CAMBRIA

November 24, 1998

Mr. Scott Seery
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: **Subsurface Investigation Report**
Shell-branded Service Station
9750 Golf Links Road
Oakland, California
WIC #204-5508-2808
Cambria Project# 240-0735-013

Dear Mr. Seery:

On behalf of Equilon Enterprises LLC (Equilon), Cambria Environmental Technology, Inc. (Cambria) is submitting the results of the subsurface investigation conducted on July 6 and 31, 1998 at the above-referenced site. The objective of this investigation was to define the vertical extent of hydrocarbons in soil, as requested by the Alameda County Health Care Services Agency (ACHCSA) in the April 10, 1998 letter to Shell Oil Products Company (Shell). The investigation was conducted in accordance with Cambria's May 14, 1998 *Investigation Work Plan*, which was approved in the July 2, 1998 ACHCSA letter to Shell. Presented below are the site background, investigation procedures, investigation results, and our conclusions and recommendations.

BACKGROUND

Site Location: This operating Shell-branded service station is located at the intersection of Golf Links Road and Mountain Boulevard in Oakland, California (Figure 1). The area surrounding the site is both commercial and residential. Highway 580 runs near the northern boundary of the site.

1995 Waste Oil Underground Storage Tank (UST) Removal: On March 7, 1995, Weiss Associates of Emeryville, California (WA) observed the removal of a 550-gallon, single-walled, steel waste oil (UST) and collected soil samples from the tank excavation floor and side walls. The highest hydrocarbon concentrations were 190 milligrams per kilogram (mg/kg) total petroleum hydrocarbons as gasoline (TPHg) and 3,900 mg/kg total petroleum hydrocarbons as diesel (TPHd). No benzene was detected.

Oakland, CA
Sonoma, CA
Portland, OR
Seattle, WA

Cambria Environmental Technology, Inc.

1144 65th Street
Suite B
Oakland, CA 94608
Tel (510) 420-0700
Fax (510) 420-9170

1995 Subsurface Investigation: On December 15, 1995, WA installed one soil boring in the vicinity of the former waste oil UST. The only hydrocarbons detected were 2.8 mg/kg TPHd at 30.5 feet below ground surface (ft bgs) and 56 mg/kg petroleum oil and grease at 40.5 ft bgs. No ground water was encountered at a maximum depth explored of 48 ft bgs.

1998 Dispenser Upgrade: On February 4, 1998, Cambria observed station upgrade activities and collected soil samples from beneath one dispenser based on field observations. The highest hydrocarbon concentrations were 7,800 mg/kg TPHg and 37 mg/kg benzene beneath dispenser D-4 at 4.0 ft bgs (Figure 1). No field indications of hydrocarbons were observed beneath the other dispensers.

INVESTIGATION PROCEDURES

The procedures for this subsurface investigation, described in Cambria's approved work plan, are summarized below. The boring location is shown on Figure 1. Analytical results for soil are summarized in Table 1 and presented as Attachment A. The boring log and Cambria's *Standard Field Procedures for Soil Borings* are presented in Attachments B and C, respectively.

Personnel Present: Maureen Feineman, Staff Geologist, of Cambria.

Permits: Alameda County Public Works Agency Drilling Permit #98WR265 (Attachment D).

Drilling Company: Gregg Drilling of Martinez, California (C-57 License #485165).

Drilling Dates: July 6 and 31, 1998.

Drilling Method: On July 6, 1998, Cambria attempted to advance the boring with a GeoProbe direct-push rig. Refusal was encountered at 16 ft bgs. Cambria returned on July 31, 1998 and completed the boring with a hollow-stem auger rig.

Number of Borings: One (SB-1).

Boring Depth: 30 ft bgs.

Sediment Lithology: The site subsurface consists primarily of silt and gravelly silt of low to moderate estimated permeability, with a layer of silty sand of high estimated permeability from

approximately 12 to 15 ft bgs. Boring logs are included as Attachment B.

Ground Water Depth: **A thin zone of perched water, corresponding with the silty sand layer, was encountered at approximately 12 ft bgs.**

Chemical Analyses: The soil samples from boring SB-1 were analyzed for:

- TPHg by modified EPA Method 8015;
- Methyl tert-butyl ether (MTBE) and benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020;
- The highest MTBE concentration was confirmed by EPA Method 8260.

Waste Handling Analyses: Four soil samples collected from the soil boring were composited and analyzed per Shell's waste management procedures included as Attachment E.

Backfill Method: The soil boring was backfilled with Portland Type I/II cement grout.

Soil Disposal: The soil cuttings were transported to Forward Landfill Inc. of Manteca, California by Manley and Sons Trucking Inc. of Sacramento, California (Attachment F).

INVESTIGATION RESULTS

Hydrocarbon Distribution in Soil: **Maximum concentrations of 14,000 mg/kg TPHg and 100 mg/kg benzene were detected in soil sample SB-1-13.0', collected at approximately 13 ft bgs.** Maximum concentrations of 91 mg/kg MTBE (23 mg/kg by EPA Method 8260) were detected in the soil sample SB-1-9.0', collected at approximately 9 ft bgs. Low concentrations of TPHg, BTEX, and MTBE were detected in the deepest sample, SB-1-26.0', collected at approximately 26 ft bgs.

