CAMBRIA

March 23, 1998

Leroy Griffin
City of Oakland
Fire Department
505 14th Street, Suite 702
Oakland, California 94612

#3646

Re: **Dispenser Soil Sampling Report**
Shell Service Station
540 Hegenberger Road
Oakland, California
WIC# 204-5508-5900
Cambria Project# 24-414-200

Dear Mr. Griffin:

On behalf of Shell Oil Products Company (Shell), Cambria Environmental Technology, Inc. (Cambria) is submitting this report presenting the results of the January 30, 1998 soil sampling at the site referenced above. Sampling was conducted during station upgrade activities. Presented below are summaries of the site conditions, sampling activities, analytical results, line tightness test, and conclusions.

SITE CONDITIONS

The site is located at the intersection of Hegenberger Road and Edes Avenue in Oakland, California. The area surrounding the site is primarily commercial. Highway 880 runs near the southern boundary of the site.

This Shell service station was recently upgraded by Paradiso Mechanical of San Leandro, California (Paradiso). Paradiso added secondary containment to the existing dispensers and the turbine sumps (Figure 1).

SAMPLING ACTIVITIES AND SAMPLE ANALYSIS

Personnel Present	*Title*	*Company*
Maureen Feineman	Staff Geologist	Cambria
Michael Paves	Staff Engineer	Cambria
Ron Hales	Site Foreman	Paradiso

CAMBRIA
ENVIRONMENTAL
TECHNOLOGY, INC.
1144 65TH STREET,
SUITE B
OAKLAND,
CA 94608
PH: (510) 420-0700
FAX: (510) 420-9170

Sample Date: January 30, 1998.

Sampling Requirements: Based on Cambria's February 3, 1998 telephone conversation with Leroy Griffin, the City of Oakland does not require sampling at dispensers during 1998 Upgrade projects unless there is evidence of hydrocarbons.

Dispenser Sampling: Cambria inspected the dispenser and tank pit areas. Soil samples were collected from native soil beneath dispensers D-1, D-2, and D-6 at a depth of approximately 2 feet into native soil. A second sample was collected from beneath dispenser D-6 at a depth of approximately 5 feet into native soil. No field indications of hydrocarbons, such as staining or odor, were observed beneath the other three dispensers during the site visit; therefore, no samples were collected. Cambria's standard procedures for dispenser and piping sampling are presented as Attachment A.

Sample Analyses: Sequoia Analytical of Redwood City, California analyzed samples D-1, D-2, and D-6 for total petroleum hydrocarbons as gasoline (TPHg) and total petroleum hydrocarbons as diesel (TPHd) by modified EPA Method 8015, and benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tert-butyl ether (MTBE) by EPA Method 8020.

ANALYTIC RESULTS

The highest TPHg concentrations were 340 milligrams per kilogram (mg/kg) in samples D-1 and D-6 at 2.0 feet. The highest TPHd concentration was 1,500 mg/kg in sample D-6 at 2.0 feet. The TPHd concentration decreases to 240 mg/kg in the same location at 5.0 feet. Analytical results are summarized in Table 1 and the laboratory report is included as Attachment B.

LINE TIGHTNESS TEST

During the line tightness test on February 6, 1998, Paradiso discovered a leak in the piping between one of the gasoline tanks and the dispensers. The piping was repaired on the same day. No separate-phase hydrocarbons were observed during Cambria's February 7, 1998 site visit. Based on Cambria's February 6, 1998 telephone conversation with Barney Chan of the Alameda County Department of Environmental Health, additional sampling in the area of the repaired piping was not required due to the planned soil and ground water investigation at the site.

CONCLUSIONS

The previously scheduled subsurface investigation was performed on March 6, 1998. Cambria will prepare a summary of our findings upon receipt of the analytical results.

CLOSING

We appreciate the opportunity to work with you on this project. Please call if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

Khaled B. Rahman, R.G., C.H.G.
Senior Geologist

Attachments: A - Standard Piping and Dispenser Removal Sampling Procedures
B - Laboratory Analytic Reports for Soil

cc: Mr. Barney Chan, 1131 Harbor Bay Parkway, 2nd Floor, Alameda, CA 94502
Mr. Tim Hargraves, Shell Oil Products Company, P.O. Box 8080, Martinez, CA 94553
Mr. A.E. (Alex) Perez, Shell Oil Products Company, P.O. Box 8080, Martinez, CA 94553

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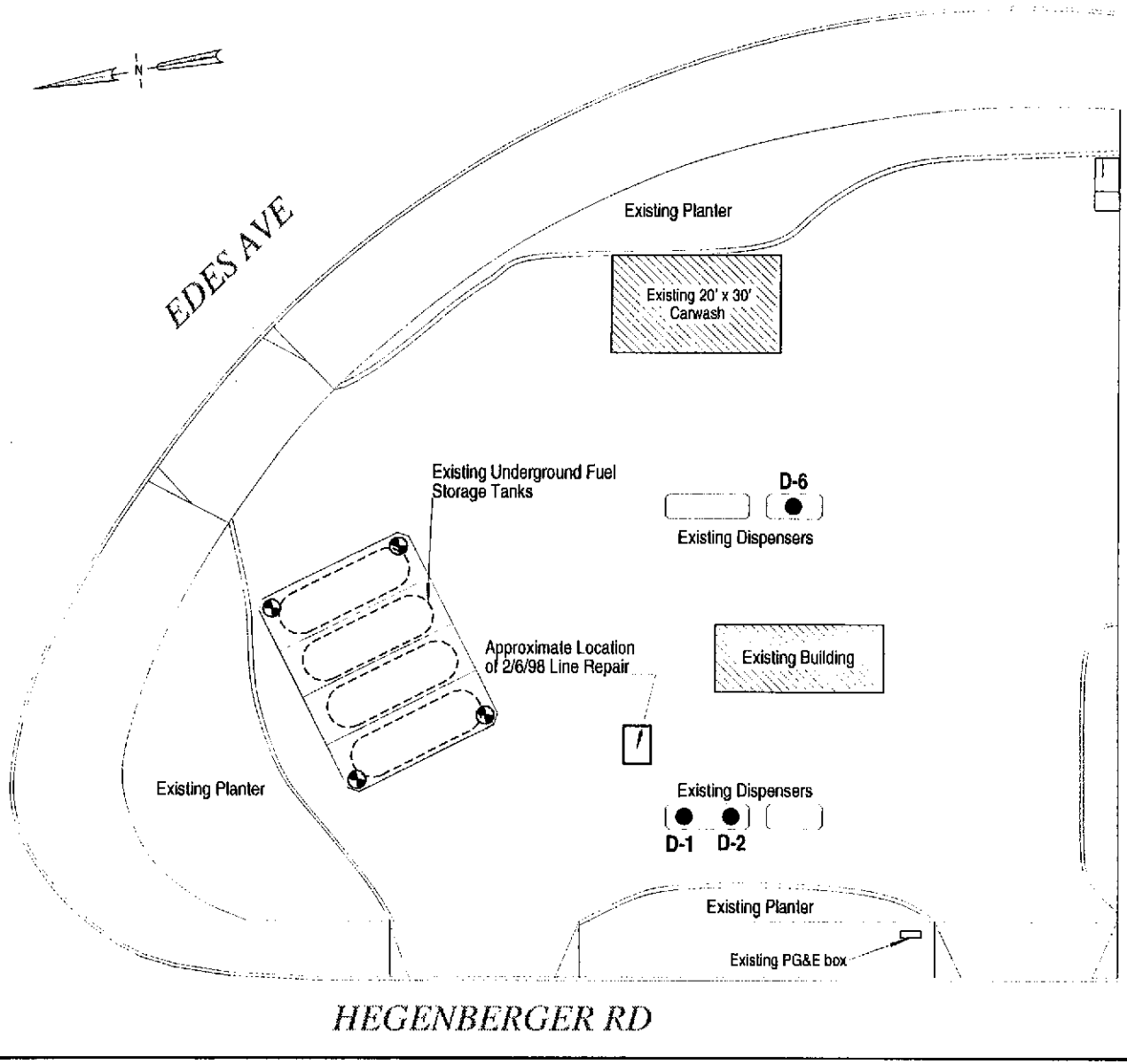

EXPLANATION

- Existing Underground Storage Tank Backfill Wells
- D-1 ● Sample Location

0 15 30

Scale (ft)

Base Map by R.H. Lee & Assoc.

CAMBRIA
Environmental Technology, Inc.

Shell Service Station
540 Hegenberger Road
Oakland, California

F:\PROJECT\SHELL\OAK540\FIGURES\DISP-SMPL.DWG

Dispenser Sample Locations

FIGURE
1

03/12/98

Table 1. Dispenser Sample Analytic Data - Shell Service Station - WIC# 204-5508-5900, 540 Hegenberger Road, Oakland, California

Sample ID	Depth (feet)	TPHg	TPHd	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
		← (Concentrations reported in milligrams per kilogram) →						
January 30, 1998 Samples:								
D-1	2.0	340	280	190	3.7	11	5.4	33
D-2	2.0	89	92	150	0.65	3.9	0.50	3.0
D-6	2.0	340	1,500	4.1	0.29	0.44	1.3	2.7
D-6	5.0	4.2	240	0.33	<0.0050	0.014	0.0085	0.040

Abbreviations and Notes:

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015.

TPHd = Total petroleum hydrocarbons as diesel by modified EPA Method 8015.

MTBE = Methyl tert-butyl ether by EPA Method 8020.

Benzene, ethylbenzene, toluene, xylenes by EPA Method 8020.

mg/kg = Milligrams per kilogram

<x = Below detection limit of x mg/kg

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ATTACHMENT A

Standard Piping and Dispenser Removal
Sampling Procedures

STANDARD PIPING AND DISPENSER REMOVAL SAMPLING PROCEDURES

Cambria Environmental Technology, Inc. (Cambria) has developed standard operating procedures for collecting soil samples during petroleum dispenser and piping removal. These procedures ensure that the samples are collected, handled, and documented in compliance with California Administration Code Title 23: Waters; Chapter 3: Water Resources Control Board; Subchapter 16: Underground Storage Tank Regulations (Title 23). Cambria's sampling procedures are based on guidelines contained in the California State Regional Water Quality Control Board Tri-Regional Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites dated August 10, 1990.

Piping and Dispenser Removal Sampling

The objective of sample collection during routine dispenser and piping removals is to determine whether hydrocarbons or other stored chemicals have leaked to the subsurface. We collect one soil sample from the native soil beneath each dispenser unit, at each piping elbow, and at every 20 ft of product piping, as applicable.

The soil samples are collected in steam cleaned brass or steel tubes from either a driven split-spoon type sampler or the bucket of a backhoe. When a backhoe is used, approximately three inches of soil are scraped from the surface and the tube is driven into the exposed soil.

