Thomas K. Bauhs
Project Manager
Retail and Terminal
Business Unit

Chevron Environmental Management Company
6001 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 842-8898
Fax (925) 842-8370

February 1, 2008
(date)

Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Chevron Facility # 9-8139

Address: 16304 Foothills Boulevard, San Leandro, California

I have reviewed the attached report titled Subsurface Investigation Report and Well Destruction Workplan and dated February 1, 2008.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Conestoga Rovers & Associates, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

Thomas K. Bauhs
Project Manager

Enclosure: Report

CONESTOGA-ROVERS
& ASSOCIATES

2000 Opportunity Dr, Suite 110, Roseville, California 95678
Telephone: 916-677-3407, ext. 100 Facsimile: 916-677-3687
www.CRAworld.com

February 1, 2008

Ms. Donna Drogos
Alameda County Health Care Services Agency (ACHCSA)
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: **Subsurface Investigation Report and Well Destruction Workplan**
Chevron Station # 9-8139
16304 Foothills Blvd.
San Leandro, California

Dear Ms. Drogos:

Conestoga-Rovers & Associates (CRA) is submitting this *Subsurface Investigation Report and Well Destruction Workplan* on behalf of Chevron Environmental Management Company (Chevron) for the site referenced above. The work was performed in accordance with CRA's *Revised Investigation Workplan* dated May 8, 2006 which proposed advancing three borings to evaluate the vertical extent of hydrocarbons in soil and groundwater. In a letter dated August 7, 2006, the ACHCSA approved the assessment but requested additional details regarding the proposed surfactant well and pilot test. CRA submitted a *Response to Technical Comments* cancelling the proposed well and surfactant test (Attachment A). CRA advanced two direct push soil borings to delineate the lateral and vertical extent of hydrocarbons in groundwater. The site background, details of the investigation and CRA's conclusions are presented below.

SITE BACKGROUND

The site is located on the eastern side of Foothill Boulevard in San Leandro, California (Figure 1). The site is currently an active Chevron-branded Service Station with a convenience store. The station is owned and operated by Mr. Harv Dahliwal. Chevron ceased operation of its station in 1998, and removed the existing facilities including a station building, three gasoline underground storage tanks (USTs), two dispenser islands, and associated product piping. The site's current facilities include two gasoline USTs and two dispenser islands. Current and former site facilities are illustrated in Figure 2.

The site is located on the western edge of the San Leandro Hills approximately four miles east of San Francisco Bay and approximately 1.25 miles south of Lake Chabot. The site is located approximately 125 ft above mean sea level (msl).

Previous Investigations

April 1982 Leak Confirmation, Tank Replacement, and Well Installation: In early 1982, a tank integrity test confirmed that a leak existed on a corroded vapor line for the regular fuel product piping. Chevron records indicate that this piping and the associated UST were removed and replaced. Tank backfill piezometers W-1 and W-2 were installed. There are no records indicating that groundwater was encountered in the UST excavation during their installation.

December 1986 Leak, UST Repair and Testing: In December 1986, the station reported petroleum inventory losses. A tightness test was performed and a leak in the regular gasoline system was confirmed. The leak was subsequently repaired. The system was retested tight on January 30, 1986 by Gettler-Ryan, Inc. (GR).

June 1989 Soil Vapor Survey: In response to the two releases mentioned above, EA Science, Engineering and Technology (EA) conducted a soil vapor survey at the site. Benzene was reported in one vapor sample, V4/C, collected from the west end of the south pump island at 1 ppm.

November and December 1989 Subsurface Investigation: In November1989, Chemical Processors, Inc. (Chempro) installed two-inch diameter monitoring wells MW-1 through MW-4. The highest concentration of benzene reported in soil was 1.1 milligrams per kilogram (mg/kg) from MW-4 at 15 feet below grade (fbg). The highest total petroleum hydrocarbons as gasoline (TPHg) was reported in MW-4 at 24 mg/kg at 15 fbg.

May and August 1990 Subsurface Investigation: In May 1990, Chempro installed two-inch diameter monitoring wells MW-5 through MW-7 and six-inch diameter extraction well E-1. In August 1990, Chempro installed offsite monitoring well MW-8. The highest concentrations of TPHg and benzene in soil were 130 and 0.29 mg/kg, respectively, in MW-5 at 15 fbg. No benzene or TPHg were detected in soil samples from MW-7.

Hydraulic tests were performed at the site by pumping well E-1 and monitoring the response at wells MW-3, MW-5, and MW-7. Chempro calculated the average hydraulic gradient conductivity at the site as 4.3×10^{-3} centimeters per second (cm/s) with an average groundwater flow velocity as 5.2×10^{-4} cm/s and the radius of influence from E-1 to be 100 ft.

June 1991 Subsurface Investigation: In June 1991, Burlington Environmental, Inc. (BE) installed offsite monitoring well MW-9 and converted two-inch monitoring wells MW-4 and MW-5 into four-inch extraction wells E-3 and E-2, respectively. A groundwater treatment system was started up in August 1991 and was operated through April 1994. The system was shut off due to low influent concentrations.

Wells E-1 through E-3 are currently designated EW-1 through EW-3 in quarterly monitoring reports. These designations will be changed to E-1 through E-3 in future groundwater monitoring reports.

April and May 1992 Subsurface Investigation: In April 1992, BE installed offsite monitoring wells MW-10 and MW-11. No Benzene or TPHg were detected in any soil samples.

September 1998 Well Destruction: In September 1998, GR destroyed wells MW-1, MW-2, MW-3, MW-6, and MW-7 prior to site renovation.

October and November 1998 UST and Product Line Removal: In October and November 1998, three 10,000-gallon fuel USTs, one 1,000-gallon used oil UST, associated product piping, three hoists, and one clarifier were removed by Touchstone Developments (Touchstone). Groundwater was encountered at 12 fbg during the UST removal. A sheen was noted and 2,500 gallons of water were pumped out of the excavation prior to backfilling. Soil in the vicinity of the former used-oil UST and the product trenches were over-excavated.

August 2000 Subsurface Investigation: In August 2000, GR installed monitoring wells MW-12 through MW-14. Methyl tert-butyl ether (MTBE) was reported in soil samples from MW-14 at 16 and 21 fbg at 2.9 and 0.13 mg/kg, respectively. No TPHg, benzene, toluene, ethylbenzene, or xylenes (BTEX) were detected in these samples. No TPHg, BTEX, or MTBE were detected in any soil sample collected from MW-12 or MW-13.

Quarterly Monitoring: Wells at this site have been monitored and sampled since December 1989. Wells are currently being monitored and sampled quarterly. Groundwater samples are analyzed for TPHg, BTEX, MTBE, tert-butyl alcohol (TBA), tert-amyl methyl ether (TAME).

Groundwater Flow Direction, Depth Trends and Gradient Trend: Historically, depth to groundwater has varied from 8.71 fbg (MW-2, 1/95) to 22.42 fbg (MW-7, 1/92). Groundwater flows predominately toward the south at a gradient of 0.01 to 0.03 ft/ft.

Stratigraphy and Hydrogeology: Soils encountered beneath the subject site consist primarily of sandy clays interbedded with clayey and gravelly sands to a total explored depth of 41.5 fbg.

INVESTIGATION RESULTS

The objective of this investigation was to delineate the vertical extent of hydrocarbons in soil and groundwater. CRA advanced direct-push borings GP-1 and GP-2 down-gradient of the former USTs. Soil samples were collected from GP-1 at 5, 15, 25, and 35 fbg; and from GP-2 at 10, 20, and 30 fbg. At each location, a direct-push boring was advanced to approximately 45 fbg. One grab-groundwater sample was collected at first encountered groundwater, and one depth discrete groundwater sample was collected from each boring. Soil sample results are summarized in Table 1 and groundwater sample results are summarized in Table 2. The drilling permit is presented as Attachment B. Boring logs are presented as Attachment C. The laboratory analytical report is presented in Attachment D. CRA's Standard Field Procedures for GeoProbe borings are presented in Attachment E. Details of the investigation and results are summarized below.

Permits: Alameda County Public Works Agency-Water Resources Well Permit # W2007-1061 (Attachment B).

Drilling Dates: November 15, 2007 through November 16, 2007.

Drilling Company: Gregg Drilling and Testing, Inc. of Martinez, CA (C-57 Lic. # 485165).

Sampling Personnel: Staff Scientists Ben Summersett and Chris Benedict conducted all fieldwork under the supervision of California Professional Geologist Brian Carey (P.G. #7820).

Number of Borings: Two borings (GP-1 and GP-2).

Drilling Method: The first 8 feet of the borings were cleared using an air-knife to ensure no subsurface utilities were encountered. Below 8 feet, each boring was advanced using direct push and a hydropunch sampler.

Soil Sampling: Soil samples were collected from GP-1 at 5, 15, 25, and 35 fbg; and from GP-2 at 10, 20, and 30 fbg. Table 1 lists the sample depths and analytical

soil data for GP-1 and GP-2.

Groundwater Sampling: One grab and one depth discrete groundwater samples were collected from depths of 32 and 45 fbg (respectively) in each boring. Table 2 summarizes the sample depths and groundwater analytical data for GP-1 and GP-2.

Encountered Lithology: Sediments encountered during boring advancement predominantly consisted of interbedded clay, gravelly clay, sandy clay, and clayey sand to a total explored depth of 45 fbg.

Laboratory Analyses: All soil and groundwater samples were analyzed for:

- TPHg by EPA Method 8015B,
- BTEX, and fuel oxygenates methyl tertiary butyl ether (MTBE), tert-butyl ether (TBA) tert-amyl methyl ether (TAME) by EPA Method 8260B.

Soil Disposal: Soil cuttings were stored in 55-gallon steel drums on-site, sampled for waste characterization, removed by Integrated Waste Management and transported to a Chevron approved facility for disposal/recycling.

Groundwater Depth: Groundwater was first encountered at 32 fbg. Groundwater depths taken approximately 4.5 hours later was at approximately 18.5 fbg.

HYDROCARBONS IN SOIL

TPHg concentrations in soil from GP-1 were reported at 21 milligrams per kilograms (mg/kg) (5 fbg), 41mg/kg (15 fbg), and 27 mg/kg (25 fbg). TPHg concentrations in soil from GP-2 were reported at 200 mg/kg (20 fbg) and 14 mg/kg (30 fbg). Benzene concentrations in soil from GP-1 were reported at 0.0009 mg/kg (5 fbg), 0.006 mg/kg (15 fbg), 0.014 mg/kg (25 fbg), and 0.002 mg/kg (35 fbg). Benzene was reported in GP-2 at concentrations of 0.067 mg/kg (20 fbg) and 0.003 mg/kg (35 fbg). MTBE was reported in GP-1 at concentrations of 0.13 mg/kg (5 and 15 fbg), 0.29 mg/kg (25 fbg), and 0.044 mg/kg

(35 fbg). MTBE was reported in GP-2 at concentrations of 0.091 mg/kg (10 fbg), 0.18 mg/kg (20 fbg), and 1.3 mg/kg (35 fbg).