Hydrocarbon Distribution in Ground Water: **Cambria was unable to collect a ground water sample** as the only water encountered was a thin perched zone at approximately 12 ft bgs. Ground water was not encountered at a maximum depth explored of 48 ft bgs in the 1995 subsurface investigation conducted by WA.

CONCLUSIONS AND RECOMMENDATIONS

Analytical results for samples collected from the soil boring identified the presence of petroleum hydrocarbon concentrations in the shallow soil. Samples collected from the soil boring demonstrate attenuation of TPHg and benzene to below detection limits over a 21 ft depth interval with only low concentrations of TPHg, BTEX and MTBE detected in the deepest sample collected at 26 ft bgs. Since ground water has not been encountered in previous investigations to depths of 48 ft bgs, these hydrocarbon concentrations in soil do not appear to pose a threat to ground water quality.

In summary, Cambria recommends *No Further Action* for the following reasons:

- An attenuation pattern of hydrocarbon concentrations is exhibited in shallow soil. Site specific data indicate that TPHg, benzene and MTBE concentrations decrease rapidly with depth;
- The tanks, dispensers and piping have been upgraded to 1998 standards. Thus, the primary source of hydrocarbon releases has been eliminated;
- The limited hydrocarbon impacted soil volume remaining is covered by pavement which reduces infiltration and therefore, the likelihood of ground water impact; and
- Depth to ground water is greater than 48 ft bgs.

not determined

DTW ≈ 12' BG

Actually, concentrations increased with depth:

Depth	TPH-G	Benzene
9.0	1100	6.1
11.5	3.5	0.019
13.0'	14,000	100

CLOSING

We appreciate the opportunity to work with you on this project. Please call Darryk Ataide at (510) 420-0700 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

Darryk Ataide
Project Environmental Scientist

Diane Lundquist, P.E.
Principal Engineer

Attachments:
A - Analytical Report for Soil Samples
B - Soil Boring Log
C - Standard Field Procedures for Soil Borings
D - Drilling Permit
E - Shell's Waste Management Procedures
F - Soil Disposal Confirmation Letter

cc: Karen Petryna, Equiva Services LLC, P.O. Box 6249 Carson, California 90749-6249

C:\WINDOWS\DESKTOP\Inv_Rpt.wpd

Attachment A

Analytical Reports for Soil Samples

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100
1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Cambria
1144 65th St. Suite C
Oakland, CA 94608
Attention: Maureen Feinemar

Project: Shell 9750 Golf Links

Enclosed are the results from samples received at Sequoia Analytical on July 7, 1998. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9807296 -01	SOLID, SB-1-9.0'	07/06/98	MTBE by 8260
9807296 -01	SOLID, SB-1-9.0'	07/06/98	Purgeable TPH/BTEX/MTBE
9807296 -02	SOLID, SB-1-11.5'	07/06/98	Purgeable TPH/BTEX/MTBE
9807296 -03	SOLID, SB-1-13.0'	07/06/98	Purgeable TPH/BTEX/MTBE

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 988-9673
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Cambria	Client Proj. ID: Shell 9750 Golf Links	Sampled: 07/06/98
1144 65th St. Suite C	Sample Descript: SB-1-9.0'	Received: 07/07/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 07/19/98
	Analysis Method: EPA 8260	Analyzed: 07/20/98
Attention: Maureen Feineman	Lab Number: 9807296-01	Reported: 07/22/98

QC Batch Number: MS071998MTBEEXA
Instrument ID: H6

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/Kg	Sample Results ug/Kg
Methyl t-Butyl Ether	2000	23000

Surrogates	Control Limits %		% Recovery
1,2-Dichloroethane-d4	70	121	102

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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Cambria	Client Proj. ID: Shell 9750 Golf Links	Sampled: 07/06/98
1144 65th St. Suite C	Sample Descript: SB-1-9.0'	Received: 07/07/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 07/08/98
	Analysis Method: 8015Mod/8020	Analyzed: 07/08/98
Attention: Maureen Feineman	Lab Number: 9807296-01	Reported: 07/22/98

QC Batch Number: GC070898BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**100**	**1100**
Methyl t-Butyl Ether	**2.5**	**91**
Benzene	**0.50**	**6.1**
Toluene	**0.50**	**40**
Ethyl Benzene	**0.50**	**143**
Xylenes (Total)	**0.50**	**98**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	143 Q
4-Bromofluorobenzene	60	140	5 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Cambria	Client Proj. ID: Shell 9750 Golf Links	Sampled: 07/06/98
1144 65th St. Suite C	Sample Descript: SB-1-11.5'	Received: 07/07/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 07/08/98
	Analysis Method: 8015Mod/8020	Analyzed: 07/08/98
Attention: Maureen Feineman	Lab Number: 9807296-02	Reported: 07/22/98