Upon removal from the split-spoon sampler or the backhoe, the samples are trimmed flush, capped with Teflon sheets and plastic end caps, labeled, logged and refrigerated for delivery under chain of custody to a State certified analytic laboratory.

ATTACHMENT B

Laboratory Analytic Reports for Soil

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

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

Project: Shell 540 Hegenberger Oakland

Enclosed are the results from samples received at Sequoia Analytical on January 30, 1998. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9801I13 -01	SOLID, D-6-2.0	01/30/98	TPGBMS Purgeable TPH/BTEX
9801I13 -01	SOLID, D-6-2.0	01/30/98	TPHD_S Extractable TPH
9801I13 -02	SOLID, D-6-5.0	01/30/98	TPGBMS Purgeable TPH/BTEX
9801I13 -02	SOLID, D-6-5.0	01/30/98	TPHD_S Extractable TPH
9801I13 -03	SOLID, D-1-2.0	01/30/98	TPGBMS Purgeable TPH/BTEX
9801I13 -03	SOLID, D-1-2.0	01/30/98	TPHD_S Extractable TPH
9801I13 -04	SOLID, D-2-2.0	01/30/98	TPGBMS Purgeable TPH/BTEX
9801I13 -04	SOLID, D-2-2.0	01/30/98	TPHD_S Extractable TPH

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

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, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria	Client Proj. ID: Shell 540 Hegenberger Oakland	Sampled: 01/30/98
1144 65th St. Suite C	Sample Descript: D-6-2.0	Received: 01/30/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 02/06/98
	Analysis Method: 8015Mod/8020	Analyzed: 02/10/98
Attention: Maureen Feineman	Lab Number: 9801I13-01	Reported: 02/15/98

QC Batch Number: GC020498BTEXEXA
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**25**	**340**
Methyl t-Butyl Ether	**0.62**	**4.1**
Benzene	**0.12**	**0.29**
Toluene	**0.12**	**0.44**
Ethyl Benzene	**0.12**	**1.3**
Xylenes (Total)	**0.12**	**2.7**
Chromatogram Pattern:		**C6-C12**
Gas & Unidentified HC		**>C10**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	96
4-Bromofluorobenzene	60	140	3 Q

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria	Client Proj. ID: Shell 540 Hegenberger Oakland	Sampled: 01/30/98
1144 65th St. Suite C	Sample Descript: D-6-2.0	Received: 01/30/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 02/04/98
	Analysis Method: EPA 8015 Mod	Analyzed: 02/09/98
Attention: Maureen Feineman	Lab Number: 9801I13-01	Reported: 02/15/98

QC Batch Number: GC0204980HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	**50**	**1500**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	133

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria	Client Proj. ID: Shell 540 Hegenberger Oakland	Sampled: 01/30/98
1144 65th St. Suite C	Sample Descript: D-6-5.0	Received: 01/30/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 02/06/98
	Analysis Method: 8015Mod/8020	Analyzed: 02/10/98
Attention: Maureen Feineman	Lab Number: 9801I13-02	Reported: 02/15/98

QC Batch Number: GC020498BTEXEXA
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**	**4.2**
Methyl t-Butyl Ether	**0.025**	**0.33**
Benzene	0.0050	N.D.
Toluene	**0.0050**	**0.014**
Ethyl Benzene	**0.0050**	**0.0085**
Xylenes (Total)	**0.0050**	**0.040**
Chromatogram Pattern:		**C6-C12**
Gas & Unidentified HC		**>C10**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	98
4-Bromofluorobenzene	60	140	88

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

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Cambria	Client Proj. ID: Shell 540 Hegenberger Oakland	Sampled: 01/30/98
1144 65th St. Suite C	Sample Descript: D-6-5.0	Received: 01/30/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 02/04/98
	Analysis Method: EPA 8015 Mod	Analyzed: 02/09/98
Attention: Maureen Feineman	Lab Number: 9801I13-02	Reported: 02/15/98

QC Batch Number: GC0204980HBPEXA
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	**10**	**240**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	78

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

Sequoia Analytical

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Cambria	Client Proj. ID: Shell 540 Hegenberger Oakland	Sampled: 01/30/98
1144 65th St. Suite C	Sample Descript: D-1-2.0	Received: 01/30/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 02/04/98
	Analysis Method: 8015Mod/8020	Analyzed: 02/06/98
Attention: Maureen Feineman	Lab Number: 9801113-03	Reported: 02/15/98

QC Batch Number: GC020498BTEXEXA
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**	**340**
Methyl t-Butyl Ether	**2.5**	**190**
Benzene	**0.50**	**3.7**
Toluene	**0.50**	**11**
Ethyl Benzene	**0.50**	**5.4**
Xylenes (Total)	**0.50**	**33**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	83
4-Bromofluorobenzene	60	140	Q

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria	Client Proj. ID: Shell 540 Hegenberger Oakland	Sampled: 01/30/98
1144 65th St. Suite C	Sample Descript: D-1-2.0	Received: 01/30/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 02/04/98
	Analysis Method: EPA 8015 Mod	Analyzed: 02/09/98
Attention: Maureen Feineman	Lab Number: 9801I13-03	Reported: 02/15/98

QC Batch Number: GC0204980HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	**10**	**280**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	120

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

Sequoia Analytical

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Cambria	Client Proj. ID: Shell 540 Hegenberger Oakland	Sampled: 01/30/98
1144 65th St. Suite C	Sample Descript: D-2-2.0	Received: 01/30/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 02/06/98
	Analysis Method: 8015Mod/8020	Analyzed: 02/10/98
Attention: Maureen Feineman	Lab Number: 9801113-04	Reported: 02/15/98

QC Batch Number: GC020498BTEXEXA
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**25**	**89**
Methyl t-Butyl Ether	**0.62**	**150**
Benzene	**0.12**	**0.65**
Toluene	**0.12**	**3.9**
Ethyl Benzene	**0.12**	**0.50**
Xylenes (Total)	**0.12**	**3.0**
Chromatogram Pattern:		**C6-C12**
Gas & Unidentified HC		**>C10**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	87
4-Bromofluorobenzene	60	140	5 Q

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

Sequoia Analytical

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Cambria	Client Proj. ID: Shell 540 Hegenberger Oakland	Sampled: 01/30/98
1144 65th St. Suite C	Sample Descript: D-2-2.0	Received: 01/30/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 02/04/98
	Analysis Method: EPA 8015 Mod	Analyzed: 02/09/98
Attention: Maureen Feineman	Lab Number: 9801I13-04	Reported: 02/15/98

QC Batch Number: GC0204980HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	**4.0**	**92**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	85

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
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 540 Hegenberger Oakland
Matrix: Solid
Work Order #: 9801I13 01-04
Reported: Feb 17, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC020498BTEXEXA	GC020498BTEXEXA	GC020498BTEXEXA	GC020498BTEXEXA	GC020498BTEXEXA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9801D8103	9801D8103	9801D8103	9801D8103	9801D8103
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	2/4/98	2/4/98	2/4/98	2/4/98	2/4/98
Analyzed Date:	2/4/98	2/4/98	2/4/98	2/4/98	2/4/98
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
Result:	0.16	0.16	0.17	0.50	1.0
MS % Recovery:	80	80	85	83	83
Dup. Result:	0.16	0.16	0.17	0.51	1.0
MSD % Recov.:	80	85	85	85	83
RPD:	0.0	0.0	0.0	2.0	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK020498	BLK020498	BLK020498	BLK020498	BLK020498
Prepared Date:	2/4/98	2/4/98	2/4/98	2/4/98	2/4/98
Analyzed Date:	2/4/98	2/4/98	2/4/98	2/4/98	2/4/98
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
LCS Result:	0.14	0.14	0.15	0.44	0.90
LCS % Recov.:	70	70	75	73	75
MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

SEQUOIA ANALYTICAL

Richard Herling
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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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria Environmental Tech.	Client Project ID:	Shell 540 Hegenberger Oakland	
1144 65th St., Ste. C	Matrix:	Solid	
Oakland, CA 94608			
Attention: Maureen Feineman	Work Order #:	9801I13 01-04	Reported: Feb 17, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0204980HBPEXA
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3550/DHS
Analyst:	A. Porter
MS/MSD #:	9801I1302
Sample Conc.:	240
Prepared Date:	2/4/98
Analyzed Date:	2/9/98
Instrument I.D.#:	GCHP4A
Conc. Spiked:	25 mg/Kg
Result:	200
MS % Recovery:	-160
Dup. Result:	170
MSD % Recov.:	-280
RPD:	16
RPD Limit:	0-50

LCS #:	BLK020498
Prepared Date:	2/4/98
Analyzed Date:	2/9/98
Instrument I.D.#:	GCHP4A
Conc. Spiked:	25 mg/Kg
LCS Result:	18
LCS % Recov.:	72

MS/MSD	50-150
LCS	60-140
Control Limits	

SEQUOIA ANALYTICAL

Richard Herling
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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: ____________

Date: 1/30/98
Page 1 of

Site Address: 510 Hegenberger, OAKLAND
WIC#: 204-5508-5900
Shell Engineer: TIM HARGRAVES
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: MICHAEL PAVES
Printed Name:

Analysis Required

LAB: Sequoia 9801E13

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
G.W. Monitoring [ ]	4461	24 hours [ ]
Site Investigation [X]	4441	48 hours [ ]
Soil Classify/Disposal [ ]	4442	16 days [X] (Normal)
Water Classify/Disposal [ ]	4443	Other [ ]
Soil/Air Rem. or Sys. O & M [ ]	4452	
Water Rem. or Sys. O & M [ ]	4453	
Other [ ]		

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

UST AGENCY: ____________

	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
01	D-6(2.0)	1/30/98		X			1		X				X							
02	D-6-5.0	1/30/98		X			1		X				X							
03	D-1-2.0	1/30/98		X			1		X				X							
04	D-2-2.0	1/30/98		X			1		X				X							

Relinquished By (signature):	Printed Name:	Date/Time:	Received (signature):	Printed Name:	Date/Time:
Maureen Feineman	Maureen Feineman	Date: 1/30/98 Time: 520	[signature]	TIMMINS 175	Date: 1-30 Time: 520P
[signature]	TIMMINS 175	Date: 1-30 Time: 815	Received (signature):	Printed Name:	Date: Time:
Relinquished By (signature):	Printed Name:	Date: Time:	[signature]	[signature]	Date: 1/30/98 Time: 2015

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
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria	Client Proj. ID: Shell 540 Hegenberger Oakland	Received: 01/30/98
1144 65th St. Suite C		
Oakland, CA 94608	Lab Proj. ID: 9801113	Reported: 02/15/98
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 13 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Richard Herling
Project Manager

CAMBRIA

April 15, 1998

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

3646

Re: **Subsurface Investigation Report**
Shell Service Station
540 Hegenberger Road
Oakland, California
WIC# 204-5508-5900
Cambria Project# 240-0414-006

Dear Mr. Chan:

On behalf of Shell Oil Products Company (Shell), Cambria Environmental Technology, Inc. (Cambria) is submitting the results of the subsurface investigation conducted on March 6, 1998 at the above-referenced site. The objective of this investigation was to determine the extent of hydrocarbons in soil and ground water, as requested by the Alameda County Health Care Services Agency Department of Environmental Health (ACDEH). The investigation was conducted in accordance with our *Investigation Work Plan*, which was approved by the ACDEH. Presented below are the site background, investigation procedures, investigation results, and our conclusions.

