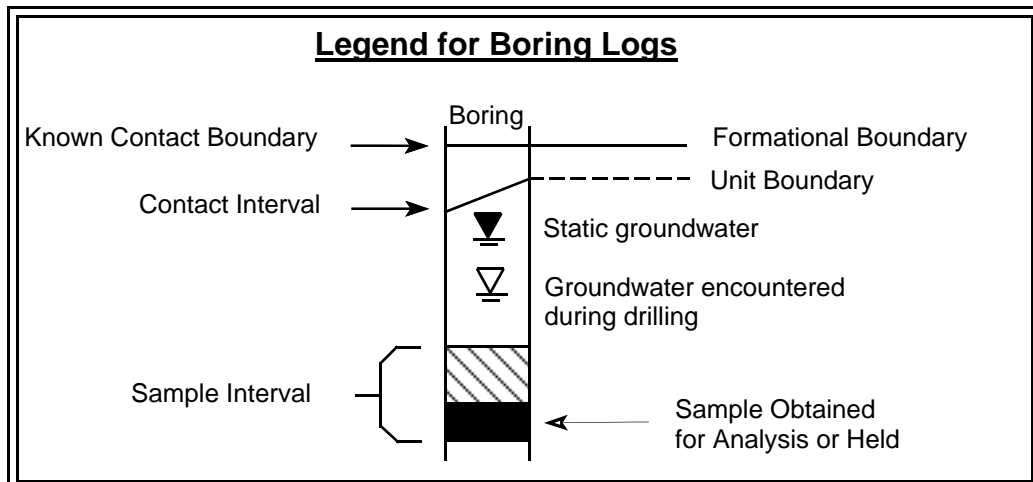




## **APPENDIX 3**








## UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS		TYPICAL NAMES			
COARSE GRAINED SOILS	<b>GRAVELS</b>  more than half coarse fraction is larger than Number 4 sieve	CLEAN GRAVELS WITH LITTLE OR NO FINES	<b>GW</b>	well graded gravels, gravel-sand mixtures	
			<b>GP</b>	poorly graded gravels, gravel-sand mixtures	
		GRAVELS WITH OVER 12% FINES	<b>GM</b>	silty gravels, poorly graded gravel-sand silt mixtures	
			<b>GC</b>	clayey gravels, poorly graded gravel-sand clay mixtures	
	<b>SANDS</b>  more than half coarse fraction is smaller than Number 4 sieve	CLEAN SANDS WITH LITTLE OR NO FINES	<b>SW</b>	well graded sands, gravelly sands	
			<b>SP</b>	poorly graded sands, gravelly sands	
		SANDS WITH OVER 12% FINES	<b>SM</b>	silty sands, poorly graded sand-silt mixtures	
			<b>SC</b>	clayey sands, poorly graded sand-clay mixtures	
			SILTS AND CLAYS liquid limit less than 50	<b>ML</b>	inorg. silts and very fine sands, rock flour silty or clayey sands, or clayey silts w/ sl. plasticity
				<b>CL</b>	inorg. clays of low-med plasticity, gravelly clays, sandy clays, silty clays, lean clays
<b>SILTS AND CLAYS</b> liquid limit greater than 50	<b>OL</b>	organic clays and organic silty clays of low plasticity			
	<b>MH</b>	inorganic silty, micaceous or diatomaceous fine sandy or silty soils, elastic silts			
	<b>CH</b>	inorganic clays of high plasticity, fat clays			
	<b>OH</b>	organic clays of medium to high plasticity organic silts			
HIGHLY ORGANIC SOILS		<b>PT</b>	peat and other highly organic soils		





**ERS Corporation**  
 1600 Riviera Avenue, Suite 310  
 Walnut Creek, California 94596  
 (925) 938-1600 Fax: (925) 938-1610