QC Batch Number: GC070898BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**1.0**	**3.5**
Methyl t-Butyl Ether	**0.025**	**0.79**
Benzene	**0.0050**	**0.019**
Toluene	**0.0050**	**0.34**
Ethyl Benzene	**0.0050**	**0.076**
Xylenes (Total)	**0.0050**	**0.55**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	80
4-Bromofluorobenzene	60	140	107

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

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Cambria	Client Proj. ID: Shell 9750 Golf Links	Sampled: 07/06/98
1144 65th St. Suite C	Sample Descript: SB-1-13.0'	Received: 07/07/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 07/08/98
	Analysis Method: 8015Mod/8020	Analyzed: 07/09/98
Attention: Maureen Feineman	Lab Number: 9807296-03	Reported: 07/22/98

QC Batch Number: GC070898BTEXEXA
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**2000**	**14000**
Methyl t-Butyl Ether	**50**	**66**
Benzene	**10**	**100**
Toluene	**10**	**530**
Ethyl Benzene	**10**	**190**
Xylenes (Total)	**10**	**1200**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	103
4-Bromofluorobenzene	60	140	Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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Cambria
1144 65th St. Ste. C
Oakland, CA 94608
Attention: Maureen Feinerman

Client Project ID: Shell 9750 Golf Links

QC Sample Group: 9807296-01-03

Reported: Jul 22, 1998

QUALITY CONTROL DATA REPORT

Matrix: Solid
Method: EPA 8015
Analyst: R. GECKLER

ANALYTE Gasoline

QC Batch #: GC070898BTEXEXA

Sample No.: GS9807265-32
Date Prepared: 7/8/98
Date Analyzed: 7/8/98
Instrument I.D.#: GCHP7

ample Conc., mg/Kg: 13 mg/Kg
Conc. Spiked, mg/Kg: 5.0

Matrix Spike, mg/Kg: 14
% Recovery: 20

Matrix
ike Duplicate, mg/Kg: 18
% Recovery: 100.0

elative % Difference: 133

RPD Control Limits: 0-25

LCS Batch#: GSBLK070898A

Date Prepared: 7/8/98
Date Analyzed: 7/8/98
Instrument I.D.#: GCHP7

Conc. Spiked, mg/Kg: 5.0

Recovery, mg/Kg: 5.2
LCS % Recovery: 104

Percent Recovery Control Limits:

MS/MSD	60-140
LCS	70-130

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

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Cambria Environmental Tech.
1144 65th St., Ste. C
Oakland, CA 94608
Attention: Maureen Feineman

Client Project ID: Shell 9750 Golf Links
Matrix: Solid
Work Order #: 9807296 -01

Reported: Jul 24, 1998

QUALITY CONTROL DATA REPORT

Analyte:	MTBE
QC Batch#:	MS071998MTBEEXA
Analy. Method:	EPA 8260
Prep. Method:	N.A.
Analyst:	L. Zhu
MS/MSD #:	980796214
Sample Conc.:	N.D.
Prepared Date:	7/19/98
Analyzed Date:	7/20/98
Instrument I.D.#:	H6
Conc. Spiked:	2500 µg/Kg
Result:	2100
MS % Recovery:	84
Dup. Result:	2200
MSD % Recov.:	88
RPD:	4.7
RPD Limit:	0-25

LCS #:	LCS071998
Prepared Date:	7/19/98
Analyzed Date:	7/20/98
Instrument I.D.#:	H6
Conc. Spiked:	2500 µg/Kg
LCS Result:	2300
LCS % Recov.:	92

MS/MSD	60-140
LCS	70-130
Control Limits	

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

Sequoia Analytical

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Cambria
1144 65th St. Suite C
Oakland, CA 94608
Attention: Maureen Feineman

Client Proj. ID: Shell 9750 Golf Links
Lab Proj. ID: 9807296

Received: 07/07/98
Reported: 07/22/98

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 9 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 7/6/98
Page 1 of 1

Site Address: 9750 Golf Links Rd., Oakland

WIC#: 204-5508-2808

Shell Engineer: Alex Perez
Phone No.: 510 335-5027
Fax #: 335-5029

Consultant Name & Address: CAMBRIA ENVIRONMENTAL
1144 65th St. Suite C, Oakland, CA 94608

Consultant Contact: Maureen Feineman
Phone No.: 510 420-0700
Fax #: 420-9170

Comments:

Sampled by: Maureen Feineman

Printed Name: Maureen Feineman

Analysis Required

LAB: Sequoia

CHECK ONE (1) BOX ONLY	C7/01
G.W. Monitoring	4461
Site Investigation	4441
Soil Classify/Disposal	4442
Water Classify/Disposal	4443
Soil/Air Rem. or Sys. O & M	4452
Water Rem. or Sys. O & M	4453
Other	

TURN AROUND TIME: 24 hours ☐ 48 hours ☐ 5 days ☒ (Normal) Other ☐ .....

NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.