SITE BACKGROUND

Site Description: The site is located at the intersection of Hegenberger Road and Edes Avenue, in a commercially-zoned area in Oakland, California. Highway 880 runs near the southern boundary of the site. The site is an active service station with three gasoline underground storage tanks (USTs) and one diesel UST.

August 1996 Piping Repair: On August 8, 1996, Cambria collected a soil sample beneath the piping at Dispenser 1 that was being repaired (Figure 1). The hydrocarbon concentrations were 3,400 milligrams per kilogram (mg/kg) total petroleum hydrocarbons as gasoline (TPHg), 17 mg/kg benzene, and 720 mg/kg methyl tert-butyl ether (MTBE) in this sample.

CAMBRIA
ENVIRONMENTAL
TECHNOLOGY, INC.
1144 65TH STREET,
SUITE B
OAKLAND,
CA 94608
PH: (510) 420-0700
FAX: (510) 420-9170

Mar 23, 1998

Mr. Barney Chan
April 15, 1998

CAMBRIA

1998 Station Upgrade: In January and February 1998, Paradiso Mechanical of San Leandro, California (Paradiso) added containment underneath the existing dispensers and submersible turbine pumps. Up to 340 mg/kg TPHg, 3.7 mg/kg benzene, and 1,500 mg/kg total petroleum hydrocarbons as diesel (TPHd) were detected in the soil samples collected from beneath Dispensers 1, 2, and 6 at approximately 2 feet (ft) depth into native soil (Figure 1). The hydrocarbon concentrations decreased to 4.2 mg/kg TPHg and 240 mg/kg TPHd at 5 ft depth. No benzene was detected at 5 ft depth.

During the line tightness test on February 6, 1998, Paradiso discovered a leak in the piping between one gasoline tank and the dispensers, which was repaired on the same day. Based on Cambria's February 6, 1998 telephone conversation with Barney Chan of the ACDEH, additional sampling in the area of the repaired piping was not required due to the planned soil and ground water investigation at the site.

INVESTIGATION PROCEDURES

Cambria advanced five soil borings based on the locations of the USTs, dispenser islands, past piping repairs, the site boundaries, and an estimated ground water flow direction to the southwest. Analytical results for soil and ground water are summarized in Tables 1-3 and presented as Attachment A. Boring logs and Cambria's standard field procedures for GeoProbe® sampling are presented in Attachments B and C, respectively. The procedures for this subsurface investigation, described in Cambria's approved work plan, are summarized below.

Field Activities

Personnel Present:	Staff Geologist Maureen Feineman directed the drilling activities, working under the supervision of Registered Geologist Khaled Rahman (RG#5739).
Permits:	Alameda County Public Works Agency Permit #98WRO87.
Drilling Company:	Vironex of Hayward, California (C-57 License #705927).
Drilling Date:	March 6, 1998.
Drilling Method:	GeoProbe® (hydraulic push with roto-hammer).
Number of Borings:	Five (SB-1 through SB-5, Figure 1).
Boring Depths:	12 to 20 ft (Attachment B).

Ground Water Depths: Ground water was encountered at approximately 6 to 12 ft below ground surface (bgs).

Sediment Lithology: The site subsurface consists primarily of silty clay of very low estimated permeability, interbedded with sandy silty clay, silty sand, and silty gravelly sand of low to moderate estimated permeability to the maximum depth explored of 20 ft bgs (Attachment B). Foreign objects, such as pieces of glass and cinders found in the borings, suggest that approximately the first 6 ft of soil beneath the site is mainly fill material.

Hydrocarbon Analyses: Selected soil and grab water samples from each boring were analyzed for:

- TPHg by modified EPA Method 8015; and
- MTBE, benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020.

Additional Analyses: Additional soil and/or grab water samples from selected borings were analyzed for:

- TPHd by modified EPA Method 8015;
- Total dissolved solids (TDS) by EPA Method 160.2;
- Porosity, fraction organic carbon, moisture content, and bulk density; and
- Additional waste disposal parameters. Samples from borings SB-1, SB-3, SB-4, and SB-5 were analyzed for TPHg and TPHd by modified EPA Method 8015; and a composite of these four samples was analyzed for BTEX by EPA Method 8020, selected metals by atomic absorption or graphite furnace methods, and organic lead by the LUFT Method.

Backfill Method: The borings were backfilled with cement grout to match the existing grade.

Soil Handling: Approximately 1 cubic yard of soil was stockpiled on site and transported to Forward Landfill in Manteca, California on April 6, 1998 by Manley Trucking of Sacramento, California. Soil handling documentation is presented in Attachment D.

INVESTIGATION RESULTS

Hydrocarbon Distribution in Soil: Maximum concentrations of 3,400 mg/kg TPHg, 39 mg/kg benzene, and 170 mg/kg MTBE were detected in the soil sample collected from boring SB-5 at approximately 9.5 ft bgs. Low concentrations of TPHg, BTEX, and MTBE were detected in the analyzed samples from borings SB-1, SB-2, SB-3, and SB-4.

Hydrocarbon Distribution in Ground Water: Maximum concentrations of 200,000 micrograms per liter (µg/L) TPHg, 11,000 µg/L benzene, and 1,300,000 µg/L MTBE were detected in the grab water sample collected from boring SB-5; and 420 milligrams per liter TDS were detected in sample SB-1. Low concentrations of TPHg, BTEX, and MTBE were detected in samples SB-2 and SB-3. No TPHg, TPHd, BTEX, or MTBE were detected in samples SB-1 and SB-4.

CONCLUSIONS

Hydrocarbons in soil and groundwater appear to be limited to the area of dispenser D-1. Based on the assumed ground water flow direction to the southwest, the down and cross gradient extent of hydrocarbons in soil and ground water to the south and east is defined by borings SB-1, SB-3, ans SB-4.

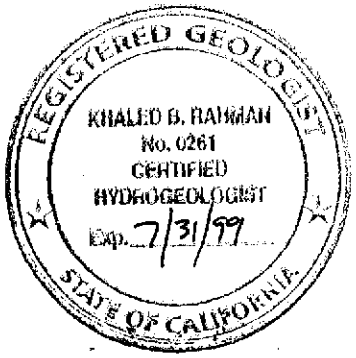
CLOSING

We appreciate your continued assistance with this project. Please call if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

Maureen D. Feineman
Staff Geologist

Khaled B. Rahman, R.G., C.H.G.
Senior Geologist



Attachments: A - Analytical Reports for Soil and Ground Water
B - Soil Boring Logs
C - Standard Field Procedures for GeoProbe® Sampling
D - Soil Handling Documentation

cc: A.E.(Alex) Perez, Shell Oil Products Company, P.O. Box 8080, Martinez, California 94553

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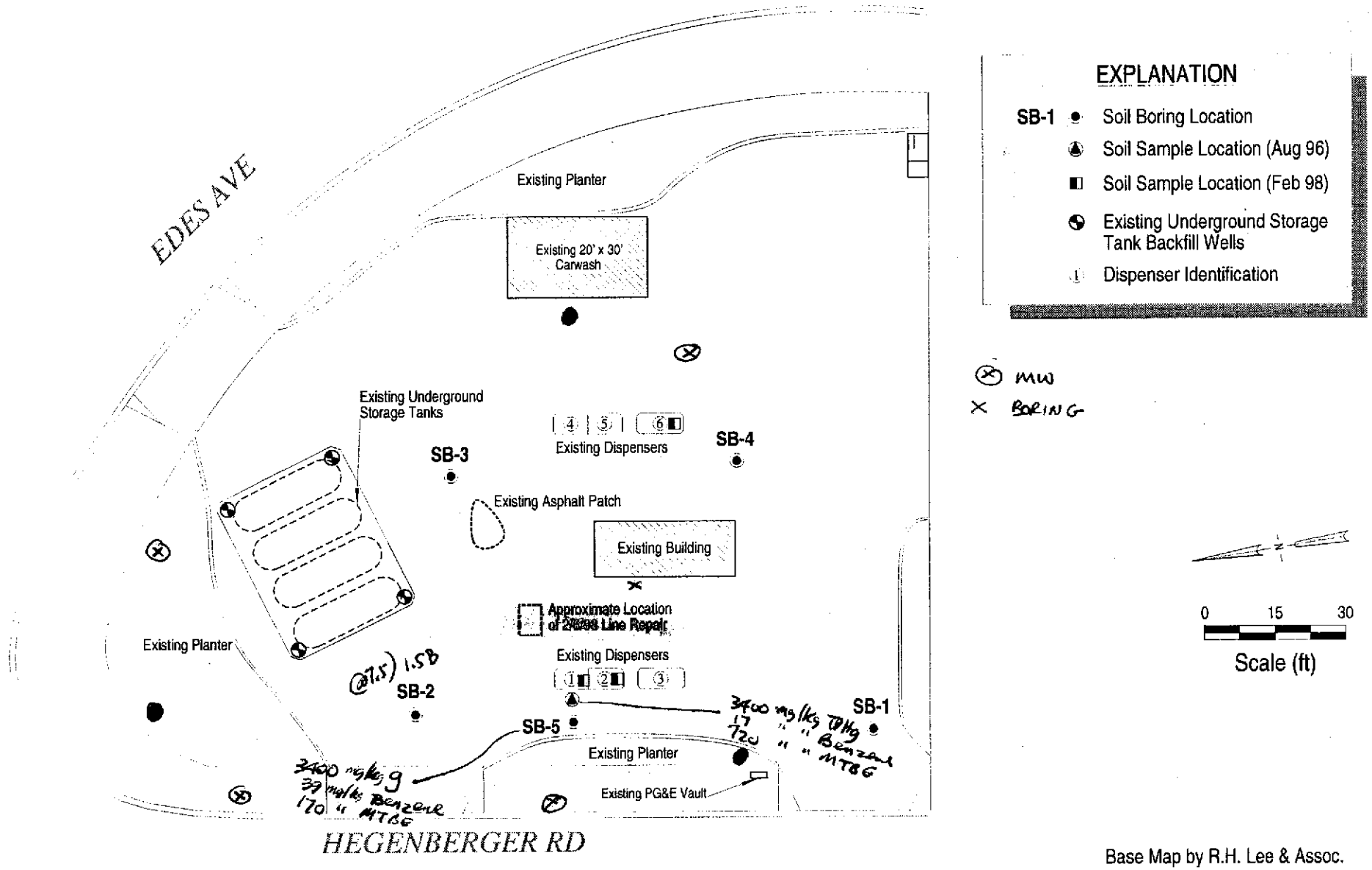

Base Map by R.H. Lee & Assoc.