TPHg, benzene, and MTBE are present in soil to depths of 35 fbg. However, the low concentrations of TPHg, benzene, and MTBE at 35 fbg adequately define the vertical extent of hydrocarbons in soil in the vicinity of the western former and current dispenser islands.

HYDROCARBONS IN GROUNDWATER

Groundwater from GP-1 contained 6,500 µg/L TPHg at 32 fbg and 110 µg/L TPHg at 45 fbg and in GP-2 at concentrations of 13,000 µg/L (32 fbg) and 11,000 µg/L (45 fbg). MTBE was detected in GP-1 at concentrations of 890 µg/L (32 fbg) and 11 µg/L (45 fbg), and in GP-2 at concentrations of 49,000 µg/L (32 fbg) and 4,100 µg/L (45 fbg). Benzene was detected in GP-1 at a concentration of 110 µg/L (32 fbg), and in GP-2 at a concentration of 48 µg/L (45 fbg). Depth discrete groundwater sample results are summarized below and presented in Table 2.

PROPOSED MONITORING WELL DESTRUCTION

CRA evaluated the current location of monitoring wells within city streets due to traffic related safety concerns during monitoring and sampling. Wells proposed for destruction were strategically selected based on safety hazards and historical concentrations of hydrocarbons. The proposed well replacement activities are summarized below.

Proposed Scope of Work

CRA proposes the destruction of MW-8, MW-9, MW-10, MW-11, and MW-13 (Figure 2). CRA proposes to destroy these wells because of safety issues related to sampling events. Wells MW-8 and MW-9 are in the narrow median of Foothill Boulevard, and one lane of traffic control is required to monitor and sample these wells. MW-12 and MW-14 will continue to provide downgradient plume data after MW-8 and MW-9 are destroyed. MW-10 is located in the west-bound lanes of Foothill Boulevard and is also deemed a safety hazard. MW-10 and MW-11 have not been sampled since 2005 following approval from the ACEHSA in response to Cambria's *Sample Reduction Request* dated March 29, 2005. A summary of historical groundwater data is provided in Attachment F.

CRA also proposes to destroy wells MW-11 and MW-13 on the south side of Foothill Boulevard.

Monitoring and sampling of these wells also ended in 2005. After destroying MW-11 and MW-13, nearby wells MW-12 and MW-14 will continue to be sampled to provide downgradient plume data south of Foothill Boulevard. The remaining wells would continue to be monitored and sampled as approved by the ACHCSA in 2005. When field commences for the well destructions, CRA will also advance soil boring GP-3 that was originally proposed for the November 2007 assessment.

Underground Utility Location: CRA will notify Underground Service Alert of our drilling activities to identify underground utilities, prior to drilling. In addition CRA will use a private utility subcontractor to locate utilities.

Site Health and Safety Plan: CRA will prepare a site safety plan to protect site workers. The plan will be reviewed and signed by all site workers, and kept on-site at all times.

Permits: Before beginning any of the proposed work, CRA will obtain a drilling permit from the Alameda County Health Care Services Agency (ACHCSA), and any necessary encroachment permits from the City of San Leandro.

Monitoring Well Destruction: CRA will drill-out monitoring wells MW-8, MW-9, MW-10, and MW-11 using 8-inch, hollow-stem augers to the total depth of the well per Alameda County Health Care Services Agency requirements. The well borings will be filled to surface with neat Portland Type I/II cement using a tremie pipe, and the surface will be patched to match existing grade. CRA's *Standard Field Procedures for Monitoring Well Destruction* are presented in Attachment F.

Drilling: CRA will use a vacuum truck to clear around each monitoring well for utilities to a depth of 8 fbg. After clearing the first 8 feet, the monitoring well will be drilled out according to approved methods by the California Water Control Board. using hollow-stem auger.

Soil Chemical Analyses: Soil and stockpile samples will be analyzed for:

- TPHg by EPA Method 8015M;
- BTEX and MTBE by EPA Method 8260B; and
- Total Lead by EPA Method 6010B (stockpile only).

Soil and Water Disposal/Recycling: Soil cuttings and rinse water produced during field activities will be temporarily stored in 55-gallon drums on-site. Following review of laboratory analytical results, the soil and water will be transported to a Chevron-approved facility for disposal.

Reporting: Upon completion of field activities and review of the analytical results, CRA will prepare a report containing, at a minimum:

- Descriptions of the well destruction methods,
- Well/Boring logs of the destroyed wells,
- Tabulated soil analytical results,
- Analytical reports and chain-of-custody forms,
- A figure illustrating soil boring and destroyed well locations,
- Soil and water disposal methods.

SCHEDULE

CRA will begin this scope of work upon receiving written approval from the ACHCSA, or after 60 days following submittal of this work plan. We will submit our investigation report approximately 60 days after receiving analytical results.

CONCLUSIONS

CRA oversaw advancement of soil borings GP-1 and GP-2 to a depth of 45 fbg. Maximum concentrations of 200 mg/kg TPHg, 0.067 mg/kg benzene and 1.3 mg/kg MTBE were detected in soil in GP-1 and GP-2. The vertical extent of hydrocarbons in soil is adequately defined in GP-1 and GP-2 based on low concentration or non-detect soil samples at depth (Table 1). Elevated concentrations of hydrocarbons were also detected in depth-discrete groundwater samples collected from both borings. The vertical extent of hydrocarbons in groundwater appears undefined in the vicinity of the western former and current dispenser islands.

CONESTOGA-ROVERS
& ASSOCIATES

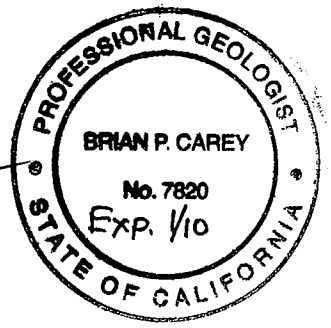
CLOSING

Please contact Brian Carey at (916) 677-3407 (ext. 106) or Chris Benedict at (916) 677-3407 (ext. 125) with any questions or if you require additional information.

Sincerely,

Conestoga-Rovers & Associates

Chris Benedict
Staff Scientist



Brian P. Carey, P.G. #7820
Senior Project Geologist

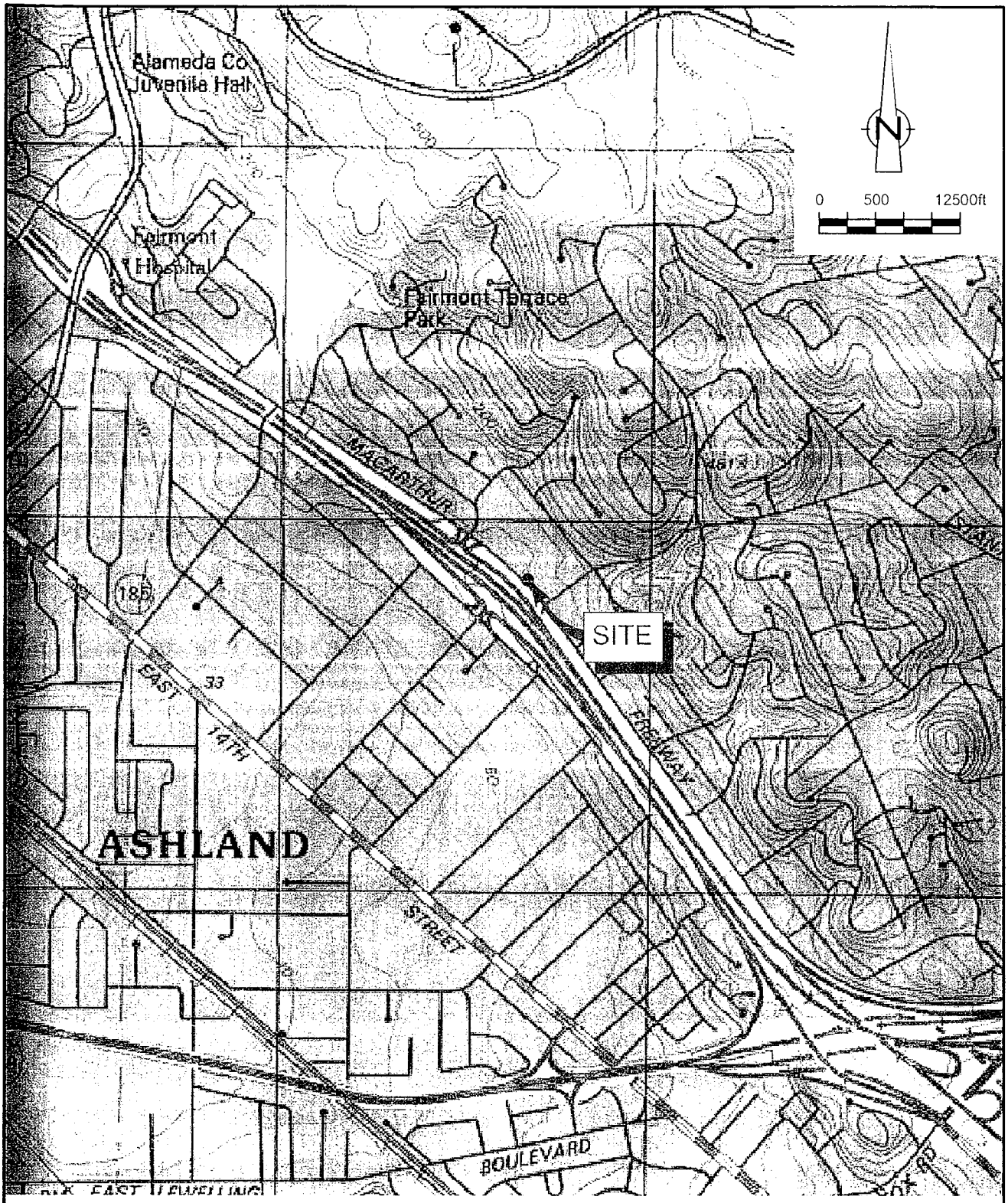
Figures: 1 – Vicinity Map
2 – Site Plan

Tables: 1 – Analytical Results for Soil
2 – Analytical Results for Groundwater

Attachments: A – Regulatory Correspondence
B – Drilling Permit
C – Boring Logs
D – Laboratory Analytical Report
E – Standard Field Procedures for GeoProbe Borings
F – Standard Field Procedures for Monitoring Well Destruction

cc: Ms. Stacie Hartung-Frerichs, Chevron Environmental Management Company, P.O. Box 6012, San Ramon, CA 94583
CRA file copy