UST AGENCY: Alameda County

Sample ID	Date	Sludge Time	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 + MTBE 8020			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SB-1-9.0'	7/6	2:30	X			1						X							* Confirm	highest
SB-1-11.5'	7/6	2:30	X			1						X							MTBE by	8260 *
SB-1-13.0'	7/6	2:50	X			1						X								

980 8260

Relinquished By (signature):	Printed Name:	Date:	Received (signature):	Printed Name:	Date:
Maureen Feineman	Maureen Feineman	7/7/98		JOHN FRICK	7/7/98
Relinquished By (signature):	Printed Name: JOHN FRICK	Time: 9:30	Received (signature):	Printed Name:	Time: 9:30
		Date: 7/7/98			Date:
Relinquished By (signature):	Printed Name:	Time:	Received (signature):	Printed Name:	Time:
		Date:		DOWNS	Date: 7/7/98
		Time:			Time: 1138

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Rev 7/1/95

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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Cambria
1144 65th St. Suite C
Oakland, CA 94608
Attention: Maureen Feineman

Project: Shell 9750 Golf Links Rd.

Enclosed are the results from samples received at Sequoia Analytical on August 3, 1998. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9808066 -01	SOLID, SB-1-16.0'	07/31/98	Purgeable TPH/BTEX/MTBE
9808066 -02	SOLID, SB-1-21.0'	07/31/98	Purgeable TPH/BTEX/MTBE
9808066 -03	SOLID, SB-1-26.0'	07/31/98	Purgeable TPH/BTEX/MTBE

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Sequoia Analytical

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Cambria	Client Proj. ID: Shell 9750 Golf Links Rd.	Sampled: 07/31/98
1144 65th St. Suite C	Sample Descript: SB-1-16.0'	Received: 08/03/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 08/11/98
	Analysis Method: 8015Mod/8020	Analyzed: 08/12/98
Attention: Maureen Feineman	Lab Number: 9808066-01	Reported: 08/18/98

QC Batch Number: GC081198BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**1.0**	**1.1**
Methyl t-Butyl Ether	**0.025**	**1.4**
Benzene	0.0050	N.D.
Toluene	**0.0050**	**0.029**
Ethyl Benzene	**0.0050**	**0.013**
Xylenes (Total)	**0.0050**	**0.091**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	107
4-Bromofluorobenzene	60	140	122

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Pehrer
Project Manager

Sequoia Analytical

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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Cambria	Client Proj. ID: Shell 9750 Golf Links Rd.	Sampled: 07/31/98
1144 65th St. Suite C	Sample Descript: SB-1-21.0'	Received: 08/03/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 08/11/98
	Analysis Method: 8015Mod/8020	Analyzed: 08/12/98
Attention: Maureen Feineman	Lab Number: 9808066-02	Reported: 08/18/98

QC Batch Number: GC081198BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	**0.025**	**0.030**
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	96
4-Bromofluorobenzene	60	140	113

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100
1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Cambria	Client Proj. ID: Shell 9750 Golf Links Rd.	Sampled: 07/31/98
1144 65th St. Suite C	Sample Descript: SB-1-26.0'	Received: 08/03/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 08/11/98
	Analysis Method: 8015Mod/8020	Analyzed: 08/12/98
Attention: Maureen Feineman	Lab Number: 9808066-03	Reported: 08/18/98

QC Batch Number: GC081198BTEXEXA
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**1.0**	**5.6**
Methyl t-Butyl Ether	**0.025**	**0.16**
Benzene	**0.0050**	**0.035**
Toluene	**0.0050**	**0.25**
Ethyl Benzene	**0.0050**	**0.062**
Xylenes (Total)	**0.0050**	**0.28**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	142 Q
4-Bromofluorobenzene	60	140	101

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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Cambria
1144 65th St. Ste C
Oakland, CA 94608
Attention: Maureen Feineman

Client Project ID: Shell 9750 Golf Links Rd.

QC Sample Group: 9808066-01-06

Reported: Aug 18, 1998

QUALITY CONTROL DATA REPORT

Matrix: Solid
Method: EPA 8020
Analyst: R. GECKLER

ANALYTE	Benzene	Toluene	Ethylbenzene	Xylenes
QC Batch #:	GC081198BTEXEXA			
Sample No.:	GS9807J55-1			
Date Prepared:	8/11/98	8/11/98	8/11/98	8/11/98
Date Analyzed:	8/11/98	8/11/98	8/11/98	8/11/98
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1
ample Conc., mg/Kg:	N.D.	N.D.	0.0 mg/Kg	0.0 mg/Kg
Conc. Spiked, mg/Kg:	0.20	0.20	0.20	0.60
Matrix Spike, mg/Kg:	0.21	0.46	0.26	0.85
% Recovery:	105	230	126	139
Matrix ike Duplicate, mg/Kg:	0.18	0.18	0.18	0.53
% Recovery:	90	90	86	85
elative % Difference:	15	88	38	48
RPD Control Limits:	0-25	0-25	0-25	0-25

LCS Batch#:	GSBLK081198A			
Date Prepared:	8/11/98	8/11/98	8/11/98	8/11/98
Date Analyzed:	8/11/98	8/11/98	8/11/98	8/11/98
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked, mg/Kg:	0.20	0.20	0.20	0.60
Recovery, mg/Kg:	0.18	0.18	0.17	0.50
LCS % Recovery:	90	90	85	83

Percent Recovery Control Limits:

MS/MSD	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

Sequoia Analytical

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Cambria 1144 65th St. Suite C Oakland, CA 94608 Attention: Maureen Feineman	Client Proj. ID: Shell 9750 Golf Links Rd. Lab Proj. ID: 9808066	Received: 08/03/98 Reported: 08/18/98

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 4 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 7/31/98
Page 1 of 2

Site Address: 9150 Golf Links Rd, Oakland

WIC#: 204-5508-2808

Shell Engineer: Karen Petryna
Phone No.:
Fax #:

Consultant Name & Address: CAMBRIA ENVIRONMENTAL
1144 65th St. Suite C, Oakland, CA 94608

Consultant Contact: Maureen Feineman
Phone No.: 510 420-0700
Fax #: 420-9170

Comments:

Sampled by: Maureen Feineman

Printed Name: Maureen Feineman

Analysis Required 9803 061

LAB: Sequoia

CHECK ONE (1) BOX ONLY		C1/01
G.W. Monitoring	☐	4461
Site Investigation	☒	4441
Soil Classify/Disposal	☐	4442
Water Classify/Disposal	☐	4443
Soil/Air Rem. or Sys. O & M	☐	4452
Water Rem. or Sys. O & M	☐	4453
Other	☐	

TURN AROUND TIME
24 hours ☐
48 hours ☐
15 days ☒ (Normal)
Other ☐ .....

NOTE: Notify Lab as soon as Possible of 24/48 hr. TAT.

UST AGENCY: Alameda City

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 + MTBE 8020			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SB-1-16.0'	7/31	1	X			1						X								
SB-1-21.0'	7/31	2	X			1						X								
SB-1-26.0'	7/31	3	X			1						X								

Relinquished By (signature): Maureen Feineman	Printed Name: Maureen Feineman	Date: 8/3/98	Received (signature):	Printed Name: LANCE A. DAVIDSON	Date: 8-3-98
Relinquished By (signature):	Printed Name: LANCE A. DAVIDSON	Time: 1515	Received (signature):	Printed Name:	Time: 1515
Relinquished By (signature):	Printed Name:	Date: 8-3-98	Received (signature):	Printed Name: JOSH HOW	Date:
		Time:			Time:
		Date:			Date: 8-3-98
		Time:			Time: 17:42

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN OF CUSTODY WITH INVOICE AND RESULTS

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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Cambria
1144 65th St. Suite C
Oakland, CA 94608
Attention: Maureen Feineman

Project: Shell 9750 Golf Links Rd.

Enclosed are the results from samples received at Sequoia Analytical on August 3, 1998. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9808062 -01	SOLID, SP-A	07/31/98	TPHG_S Purgeable TPH
9808062 -02	SOLID, SP-B	07/31/98	TPHG_S Purgeable TPH
9808062 -03	SOLID, SP-C	07/31/98	TPHG_S Purgeable TPH
9808062 -04	SOLID, SP-D	07/31/98	TPHG_S Purgeable TPH
9808062 -05	SOLID, SP-(A-D)comp	07/31/98	BTEX_S Distinction
9808062 -05	SOLID, SP-(A-D)comp	07/31/98	Lead by ICP

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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Cambria
1144 65th St. Suite C
Oakland, CA 94608

Client Proj. ID: Shell 9750 Golf Links Rd.
Lab Proj. ID: 9808062

Sampled: 07/31/98
Received: 08/03/98
Analyzed: see below

Attention: Maureen Feineman

Reported: 08/19/98

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9808062-05				
Sample Desc : **SOLID,SP-(A-D)comp**				
Lead by ICP	mg/Kg	08/05/98	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Cambria	Client Proj. ID: Shell 9750 Golf Links Rd.	Sampled: 07/31/98
1144 65th St. Suite C	Sample Descript: SP-A	Received: 08/03/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 08/07/98
	Analysis Method: EPA 8015 Mod	Analyzed: 08/07/98
Attention: Maureen Feineman	Lab Number: 9808062-01	Reported: 08/19/98

QC Batch Number: GC080798BTEXEXD
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	82
4-Bromofluorobenzene	60	140	167 Q

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Cambria	Client Proj. ID: Shell 9750 Golf Links Rd.	Sampled: 07/31/98
1144 65th St. Suite C	Sample Descript: SP-B	Received: 08/03/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 08/07/98
	Analysis Method: EPA 8015 Mod	Analyzed: 08/09/98
Attention: Maureen Feineman	Lab Number: 9808062-02	Reported: 08/19/98

QC Batch Number: GC080798BTEXEXD
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	87
4-Bromofluorobenzene	60	140	71

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Renner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Cambria	Client Proj. ID: Shell 9750 Golf Links Rd.	Sampled: 07/31/98
1144 65th St. Suite C	Sample Descript: SP-C	Received: 08/03/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 08/07/98
	Analysis Method: EPA 8015 Mod	Analyzed: 08/10/98
Attention: Maureen Feineman	Lab Number: 9808062-03	Reported: 08/19/98

QC Batch Number: GC080798BTEXEXD
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**1.0**	**1.0**
Chromatogram Pattern:		
Weathered Gas		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	75
4-Bromofluorobenzene	60	140	84

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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Cambria	Client Proj. ID: Shell 9750 Golf Links Rd.	Sampled: 07/31/98
1144 65th St. Suite C	Sample Descript: SP-D	Received: 08/03/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 08/07/98
	Analysis Method: EPA 8015 Mod	Analyzed: 08/10/98
Attention: Maureen Feineman	Lab Number: 9808062-04	Reported: 08/19/98

QC Batch Number: GC080798BTEXEXD
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas Chromatogram Pattern:	1.0	N.D.