CAMBRIA
Environmental Technology, Inc.

Shell Service Station
540 Hegenberger Road
Oakland, California

G:\OAK540\FIGURES\BOR-LOC.DWG

Boring Locations Map

FIGURE
1

04/07/98

Table 1. Soil Analytical Data - Shell Service Station, WIC# 204-5508-5900, 540 Hegenberger Road, Oakland, California

Sample ID	Depth (feet)	Date Sampled	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
			← mg/kg →					
SB-1	8.0	3/6/98	2.4	0.094	0.12	<0.0050	<0.0050	0.40
SB-2	7.5	3/6/98	160[a]	1.5	12	2.8	17	55
SB-3	5.0	3/6/98	37	0.058	0.24	0.90	5.0	5.8
SB-4	7.5	3/6/98	<1.0	0.0057	0.029	<0.0050	0.014	0.34
SB-5	6.0	3/6/98	3,400	39	200	52	300	170

Notes and Abbreviations:

mg/kg = Milligrams per kilogram
TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
MTBE = Methyl tert-butyl ether by EPA Method 8020
<n = Below detection limit of n mg/kg
Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8020
A composite soil sample of SB-1-24.0, SB-2-6.5, SB-2-7.5, and SB-2-8.0 contained 5.4 mg/kg lead by EPA Method 6010.

Table 2. Ground Water Analytical Data - Shell Service Station, WIC# 204-5508-5900, 540 Hegenberger Road, Oakland, California

Sample ID	Date Sampled	TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	TDS
		←			µg/L			→	mg/L
SB-1	3/6/98	<50	<50	<0.50	<0.50	<0.50	<0.50	<2.5	420
SB-2	3/6/98	3,400	---	190	880	81	460	9,400	---
SB-3	3/6/98	410	---	14	48	10	61	210	---
SB-4	3/6/98	<50	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---
SB-5	3/6/98	200,000	---	11,000	36,000	3,200	19,000	1,300,000	---

Notes and Abbreviations:
µg/L = Micrograms per liter
mg/L = Milligrams per liter
TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
TPHd = Total petroleum hydrocarbons as diesel by modified EPA Method 8015
MTBE = Methyl tert-butyl ether by EPA Method 8020.
TDS = Total dissolved solids by EPA Method 160.2
<n = Below detection limit of n µg/L
Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8020
--- = Not analyzed

Table 3. Soil Analytical Data - Physical Parameters - Shell Service Station, WIC# 204-5508-5900, 540 Hegenberger Road, Oakland, California

Sample ID	Depth (feet)	Date Sampled	Soil Type	Porosity (Percent)	Fraction Organic Carbon (Percent)	Moisture Content (Percent)	Bulk Density (g/cc)
SB-3	5.0	3/6/98	silty clay	31.3	0.62	17	2.05
SB-3	7.5	3/6/98	very silty clay	33.8	0.77	—	2.03
SB-4	7.5	3/6/98	very fine- fine grained very silty sand	48.9	0.77	30	1.82
SB-4	12.0	3/6/98	very fine- medium grained slightly silty sand	43.0	0.67	—	1.92

Notes and Abbreviations:

g/cc = grams per cubic centimeter

CAMBRIA

ATTACHMENT A

ANALYTICAL REPORTS FOR SOIL AND GROUND WATER

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 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 Feinman

Project: Shell 540 Hegenberger

Enclosed are the results from samples received at Sequoia Analytical on March 10, 1998.
The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9803720 -01	SOLID, SB-4-7.5	03/06/98	Fraction Organic Carbon
9803720 -01	SOLID, SB-4-7.5	03/06/98	Moisture, Percent
9803720 -01	SOLID, SB-4-7.5	03/06/98	Purgeable TPH/BTEX/MTBE
9803720 -01	SOLID, SB-4-7.5	03/06/98	Bulk Density
9803720 -01	SOLID, SB-4-7.5	03/06/98	Porosity
9803720 -02	SOLID, SB-4-12.0	03/06/98	Bulk Density
9803720 -02	SOLID, SB-4-12.0	03/06/98	Porosity
9803720 -02	SOLID, SB-4-12.0	03/06/98	Fraction Organic Carbon
9803720 -03	LIQUID, SB-4	03/06/98	TPHD_W Extractable TPH
9803720 -03	LIQUID, SB-4	03/06/98	Purgeable TPH/BTEX/MTBE
9803720 -04	SOLID, SB-3-5.0	03/06/98	Fraction Organic Carbon
9803720 -04	SOLID, SB-3-5.0	03/06/98	Moisture, Percent
9803720 -04	SOLID, SB-3-5.0	03/06/98	Purgeable TPH/BTEX/MTBE
9803720 -04	SOLID, SB-3-5.0	03/06/98	Bulk Density
9803720 -04	SOLID, SB-3-5.0	03/06/98	Porosity
9803720 -05	SOLID, SB-3-7.5	03/06/98	Bulk Density
9803720 -05	SOLID, SB-3-7.5	03/06/98	Porosity
9803720 -05	SOLID, SB-3-7.5	03/06/98	Fraction Organic Carbon
9803720 -06	LIQUID, SB-3	03/06/98	Purgeable TPH/BTEX/MTBE
9803720 -07	SOLID, SB-1-8.0	03/06/98	Purgeable TPH/BTEX/MTBE
9803720 -08	LIQUID, SB-1	03/06/98	TPHD_W Extractable TPH

SEQUOIA ANALYTICAL

Sequoia Analytical

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

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9803720 -08	LIQUID, SB-1	03/06/98	Total Dissolved Solids
9803720 -08	LIQUID, SB-1	03/06/98	Purgeable TPH/BTEX/MTBE
9803720 -09	SOLID, SB-5-6.0	03/06/98	Purgeable TPH/BTEX/MTBE
9803720 -10	LIQUID, SB-5	03/06/98	Purgeable TPH/BTEX/MTBE
9803720 -11	SOLID, SB-2-7.5	03/06/98	Purgeable TPH/BTEX/MTBE
9803720 -12	LIQUID, SB-2	03/06/98	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

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, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria
1144 65th St. Suite C
Oakland, CA 94608

Attention: Maureen Feinman

Client Proj. ID: Shell 540 Hegenberger

Lab Proj. ID: 9803720

Sampled: 03/06/98
Received: 03/10/98
Analyzed: see below

Reported: 03/27/98

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9803720-01				
Sample Desc : **SOLID,SB-4-7.5**				
Bulk Density			**See**	**Attached**
Fraction Organic Carbon	**%**	**03/17/98**	**0.020**	**0.77**
Moisture, Percent	**%**	**03/13/98**	**1.0**	**30**
Porosity			**See**	**Attached**
Lab No: 9803720-02				
Sample Desc : **SOLID,SB-4-12.0**				
Bulk Density			**See**	**Attached**
Fraction Organic Carbon	**%**	**03/17/98**	**0.020**	**0.67**
Porosity			**See**	**Attached**
Lab No: 9803720-04				
Sample Desc : **SOLID,SB-3-5.0**				
Bulk Density			**See**	**Attached**
Fraction Organic Carbon	**%**	**03/17/98**	**0.020**	**0.62**
Moisture, Percent	**%**	**03/13/98**	**1.0**	**17**
Porosity			**See**	**Attached**
Lab No: 9803720-05				
Sample Desc : **SOLID,SB-3-7.5**				
Bulk Density			**See**	**Attached**
Fraction Organic Carbon	**%**	**03/17/98**	**0.020**	**0.77**
Porosity			**See**	**Attached**
Lab No: 9803720-08				
Sample Desc : **LIQUID,SB-1**				
Total Dissolved Solids	**mg/L**	**03/13/98**	**1.0**	**420**

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
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, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria	Client Proj. ID: Shell 540 Hegenberger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-4-7.5	Received: 03/10/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/17/98
	Analysis Method: 8015Mod/8020	Analyzed: 03/17/98
Attention: Maureen Feinman	Lab Number: 9803720-01	Reported: 03/27/98

QC Batch Number: GC031798BTEXEXA
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	N.D.
Methyl t-Butyl Ether	**0.025**	**0.34**
Benzene	**0.0050**	**0.0057**
Toluene	**0.0050**	**0.029**
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.014**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	102
4-Bromofluorobenzene	60	140	85

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
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, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria	Client Proj. ID: Shell 540 Hegenberger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-4	Received: 03/10/98
Oakland, CA 94608	Matrix: LIQUID	Extracted: 03/17/98
	Analysis Method: EPA 8015 Mod	Analyzed: 03/18/98
Attention: Maureen Feinman	Lab Number: 9803720-03	Reported: 03/27/98

QC Batch Number: GC0317980HBPEXD
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	75

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
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, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria	Client Proj. ID: Shell 540 Hegenberger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-3-5.0	Received: 03/10/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/17/98
	Analysis Method: 8015Mod/8020	Analyzed: 03/17/98
Attention: Maureen Feinman	Lab Number: 9803720-04	Reported: 03/27/98

QC Batch Number: GC031798BTEXEXA
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**10**	**37**
Methyl t-Butyl Ether	**0.25**	**5.8**
Benzene	**0.050**	**0.058**
Toluene	**0.050**	**0.24**
Ethyl Benzene	**0.050**	**0.90**
Xylenes (Total)	**0.050**	**5.0**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	128
4-Bromofluorobenzene	60	140	12 Q

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
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 540 Hegenberger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-4	Received: 03/10/98
Oakland, CA 94608	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 03/20/98
Attention: Maureen Feinman	Lab Number: 9803720-03	Reported: 03/27/98

QC Batch Number: GC032098BTEX01A
Instrument ID: GCHP01

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	97

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

Sequoia Analytical

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Cambria	Client Proj. ID: Shell 540 Hegenberger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-3	Received: 03/10/98
Oakland, CA 94608	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 03/20/98
Attention: Maureen Feinman	Lab Number: 9803720-06	Reported: 03/27/98

QC Batch Number: GC032098BTEX01A
Instrument ID: GCHP01

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**50**	**410**
Methyl t-Butyl Ether	**2.5**	**210**
Benzene	**0.50**	**14**
Toluene	**0.50**	**48**
Ethyl Benzene	**0.50**	**10**
Xylenes (Total)	**0.50**	**61**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	126

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

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Cambria	Client Proj. ID: Shell 540 Hegenberger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-1-8.0	Received: 03/10/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/17/98
	Analysis Method: 8015Mod/8020	Analyzed: 03/17/98
Attention: Maureen Feinman	Lab Number: 9803720-07	Reported: 03/27/98

QC Batch Number: GC031798BTEXEXA
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**	**2.4**
Methyl t-Butyl Ether	**0.025**	**0.40**
Benzene	**0.0050**	**0.094**
Toluene	**0.0050**	**0.12**
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		**C6-C8**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	130
4-Bromofluorobenzene	60	140	73