\\sac-s1\shared\Rocklin.Chevron\9-8139 San Leandro\2007 Investigation\9-8139 SSI and Well Destruction workplan Jan 2008.doc



SOURCE: TOPO! MAPS.

figure 1

VICINITY MAP
CHEVRON SERVICE STATION 9-8139
16304 FOOTHILL BOULEVARD
San Leandro, California

611971-200(PRES001)GN-WA002 SEP 14/2007

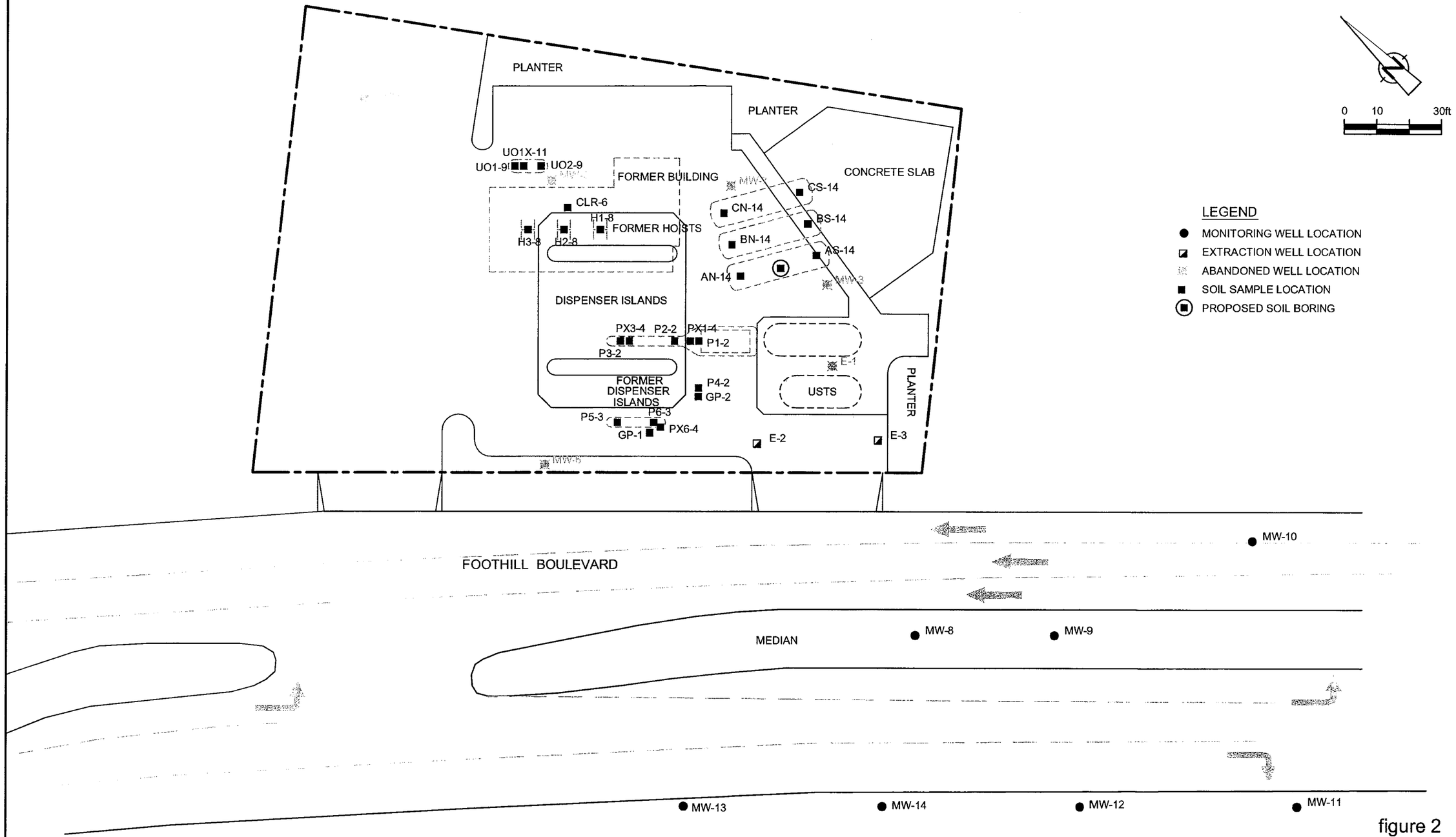


figure 2

SITE PLAN
CHEVRON SERVICE STATION 9-8139
16304 FOOTHILL BOULEVARD
San Leandro, California

Table 1

Analytical Results for Soil

Chevron Station #9-8139, 16304 Foothills Boulevard, San Leandro, California

Sample ID	Depth (ft)	Sample Date	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	TAME	TBA
			Concentrations reported in milligrams per kilogram (mg/kg)							
GP-1-5	5	11/16/2007	**21**	**0.0009**	<0.0005	**0.015**	**0.024**	**0.13**	**0.005**	**0.25**
GP-1-15	15	11/16/2007	**41**	**0.006**	<0.0009	<0.0009	**0.54**	**0.13**	**0.012**	**0.056**
GP-1-25	25	11/16/2007	**27**	**0.014**	<0.001	**0.10**	**0.25**	**0.29**	**0.013**	<0.019
GP-1-35	35	11/16/2007	<1.0	**0.002**	<0.001	**0.006**	**0.014**	**0.044**	**0.003**	<0.020
GP-2-10	10	11/16/2007	<1.0	<0.005	<0.0009	<0.0009	<0.0009	**0.091**	**0.05**	**0.062**
GP-2-20	20	11/16/2007	**200**	**0.067**	<0.051	**0.61**	**0.74**	**0.18**	**0.091**	<1.0
GP-2-35	35	11/16/2007	**14**	**0.003**	<0.001	**0.031**	**0.042**	**1.3**	**0.17**	**0.18**

Abbreviations / Notes

TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8015
BTEX = Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8260B
MTBE = methyl tert-butyl by EPA Method 8260B
ETBE = Ethyl t-butyl ether
TAME = t-Amyl methyl ether
TBA = tertiary butyl alcohol by EPA Method 8260B
1,2-DCA = 1,2-dichloroehtane by EPA Method 8260B
EDB = 1,2-dibromoethane by EPA Method 8260B
<x = not detected above reporting limit x

Table 2

Analytical Results for Groundwater

Chevron Station #9-8139, 16304 Foothills Boulevard, San Leandro, California

Sample ID	Sample Date	Depth	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	TAME	TBA
		fbg	Concentrations reported in micrograms per liter (µg/L)							
GP-1-32	11/16/2007	32	**6,500**	**110**	**5**	**280**	**740**	**890**	**88**	**11**
GP-1-45	11/16/2007	45	**110**	<0.5	<0.5	**1**	**3**	**11**	**2**	<2.0
GP-2-32	11/16/2007	32	**13,000**	<10	<10	**40**	**53**	**49,000**	**7,300**	**360**
GP-2-45	11/16/2007	45	**11,000**	**48**	<5	**270**	**350**	**6,100**	**1,500**	**910**

Abbreviations:

TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8015B
BTEX = Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8260B
MTBE = Methyl tertiary butyl ether by EPA Method 8260B
ETBE = Ethyl t-butyl ether
TAME = t-Amyl methyl ether
TBA = t-Butyl alcohol by EPA Method 8260B
µg/L = micrograms per liter
fbg = feet below grade
<x = below laboratory detection limits

CONESTOGA-ROVERS
& ASSOCIATES

ATTACHMENT A
Regulatory Correspondence

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

August 7, 2006

Mr. Dana Thurman
Chevron
6001 Bollinger Canyon Rd., K2236
P.O. Box 6012
San Ramon, CA 94583-2324

Dear Mr. Thurman:

Subject: Fuel Leak Case RO0000368, Chevron Station # 9-8139, 16304 Foothill Blvd., San Leandro, CA 94578

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the subject site including the May 8, 2006 Revised Investigation Workplan by Cambria, which responds to the County's November 23, 2005 letter. The work plan proposes the installation of three Geoprobe borings in the areas of the former USTs and the southern dispenser island and the installation of a groundwater extraction well in the area of the former USTs. The borings will be advanced to approximately 35' bgs to investigate the vertical extent of contamination. Soil and groundwater samples from multiple depths will be collected for chemical analysis. The actual construction of the extraction well will be based upon the results from the proposed borings. The work plan also proposes to perform a surfactant extraction pilot test from the proposed extraction well and from existing well E-2 by multiple applications and extractions from these wells.

TECHNICAL COMMENTS

1. We concur with the proposal to determine the vertical extent of contamination in the area of the dispenser islands and former UST pit with the drilling of the three borings.
2. We are concerned with monitoring the effectiveness of the surfactant extraction pilot test by sampling the same treated wells. Nothing is proposed to determine the extent of the application or treatment. We suggest that minimally, E-3 be monitored for the presence of surfactant as well as considering installing a monitoring well immediately down-gradient of the proposed extraction well.
3. Receptor Survey- the receptor survey provided in the March 2004 Site Conceptual Model is insufficient to estimate risk. The wells identified down-gradient of the site are of unknown screen interval and use. Because MTBE is not as bio-degradable and is more mobile than typical petroleum contaminants, a greater understanding of off-site receptors is required. Please provide additional receptor information to assess risk.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health, according to the following schedule:

- September 8, 2006- Response to technical comment
- 45 days after Soil and Groundwater Investigation- SWI Report

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) now request submission of reports in electronic form. The electronic copy is intended to replace the need for a paper copy and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, electronic submittal of a complete copy of all reports is required in Geotracker (in PDF format). Please visit the State Water Resources Control Board for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and

recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

If you have any questions, please call me at (510) 567-6765.

Sincerely,

Barney M. Chan
Hazardous Materials Specialist

cc: files, D. Drogos
Mr. David Herzog, Cambria Environmental, 4111 Citrus Ave., Suite 12, Rocklin, CA 95677

8_2_06 16304Foothill Blvd

Chevron

Thomas K. Bauhs
Project Manager
Retail and Terminal
Business Unit

Chevron Environmental Management Company
6001 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 842-8898
Fax (925) 842-8370

September 28, 2007
(date)

Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Chevron Facility # 9-8139

Address: 16304 Foothill Boulevard, San Leandro, California

I have reviewed the attached report titled Response to Technical Comments and dated September 28, 2007.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Conestoga Rovers & Associates, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

Thomas K. Bauhs
Project Manager

Enclosure: Report

CONESTOGA-ROVERS
& ASSOCIATES

2000 Opportunity Dr, Suite 110, Roseville, California 95678
Telephone: 916-677-3407, ext. 100 Facsimile: 916-677-3687
www.CRAworld.com

September 28, 2007

Ms. Donna Drogos
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: **Response to Technical Comments**
Chevron Service Station 9-8139
16304 Foothill Boulevard
San Leandro, California

Dear Ms. Drogos:

Conestoga Rovers & Associates (CRA) has prepared this response to technical comments on behalf of Chevron Environmental Management Company (Chevron) in response to Alameda County Health Care Services Agency's (ACHCSA) August 7, 2006 letter (Attachment A). In addition to the work originally proposed in Cambria's May 8, 2006 *Revised Investigation Workplan*, ACHCSA expressed concern regarding monitoring of the surfactant extraction pilot test. However, CRA did not receive the ACHCSA response letter until July 30, 2007. CRA provides responses to ACHCSA's comments below.