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	86
4-Bromofluorobenzene	60	140	102

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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Cambria	Client Proj. ID: Shell 9750 Golf Links Rd.	Sampled: 07/31/98
1144 65th St. Suite C	Sample Descript: SP-(A-D)comp	Received: 08/03/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 08/07/98
	Analysis Method: EPA 8020	Analyzed: 08/10/98
Attention: Maureen Feineman	Lab Number: 9808062-05	Reported: 08/19/98

QC Batch Number: GC080798BTEXEXD
Instrument ID: GCHP18

BTEX Distinction

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	87
4-Bromofluorobenzene	60	140	94

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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Cambria Environmental Tech.
1144 65th St., Ste. C
Oakland, CA 94608
Attention: Maureen Feineman

Client Project ID: Shell 9750 Golf Links Rd.
Matrix: Liquid
Work Order #: 9808062 -01

Reported: Aug 24, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Beryllium	Cadmium	Chromium	Nickel
QC Batch#:	ME0805986010MDE	ME0805986010MDE	ME0805986010MDE	ME0805986010MDE
Analy. Method:	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prep. Method:	EPA 3010	EPA 3010	EPA 3010	EPA 3010
Analyst:	CC	CC	CC	CC
MS/MSD #:	9807J1301	9807J1301	9807J1301	9807J1301
Sample Conc.:	N.D.	N.D.	31	32
Prepared Date:	8/5/98	8/5/98	8/5/98	8/5/98
Analyzed Date:	8/5/98	8/5/98	8/5/98	8/5/98
Instrument I.D.#:	MTJA5	MTJA5	MTJA5	MTJA5
Conc. Spiked:	50 mg/Kg	50 mg/Kg	50 mg/Kg	50 mg/Kg
Result:	43	43	73	76
MS % Recovery:	86	86	84	88
Dup. Result:	43	43	72	73
MSD % Recov.:	86	86	82	82
RPD:	0.0	0.0	1.4	4.0
RPD Limit:	0-20	0-20	0-20	0-20
LCS #:	BLK080598	BLK080598	BLK080598	BLK080598
Prepared Date:	8/5/98	8/5/98	8/5/98	8/5/98
Analyzed Date:	8/5/98	8/5/98	8/5/98	8/5/98
Instrument I.D.#:	MTJA5	MTJA5	MTJA5	MTJA5
Conc. Spiked:	50 mg/Kg	50 mg/Kg	50 mg/Kg	50 mg/Kg
LCS Result:	48	46	47	47
LCS % Recov.:	96	92	94	94
MS/MSD Control Limits	80-120	80-120	80-120	80-120
LCS Control Limits	80-120	80-120	80-120	80-120

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

Sequoia Analytical

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Cambria
1144 65th St. Ste. C
Oakland, CA 94608
Attention: Maureen Feineman

Client Project ID: Shell 9750 Golf Links Rd.

QC Sample Group: 9808062-01-05

Reported: Aug 19, 1998

QUALITY CONTROL DATA REPORT

Matrix:	Solid
Method:	EPA 8015
Analyst:	G. GAMBOA
ANALYTE	Gasoline

QC Batch #: GC080798BTEXEXD

Sample No.:	GS9808085-3
Date Prepared:	8/7/98
Date Analyzed:	8/9/98
Instrument I.D.#:	GCHP22
ample Conc., mg/Kg:	N.D.
Conc. Spiked, mg/Kg:	5.0
Matrix Spike, mg/Kg:	5.4
% Recovery:	108
Matrix ike Duplicate, mg/Kg:	5.4
% Recovery:	108
elative % Difference:	0.0
RPD Control Limits:	0-25

LCS Batch#: GSBLK080798D

Date Prepared:	8/7/98
Date Analyzed:	8/9/98
Instrument I.D.#:	GCHP22
Conc. Spiked, mg/Kg:	5.0
Recovery, mg/Kg:	5.4
LCS % Recovery:	108

Percent Recovery Control Limits:

MS/MSD	60-140
LCS	70-130

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Reggy Penner
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

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Cambria	Client Proj. ID: Shell 9750 Golf Links Rd.	Received: 08/03/98
1144 65th St. Suite C		
Oakland, CA 94608	Lab Proj. ID: 9808062	Reported: 08/19/98
Attention: Maureen Feineman		

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 10 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 7/31/98
Page 2 of 2