Site: **15796 E. 14th Street**  
**San Leandro, California**

<b>Soil Color</b> <u>Color Code</u> (Munsell Soil Color Chart)	PID (ppm)	SAMPLE ID	SAMPLE INTERVAL	depth below ground surface (ft)	<b>EQUIPMENT: Geoprobe Hydraulic Sampling Device</b> <b>OPERATED BY: Environmental Control Associates</b> <b>LOGGED BY: David DeMent, PG</b> <b>LOCATION: 15796 E. 14th Street, San Leandro, CA</b> <b>WORK DATE: 12/17/2009</b> <b>BORING: B1</b>
5Y-3/2	480	B1-4.0		0	Asphalt pavement and silty gravel baserock
				2	Clay (CL), dark olive, moderately plastic, medium stiff, low estimated permeability, uniform, damp, no petroleum odor noted
	990	B1-8.0		4	slight petroleum odor noted
				6	Clay (CL), as above, very dark olive, slight petroleum odor noted
	1,570	B1-12.0		8	Clay (CL), as above, dark olive
				10	Sandy Clay (CL), dark olive, moderately plastic, medium stiff, moderate estimated permeability, 5-10% very fine grain sand, wet to saturated, no petroleum odor noted
0			12		
14					
					
16	<b>TOTAL DEPTH OF BORING: 16.0 feet bgs</b>				
18					
20					
22					
24					
26					
28					
<b>ERS Corporation</b> 1600 Riviera Avenue, Suite 310 Walnut Creek, California 94596 (925) 938-1600 FAX: (925) 938-1610	Project Number <b>1022-01.01</b>	Title: <b>LOG OF BORING B1</b>  15796 E. 14th Street San Leandro, California			
<b>Date: 12/12/09</b>					

Soil Color Color Code (Munsell Soil Color Chart)	PID (ppm)	SAMPLE ID	SAMPLE INTERVAL	depth below ground surface (ft)	<b>EQUIPMENT: Geoprobe Hydraulic Sampling Device</b> <b>OPERATED BY: Environmental Control Associates</b> <b>LOGGED BY: David DeMent, PG</b> <b>LOCATION: 15796 E. 14th Street, San Leandro, CA</b> <b>WORK DATE: 12/17/2009</b> <b>BORING: B2</b>
				0	Asphalt pavement and silty gravel baserock
	21			2	Gravel and Silt/Clay, interpreted as FILL
				4	
5Y-4/1	720	B2-8.0		6	Clay (CL), dark gray, highly to moderately plastic, stiff to medium stiff, low estimated permeability, uniform, damp, slight petroleum odor noted
				8	
5Y-3/2	10	B2-12.0		10	Sandy Clay (CL), dark olive, moderately plastic, medium stiff, moderate estimated permeability, 5-10% very fine grain disseminated sand, moist, no petroleum odor noted
				12	
				14	Sandy Clay noted 11-15.5 feet bgs
	0			16	Clay (CL), as above, dark gray to black, very stiff
5Y-6/4				18	Clay (CL), pale olive to yellow brown, moderately plastic, very stiff, very low estimated permeability, uniform, damp, no petroleum odor noted
				20	<b>TOTAL DEPTH OF BORING: 20.0 feet bgs</b>
				22	
				24	
				26	
				28	