ACHCSA Comment #1
We concur with the proposal to determine the vertical extent of contamination in the area of the dispenser islands and former UST pit with the drilling of the three borings.

CRA has initiated the planning and execution of the soil and groundwater investigation approved by the ACHCSA.

ACHCSA Comment #2
We are concerned with monitoring the effectiveness of the surfactant extraction pilot test by sampling the same treated wells. Nothing is proposed to determine the extent of the application or treatment. We suggest that minimally, E-3 be monitored for the presence of surfactant as well as considering installing a monitoring well immediately down-gradient of the proposed extraction well.

CRA has decided to cancel the surfactant extraction pilot test and will evaluate site conditions based on the results of the subsurface investigation.

ACHCSA Comment #3
Receptor Survey – the receptor survey provided in the March 2004 Site Conceptual

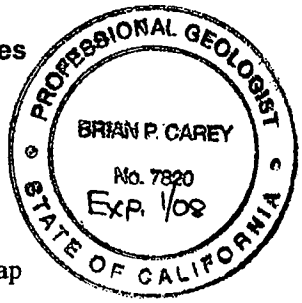
Model is insufficient to estimate risk. The wells identified downgradient of the site are of unknown screen interval and use. Because MTBE is not as bio-degradable and is more mobile than typical petroleum contaminants, a greater understanding of offsite receptors is required. Please provide additional receptor information to assess risk.

CRA will submit a revised receptor survey as part of the soil and groundwater investigation report.

CLOSING

CRA will coordinate and perform the above activities after receiving written approval of this letter from the ACHCSA, or 60 days after submittal of this letter to ACHCSA. We will submit our investigation report approximately six to eight weeks after completion of field activities. Please contact me at (916) 677-3407 (ext 106), if you have any questions or comments.

Sincerely,
Conestoga-Rovers and Associates



Brian P. Carey, PG
Project Geologist

Figures: Figure 1 – Vicinity Map
Figure 2 – Site Plan

Attachments: A – ACHCSA August 7, 2006 Letter

cc: Mr. Tom Bauhs, Chevron Environmental Management Company, P.O. Box 6012, San Ramon, CA 94583

I:\ROCKLIN.CHEVRON\9-8139 SAN LEANDRO\WORKPLANS\REVISED WORKPLAN 8-07.DOC

CONESTOGA-ROVERS
& ASSOCIATES

ATTACHMENT B
Drilling Permit

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: 10/12/2007 By jamesy

Permit Numbers: W2007-1061
Permits Valid from 11/15/2007 to 11/16/2007

Application Id:	1191947175807	**City of Project Site:** San Leandro
Site Location:	16304 Foothill Bl, San Leandro, CA	
Project Start Date:	11/15/2007	**Completion Date:** 11/16/2007
Applicant:	Conestoga-Rovers & Associates - Chris Benedict 2000 Opportunity Dr #110, Roseville, CA 95678	**Phone:** 916-677-3407
Property Owner:	Chevron Gas Sta. PO Box 6012, San Ramon, CA 94583	**Phone:** --
Client:	** same as Property Owner **	

Total Due:	$200.00
Receipt Number: WR2007-0449 Total Amount Paid:	$200.00
Payer Name : Conestoga-Rovers & Paid By: CHECK	**PAID IN FULL**
Associates	

Works Requesting Permits:

Borehole(s) for Investigation-Contamination Study - 3 Boreholes
Driller: Gregg Drilling - Lic #: 485165 - Method: DP

Work Total: $200.00

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2007-1061	10/12/2007	02/13/2008	3	2.00 in.	35.00 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. 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.

Alameda County Public Works Agency - Water Resources Well Permit

5. Applicant shall contact Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

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.

CONESTOGA-ROVERS
& ASSOCIATES

ATTACHMENT C
Boring Logs

Conestoga-Rovers & Associates
2000 Opportunity Drive, Suite 110
Roseville, CA 95678
Telephone: (916) 677-3407
Fax: (916) 677-3687

BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Co.	**BORING/WELL NAME**	GP-1
JOB/SITE NAME	9-8139	**DRILLING STARTED**	15-Nov-07
LOCATION	16304 Foothills Boulevard	**DRILLING COMPLETED**	16-Nov-07
PROJECT NUMBER		**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling & Testing, Inc.	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	2	**SCREENED INTERVAL**	NA
LOGGED BY	C. Benedict	**DEPTH TO WATER (First Encountered)**	32.0 fbg (16-Nov-07) ▽
REVIEWED BY	B. Carey, P.G. 7820	**DEPTH TO WATER (Static)**	NA ▼
REMARKS			

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							Asphalt	0.5	
24.1		GP-1-5		5			**Gravelly Lean CLAY:**brown; moist; 50% clay, 30% gravel, 10% sand, 10% silt; moderate plasticity; medium estimated permeability.		
1.7				10			**Gravelly Lean CLAY:**dark brown; moist; 50% clay, 20% silt, 20% gravel, 10% sand; moderate plasticity; medium estimated permeability.	8.0	
							Lean CLAY:light brown; moist; mottling; 60% clay, 25 % silt, 10% sand, 5% gravel; moderate plasticity; medium estimated permeability.	10.0	
28							**Gravelly Lean CLAY:**brown; dry; 45% clay, 25% gravel, 20% silt, 10% sand; moderate plasticity; medium estimated permeability.	12.0	
		GP-1-15		15			Color change to brown with mottling		
235							Color Change to grey brown	18.0	
101				20			**Lean CLAY with sand:**light brown; dry; 60% clay, 25% silt, 15% sand; moderate plasticity; low estimated permeability.	21.0	
					CL		**Gravelly Lean CLAY:**brown; dry; 40% clay, 30% gravel, 20% silt, 10% sand; moderate plasticity; medium estimated permeability.		Portland Type I/II
		GP-1-25		25			**Lean CLAY with sand:**brown; dry; 60% clay, 25% silt, 15% sand; moderate plasticity; low estimated permeability.	25.0	
15.4							Color change to grey brown.		
33.6				30			**Lean CLAY with sand:**grey brown; wet; 60% clay, 25% silt, 15% sand; moderate plasticity; low estimated permeability. ▽	30.0	
							Sandy Lean CLAY with gravel:brown; wet; 30% clay, 30% sand, 20% silt, 20% gravel; low plasticity; high estimated permeability.	33.0	
		GP-1-35		35					

Continued Next Page

Conestoga-Rovers & Associates
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Fax: (916) 677-3687

BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Co.	**BORING/WELL NAME**	GP-1
JOB/SITE NAME	9-8139	**DRILLING STARTED**	15-Nov-07
LOCATION	16304 Foothills Boulevard	**DRILLING COMPLETED**	16-Nov-07

Continued from Previous Page

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
3.3							No recovery of soil; Wet medium to coarse grained sand was observed on Geoprobe sleeve.	36.0	
				40			Hydropunch Groundwater sample collected	45.0	Bottom of Boring @ 45 fbg
				45					

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Fax: (916) 677-3687

BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Co.	**BORING/WELL NAME**	GP-2
JOB/SITE NAME	9-8139	**DRILLING STARTED**	15-Nov-07
LOCATION	16304 Foothills Boulevard	**DRILLING COMPLETED**	16-Nov-07
PROJECT NUMBER		**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling & Testing, Inc.	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	Not Surveyed
BORING DIAMETER	2	**SCREENED INTERVAL**	NA
LOGGED BY	C. Benedict	**DEPTH TO WATER (First Encountered)**	32.0 fbg (16-Nov-07) ▽
REVIEWED BY	B. Carey, P.G. 7820	**DEPTH TO WATER (Static)**	NA ▼
REMARKS			

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							Asphalt	0.5	
					CL		**Fill:** brown; moist; 40% clay, 30% sand, 30% silt; low plasticity; high estimated permeability.	2.0	
							Fat CLAY: dark brown; moist; 70% clay, 20% silt, 10% sand; high plasticity; low estimated permeability.		
6.0				5	CH				
								8.0	
1.8		GP-2- 10		10			**Sandy Lean CLAY:** brown; moist; 40% clay, 35% sand, 25% silt; moderate plasticity, medium estimated permeability.		
							Mottling	12.0	
							Lean CLAY with sand: brown; moist; 60% clay, 25% silt, 15% sand; moderate plasticity, low estimated permeability.		
				15					
109		GP-2- 20		20	CL				
345								22.0	
							Sandy Lean CLAY with gravel: grey-green, moist, 50% clay, 20% sand, 20% gravel, 10% silt, moderate plasticity, medium estimated permeability.	23.0	Portland Type I/II
				25			**Lean CLAY with sand:** brown, moist, 60% clay, 25% silt, 15% sand, moderate plasticity, medium estimated permeability.	25.0	
276							**Lean CLAY with sand:** brown with grey mottling, moist, 60% clay, 25% silt, 15% sand, moderate plasticity, medium estimated permeability. Black Mottling		
				30					
								32.0 ▽	
		GP-2- 35		35			**Clayey Sand with gravel:** brown, wet, 30 % gravel, 30% sand, 20% silt, 20% clay; low plasticity; high estimated permeability.		

WELL LOG (PID) \\SAC-S1\SHARED\ROCKLI~1.CHE\9-8139~1\GINT\(8-19-8139.GPJ DEFAULT.GDT 1/30/08

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Fax: (916) 677-3687

BORING/WELL LOG

CLIENT NAME	Chevron Environmental Management Co.	**BORING/WELL NAME**	GP-2
JOB/SITE NAME	9-8139	**DRILLING STARTED**	15-Nov-07
LOCATION	16304 Foothills Boulevard	**DRILLING COMPLETED**	16-Nov-07

Continued from Previous Page

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
20.6					SC				
				40				40.0	
							Hydropunch groundwater sample collected.		
				45					Bottom of Boring @ 45 fbg

CONESTOGA-ROVERS
& ASSOCIATES

ATTACHMENT D
Laboratory Analytical Report

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared for:

Chevron c/o CRA
Suite 110
2000 Opportunity Drive
Roseville CA 95678

916-677-3407

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1066545. Samples arrived at the laboratory on Wednesday, November 21, 2007. The PO# for this group is 0015002175 and the release number is MTI.