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

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Cambria	Client Proj. ID: Shell 540 Hegenberger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-1	Received: 03/10/98
Oakland, CA 94608	Matrix: LIQUID	Extracted: 03/17/98
	Analysis Method: EPA 8015 Mod	Analyzed: 03/18/98
Attention: Maureen Feinman	Lab Number: 9803720-08	Reported: 03/27/98

QC Batch Number: GC0317980HBPEXD
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	90

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

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Cambria	Client Proj. ID: Shell 540 Hegenberger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-1	Received: 03/10/98
Oakland, CA 94608	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 03/20/98
Attention: Maureen Feinman	Lab Number: 9803720-08	Reported: 03/27/98

QC Batch Number: GC032098BTEX01A
Instrument ID: GCHP01

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	99

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

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Cambria	Client Proj. ID: Shell 540 Hegenberger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-5-6.0	Received: 03/10/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/17/98
	Analysis Method: 8015Mod/8020	Analyzed: 03/18/98
Attention: Maureen Feinman	Lab Number: 9803720-09	Reported: 03/27/98

QC Batch Number: GC031798BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**500**	**3400**
Methyl t-Butyl Ether	**12**	**170**
Benzene	**2.5**	**39**
Toluene	**2.5**	**200**
Ethyl Benzene	**2.5**	**52**
Xylenes (Total)	**2.5**	**300**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	126
4-Bromofluorobenzene	60	140	2 Q

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

SEQUOIA ANALYTICAL ELAP #1210

Richard Herling
Project Manager

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Cambria	Client Proj. ID: Shell 540 Hegenberger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-5	Received: 03/10/98
Oakland, CA 94608	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 03/20/98
Attention: Maureen Feinman	Lab Number: 9803720-10	Reported: 03/27/98

QC Batch Number: GC032098BTEX06A
Instrument ID: GCHP06

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**200000**	**200000**
Methyl t-Butyl Ether	**12500**	**1300000**
Benzene	**2000**	**11000**
Toluene	**2000**	**36000**
Ethyl Benzene	**2000**	**3200**
Xylenes (Total)	**2000**	**19000**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	73

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

Sequoia Analytical

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Cambria	Client Proj. ID: Shell 540 Hegenberger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-2-7.5	Received: 03/10/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/17/98
	Analysis Method: 8015Mod/8020	Analyzed: 03/19/98
Attention: Maureen Feinman	Lab Number: 9803720-11	Reported: 03/27/98

QC Batch Number: GC031798BTEXEXA
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**20**	**160**
Methyl t-Butyl Ether	**0.50**	**55**
Benzene	**0.10**	**1.5**
Toluene	**0.10**	**12**
Ethyl Benzene	**0.10**	**2.8**
Xylenes (Total)	**0.10**	**17**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	138 Q
4-Bromofluorobenzene	60	140	7 Q

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

Sequoia Analytical

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Cambria	Client Proj. ID: Shell 540 Hegenberger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-2	Received: 03/10/98
Oakland, CA 94608	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 03/20/98
Attention: Maureen Feinman	Lab Number: 9803720-12	Reported: 03/27/98

QC Batch Number: GC032098BTEX18A
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**2000**	**3400**
Methyl t-Butyl Ether	**100**	**9400**
Benzene	**20**	**190**
Toluene	**20**	**880**
Ethyl Benzene	**20**	**81**
Xylenes (Total)	**20**	**460**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	83

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

CORELAB

CORE LABORATORIES

Mr. Richard Herling
Sequoia Analytical
680 Chesapeake Dr.
Redwood City, CA 94063

March 30, 1998

Subject : Transmittal of Geotechnical Analysis Data
SA Workorder # 9803720
Core Lab File No. 57111-98078

Dear Mr. Herling :

Four soil samples were submitted to our Bakersfield laboratory for geotechnical analysis. Determinations of bulk density and total porosity were requested. Bulk densities and total porosities were measured and calculated as described in **API RP-40**, API Recommended Practice for Core-Analysis Procedure, 1960. Accompanying this letter please find the results of this study.

Grain and pore volumes used for the porosity determinations were measured by Boyles Law double-cell methods utilizing an extended range helium porosimeter.

We appreciate this opportunity to be of service to you and to Sequoia Analytical. Should you have any questions, or if we may be of further help in the future, please do not hesitate to contact us.

Very truly yours,

Jeffry L. Smith
Laboratory Supervisor - Rock Properties

JLS:nw
1 original report, 1 cc report: Addressee

CORE LAB

Sequoia Analytical
(Redwood City)
9803720

C.L. File: 57111-98078

Sample Fraction	Sample Desc.	Sample Date	Sample Density			Total Porosity %	Description	Method
			Dry Bulk g/cc	Natural Bulk g/cc	Matrix g/cc			
01	SB-4-7.5	6-Mar-98	1.33	1.82	2.60	48.9	Gry slty clay	API RP-40
02	SB-4-12.0	6-Mar-98	1.50	1.92	2.62	43.0	Gry v silty clay	
04	SB-3-5.0	6-Mar-98	1.83	2.05	2.67	31.3	Gry vf-fgr v silty sand	
05	SB-3-7.5	6-Mar-98	1.76	2.03	2.66	33.8	Gry vf-mgr sl silty sand (gasoline)	

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

Cambria Environmental Tech.	Client Project ID:	Shell 540 Hegenberger		
1144 65th St., Ste. C	Matrix:	Solid		
Oakland, CA 94608				
Attention: Maureen Feinman	Work Order #:	9803720	01, 04	Reported: Apr 13, 1998

QUALITY CONTROL DATA REPORT

Analyte:	% Moisture
QC Batch:	IN031398160300B
Analy. Method:	EPA 160.3
Prep Method:	

Analyst:	W. Loo
Duplicate Sample #:	980377601
Prepared Date:	3/13/98
Analyzed Date:	3/14/98
Instrument I.D.#:	MANUAL
Sample Concentration:	10
Dup. Sample Concentration:	10
RPD:	0.0
RPD Limit:	0-20

SEQUOIA ANALYTICAL

Richard Herling
Project Manager

** RPD= Relative % Difference

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Cambria Environmental Tech.	Client Project ID:	Shell 540 Hegenberger		
1144 65th St., Ste. C	Matrix:	Solid		
Oakland, CA 94608				
Attention: Maureen Feinman	Work Order #:	9803720	01, 02, 04, 05	Reported: Apr 13, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Fractional Organic Carbon
QC Batch:	IN031798FOC00A
Analy. Method:	
Prep Method:	

Analyst:	M. Moore
Duplicate Sample #:	980390803
Prepared Date:	3/17/98
Analyzed Date:	3/17/98
Instrument I.D.#:	MANUAL
Sample Concentration:	0.037
Dup. Sample Concentration:	0.037
RPD:	0.0
RPD Limit:	0-20

SEQUOIA ANALYTICAL

Richard Herling
Project Manager

** RPD = Relative % Difference

Sequoia Analytical

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Cambria Environmental Tech.	Client Project ID:	Shell 540 Hegenberger	
1144 65th St., Ste. C	Matrix:	Liquid	
Oakland, CA 94608			
Attention: Maureen Feinman	Work Order #:	9803720 08	Reported: Apr 13, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Total Dissolved Solids
QC Batch#:	IN031398160100A
Analy. Method:	EPA 160.1
Prep. Method:	N.A.
Analyst:	W. Loo
MS/MSD #:	980337601
Sample Conc.:	1400
Prepared Date:	3/13/98
Analyzed Date:	3/14/98
Instrument I.D.#:	MANUAL
Conc. Spiked:	500 mg/L
Result:	1700
MS % Recovery:	60
Dup. Result:	1700
MSD % Recov.:	60
RPD:	0.0
RPD Limit:	0-20

LCS #:	LCS031398
Prepared Date:	3/13/98
Analyzed Date:	3/14/98
Instrument I.D.#:	MANUAL
Conc. Spiked:	500 mg/L
LCS Result:	445
LCS % Recov.:	89

MS/MSD	75-125
LCS	80-120
Control Limits	

SEQUOIA ANALYTICAL

Richard Herling
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

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

Client Project ID: Shell 540 Hegenberger
Matrix: Liquid
Work Order #: 9803720 03, 06, 08
Reported: Apr 13, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC032098BTEX01A	GC032098BTEX01A	GC032098BTEX01A	GC032098BTEX01A	GC032098BTEX01A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9803A0301	9803A0301	9803A0301	9803A0301	9803A0301
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/20/98	3/20/98	3/20/98	3/20/98	3/20/98
Analyzed Date:	3/20/98	3/20/98	3/20/98	3/20/98	3/20/98
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	11	11	11	33	67
MS % Recovery:	110	110	110	110	112
Dup. Result:	10	10	10	31	62
MSD % Recov.:	100	100	100	103	103
RPD:	9.5	9.5	9.5	6.3	7.8
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK032098	BLK032098	BLK032098	BLK032098	BLK032098
Prepared Date:	3/20/98	3/20/98	3/20/98	3/20/98	3/20/98
Analyzed Date:	3/20/98	3/20/98	3/20/98	3/20/98	3/20/98
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	11	11	11	33	66
LCS % Recov.:	110	110	110	110	110
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Richard Herling
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

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

Client Project ID: Shell 540 Hegenberger
Matrix: Liquid
Work Order #: 9803720 10

Reported: Apr 13, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC032098BTEX06A	GC032098BTEX06A	GC032098BTEX06A	GC032098BTEX06A	GC032098BTEX06A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9803A0301	9803A0301	9803A0301	9803A0301	9803A0301
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/20/98	3/20/98	3/20/98	3/20/98	3/20/98
Analyzed Date:	3/20/98	3/20/98	3/20/98	3/20/98	3/20/98
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	11	10	11	32	64
MS % Recovery:	110	100	110	100	107
Dup. Result:	13	13	13	37	77
MSD % Recov.:	130	130	130	123	128
RPD:	17	26	17	14	18
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK032098	BLK032098	BLK032098	BLK032098	BLK032098
Prepared Date:	3/20/98	3/20/98	3/20/98	3/20/98	3/20/98
Analyzed Date:	3/20/98	3/20/98	3/20/98	3/20/98	3/20/98
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	11	11	11	34	68
LCS % Recov.:	110	110	110	113	113
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Richard Herling
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

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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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 Environmental Tech.
1144 65th St., Ste. C
Oakland, CA 94608
Attention: Maureen Feinman