Site Address: 9750 Golf Links Rd., Oakland
WIC#: 204-5508-2868
Shell Engineer: KAREN PETRYNA
Phone No.: _____
Fax #: _____
Consultant Name & Address: CAMBRIA ENVIRONMENTAL 1144 65th St. Suite C, Oakland, CA 94608
Consultant Contact: MAUREEN FEINEMAN
Phone No.: 510-420-0700
Fax #: 510-420-9170
Comments:
Sampled by: [signature]
Printed Name: MIKE PAVES

Analysis Required 8020 8062

LAB: SEQUOIA

CHECK ONE (1) BOX ONLY	C1/DI	TURN AROUND TIME
G.W. Monitoring	4441	24 hours
Site Investigation	4441	48 hours
Soil Classify/Disposal	4442	10 days (Normal)
Water Classify/Disposal	4443	Other
Soil/Air Rem. or Sys. O & M	4452	NOTE: Notify Lab as soon as Possible of 24/48 hr. TAT.
Water Rem. or Sys. O & M	4453	
Other		

UST AGENCY: Alameda Co.

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SP-A,5	7/31/98		X			1					X					Y	#4:1 Composite, except	
SP-B2	"		X			1					X					Y	TPHg - follow attached	
SP-C3	"		X			1					X					Y	protocol for soil disposal	
SP-D4	"		X			1					X					Y	for gasoline *	

Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
[signature]	Maureen Feineman	8/3/98	1515	[signature]	LANCE A. DAVIDSON	8-3-98	1515
[signature]	LANCE A. DAVIDSON	8-3-98					
				[signature]	JOSH HORN	D-3-98	17:45

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Cambria Environmental Technology, Inc.
1144 - 65th St.
Oakland, CA 94608
Telephone: (510) 420-0700
Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	Equilon Enterprises LLC	**BORING/WELL NAME**	SB-1
JOB/SITE NAME	OAK9750	**DRILLING STARTED**	06-Jul-98
LOCATION	9750 Golf Links Road, Oakland	**DRILLING COMPLETED**	31-Jul-98
PROJECT NUMBER	240-0735	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Geoprobe/Hollow stem auger	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2" and 8"	**SCREENED INTERVAL**	NA
LOGGED BY	M. Feineman	**DEPTH TO WATER (First Encountered)**	12.00 ft (31-Jul-98)
REVIEWED BY	D. Lunquist, PE	**DEPTH TO WATER (Static)**	
REMARKS	8 ft south of northwestern dispenser.		

PID (ppm)	BLOW COUNTS	RECOVERY	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
								CONCRETE	0.5	**Hand auger 0-5 ft.**
								SILT: (FILL); brown; stiff; damp; 10% clay, 90% silt; medium plasticity; moderate to low estimated permeability. **Gravelly SILT:** (FILL); grey to brown; stiff; soft; 60% silt, 40% gravel; low plasticity; high estimated permeability.	1.5	
								stiff.	4.0	
					5			No recovery.	5.0	**GeoProbe 5-16 ft.**
1,786									8.0	
					10	ML		**SILT:** (ML); dark brown; stiff; damp; 10% clay, 90% silt, trace amounts of gravel; medium plasticity; moderate to low estimated permeability.		
889.3								7/31/98 ▽	12.0	**Water encountered @ 12 ft.**
1,786						SM		**Silty SAND:** (SM); dark grey; loose; wet; 20% silt, 80% sand; high estimated permeability.		
					15				15.0	
1,786						ML		**SILT:** (ML); dark brown; very stiff; dry; 10% clay, 90% silt, trace amounts of gravel; medium plasticity; moderate to low estimated permeability.		**Refusal @ 16 ft. Hollow-stem auger 16-30 ft.**
					20					
0.0										
					25					Portland Type I/II
0.0										
					30				30.0	Bottom of Boring @ 30 ft

WELL LOG (PID) G:\OAK9750\GINT\OAK9750.GPJ DEFAULT.GDT 11/24/98

Attachment C

Standard Field Procedures for Soil Borings

CAMBRIA

STANDARD FIELD PROCEDURES FOR SOIL BORINGS

This document describes Cambria Environmental Technology's standard field methods for drilling and sampling soil borings. 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 Registered Geologist (RG) 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 product saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e. cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or hydraulic push technologies. At least one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments beyond the bottom of the borehole. The vertical location of each soil sample is determined by measuring the distance from the middle of the soil sample tube to the end of the drive rod used to advance the split barrel sampler. All sample depths use the ground surface immediately adjacent to the boring as a datum. The horizontal location of each boring is measured in the field from an onsite permanent reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned 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

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector (PID) measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. PID measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch type sampler or are collected from the open borehole using bailers. 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 collected 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 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.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite on top of and covered by plastic sheeting. At least four individual soil samples are collected from the stockpiles for later compositing at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples. Soil cuttings are transported by licenced waste haulers and disposed in secure, licenced facilities based on the composite analytic results.