Client Description	Lancaster Labs Number
GP-1-W-32-071116 Grab Water	5218113
GP-1-W-45-071116 Grab Water	5218114
GP-2-W-32-071116 Grab Water	5218115
GP-2-W-45-071116 Grab Water	5218116
GP-1-S-5-071115 Grab Soil	5218117
GP-1-S-15-071116 Grab Soil	5218118
GP-1-S-25-071116 Grab Soil	5218119
GP-1-S-35-071116 Grab Soil	5218120
GP-2-S-10-071116 Grab Soil	5218121
GP-2-S-20-071116 Grab Soil	5218122
GP-2-S-35-071116 Grab Soil	5218124

ELECTRONIC COPY TO CRA Attn: Brian Carey

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster PA 17605-2425 • 717-656-2300 Fax 717-656-2681 • www.lancasterlabs.com

Analysis Report

Questions? Contact your Client Services Representative
Angela M Miller at (717) 656-2300

Respectfully Submitted,

Susan M Goshert

Susan M. Goshert
Group Leader

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. WW 5218113

GP-1-W-32-071116 Grab Water
Facility# 98139 MTI# 61H-1971 CETK
16304 Foothill-San Leandro T0600100303 GP-1
Collected:11/16/2007 10:25 by CB

Account Number: 11997

Submitted: 11/21/2007 09:50
Reported: 12/05/2007 at 15:17
Discard: 01/05/2008

Chevron c/o CRA
Suite 110
2000 Opportunity Drive
Roseville CA 95678

LG132
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CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	6,500.	250.	ug/l	5
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH					
02010	Methyl Tertiary Butyl Ether	1634-04-4	890.	3.	ug/l	5
02014	t-Amyl methyl ether	994-05-8	88.	0.5	ug/l	1
02015	t-Butyl alcohol	75-65-0	11.	2.	ug/l	1
05401	Benzene	71-43-2	110.	0.5	ug/l	1
05407	Toluene	108-88-3	5.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	280.	3.	ug/l	5
06310	Xylene (Total)	1330-20-7	740.	3.	ug/l	5

Preservation requirements were not met. The vial submitted for volatile analysis did not have a pH < 2 at the time of analysis. Due to the volatile nature of the analytes, it is not appropriate for the laboratory to adjust the pH at the time of sample receipt. The pH of this sample was pH = 4.

State of California Lab Certification No. 2116
Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	11/26/2007 00:40	K. Robert Caulfeild-James	5
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	11/29/2007 00:46	Michael A Ziegler	1
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	11/29/2007 01:09	Michael A Ziegler	5
01146	GC VOA Water Prep	SW-846 5030B	1	11/26/2007 00:40	K. Robert Caulfeild-James	5
01163	GC/MS VOA Water Prep	SW-846 5030B	1	11/29/2007 00:46	Michael A Ziegler	1

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 5218113

GP-1-W-32-071116 Grab Water
Facility# 98139 MTI# 61H-1971 CETK
16304 Foothill-San Leandro T0600100303 GP-1
Collected:11/16/2007 10:25 by CB

Account Number: 11997

Submitted: 11/21/2007 09:50
Reported: 12/05/2007 at 15:17
Discard: 01/05/2008

Chevron c/o CRA
Suite 110
2000 Opportunity Drive
Roseville CA 95678

LG132

01163	GC/MS VOA Water Prep	SW-846 5030B	2	11/29/2007 01:09	Michael A Ziegler	5

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Analysis Report

Lancaster Laboratories Sample No. WW 5218114

GP-1-W-45-071116 Grab Water
Facility# 98139 MTI# 61H-1971 CETK
16304 Foothill-San Leandro T0600100303 GP-1
Collected:11/16/2007 15:25 by CB

Account Number: 11997

Submitted: 11/21/2007 09:50
Reported: 12/05/2007 at 15:17
Discard: 01/05/2008

Chevron c/o CRA
Suite 110
2000 Opportunity Drive
Roseville CA 95678

LG145
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CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	110.	50.	ug/l	1

The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.
Preservation requirements were not met. The vial submitted for volatile analysis did not have a pH < 2 at the time of analysis. Due to the volatile nature of the analytes, it is not appropriate for the laboratory to adjust the pH at the time of sample receipt. The pH of this sample was pH = 5.

01594	BTEX+5 Oxygenates+EDC+EDB+ETOH					
02010	Methyl Tertiary Butyl Ether	1634-04-4	11.	0.5	ug/l	1
02014	t-Amyl methyl ether	994-05-8	2.	0.5	ug/l	1
02015	t-Butyl alcohol	75-65-0	N.D.	2.	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	1.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	3.	0.5	ug/l	1

Preservation requirements were not met. The vial submitted for volatile analysis did not have a pH < 2 at the time of analysis. Due to the volatile nature of the analytes, it is not appropriate for the laboratory to adjust the pH at the time of sample receipt. The pH of this sample was pH = 4.

State of California Lab Certification No. 2116
Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	11/25/2007 21:31	K. Robert Caulfeild-James	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5218114

GP-1-W-45-071116 Grab Water
Facility# 98139 MTI# 61H-1971 CETK
16304 Foothill-San Leandro T0600100303 GP-1
Collected:11/16/2007 15:25 by CB

Account Number: 11997

Submitted: 11/21/2007 09:50
Reported: 12/05/2007 at 15:17
Discard: 01/05/2008

Chevron c/o CRA
Suite 110
2000 Opportunity Drive
Roseville CA 95678

LG145

01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	11/29/2007 01:32	Michael A Ziegler	1
01146	GC VOA Water Prep	SW-846 5030B	1	11/25/2007 21:31	K. Robert Caulfeild-James	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	11/29/2007 01:32	Michael A Ziegler	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5218115

GP-2-W-32-071116 Grab Water
Facility# 98139 MTI# 61H-1971 CETK
16304 Foothill-San Leandro T0600100303 GP-2
Collected:11/16/2007 13:20 by CB

Account Number: 11997

Submitted: 11/21/2007 09:50
Reported: 12/05/2007 at 15:17
Discard: 01/05/2008

Chevron c/o CRA
Suite 110
2000 Opportunity Drive
Roseville CA 95678

LG232
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CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	13,000.	5,000.	ug/l	100
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH					
02010	Methyl Tertiary Butyl Ether	1634-04-4	49,000.	25.	ug/l	50
02014	t-Amyl methyl ether	994-05-8	7,300.	25.	ug/l	50
02015	t-Butyl alcohol	75-65-0	360.	40.	ug/l	20
05401	Benzene	71-43-2	N.D.	10.	ug/l	20
05407	Toluene	108-88-3	N.D.	10.	ug/l	20
05415	Ethylbenzene	100-41-4	40.	10.	ug/l	20
06310	Xylene (Total)	1330-20-7	53.	10.	ug/l	20

State of California Lab Certification No. 2116
Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	11/26/2007 02:24	K. Robert Caulfeild-James	100
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	11/29/2007 01:55	Michael A Ziegler	50
01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	11/30/2007 06:34	Michael A Ziegler	20
01146	GC VOA Water Prep	SW-846 5030B	1	11/26/2007 02:24	K. Robert Caulfeild-James	100
01163	GC/MS VOA Water Prep	SW-846 5030B	1	11/30/2007 06:34	Michael A Ziegler	20
01163	GC/MS VOA Water Prep	SW-846 5030B	2	11/29/2007 01:55	Michael A Ziegler	50

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 5218116

GP-2-W-45-071116 Grab Water
Facility# 98139 MTI# 61H-1971 CETK
16304 Foothill-San Leandro T0600100303 GP-2
Collected:11/16/2007 14:30 by CB

Account Number: 11997

Submitted: 11/21/2007 09:50
Reported: 12/05/2007 at 15:17
Discard: 01/05/2008

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CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters	n.a.	11,000.	500.	ug/l	10

The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.
Preservation requirements were not met. The vial submitted for volatile analysis did not have a pH < 2 at the time of analysis. Due to the volatile nature of the analytes, it is not appropriate for the laboratory to adjust the pH at the time of sample receipt. The pH of this sample was pH = 4.

01594	BTEX+5 Oxygenates+EDC+EDB+ETOH					
02010	Methyl Tertiary Butyl Ether	1634-04-4	6,100.	5.	ug/l	10
02014	t-Amyl methyl ether	994-05-8	1,500.	5.	ug/l	10
02015	t-Butyl alcohol	75-65-0	910.	20.	ug/l	10
05401	Benzene	71-43-2	48.	5.	ug/l	10
05407	Toluene	108-88-3	N.D.	5.	ug/l	10
05415	Ethylbenzene	100-41-4	270.	5.	ug/l	10
06310	Xylene (Total)	1330-20-7	350.	5.	ug/l	10

Preservation requirements were not met. The vial submitted for volatile analysis did not have a pH < 2 at the time of analysis. Due to the volatile nature of the analytes, it is not appropriate for the laboratory to adjust the pH at the time of sample receipt. The pH of this sample was pH = 4.

State of California Lab Certification No. 2116
Trip blank vials were not received by the laboratory for this sample group.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	SW-846 8015B modified	1	11/26/2007 01:01	K. Robert Caulfeild-James	10

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Analysis Report

Lancaster Laboratories Sample No. WW 5218116

GP-2-W-45-071116 Grab Water
Facility# 98139 MTI# 61H-1971 CETK
16304 Foothill-San Leandro T0600100303 GP-2
Collected:11/16/2007 14:30 by CB

Account Number: 11997

Submitted: 11/21/2007 09:50
Reported: 12/05/2007 at 15:17
Discard: 01/05/2008

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01594	BTEX+5 Oxygenates+EDC+EDB+ETOH	SW-846 8260B	1	11/29/2007 02:41	Michael A Ziegler	10
01146	GC VOA Water Prep	SW-846 5030B	1	11/26/2007 01:01	K. Robert Caulfeild-James	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	11/29/2007 02:41	Michael A Ziegler	10

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Analysis Report

Lancaster Laboratories Sample No. SW 5218117

GP-1-S-5-071115 Grab Soil
Facility# 98139 MTI# 61H-1971 CETK
16304 Foothill-San Leandro T0600100303 GP-1
Collected:11/15/2007 09:20 by CB

Account Number: 11997

Submitted: 11/21/2007 09:50
Reported: 12/05/2007 at 15:17
Discard: 01/05/2008

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CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	21.	10.	mg/kg	250
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07361	BTEX+5 Oxygenates+EDC+EDB					
02016	Methyl Tertiary Butyl Ether	1634-04-4	0.13	0.0005	mg/kg	0.93
02019	t-Amyl methyl ether	994-05-8	0.005	0.0009	mg/kg	0.93
02020	t-Butyl alcohol	75-65-0	0.25	0.019	mg/kg	0.93
05460	Benzene	71-43-2	0.0009	0.0005	mg/kg	0.93
05466	Toluene	108-88-3	N.D.	0.0009	mg/kg	0.93
05474	Ethylbenzene	100-41-4	0.015	0.0009	mg/kg	0.93
06301	Xylene (Total)	1330-20-7	0.024	0.0009	mg/kg	0.93

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01725	TPH-GRO - Soils	SW-846 8015B modified	1	11/28/2007 12:15	Linda C Pape	250
07361	BTEX+5 Oxygenates+EDC+EDB	SW-846 8260B	1	11/29/2007 11:24	Holly Berry	0.93
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	1	11/21/2007 18:22	Lois E Hiltz	n.a.
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	2	11/21/2007 18:24	Lois E Hiltz	n.a.
01150	GC - Bulk Soil Prep	SW-846 5030A	1	11/21/2007 18:27	Lois E Hiltz	n.a.
06646	GC/MS HL Bulk Sample Prep	SW-846 5030A	1	11/21/2007 18:25	Lois E Hiltz	n.a.