<b>ERS Corporation</b> 1600 Riviera Avenue, Suite 310 Walnut Creek, California 94596 (925) 938-1600 FAX: (925) 938-1610	Project Number <b>1022-01.01</b> <hr/> Date: <b>12/12/09</b>	Title: <b>LOG OF BORING B2</b> 15796 E. 14th Street San Leandro, California
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<b>Soil Color</b> <u>Color Code</u> (Munsell Soil Color Chart)	PID (ppm)	SAMPLE ID	SAMPLE INTERVAL	depth below ground surface (ft)	<b>EQUIPMENT: Geoprobe Hydraulic Sampling Device</b> <b>OPERATED BY: Environmental Control Associates</b> <b>LOGGED BY: David DeMent, PG</b> <b>LOCATION: 15796 E. 14th Street, San Leandro, CA</b> <b>WORK DATE: 12/17/2009</b> <b>BORING: B3</b>
5Y-3/2	1,880	B3-12.0		0 2 4 6 8 10 12	Asphalt pavement and silty gravel baserock  Gravel and Silt/Clay, interpreted as FILL  Gravel and Silt/Clay, interpreted as FILL  Clay (CL), dark olive, highly to moderately plastic, medium stiff, low estimated permeability, uniform, damp, slight petroleum odor noted
		B3-16.0		14 16 18 20 22 24 26 28	Clay (CL), as above, moist, no petroleum odor  <b>TOTAL DEPTH OF BORING: 16.0 feet bgs</b>
<b>ERS Corporation</b> 1600 Riviera Avenue, Suite 310 Walnut Creek, California 94596 (925) 938-1600 FAX: (925) 938-1610			Project Number <b>1022-01.01</b>	Title: <b>LOG OF BORING B3</b>  15796 E. 14th Street San Leandro, California	
			<b>Date: 12/12/09</b>		

Soil Color Color Code (Munsell Soil Color Chart)	PID (ppm)	SAMPLE ID	SAMPLE INTERVAL	depth below ground surface (ft)	<b>EQUIPMENT: Geoprobe Hydraulic Sampling Device</b> <b>OPERATED BY: Environmental Control Associates</b> <b>LOGGED BY: David DeMent, PG</b> <b>LOCATION: 15796 E. 14th Street, San Leandro, CA</b> <b>WORK DATE: 12/17/2009</b> <b>BORING: B4</b>
				0	Asphalt pavement and silty gravel baserock
	0			2	Gravel and Silt/Clay, interpreted as FILL
				4	
	0			6	Gravel and Silt/Clay, interpreted as FILL
				8	
5Y-3/2	1,480	B4-12.0		10	Clay (CL), dark olive, highly to moderately plastic, medium stiff to stiff, low estimated permeability, uniform, damp, slight petroleum odor noted
				12	
				14	Sandy Clay (CL), as above, 1-10% very fine grain sand 12.5-14.5 feet bgs
7.5YR-3/4	0			16	Clay (CL), as above, dark brown, highly plastic, stiff, moist, no petroleum odor
					<b>TOTAL DEPTH OF BORING: 16.0 feet bgs</b>
					18
					20
					22
					24
					26
					28
<b>ERS Corporation</b> 1600 Riviera Avenue, Suite 310 Walnut Creek, California 94596 (925) 938-1600 FAX: (925) 938-1610			Project Number <b>1022-01.01</b>		Title: <b>LOG OF BORING B4</b>  15796 E. 14th Street San Leandro, California
			Date: <b>12/12/09</b>		

Soil Color Color Code (Munsell Soil Color Chart)	PID (ppm)	SAMPLE ID	SAMPLE INTERVAL	depth below ground surface (ft)	<b>EQUIPMENT: Geoprobe Hydraulic Sampling Device</b> <b>OPERATED BY: Environmental Control Associates</b> <b>LOGGED BY: David DeMent, PG</b> <b>LOCATION: 15796 E. 14th Street, San Leandro, CA</b> <b>WORK DATE: 12/17/2009</b> <b>BORING: B5</b>
				0	Asphalt pavement and silty gravel baserock
	0			2	Gravel and Silt/Clay, interpreted as FILL
				4	
	0			6	Gravel and Silt/Clay, interpreted as FILL
				8	
5Y-3/2	1,480	B5-12.0		10	Clay (CL), dark olive, moderately plastic, medium stiff, low estimated permeability, uniform, damp, slight petroleum odor noted
				12	
7.5YR-3/4	0			14	Clay (CL), as above, some disseminated fine grain sand 14-15 ft bgs, stiff, moist, no petroleum odor
				16	<b>TOTAL DEPTH OF BORING: 16.0 feet bgs</b>
				18	
				20	
				22	
				24	
				26	
				28	
<b>ERS Corporation</b> 1600 Riviera Avenue, Suite 310 Walnut Creek, California 94596 (925) 938-1600 FAX: (925) 938-1610			Project Number <b>1022-01.01</b>  Date: <b>12/12/09</b>		Title: <b>LOG OF BORING B5</b>  15796 E. 14th Street San Leandro, California