Client Project ID: Shell 540 Hegenberger
Matrix: Liquid
Work Order #: 9803720 12

Reported: Apr 13, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC032098BTEX18A	GC032098BTEX18A	GC032098BTEX18A	GC032098BTEX18A	GC032098BTEX18A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	980358904	980358904	980358904	980358904	980358904
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/20/98	3/20/98	3/20/98	3/20/98	3/20/98
Analyzed Date:	3/20/98	3/20/98	3/20/98	3/20/98	3/20/98
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	10	9.6	9.7	30	59
MS % Recovery:	100	96	97	100	98
Dup. Result:	10	9.8	9.9	30	60
MSD % Recov.:	100	98	99	100	100
RPD:	0.0	2.1	2.0	0.0	1.7
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK032098	BLK032098	BLK032098	BLK032098	BLK032098
Prepared Date:	3/20/98	3/20/98	3/20/98	3/20/98	3/20/98
Analyzed Date:	3/20/98	3/20/98	3/20/98	3/20/98	3/20/98
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	10	10	10	31	61
LCS % Recov.:	100	100	100	103	102
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

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

Cambria Environmental Tech.	Client Project ID:	Shell 540 Hegenberger	
1144 65th St., Ste. C	Matrix:	Liquid	
Oakland, CA 94608			
Attention: Maureen Feinman	Work Order #:	9803720 03, 08	Reported: Apr 13, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0317980HBPEXD
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3510
Analyst:	A. Porter
MS/MSD #:	980371107
Sample Conc.:	N.D.
Prepared Date:	3/17/98
Analyzed Date:	3/18/98
Instrument I.D.#:	GCHP4B
Conc. Spiked:	1000 µg/L
Result:	630
MS % Recovery:	63
Dup. Result:	670
MSD % Recov.:	67
RPD:	6.2
RPD Limit:	0-50

LCS #:	BLK031798
Prepared Date:	3/17/98
Analyzed Date:	3/18/98
Instrument I.D.#:	GCHP4B
Conc. Spiked:	1000 µg/L
LCS Result:	670
LCS % Recov.:	67

MS/MSD	50-150
LCS	60-140
Control Limits	

SEQUOIA ANALYTICAL

Richard Herling
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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD Serial No: 9803770

Site Address: 540 Hegenberger, Oakland

WIC #: 204-5508-5900

Shell Engineer: Alex Perez | Phone No.: 335-5027 | 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

LAB: Sequoia

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.
SB-4-7.5	3/6	1	X			1
SB-4-12.0	3/6	2	X			1
SB-4-17.5	3/6		X			1
SB-4	3/6	3		X		2L 3VOA
SB-3-5.0	3/6	4	X			1
SB-3-7.5	3/6	5	X			1
SB-3-11.5	3/6		X			1
SB-3	3/6	6		X		3VOA

Analysis Required

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/6020)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 + MTBE 8260	foc, porosity, bulk density	moisture content	Asbestos Test for disposal	Container Size	Preparation Used	Composite Y/N
					X	X	X				
						X					
								X			Y
	X				X						
					X	X	X				
						X					
								X			Y
					X						

CHECK ONE (1) BOX ONLY		C7/01
G.W. Monitoring	[ ]	4441
Site Investigation	[X]	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 [ ]
10 days [X] (Normal)
Other [ ]
AR 10 12 53
NOTE: Notify Lab as soon as Possible of 24/48 hr. TAT.

UST AGENCY: Alameda County

MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
Note: Please make sure hold time is measured from sample date. Thanks.	
4:1 composite test for disposal gas and diesel	

Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
Maureen Feineman	Maureen Feineman	3/9/98	10:20	R Scrassi	R Scrassi	3/10/98	10:20
R Scrassi	R Scrassi	3/10/98					
				Teri Downs	DOWNS	3/10	1253

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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 3/6/98
Page 2 of 3

Site Address: 540 Hegenberger, Oakland
WIC#: 204-5508-5900
Shell Engineer: Alex Perez
Phone No.: 335-5027
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

9803720 Analysis Required

LAB: Sequoia

CHECK ONE (1) BOX ONLY	C/O#
G.W. Monitoring	[ ] 4461
Site Investigation	[X] 4461
Soil Classify/Disposal	[ ] 4462
Water Classify/Disposal	[ ] 4463
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 [X] (Normal)
Other [ ] _____

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

UST AGENCY: Alameda County

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	TDS (EPA 160.2)	Porosity, Sp. Gr., bulk density	Asbestos, Moisture content	Test for disposal	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SB-1-8.0	3/6	7	X			1						X								
SB-1-11.5	3/6		X			1										X		Y		
SB-1	3/6	8		X		1 L, 1 VOA		X				X	X							
SB-5-6.0	3/6	9	X			1						X								
SB-5-7.5	3/6	(A)	X			1										X		Y		
SB-5	3/6	10		X		3 VOA						X								
SB-2-4.5	3/6		X			1													HOLD	
SB-2-7.5	3/6	11	X			1						X								

Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
Maureen Feineman	Maureen Feineman	3/9/98	10:20			3/10	1253
		3/10/98					
				Jeri Downs	DOWNS		

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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD Serial No: _____ Page 3 of 3

Site Address: 540 Hegenberger, Oakland
WIC#: 204-5508-5900
Shell Engineer: Alex Perez | Phone No.: 335-5027 | 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

LAB: Sequoia

CHECK ONE (1) BOX ONLY | C1/01 | TURN AROUND TIME
G.W. Monitoring [ ] 4441 | 24 hours [ ]
Site Investigation [X] 4441 | 48 hours [ ]
Soil Classify/Disposal [ ] 4442 | 10 days [X] (Normal)
Water Classify/Disposal [ ] 4443 | Other [ ]
Soil/Air Remt. or Sys. O & M [ ] 4452
Water Remt. or Sys. O & M [ ] 4453
Other [ ]
NOTE: Notify Lab as soon as Possible of 24/48 hr. TAT.

UST AGENCY: Alameda County

Analysis Required

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	Porosity, foc, bulk density	Moisture content	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SB-2-11.5	3/6		X			1													HOLD	
SB-2	3/6	12		X		3VOA						X								
SB-3-4.0	3/6		X			1													HOLD	

Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
Maureen Feineman	Maureen Feineman	3/9/98	10:20				
Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
	R Scrogin	3/10/98					
Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
				Jeff Downs	DOWNS	3/10	1253

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

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria	Client Proj. ID: Shell 540 Hegenberger	Received: 03/10/98
1144 65th St. Suite C		
Oakland, CA 94608	Lab Proj. ID: 9803720	Reported: 03/27/98
Attention: Maureen Feinman		

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 28 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Richard Herling
Project Manager

CAMBRIA

ATTACHMENT B

SOIL BORING LOGS

BORING LOG

Client: **Shell Oil Products Company**

Project No: **240-0414** Phase Task **006**

Boring ID **SB-1**

Location **540 Hegenberger Road, Oakland**

Surface Elev. **NA ft,** Page **1** of **1**

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			
				ASPHALT
				Gravelly Silty SAND with pieces of brick, cinders, debris, FILL.
5				No Recovery.
		X		**Silty SAND**; (SM); black; loose; wet; 10% clay, 20% silt, 60% sand, 10% gravel; no plasticity; moderate estimated permeability.
10				**Silty CLAY**; (CH); grey to black; soft; moist; 70% clay, 30% silt; medium to high plasticity; low estimated permeability.
		X		
15				
20				

TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
			0	
			5	
2.4			10	Water level @ 8 ft
<1.0			15	Bottom of boring @ 12 ft
			20	

Driller **Vironex**

Logged By **Maureen Feineman**

Water-Bearing Zones **NA**

Drilling Started **3/6/98**

Drilling Completed **3/6/98**

Grout Type **Portland Type I/II**

Notes: **Southwest corner of lot.**

BOR 24414 4/13/98

Cambria Environmental Technology, Inc.

BORING LOG

Client: **Shell Oil Products Company**

Project No: **240-0414** Phase Task **006**

Boring ID **SB-2**

Location **540 Hegenberger Road, Oakland**

Surface Elev. **NA ft,**

Page **1** of **1**

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			
				ASPHALT
				Compacted GRAVEL, FILL.
5		X		**Sandy Silty CLAY**; (CL); black; soft; moist; 50% clay, 20% silt, 30% sand; medium plasticity; low estimated permeability.
				Silty CLAY; (CH); black; soft; moist; 70% clay, 30% silt; high plasticity; low estimated permeability.
		X		
10				
		X		
				Grey; 60% clay, 40% silt; medium to high plasticity.
15				
				Silty SAND; (SM); grey; loose; wet; 20% silt, 80% fine sand; low plasticity; high estimated permeability.
20				

TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
			0	
			5	
160.0			10	
				Water level @ 12 ft
			15	
				Bottom of boring @ 16 ft
			20	

Driller **Vironex**

Logged By **Maureen Feineman**

Water-Bearing Zones **NA**

Drilling Started **3/6/98**

Drilling Completed **3/6/98**

Grout Type **Portland Type I/II**

Notes: **Approximately 20 feet west of USTs.**

BOR 24414 4/13/98

Cambria Environmental Technology, Inc.

BORING LOG

Client: **Shell Oil Products Company**

Project No: **240-0414** Phase Task **006**

Boring ID **SB-3**

Location **540 Hegenberger Road, Oakland**

Surface Elev. **NA ft,**

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			
				ASPHALT
				Gravelly Silty SAND, FILL.
5				**Silty SAND with Clay Clasts:** (SM); grey to black; loose; moist; 15% clay, 15% silt, 65-70% sand, trace gravel; low plasticity; moderate estimated permeability.
				No clay clasts; wet; 20% silt, 80% fine sand.
10				
15				
20				

TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
			0	
37.0			5	Water @ 6 ft
830.0			10	Bottom of boring @ 12 ft
			15	
			20	

Driller **Vironex**

Logged By **Maureen Feineman**

Water-Bearing Zones **NA**

Drilling Started **3/6/98**

Drilling Completed **3/6/98**

Grout Type **Portland Type I/II**

Notes: **Approximately 15 feet south of USTs.**

Cambria Environmental Technology, Inc.

BORING LOG

Client: **Shell Oil Products Company**

Project No: **240-0414** Phase Task **006**

Boring ID **SB-4**

Location **540 Hegenberger Road, Oakland**

Surface Elev. **NA ft,** Page **1** of **1**

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			
				ASPHALT
				Gravelly CLAY, FILL: brown to black; soft; dry; 60% clay, 5% silt, 10% sand, 25% gravel; low to medium plasticity; low to moderate estimated permeability.
5				
				Silty CLAY; (CH); black; soft; moist; 70% clay, 30% silt; high plasticity; low estimated permeability.
		X		
10				
		X		**Sandy Silty CLAY;** (CL); black; soft; wet; 50% clay, 20% silt, 30% sand; low to medium plasticity; low estimated permeability.
				Silty CLAY; (CH); grey; soft; moist; 60% clay, 40% silt; medium to high plasticity; low estimated permeability.
15				
				Sandy Silty CLAY; (CL); black; soft; wet; 50% clay, 20% silt, 30 % sand; low to medium plasticity; low estimated permeability.
		X		
				Silty CLAY; (CH); grey; soft; moist; 60% clay, 40% silt; medium to high plasticity, low estimated permeability.
20				

TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
			0	
			5	
<1.0			10	Water level @ 10 ft
<1.0			15	
			20	Bottom of boring @ 20 ft

Driller **Vironex**

Logged By **Maureen Feineman**

Water-Bearing Zones **NA**

Drilling Started **3/6/98**

Drilling Completed **3/6/98**

Grout Type **Portland Type I/II**

Notes: **South side of lot, approximately 15 feet east of building.**

BOR 24414 4/13/98

Cambria Environmental Technology, Inc.