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Analysis Report

Lancaster Laboratories Sample No. SW 5218118

GP-1-S-15-071116 Grab Soil
Facility# 98139 MTI# 61H-1971 CETK
16304 Foothill-San Leandro T0600100303 GP-1
Collected:11/16/2007 09:25 by CB

Account Number: 11997

Submitted: 11/21/2007 09:50
Reported: 12/05/2007 at 15:17
Discard: 01/05/2008

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CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	41.	10.	mg/kg	250
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07361	BTEX+5 Oxygenates+EDC+EDB					
02016	Methyl Tertiary Butyl Ether	1634-04-4	0.13	0.0005	mg/kg	0.94
02019	t-Amyl methyl ether	994-05-8	0.012	0.0009	mg/kg	0.94
02020	t-Butyl alcohol	75-65-0	0.056	0.019	mg/kg	0.94
05460	Benzene	71-43-2	0.006	0.0005	mg/kg	0.94
05466	Toluene	108-88-3	N.D.	0.0009	mg/kg	0.94
05474	Ethylbenzene	100-41-4	0.11	0.0009	mg/kg	0.94
06301	Xylene (Total)	1330-20-7	0.54	0.0009	mg/kg	0.94

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01725	TPH-GRO - Soils	SW-846 8015B modified	1	11/28/2007 12:52	Linda C Pape	250
07361	BTEX+5 Oxygenates+EDC+EDB	SW-846 8260B	1	11/29/2007 00:46	Susan McMahon-Luu	0.94
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	1	11/21/2007 18:30	Lois E Hiltz	n.a.
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	2	11/21/2007 18:31	Lois E Hiltz	n.a.
01150	GC - Bulk Soil Prep	SW-846 5030A	1	11/21/2007 18:35	Lois E Hiltz	n.a.
06646	GC/MS HL Bulk Sample Prep	SW-846 5030A	1	11/21/2007 18:33	Lois E Hiltz	n.a.

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Analysis Report

Lancaster Laboratories Sample No. SW 5218119

GP-1-S-25-071116 Grab Soil
Facility# 98139 MTI# 61H-1971 CETK
16304 Foothill-San Leandro T0600100303 GP-1
Collected:11/16/2007 09:45 by CB

Account Number: 11997

Submitted: 11/21/2007 09:50
Reported: 12/05/2007 at 15:17
Discard: 01/05/2008

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CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	27.	10.	mg/kg	250
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07361	BTEX+5 Oxygenates+EDC+EDB					
02016	Methyl Tertiary Butyl Ether	1634-04-4	0.29	0.024	mg/kg	47.08
02019	t-Amyl methyl ether	994-05-8	0.013	0.001	mg/kg	0.97
02020	t-Butyl alcohol	75-65-0	N.D.	0.019	mg/kg	0.97
05460	Benzene	71-43-2	0.014	0.0005	mg/kg	0.97
05466	Toluene	108-88-3	N.D.	0.001	mg/kg	0.97
05474	Ethylbenzene	100-41-4	0.095	0.001	mg/kg	0.97
06301	Xylene (Total)	1330-20-7	0.25	0.001	mg/kg	0.97

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01725	TPH-GRO - Soils	SW-846 8015B modified	1	11/28/2007 16:50	Linda C Pape	250
07361	BTEX+5 Oxygenates+EDC+EDB	SW-846 8260B	1	11/28/2007 11:28	Matthew S Woods	0.97
07361	BTEX+5 Oxygenates+EDC+EDB	SW-846 8260B	1	11/29/2007 20:03	Angela D Sneeringer	47.08
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	1	11/21/2007 18:39	Lois E Hiltz	n.a.
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	2	11/21/2007 18:41	Lois E Hiltz	n.a.
01150	GC - Bulk Soil Prep	SW-846 5030A	1	11/21/2007 18:46	Lois E Hiltz	n.a.
06646	GC/MS HL Bulk Sample Prep	SW-846 5030A	1	11/21/2007 18:44	Lois E Hiltz	n.a.

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Analysis Report

Lancaster Laboratories Sample No. SW 5218120

GP-1-S-35-071116 Grab Soil
Facility# 98139 MTI# 61H-1971 CETK
16304 Foothill-San Leandro T0600100303 GP-1
Collected:11/16/2007 15:05 by CB

Account Number: 11997

Submitted: 11/21/2007 09:50
Reported: 12/05/2007 at 15:17
Discard: 01/05/2008

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CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	N.D.	1.0	mg/kg	25
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07361	BTEX+5 Oxygenates+EDC+EDB					
02016	Methyl Tertiary Butyl Ether	1634-04-4	0.044	0.0005	mg/kg	0.99
02019	t-Amyl methyl ether	994-05-8	0.003	0.001	mg/kg	0.99
02020	t-Butyl alcohol	75-65-0	N.D.	0.020	mg/kg	0.99
05460	Benzene	71-43-2	0.002	0.0005	mg/kg	0.99
05466	Toluene	108-88-3	N.D.	0.001	mg/kg	0.99
05474	Ethylbenzene	100-41-4	0.006	0.001	mg/kg	0.99
06301	Xylene (Total)	1330-20-7	0.014	0.001	mg/kg	0.99

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01725	TPH-GRO - Soils	SW-846 8015B modified	1	11/28/2007 17:28	Linda C Pape	25
07361	BTEX+5 Oxygenates+EDC+EDB	SW-846 8260B	1	11/28/2007 09:12	Matthew S Woods	0.99
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	1	11/21/2007 18:49	Lois E Hiltz	n.a.
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	2	11/21/2007 18:51	Lois E Hiltz	n.a.
01150	GC - Bulk Soil Prep	SW-846 5030A	1	11/21/2007 18:55	Lois E Hiltz	n.a.
06646	GC/MS HL Bulk Sample Prep	SW-846 5030A	1	11/21/2007 18:53	Lois E Hiltz	n.a.

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Analysis Report

Lancaster Laboratories Sample No. SW 5218121

GP-2-S-10-071116 Grab Soil
Facility# 98139 MTI# 61H-1971 CETK
16304 Foothill-San Leandro T0600100303 GP-2
Collected:11/16/2007 11:05 by CB

Account Number: 11997

Submitted: 11/21/2007 09:50
Reported: 12/05/2007 at 15:17
Discard: 01/05/2008

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CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	N.D.	1.0	mg/kg	25
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07361	BTEX+5 Oxygenates+EDC+EDB					
02016	Methyl Tertiary Butyl Ether	1634-04-4	0.091	0.0005	mg/kg	0.93
02019	t-Amyl methyl ether	994-05-8	0.050	0.0009	mg/kg	0.93
02020	t-Butyl alcohol	75-65-0	0.062	0.019	mg/kg	0.93
05460	Benzene	71-43-2	N.D.	0.0005	mg/kg	0.93
05466	Toluene	108-88-3	N.D.	0.0009	mg/kg	0.93
05474	Ethylbenzene	100-41-4	N.D.	0.0009	mg/kg	0.93
06301	Xylene (Total)	1330-20-7	N.D.	0.0009	mg/kg	0.93

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01725	TPH-GRO - Soils	SW-846 8015B modified	1	11/28/2007 18:05	Linda C Pape	25
07361	BTEX+5 Oxygenates+EDC+EDB	SW-846 8260B	1	11/28/2007 09:35	Matthew S Woods	0.93
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	1	11/21/2007 18:57	Lois E Hiltz	n.a.
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	2	11/21/2007 18:59	Lois E Hiltz	n.a.
01150	GC - Bulk Soil Prep	SW-846 5030A	1	11/21/2007 19:04	Lois E Hiltz	n.a.
06646	GC/MS HL Bulk Sample Prep	SW-846 5030A	1	11/21/2007 19:01	Lois E Hiltz	n.a.

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Analysis Report

Lancaster Laboratories Sample No. SW 5218122

GP-2-S-20-071116 Grab Soil
Facility# 98139 MTI# 61H-1971 CETK
16304 Foothill-San Leandro T0600100303 GP-2
Collected:11/16/2007 12:30 by CB

Account Number: 11997

Submitted: 11/21/2007 09:50
Reported: 12/05/2007 at 15:17
Discard: 01/05/2008

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CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	200.	40.	mg/kg	1000
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07361	BTEX+5 Oxygenates+EDC+EDB					
02016	Methyl Tertiary Butyl Ether	1634-04-4	0.18	0.025	mg/kg	50.51
02019	t-Amyl methyl ether	994-05-8	0.091	0.051	mg/kg	50.51
02020	t-Butyl alcohol	75-65-0	N.D.	1.0	mg/kg	50.51
05460	Benzene	71-43-2	0.067	0.025	mg/kg	50.51
05466	Toluene	108-88-3	N.D.	0.051	mg/kg	50.51
05474	Ethylbenzene	100-41-4	0.61	0.051	mg/kg	50.51
06301	Xylene (Total)	1330-20-7	0.74	0.051	mg/kg	50.51
	The GC/MS volatile analysis was performed according to the high level soil method due to the level of non-target compounds. Therefore, the reporting limits were raised.					

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All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01725	TPH-GRO - Soils	SW-846 8015B modified	1	11/28/2007 18:42	Linda C Pape	1000
07361	BTEX+5 Oxygenates+EDC+EDB	SW-846 8260B	1	11/29/2007 18:33	Angela D Sneeringer	50.51
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	1	11/21/2007 19:13	Lois E Hiltz	n.a.
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	2	11/21/2007 19:15	Lois E Hiltz	n.a.
01150	GC - Bulk Soil Prep	SW-846 5030A	1	11/21/2007 19:19	Lois E Hiltz	n.a.
06646	GC/MS HL Bulk Sample Prep	SW-846 5030A	1	11/21/2007 19:17	Lois E Hiltz	n.a.