Soil Color Color Code (Munsell Soil Color Chart)	PID (ppm)	SAMPLE ID	SAMPLE INTERVAL	depth below ground surface (ft)	<b>EQUIPMENT: Geoprobe Hydraulic Sampling Device</b> <b>OPERATED BY: Environmental Control Associates</b> <b>LOGGED BY: David DeMent, PG</b> <b>LOCATION: 15796 E. 14th Street, San Leandro, CA</b> <b>WORK DATE: 12/17/2009</b> <b>BORING: B6</b>
				0	Asphalt pavement and silty gravel baserock
				2	Gravel and Silt/Clay, interpreted as FILL
2.5Y-N4/	0			4	Clay (CL), dark gray, moderately plastic, medium stiff, low estimated permeability, uniform, damp, no petroleum odor noted
	81	B6-8.0		8	Clay (CL), as above, slight petroleum odor noted
5Y-3/2	20	B6-12.0		12	Clay (CL), dark olive, moderately plastic, medium stiff to stiff, low estimated permeability, uniform, damp, slight petroleum odor noted
2.5Y-5/2	0			14	Clay (CL), as above, gray brown
					<b>TOTAL DEPTH OF BORING: 16.0 feet bgs</b>
					16
					18
					20
					22
					24
					26
					28
<b>ERS Corporation</b> 1600 Riviera Avenue, Suite 310 Walnut Creek, California 94596 (925) 938-1600 FAX: (925) 938-1610			Project Number <b>1022-01.01</b>		Title: <b>LOG OF BORING B6</b>  15796 E. 14th Street San Leandro, California
			Date: <b>12/12/09</b>		



<b>Soil Color</b> <u>Color Code</u> (Munsell Soil Color Chart)	PID (ppm)	SAMPLE ID	SAMPLE INTERVAL	depth below ground surface (ft)	<b>EQUIPMENT: Geoprobe Hydraulic Sampling Device</b> <b>OPERATED BY: Environmental Control Associates</b> <b>LOGGED BY: David DeMent, PG</b> <b>LOCATION: 15796 E. 14th Street, San Leandro, CA</b> <b>WORK DATE: 12/17/2009</b> <b>BORING: B7</b>
				0	Asphalt pavement and silty gravel baserock
				2	Gravel and Silt/Clay, interpreted as FILL
10YR-3/3	0			4	Clay (CL), dark brown, moderately plastic, medium stiff, low estimated permeability, uniform, damp, no petroleum odor noted
	35	B7-7.5		6	
5Y-4/2				8	Clay (CL), as above, olive gray, slight petroleum odor noted
	22			10	
5Y-3/2	14			12	Clay (CL), dark olive, moderately plastic, medium stiff to stiff, low estimated permeability, uniform, damp, no petroleum odor noted
				14	
2.5Y-5/2	0			16	Clay (CL), as above
				16	<b>TOTAL DEPTH OF BORING: 16.0 feet bgs</b>
				18	
				20	
				22	
				24	
				26	
				28	
<b>ERS Corporation</b> 1600 Riviera Avenue, Suite 310 Walnut Creek, California 94596 (925) 938-1600 FAX: (925) 938-1610	Project Number <b>1022-01.01</b>	Title: <b>LOG OF BORING B7</b>			
	<b>Date: 12/12/09</b>	15796 E. 14th Street San Leandro, California			