Ground water removed during sampling and/or rinsate generated during decontamination procedures are stored onsite in sealed 55 gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Disposal of the water is based on the analytic results for the well samples. The water is either pumped out using a vacuum truck for transport to a licenced waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 100, HAYWARD, CA 94545-2651
PHONE (510) 670-5575 ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5448 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 9750 Golf Links Rd. Oakland, CA

California Coordinates Source _____ ft. Accuracy ± ___ ft.
CCN _____ ft. CCE _____ ft.
APN _____

CLIENT
Name Equilon Enterprises LLC
Address PO Box 8080 Phone (510) 335-5027
City Martinez Zip 94553

APPLICANT
Name Cambria Environmental Technology Fax (510) 420-9170
Address 1144 65th Street Phone (510) 420-3319
City Oakland Zip 94608

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☒
Monitoring	☐	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other _____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☐
Cable	☐	Other	☒ Geoprobe		

DRILLER'S LICENSE NO. _____

WELL PROJECTS
Drill Hole Diameter ___ in. Maximum
Casing Diameter ___ in. Depth ___ ft.
Surface Seal Depth ___ ft. Number ___

GEOTECHNICAL PROJECTS
Number of Borings 1 Maximum
Hole Diameter 2 in. Depth 30 ft.

ESTIMATED STARTING DATE 7/6/98
ESTIMATED COMPLETION DATE 7/6/98

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Maureen Gruenich 6/23/98

FOR OFFICE USE

PERMIT NUMBER 98WR265
WELL NUMBER _____
APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A) GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(D.) GEOTECHNICAL
Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED Al-Ka DATE 7/2/98

ISSUED DATE: 05/23/97
CANCELS ISSUE: 03/05/97
ISSUED BY: RLG

MATERIAL: MINIMUM SOIL ANALYSIS FOR UST SOIL WITH GASOLINE OR DIESEL CONTAMINATION

USE FOR ARIZONA , CALIFORNIA AND NEVADA WASTE ONLY!!!

NOTE: ANALYSES ARE BASED ON CHARACTERIZATION MINIMUM. YOU MUST BE SURE THAT THE FACILITY WILL TAKE THE FOLLOWING AS ACCEPTANCE. FURTHER ANALYSIS MAY BE REQUIRED FOR CHARACTERIZATION UPON REVIEW BY THE WASTE TEAM MEMBER OR TO MEET DISPOSAL SITE REQUIREMENTS. IF THE MATERIAL IS RETURNED TO CONSULTANT, COPIES OF ALL TRANSPORTATION DOCUMENTS MUST BE SENT TO THE WASTE DISPOSAL COORDINATOR FOR RECORDING WHEN PROJECT IS COMPLETE.

MINIMUM REQUIRED TESTING

Note: If material is to be sent to a BFI facility EPA METHOD 8010 must be run IN ADDITION to the following analysis prior to requesting profile approval:

TPH = TOTAL PETROLEUM HYDROCARBONS, DHS GC-FID MOD 8015
GASOLINE OR DIESEL AS REQUIRED.
BTXE = EPA 8020
CAM METALS = TTLC LEAD, STLC LEAD IF TTLC => 50 MG/KG AND/OR
ORGANIC LEAD IF TTLC => 13 MG/KG

AQUATIC BIOASSAY (FISH TOX) IS ONLY TO BE RUN ON SAMPLES WITH **GREATER THAN 5000 PPM TPH.** COMPOSITE A MAXIMUM OF 4 SAMPLES.

AQUATIC BIOASSAY (FISH TOX) = PART 800 OF "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER (15TH EDITION)"

LABORATORY INSTRUCTIONS (MINIMUM GUIDELINES ONLY)

- 8015/8020 TO BE BILLED AS "COMBO" WITHOUT EXCEPTION
- TPH REQUIRED FOR ALL SAMPLES.
- ALL OTHER TESTS REQUIRED TO BE RUN ON COMPOSITE(S): MAXIMUM 4 SAMPLES PER COMPOSITE.
- STLC REQUIRED FOR METALS WITH TTLC VALUE 10 X STLC MAXIMUM.
- ORGANIC ANALYSIS REQUIRED FOR TTLC LEAD OF 13 MG/KG OR GREATER.
- LABORATORY IS TO SUPPLY QA/QC INFORMATION WITH ALL ANALYTICAL REPORTS.
- MAIL OR FAX ALL ANALYSIS TO PERSON REQUESTING ANALYSIS.

Attachment F

Soil Disposal Confirmation Letter

DISPOSAL CONFIRMATION

Consultant:	CAMBRIA ENVIRONMENTAL
Contact:	AUBREY K. COOL
Phone/Fax:	(510) 420-0700 FAX (510) 420-9170
Client:	EQUILON ENTERPRISE - KAREN PETRYNA
Station #/Wic #:	204-5508-2808
Site Address:	9750 GOLF LINKS ROAD
City/State:	OAKLAND, CA
Estimated YD/Ton:	2 - 3 YARDS
Actual YD/Ton:	1/2 YARD
Disposal Facility:	FORWARD LANDFILL
Disposal Date:	AUGUST 28, 1998
Contact:	BRAD BONNER
Phone #:	(800) 204-4242
Hauler:	MANLEY & SONS TRUCKING, INC.
Contact:	TIM A. MANLEY
Phone #:	(916) 381-6864
Fax #:	(916) 381-1573

Date & Time Faxed

7695