BORING LOG

Client: **Shell Oil Products Company**

Project No: **240-0414** Phase Task **006**

Boring ID **SB-5**

Location **540 Hegenberger Road, Oakland**

Surface Elev. **NA ft,** Page **1** of **1**

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
0	Ground Surface							0	
				CONCRETE					
				Silty SAND, FILL: (SM); brown; loose; damp; 20% silt, 80% sand; low plasticity; moderate to high estimated permeability. **Silty CLAY, FILL:** (CH); brown to black; soft; damp; 60% clay, 40% silt, high plasticity; low estimated permeability.					
5				**Gravelly SAND, FILL:** (SP); black; loose; damp; 10% silt, 70% sand, 20% gravel; low plasticity; high estimated permeability.				5	
				Silty SAND: (SM); black; loose; wet; 20% silt, 80% fine sand; low plasticity; moderate to high estimated permeability.	3,400				
				Silty CLAY: (CH); black; soft; moist; 70% clay, 30% silt; high plasticity; low estimated permeability.	100.0				Water level @ 8 ft
10				**Silty SAND:** (SM); black; loose; wet; 20% silt, 80% fine sand; low plasticity; moderate to high estimated permeability.				10	
15								15	Bottom of boring @ 12 ft
20								20	

Driller **Vironex**

Logged By **Maureen Feineman**

Water-Bearing Zones **NA**

Drilling Started **3/6/98**

Drilling Completed **3/6/98**

Grout Type **Portland Type I/II**

Notes: **West side of lot, adjacent to planter.**

BOR 24414 4/13/98

Cambria Environmental Technology, Inc.

CAMBRIA

ATTACHMENT C

STANDARD FIELD PROCEDURES FOR GEOPROBE® SAMPLING

STANDARD FIELD PROCEDURES FOR GEOPROBE® SAMPLING

This document describes Cambria Environmental Technology's 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 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 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. 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 photoionization 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.

CAMBRIA

ATTACHMENT D

SOIL HANDLING DOCUMENTATION

DISPOSAL CONFIRMATION

Consultant:	CAMBRIA ENVIRONMENTAL
Contact:	MAUREEN FIENEMAN
Phone/Fax:	(510) 420-0700 FAX (510) 420-9170
Client:	SHELL OIL CO. - ALEX PEREZ
Station #/Wic #:	204-5508-5900
Site Address:	540 HEGENBERGER ROAD
City/State:	OAKLAND, CA
Estimated YD/Ton:	1 YARD
Actual YD/Ton:	.25 TONS
Disposal Facility:	FORWARD LANDFILL
Disposal Date:	APRIL 6, 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

6978

4/14/98

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria
1144 65th St. Suite C
Oakland, CA 94608

Attention: Maureen Feinman

Client Proj. ID: Shell 540 Hegenburger

Lab Proj. ID: 9803656

Sampled: 03/06/98
Received: 03/10/98
Analyzed: see below

Reported: 03/24/98

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9803656-05				
Sample Desc : **SOLID,SB-(4-17.5 - 5-7.5)comp**				
Organic Lead	mg/Kg	03/20/98	5.0	N.D.

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

SEQUOIA ANALYTICAL - ELAP #1210

Richard Herling
Project Manager

Sequoia Analytical

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

Project: Shell 540 Hegenburger

Enclosed are the results from samples received at Sequoia Analytical on March 10, 1998. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9803656 -01	SOLID, SB-4-17.5	03/06/98	TPHD_S Extractable TPH
9803656 -01	SOLID, SB-4-17.5	03/06/98	TPHG_S Purgeable TPH
9803656 -02	SOLID, SB-3-11.5	03/06/98	TPHD_S Extractable TPH
9803656 -02	SOLID, SB-3-11.5	03/06/98	TPHG_S Purgeable TPH
9803656 -03	SOLID, SB-1-11.5	03/06/98	TPHD_S Extractable TPH
9803656 -03	SOLID, SB-1-11.5	03/06/98	TPHG_S Purgeable TPH
9803656 -04	SOLID, SB-5-7.5	03/06/98	TPHD_S Extractable TPH
9803656 -04	SOLID, SB-5-7.5	03/06/98	TPHG_S Purgeable TPH
9803656 -05	SOLID, SB-(4-17.5 - 5-7.5)comp	03/06/98	BTEX_S Distinction
9803656 -05	SOLID, SB-(4-17.5 - 5-7.5)comp	03/06/98	ITTLCS Title 22: Metals, T
9803656 -05	SOLID, SB-(4-17.5 - 5-7.5)comp	03/06/98	Organic Lead

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

Project Manager

Sequoia Analytical

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Cambria	Client Proj. ID: Shell 540 Hegenburger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-4-17.5	Received: 03/10/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/12/98
	Analysis Method: EPA 8015 Mod	Analyzed: 03/13/98
Attention: Maureen Feinman	Lab Number: 9803656-01	Reported: 03/24/98

QC Batch Number: GC0312980HBPEXD
Instrument ID: GCHP19B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	**1.0**	**1.3**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	86

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

SEQUOIA ANALYTICAL - ELAP #1210

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Project Manager

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Cambria	Client Proj. ID: Shell 540 Hegenburger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-4-17.5	Received: 03/10/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/19/98
	Analysis Method: EPA 8015 Mod	Analyzed: 03/19/98
Attention: Maureen Feinman	Lab Number: 9803656-01	Reported: 03/24/98

QC Batch Number: GC031998BTEXEXA
Instrument ID: GCHP07

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	107
4-Bromofluorobenzene	60	140	78

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

SEQUOIA ANALYTICAL - ELAP #1210

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Project Manager

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Cambria	Client Proj. ID: Shell 540 Hegenburger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-3-11.5	Received: 03/10/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/12/98
	Analysis Method: EPA 8015 Mod	Analyzed: 03/13/98
Attention: Maureen Feinman	Lab Number: 9803656-02	Reported: 03/24/98

QC Batch Number: GC0312980HBPEXD
Instrument ID: GCHP19B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	**20**	**290**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	169 Q

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

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Cambria	Client Proj. ID: Shell 540 Hegenburger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-3-11.5	Received: 03/10/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/19/98
	Analysis Method: EPA 8015 Mod	Analyzed: 03/19/98
Attention: Maureen Feinman	Lab Number: 9803656-02	Reported: 03/24/98

QC Batch Number: GC031998BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**50**	**830**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	116
4-Bromofluorobenzene	60	140	14 Q

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

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Cambria	Client Proj. ID: Shell 540 Hegenburger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-1-11.5	Received: 03/10/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/12/98
	Analysis Method: EPA 8015 Mod	Analyzed: 03/13/98
Attention: Maureen Feinman	Lab Number: 9803656-03	Reported: 03/24/98

QC Batch Number: GC0312980HBPEXD
Instrument ID: GCHP19B

Total Extractable Petroleum Hydrocarbons (TEPH)

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

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	84

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

SEQUOIA ANALYTICAL - ELAP #1210

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Project Manager

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Cambria
1144 65th St. Suite C
Oakland, CA 94608

Attention: Maureen Feinman

Client Proj. ID: Shell 540 Hegenburger
Sample Descript: SB-1-11.5
Matrix: SOLID
Analysis Method: EPA 8015 Mod
Lab Number: 9803656-03

Sampled: 03/06/98
Received: 03/10/98
Extracted: 03/19/98
Analyzed: 03/19/98
Reported: 03/24/98

QC Batch Number: GC031998BTEXEXA
nstrument ID: GCHP07

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	92
4-Bromofluorobenzene	60	140	95

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

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Cambria	Client Proj. ID: Shell 540 Hegenburger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-5-7.5	Received: 03/10/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/12/98
	Analysis Method: EPA 8015 Mod	Analyzed: 03/13/98
Attention: Maureen Feinman	Lab Number: 9803656-04	Reported: 03/24/98

QC Batch Number: GC0312980HBPEXD
Instrument ID: GCHP19B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TEPH as Diesel	1.0	4.8
Chromatogram Pattern:		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	78

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

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Project Manager

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Cambria
1144 65th St. Suite C
Oakland, CA 94608

Attention: Maureen Feinman

Client Proj. ID: Shell 540 Hegenburger
Sample Descript: SB-5-7.5
Matrix: SOLID
Analysis Method: EPA 8015 Mod
Lab Number: 9803656-04

Sampled: 03/06/98
Received: 03/10/98
Extracted: 03/19/98
Analyzed: 03/19/98
Reported: 03/24/98

QC Batch Number: GC031998BTEXEXA
nstrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH)

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	**10**	**100**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	107
4-Bromofluorobenzene	60	140	13 Q

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

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Cambria	Client Proj. ID: Shell 540 Hegenburger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-(4-17.5 - 5-7.5)comp	Received: 03/10/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/19/98
	Analysis Method: EPA 8020	Analyzed: 03/20/98
Attention: Maureen Feinman	Lab Number: 9803656-05	Reported: 03/24/98

QC Batch Number: GC031998BTEXEXA
Instrument ID: GCHP07

BTEX Distinction

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
Benzene	**0.0050**	**0.0053**
Toluene	**0.0050**	**0.031**
Ethyl benzene	0.0050	N.D.
Xylenes (Total)	**0.0050**	**0.0072**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	114
4-Bromofluorobenzene	60	140	96

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

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Cambria	Client Proj. ID: Shell 540 Hegenburger	Sampled: 03/06/98
1144 65th St. Suite C	Sample Descript: SB-(4-17.5 - 5-7.5)comp	Received: 03/10/98
Oakland, CA 94608	Matrix: SOLID	Extracted: 03/12/98
	Analysis Method: Title 22	Analyzed: 03/12/98
Attention: Maureen Feinman	Lab Number: 9803656-05	Reported: 03/24/98

QC Batch Number: ME031298601OMDE

Inorganic Persistent and Bioaccumulative Toxic Substances : TTLC

Analyte	Max. Limit mg/kg	Detection Limit mg/kg	Sample Results mg/kg
Antimony, Sb	500	5.0	N.D.
Arsenic, As	**500**	**5.0**	**16**
Barium, Ba	**10000**	**5.0**	**120**
Beryllium, Be	75	0.50	N.D.
Cadmium, Cd	100	0.50	N.D.
Chromium, Cr	**2500**	**0.50**	**51**
Cobalt, Co	**8000**	**2.5**	**11**
Copper, Cu	**2500**	**0.50**	**22**
Lead, Pb	**1000**	**5.0**	**13**
Mercury, Hg	**20**	**0.020**	**0.091**
Molybdenum, Mo	3500	2.5	N.D.
Nickel, Ni	**2000**	**2.5**	**54**
Selenium, Se	100	5.0	N.D.
Silver, Ag	500	0.50	N.D.
Thallium, Tl	**700**	**5.0**	**15**
Vanadium, V	**2400**	**2.5**	**34**
Zinc, Zn	**5000**	**0.50**	**77**