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Analysis Report

Lancaster Laboratories Sample No. SW 5218124

GP-2-S-35-071116 Grab Soil
Facility# 98139 MTI# 61H-1971 CETK
16304 Foothill-San Leandro T0600100303 GP-2
Collected:11/16/2007 14:10 by CB

Account Number: 11997

Submitted: 11/21/2007 09:50
Reported: 12/05/2007 at 15:17
Discard: 01/05/2008

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CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01725	TPH-GRO - Soils	n.a.	14.	10.	mg/kg	250
	The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.					
07361	BTEX+5 Oxygenates+EDC+EDB					
02016	Methyl Tertiary Butyl Ether	1634-04-4	1.3	0.024	mg/kg	47.35
02019	t-Amyl methyl ether	994-05-8	0.17	0.001	mg/kg	0.96
02020	t-Butyl alcohol	75-65-0	0.18	0.019	mg/kg	0.96
05460	Benzene	71-43-2	0.003	0.0005	mg/kg	0.96
05466	Toluene	108-88-3	N.D.	0.001	mg/kg	0.96
05474	Ethylbenzene	100-41-4	0.031	0.001	mg/kg	0.96
06301	Xylene (Total)	1330-20-7	0.042	0.001	mg/kg	0.96

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01725	TPH-GRO - Soils	SW-846 8015B modified	1	11/28/2007 19:57	Linda C Pape	250
07361	BTEX+5 Oxygenates+EDC+EDB	SW-846 8260B	1	11/29/2007 18:56	Angela D Sneeringer	47.35
07361	BTEX+5 Oxygenates+EDC+EDB	SW-846 8260B	1	11/29/2007 22:00	Susan McMahon-Luu	0.96
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	1	11/21/2007 19:39	Lois E Hiltz	n.a.
00374	GC/MS - Bulk Sample Prep	SW-846 5030A	2	11/21/2007 19:40	Lois E Hiltz	n.a.
01150	GC - Bulk Soil Prep	SW-846 5030A	1	11/21/2007 19:43	Lois E Hiltz	n.a.
06646	GC/MS HL Bulk Sample Prep	SW-846 5030A	1	11/21/2007 19:42	Lois E Hiltz	n.a.

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Analysis Report

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 12/05/07 at 03:17 PM

Group Number: 1066545

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 07325B54B	Sample number(s): 5218113-5218116							
TPH-GRO - Waters	N.D.	50.	ug/l	99	103	75-135	4	30
Batch number: 07332A16A	Sample number(s): 5218119-5218122,5218124							
TPH-GRO - Soils	N.D.	1.0	mg/kg	84		67-119		
Batch number: 07332A31A	Sample number(s): 5218117-5218118							
TPH-GRO - Soils	N.D.	1.0	mg/kg	99		67-119		
Batch number: A073321AA	Sample number(s): 5218119-5218121							
Methyl Tertiary Butyl Ether	N.D.	0.0005	mg/kg	105	101	72-117	3	30
t-Amyl methyl ether	N.D.	0.001	mg/kg	105	103	73-116	2	30
t-Butyl alcohol	N.D.	0.020	mg/kg	112	112	59-154	1	30
Benzene	N.D.	0.0005	mg/kg	98	100	84-115	1	30
Toluene	N.D.	0.001	mg/kg	102	104	81-116	2	30
Ethylbenzene	N.D.	0.001	mg/kg	101	102	82-115	1	30
Xylene (Total)	N.D.	0.001	mg/kg	100	101	82-117	1	30
Batch number: A073322AA	Sample number(s): 5218118							
Methyl Tertiary Butyl Ether	N.D.	0.0005	mg/kg	105	99	72-117	6	30
t-Amyl methyl ether	N.D.	0.001	mg/kg	104	103	73-116	1	30
t-Butyl alcohol	N.D.	0.020	mg/kg	114	105	59-154	8	30
Benzene	N.D.	0.0005	mg/kg	101	99	84-115	2	30
Toluene	N.D.	0.001	mg/kg	103	101	81-116	2	30
Ethylbenzene	N.D.	0.001	mg/kg	103	101	82-115	2	30
Xylene (Total)	N.D.	0.001	mg/kg	101	99	82-117	2	30
Batch number: A073331AA	Sample number(s): 5218124							
t-Amyl methyl ether	N.D.	0.001	mg/kg	99	105	73-116	6	30
t-Butyl alcohol	N.D.	0.020	mg/kg	116	118	59-154	2	30
Benzene	N.D.	0.0005	mg/kg	97	102	84-115	5	30
Toluene	N.D.	0.001	mg/kg	100	105	81-116	5	30
Ethylbenzene	N.D.	0.001	mg/kg	95	103	82-115	8	30
Xylene (Total)	N.D.	0.001	mg/kg	94	102	82-117	8	30
Batch number: B073331AA	Sample number(s): 5218117							
Methyl Tertiary Butyl Ether	N.D.	0.0005	mg/kg	87	82	72-117	6	30
t-Amyl methyl ether	N.D.	0.001	mg/kg	95	93	73-116	2	30
t-Butyl alcohol	N.D.	0.020	mg/kg	99	98	59-154	1	30
Benzene	N.D.	0.0005	mg/kg	93	89	84-115	4	30
Toluene	N.D.	0.001	mg/kg	93	91	81-116	2	30
Ethylbenzene	N.D.	0.001	mg/kg	92	90	82-115	2	30
Xylene (Total)	N.D.	0.001	mg/kg	93	90	82-117	2	30
Batch number: D073324AA	Sample number(s): 5218113-5218116							
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	97		73-119		
t-Amyl methyl ether	N.D.	0.5	ug/l	97		79-113		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 12/05/07 at 03:17 PM

Group Number: 1066545

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
t-Butyl alcohol	N.D.	2.	ug/l	99		74-117		
Benzene	N.D.	0.5	ug/l	99		78-119		
Toluene	N.D.	0.5	ug/l	103		85-115		
Ethylbenzene	N.D.	0.5	ug/l	101		82-119		
Xylene (Total)	N.D.	0.5	ug/l	103		83-113		
Batch number: D073333AA	Sample number(s): 5218115							
t-Butyl alcohol	N.D.	2.	ug/l	89		74-117		
Benzene	N.D.	0.5	ug/l	96		78-119		
Toluene	N.D.	0.5	ug/l	97		85-115		
Ethylbenzene	N.D.	0.5	ug/l	92		82-119		
Xylene (Total)	N.D.	0.5	ug/l	94		83-113		
Batch number: R073331AA	Sample number(s): 5218119,5218122,5218124							
Methyl Tertiary Butyl Ether	N.D.	0.025	mg/kg	90		72-117		
t-Amyl methyl ether	N.D.	0.050	mg/kg	93		73-116		
t-Butyl alcohol	N.D.	1.0	mg/kg	103		59-154		
Benzene	N.D.	0.025	mg/kg	93		84-115		
Toluene	N.D.	0.050	mg/kg	95		81-116		
Ethylbenzene	N.D.	0.050	mg/kg	96		82-115		
Xylene (Total)	N.D.	0.050	mg/kg	96		82-117		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 07325B54B	Sample number(s): 5218113-5218116 UNSPK: P217065								
TPH-GRO - Waters	111		63-154						
Batch number: 07332A16A	Sample number(s): 5218119-5218122,5218124 UNSPK: P216785								
TPH-GRO - Soils	69	69	39-118	1	30				
Batch number: 07332A31A	Sample number(s): 5218117-5218118 UNSPK: P217991								
TPH-GRO - Soils	83	88	39-118	5	30				
Batch number: A073321AA	Sample number(s): 5218119-5218121 UNSPK: P218020								
Methyl Tertiary Butyl Ether	102		59-119						
t-Amyl methyl ether	103		63-112						
t-Butyl alcohol	128		51-134						
Benzene	104		66-112						
Toluene	110		50-121						
Ethylbenzene	106		54-116						
Xylene (Total)	103		52-117						
Batch number: A073322AA	Sample number(s): 5218118 UNSPK: P218596								
Methyl Tertiary Butyl Ether	103		59-119						
t-Amyl methyl ether	103		63-112						
t-Butyl alcohol	190*		51-134						
Benzene	102		66-112						
Toluene	107		50-121						

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 12/05/07 at 03:17 PM

Group Number: 1066545

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Ethylbenzene	109		54-116						
Xylene (Total)	105		52-117						
Batch number: A073331AA	Sample number(s): 5218124 UNSPK: P217990								
t-Amyl methyl ether	104		63-112						
t-Butyl alcohol	137*		51-134						
Benzene	105		66-112						
Toluene	110		50-121						
Ethylbenzene	105		54-116						
Xylene (Total)	103		52-117						
Batch number: B073331AA	Sample number(s): 5218117 UNSPK: P219117								
Methyl Tertiary Butyl Ether	95		59-119						
t-Amyl methyl ether	111		63-112						
t-Butyl alcohol	127		51-134						
Benzene	101		66-112						
Toluene	103		50-121						
Ethylbenzene	107		54-116						
Xylene (Total)	104		52-117						
Batch number: D073324AA	Sample number(s): 5218113-5218116 UNSPK: P217120								
Methyl Tertiary Butyl Ether	91	99	69-127	4	30				
t-Amyl methyl ether	98	99	72-125	1	30				
t-Butyl alcohol	90	97	70-121	6	30				
Benzene	99	105	83-128	4	30				
Toluene	104	108	83-127	3	30				
Ethylbenzene	104	108	82-129	3	30				
Xylene (Total)	103	108	82-130	4	30				
Batch number: D073333AA	Sample number(s): 5218115 UNSPK: P218327								
t-Butyl alcohol	91	93	70-121	2	30				
Benzene	103	104	83-128	1	30				
Toluene	104	105	83-127	1	30				
Ethylbenzene	101	102	82-129	1	30				
Xylene (Total)	103	103	82-130	0	30				
Batch number: R073331AA	Sample number(s): 5218119,5218122,5218124 UNSPK: P217481								
Methyl Tertiary Butyl Ether	69	78	59-119	23	30				
t-Amyl methyl ether	77	91	63-112	27	30				
t-Butyl alcohol	93	105	51-134	23	30				
Benzene	75	82	66-112	19	30				
Toluene	86	96	50-121	22	30				
Ethylbenzene	91	103	54-116	23	30				
Xylene (Total)	90	104	52-117	25	30				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 12/05/07 at 03:17 PM

Group Number: 1066545

Surrogate Quality Control

Analysis Name: TPH-GRO - Waters
Batch number: 07325B54B

	Trifluorotoluene-F
5218113	89
5218114	86
5218115	92
5218116	105
Blank	83
LCS	94
LCSD	96
MS	92
Limits:	63-135