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

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Cambria Environmental Tech.	Client Project ID:	Shell 540 Hegenburger	
1144 65th St., Ste. C	Matrix:	Solid	
Oakland, CA 94608			
Attention: Maureen Feinman	Work Order #:	9803656 01-04	Reported: Mar 26, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0312980HBPEXD
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3550/FHS
Analyst:	G. Fish
MS/MSD #:	980369205
Sample Conc.:	N.D.
Prepared Date:	3/12/98
Analyzed Date:	3/13/98
Instrument I.D.#:	GCHP5A
Conc. Spiked:	25 mg/Kg
Result:	19
MS % Recovery:	76
Dup. Result:	19
MSD % Recov.:	76
RPD:	0.0
RPD Limit:	0-50

LCS #:	BLK031298
Prepared Date:	3/12/98
Analyzed Date:	3/13/98
Instrument I.D.#:	GCHP5A
Conc. Spiked:	25 mg/Kg
LCS Result:	20
LCS % Recov.:	80

MS/MSD	50-150
LCS	60-140
Control Limits	

SEQUOIA ANALYTICAL

Richard Herling
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

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

Client Project ID: Shell 540 Hegenburger
Matrix: Solid
Work Order #: 9803656 01-05
Reported: Mar 26, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC031998BTEXEXA	GC031998BTEXEXA	GC031998BTEXEXA	GC031998BTEXEXA	GC031998BTEXEXA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9803A3205	9803A3205	9803A3205	9803A3205	9803A3205
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/19/98	3/19/98	3/19/98	3/19/98	3/19/98
Analyzed Date:	3/19/98	3/19/98	3/19/98	3/19/98	3/19/98
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
Result:	0.20	0.20	0.20	0.60	1.2
MS % Recovery:	100	100	100	100	100
Dup. Result:	0.19	0.19	0.19	0.57	1.1
MSD % Recov.:	95	95	95	95	92
RPD:	5.1	5.1	5.1	5.1	8.7
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK031998	BLK031998	BLK031998	BLK031998	BLK031998
Prepared Date:	3/19/98	3/19/98	3/19/98	3/19/98	3/19/98
Analyzed Date:	3/19/98	3/19/98	3/19/98	3/19/98	3/19/98
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg	1.2 mg/Kg
LCS Result:	0.20	0.20	0.20	0.60	1.3
LCS % Recov.:	100	100	100	100	108
MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

SEQUOIA ANALYTICAL

Richard Herling
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

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

Client Project ID: Shell 540 Hegenburger
Matrix: Solid
Work Order #: 9803656 05
Reported: Mar 26, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Beryllium	Cadmium	Chromium	Nickel	Mercury
QC Batch#:	ME0312986010MDE	ME0312986010MDE	ME0312986010MDE	ME0312986010MDE	ME0319987471M4A
Analy. Method:	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 7471
Prep. Method:	EPA 3050	EPA 3050	EPA 3050	EPA 3050	EPA 7471
Analyst:	S. LaBarron	S. LaBarron	S. LaBarron	S. LaBarron	B. Taylor
MS/MSD #:	980357204	980357204	980357204	980357204	980370207
Sample Conc.:	N.D.	N.D.	25	30	1.7
Prepared Date:	3/12/98	3/12/98	3/12/98	3/12/98	3/18/98
Analyzed Date:	3/12/98	3/12/98	3/12/98	3/12/98	3/19/98
Instrument I.D.#:	MTJA5	MTJA5	MTJA5	MTJA5	MPE4
Conc. Spiked:	50 mg/Kg	50 mg/Kg	50 mg/Kg	50 mg/Kg	0.40 mg/Kg
Result:	44	45	69	74	0.20
MS % Recovery:	88	90	88	88	50
Dup. Result:	45	46	70	81	1.5
MSD % Recov.:	90	92	90	102	375
RPD:	2.2	2.2	1.4	9.0	152
RPD Limit:	0-20	0-20	0-20	0-20	0-20
LCS #:	BLK031298	BLK031298	BLK031298	BLK031298	BLK031998
Prepared Date:	3/12/98	3/12/98	3/12/98	3/12/98	3/18/98
Analyzed Date:	3/12/98	3/12/98	3/12/98	3/12/98	3/19/98
Instrument I.D.#:	MTJA5	MTJA5	MTJA5	MTJA5	MPE4
Conc. Spiked:	50 mg/Kg	50 mg/Kg	50 mg/Kg	50 mg/Kg	0.40 mg/Kg
LCS Result:	47	46	46	46	0.34
LCS % Recov.:	94	92	92	92	85
MS/MSD	80-120	80-120	80-120	80-120	
LCS	80-120	80-120	80-120	80-120	
Control Limits					75-125

SEQUOIA ANALYTICAL

Richard Herling
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

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria Environmental Tech.	Client Project ID:	Shell 540 Hegenburger	
1144 65th St., Ste. C	Matrix:	Liquid	
Oakland, CA 94608			
Attention: Maureen Feinman	Work Order #:	9803656 05	Reported: Mar 26, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Organic Lead
QC Batch#:	ME0312987000MDA
Analy. Method:	LUFT
Prep. Method:	LUFT
Analyst:	B. Taylor
MS/MSD #:	980317205
Sample Conc.:	N.D.
Prepared Date:	3/12/98
Analyzed Date:	3/20/98
Instrument I.D.#:	MV2
Conc. Spiked:	4.0 mg/L
Result:	3.6
MS % Recovery:	90
Dup. Result:	4.1
MSD % Recov.:	103
RPD:	13
RPD Limit:	0-30

LCS #:	BLK031298
Prepared Date:	3/12/98
Analyzed Date:	3/20/98
Instrument I.D.#:	MV2
Conc. Spiked:	4.0 mg/L
LCS Result:	3.4
LCS % Recov.:	85

MS/MSD LCS Control Limits	75-125

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Richard Herring
Project Manager

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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 9803650

Date: 3/6/98
Page 1 of 3

Site Address: 540 Hegenberger, Oakland
WIC #: 204-5508-5900
Shell Engineer: Alex Perez
Phone No.: 335-5027
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

LAB: Sequoia

CHECK ONE (1) BOX ONLY	C1/01
G.W. Monitoring	4461
Site Investigation	X 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

RR 10 12 53

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

UST AGENCY: Alameda County

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	foc, porosity, bulk density	moisture content	Asbestos Test for disposal	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SB-4-7.5	3/6		X			1						X	X	X					Note: Please make sure hold time is measured from sample date. Thanks.	
SB-4-12.0	3/6		X			1							X							
SB-4-17.5	3/6	1	X			1									X			Y	4:1 composite test for disposal gas and diesel	
SB-4	3/6			X		2L 3VOA		X				X								
SB-3-5.0	3/6		X			1						X	X	X						
SB-3-7.5	3/6		X			1							X							
SB-3-11.5	3/6	L	X			1									X			Y		
SB-3	3/6			X		3VOA						X								

Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
Maureen Feineman	Maureen Feineman	3/9/98	10:30	R. Scarsi	R. Scarsi	3/10/98	10:20
R. Scarsi	R. Scarsi	3/10/98					
				Jeri Downs	DOWNS	3/10	1253

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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 3/10/98
Page 2 of 3

Site Address: 540 Hegenberger, Oakland
WIC#: 204-5508-5900
Shell Engineer: Alex Perez
Phone No.: 335-5027
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

4803656 **Analysis Required**

LAB: Sequoia

CHECK ONE (1) BOX ONLY	C1/D1
G.W. Monitoring	4441
Site Investigation	X 4441
Soil Classify/Disposal	4442
Water Classify/Disposal	4443
Soil/Air Remt. or Sys. O & M	4452
Water Remt. or Sys. O & M	4453
Other	

TURN AROUND TIME: 24 hours [ ] 48 hours [ ] 15 days [X] (Normal) Other [ ]
NOTE: Notify Lab as soon as Possible of 24/48 hr. TAT.

UST AGENCY: Alameda County

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	TDS (EPA 160.2)	Porosity, Sec, bulk density	Asbestos, Moisture content	Composite for disposal Test for disposal	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SB-1-8.0	3/6		X			1						X								
SB-1-11.5	3/6	3	X			1										X		Y		
SB-1	3/6			X		1 1/2L 3 VOA		X				X	X							
SB-5-6.0	3/6		X			1						X								
SB-5-7.5	3/6	4	X			1										X		Y		
SB-5	3/6			X		3 VOA						X						2 of this only 3-10-98		
SB-2-4.5	3/6		X			1													HOLD	
SB-2-7.5	3/6		X			1						X								

Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
Maureen Feineman	Maureen Feineman	3/9/98	10:20	R. Scroggin	R. Scroggin	3/10/98	10:20
R. Scroggin	R. Scroggin	3/10/98					
				Jeri Downs	DOWNS	3/10	1253

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SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: ____

Date: 3/6/98
Page 3 of 3

Site Address: 540 Hegenberger, Oakland
WIC#: 204-5508-5900
Shell Engineer: Alex Perez — Phone No.: 335-5027 — 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

9803656 **Analysis Required**

LAB: Sequoia

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
G.W. Monitoring [ ]	4461	24 hours [ ]
Site Investigation [X]	4441	48 hours [ ]
Soil Classify/Disposal [ ]	4442	16 days [X] (Normal)
Water Classify/Disposal [ ]	4443	Other [ ]
Soil/Air Rem. or Sys. O & M [ ]	4452	NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.
Water Rem. or Sys. O & M [ ]	4453	
Other [ ]		

UST AGENCY: Alameda County

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	Porosity, foc, bulk density	moisture content	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
SB-2-11.5	3/6		X			1													HOLD	
SB-2	3/6			X		3VOA						X								
SB-3-4.0	3/6		X			1													HOLD	

Relinquished By (signature):	Printed Name:	Date/Time:	Received (signature):	Printed Name:	Date/Time:
Maureen Feineman	Maureen Feineman	Date: 3/9/98 Time: 10:20	R. Scroggin	R Scroggin	Date: 3/10/98 Time: 10:20
R Scroggin	R Scroggin	Date: 3/10/98 Time:			Date: Time:
		Date: Time:	Teri Downs	DOWNS	Date: 3/10 Time: 1253

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Cambria 1144 65th St. Suite C Oakland, CA 94608 Attention: Maureen Feinman	Client Proj. ID: Shell 540 Hegenburger Lab Proj. ID: 9803656	Received: 03/10/98 Reported: 03/24/98

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 20 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Richard Herling
Project Manager