Analysis Name: TPH-GRO - Soils
Batch number: 07332A16A

	Trifluorotoluene-F
5218119	8*
5218120	76
5218121	77
5218122	4*
5218124	8*
Blank	89
LCS	87
MS	80
MSD	81
Limits:	61-122

Analysis Name: TPH-GRO - Soils
Batch number: 07332A31A

	Trifluorotoluene-F
5218117	7*
5218118	10*
Blank	89
LCS	100
MS	93
MSD	90
Limits:	61-122

Analysis Name: BTEX+5 Oxygenates+EDC+EDB
Batch number: A073321AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5218119	93	83	101	108
5218120	100	83	98	101
5218121	100	88	99	99
Blank	94	88	96	94
LCS	95	90	97	98
LCSD	94	88	97	97
MS	93	90	97	92
Limits:	71-114	70-109	70-123	70-111

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 12/05/07 at 03:17 PM

Group Number: 1066545

Surrogate Quality Control

Analysis Name: BTEX+5 Oxygenates+EDC+EDB
Batch number: A073322AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5218118	95	88	102	96
Blank	93	88	96	91
LCS	92	90	97	93
LCSD	93	88	98	94
MS	97	86	97	96
Limits:	71-114	70-109	70-123	70-111

Analysis Name: BTEX+5 Oxygenates+EDC+EDB
Batch number: A073331AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5218124	97	92	97	97
Blank	94	90	96	93
LCS	94	89	98	93
LCSD	94	90	97	94
MS	95	90	101	90
Limits:	71-114	70-109	70-123	70-111

Analysis Name: BTEX+5 Oxygenates+EDC+EDB
Batch number: B073331AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5218117	101	89	92	102
Blank	97	92	94	88
LCS	96	94	94	92
LCSD	101	92	96	94
MS	101	91	99	90
Limits:	71-114	70-109	70-123	70-111

Analysis Name: BTEX+5 Oxygenates+EDC+EDB+ETOH
Batch number: D073324AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5218113	94	94	98	102
5218114	102	106	104	102
5218116	96	98	102	102
Blank	98	101	100	99
LCS	99	102	100	103
MS	96	98	99	100
MSD	102	105	104	107
Limits:	80-116	77-113	80-113	78-113

Analysis Name: BTEX+5 Oxygenates+EDC+EDB+ETOH
Batch number: D073333AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5218115	90	93	93	95
Blank	96	97	95	97
LCS	96	101	96	105
MS	98	102	98	108

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o CRA
Reported: 12/05/07 at 03:17 PM

Group Number: 1066545

Surrogate Quality Control

MSD	96	97	94	102
Limits:	80-116	77-113	80-113	78-113

Analysis Name: BTEX+5 Oxygenates+EDC+EDB
Batch number: R073331AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5218122	80	77	80	80
Blank	93	90	89	89
LCS	87	85	84	86
MS	78	73	77	80
MSD	90	86	90	97
Limits:	71-114	70-109	70-123	70-111

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Chevron California Region Analysis Request/Chain of Custody

Lancaster Laboratories
Where quality is a science.

Acct. #: 11997 For Lancaster Laboratories use only Sample #: 5218113-24 SCR#:

MT# 611971

Group# 1066545

Facility #: 9-8139
Site Address: 16304 Foothill San Leandro, CA
Chevron PM: Bauhs Lead Consultant: CRA
Consultant/Office: Rosemite
Consultant Prj. Mgr.: B. Case
Consultant Phone #: 916 677 3407 Fax #: 916 677 3687
Sampler: C. Benedict
Service Order #: ☐ Non SAR:

Analyses Requested

Preservation Codes

Preservative Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 O = Other

☐ J value reporting needed
☐ Must meet lowest detection limits possible for 8260 compounds

8021 MTBE Confirmation
☐ Confirm highest hit by 8260
☐ Confirm all hits by 8260
☐ Run ____ oxy's on highest hit
☐ Run ____ oxy's on all hits

Field Point Name	Matrix	Repeat Sample	Top Depth	Year Month Day	Time Collected	New Field Pt.	Grab	Composite	Total Number of Containers	BTEX + MTBE 8260 ☒ 8021 ☐	TPH 8015 MOD GRO	TPH 8015 MOD DRO ☐ Silica Gel Cleanup	8260 full scan	Oxygenates	Lead 7420 ☐ 7421 ☐	TAME, TBA (8260)
GP-1-32	WATER		32	07 11 16	1025		X			X	X					X
GP-1-45	WATER		41		1525											
GP-2-32					1320		X									
GP-2-45			41		1430											
GP-1-5	SOIL			07 11 15	0920		X									
GP-1-15				07 11 16	0925		X									
GP-1-25					0945		X									
GP-1-35					1505		X									
GP-2-10					1105		X									
GP-2-20					1230		X									
GP-2-35					1410		X									
WASTE-5								X							X	
GP-3-5				07 11 15	1300		X			X	X				X	

Comments / Remarks

Please send WASTE-5 results to Jay@IWM

Recieved extra sample GP-2-30 on 11/20/07. -Discarded per C. Benedict.

Turnaround Time Requested (TAT) (please circle)

STD. TAT	72 hour	48 hour
24 hour	4 day	5 day

Data Package Options (please circle if required)
QC Summary Type I – Full
Type VI (Raw Data) ☐ Coelt Deliverable not needed
WIP (RWQCB)
Disk

	Date	Time		Date	Time
Relinquished by: C. Benedict	11/20/07	1500	Received by:		
Relinquished by:			Received by:		
Relinquished by:			Received by:		
Relinquished by Commercial Carrier: UPS FedEx Other			Received by: Sheila Meyer	11-21-07	0950
Temperature Upon Receipt 4.8 C°			Custody Seals Intact? Yes No		

3460 Rev. 10/04/01

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

11/29/07

Environmental Change Form

Acct #: 11997

Client Name: Chevron
(Include Project Name)

☐ Reprint Acknowledgement

Select one	Sample #(s)	SDG #	
Delete	5218123		VOIDED

Reason for Change

- ☐ Technical Decision
- ☐ Missed TAT
- ☐ Missed Holding Time
- ☐ SA Entry/Interpretation
- ☐ Unclear Client Info
- ☐ Updated Client Request
- ☐ Mislabeling
- ☐ Unclear/Lack of Info
  From TC_____
  From CS_____
- ☐ Other
  _____

Distribution List

SA – Receive Original
Reprint Labels _
CS Rep.:_____
Circle appropriate department number(s) to receive copy
If change is related to employee safety, send a copy to Dept. 48

- ☐ 02 Env. Micro
- ☒ 21 GC/MS VOA
- ☐ 22 Metals
- ☐ 24 Pest
- ☒ 25 GC/VOA
- ☐ 26 GC/MS Semi
- ☐ 27 Inst. Water Qual
- ☐ 28 Leachate
- ☐ 29 Water Quality
- ☐ 30 VOAs in Air
- ☐ 32 EPH/Misc. GC
- ☐ 36 Org Prep
- ☐ 38 Data Package
- ☐ 38 Diskette
- ☐ 48 Env Health & Safety (EHS)
- ☐ 55 Storage

☒ Copies have been distributed

Remarks/Corrective Action:
Sample submitted which was not on COC- client requested for this sample to be discarded and not analyzed.

Please make changes to Group Form #_____

Please make changes to Sample Form #_____

Requested by:	_____	**Date:** _	**Time:** _____
Made by:	Angela Miller	**Date:** 11/29/07	**Time** 1336
Audited by:	_____	**Date:** _____	**Time** _____

E2058.03

Lancaster Laboratories
Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< less than – The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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CONESTOGA-ROVERS
& ASSOCIATES

ATTACHMENT E
Standard Field Procedures for GeoProbe Borings

STANDARD FIELD PROCEDURES FOR GEOPROBE® SAMPLING

This document describes Conestoga-Rovers & Associates' standard field methods for GeoProbe® soil and ground water sampling. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Professional Geologist (PG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e., sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or separate-phase hydrocarbon saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e., cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Sampling

GeoProbe® soil samples are collected from borings driven using hydraulic push technologies. Prior to drilling, the first 8 ft of the boring are cleared using an air or water knife and vacuum extraction. This minimizes the potential for impacting utilities.

A minimum of one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples can be collected near the water table and at lithologic changes. Samples are collected using samplers lined with polyethylene or brass tubes driven into undisturbed sediments at the bottom of the borehole. The ground surface immediately adjacent to the boring is used as a datum to measure sample depth. The horizontal location of each boring is measured in the field relative to a permanent on-site reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned or washed prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling, and Transport

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon® tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

After a soil sample has been collected, soil from the remaining tubing is placed inside a sealed plastic bag and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable GasTech® or photo ionization detector measures volatile hydrocarbon vapor concentrations in the bag's headspace, extracting the vapor through a slit in the plastic bag. The measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Grab Ground Water Sampling

Ground water samples are collected from the open borehole using bailers, advancing disposable Tygon® tubing into the borehole and extracting ground water using a diaphragm pump, or using a hydro-punch style sampler with a bailer or tubing. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4° C, and transported under chain-of-custody to the laboratory.

Duplicates and Blanks

Blind duplicate water samples are usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory quality assurance/quality control (QA/QC) blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

CONESTOGA-ROVERS
& ASSOCIATES

ATTACHMENT F
Standard Field Procedures for Monitoring Well Desturction

Conestoga-Rovers & Associates

STANDARD FIELD PROCEDURES FOR MONITORING WELL DESTRUCTION

This document presents standard field methods for properly destroying groundwater monitoring wells. The objective of well destruction is to destroy wells in a manner that is protective of potential water resources. The two procedures most commonly used are pressure grouting and drilling out the well. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Pressure Grouting

Pressure grouting consists of injecting neat Portland cement through a tremie pipe under pressure to the bottom of the well. The cement is composed of about five gallons of water to a 94 pound. sack of Portland I/II Cement. Once the well casing is full of grout, it is pressurized for five minutes by applying a pressure of 25 pounds per square inch (psi) with a grout pump. The well casing can also be pressurized by extending the well casing to the appropriate height and filling it with grout. In either case, the additional pressure allows the grout to be forced into the sand pack. After grouting the sand pack and casing, the well vault is removed and the area resurfaced or backfilled as required.

Well Drill Out

When well drill out is required, the well location is cleared for subsurface utilities and a hollow-stem auger (or other appropriate) drilling rig is used to drill out the well casing and filter pack materials. First, drill rods are placed down the well and used to guide the augers as they drill out the well. A guide auger is used in place of the drill rods if feasible. Once the well is drilled out, the boring is filled with Portland cement injected through the augers or a tremie pipe under pressure to the bottom of the boring. The well vault is removed and the area resurfaced or backfilled as required.

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