CAMBRIA

November 19, 1998

98 DEC -9 PM 3:44

Barney Chan
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: **Third Quarter 1998 Monitoring Report**
Shell-branded Service Station
540 Hegenberger Road
Oakland, California
WIC #204-5508-5900
Cambria Project #24-314-398

Dear Mr. Chan:

On behalf of Equilon Enterprises LLC, Cambria Environmental Technology, Inc. (Cambria) is submitting this ground water monitoring report in accordance with the reporting requirements of 23 CCR 2652d.

THIRD QUARTER 1998 ACTIVITIES

Monitoring Well Installation: Cambria installed wells MW-1, MW-2, and MW-3 on July 14 and 15, 1998. These activities were reported under separate cover. Blaine Tech Services, Inc. (Blaine) of San Jose, California developed the wells on August 20, 1998. Development details are included in Blaine's field notes (Attachment A). Blaine will measure dissolved oxygen (DO) concentrations, gauge, and sample all wells on a quarterly basis. The ground water samples will be analyzed for total purgeable petroleum hydrocarbons as gasoline by modified EPA Method 8015, benzene, toluene, ethylbenzene, xylenes, and methyl tert-butyl ether (MTBE) by EPA Method 8020.

Well Head Survey: Cambria contracted Virgil Chavez Land Surveying (Chavez) of Vallejo, California to survey the well head elevations for all wells. The results are presented as Attachment B.

Ground Water Monitoring: Blaine gauged and sampled the site wells. The wells were sampled by both non-purging and purging sampling methods, and DO readings were collected pre-purge and post-purge. In addition, the highest MTBE hit was confirmed by EPA Method 8260. Cambria calculated ground water elevations and compiled the analytical data (Table 1) and prepared a ground water elevation contour map (Figure 1). The Blaine report is included as Attachment A.

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

Cambria Environmental Technology, Inc.

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

ANTICIPATED FOURTH QUARTER 1998 ACTIVITIES

Ground Water Monitoring: Blaine will collect DO measurements, gauge, and sample the site wells using the non-purging sampling method. Cambria will tabulate the data and prepare a monitoring report.

CLOSING

We appreciate the opportunity to work with you on this project. Please call Darryk Ataide at (510) 420-3339 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

Darryk Ataide
Project Environmental Scientist

Diane M. Lundquist, P.E.
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
DIANE M. LUNDQUIST
NO. C46725
CIVIL
STATE OF CALIFORNIA

Attachment: A - Blaine Ground Water Monitoring Report
B - Chavez Surveying Results

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

G:\OAK540\QMRs\3Q98QM.WPD

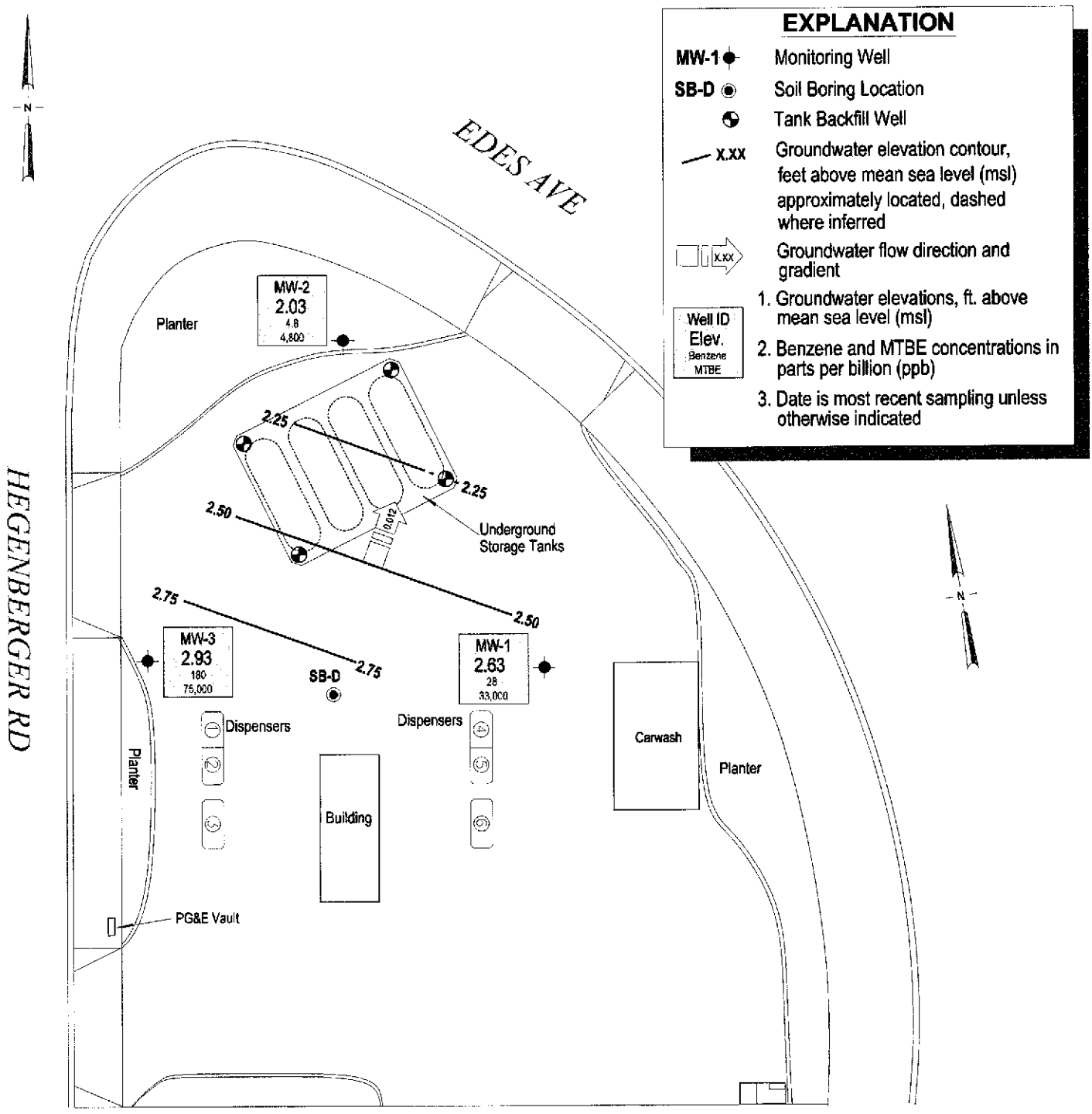

FIGURE
1

Base Map by R.H. Lee & Assoc.

Shell-branded Service Station
540 Hegenberger Road
Oakland, California
WIC #204-5508-5900

CAMBRIA

Groundwater Elevation Contour

August 26, 1998

Revised spelling on 7/15/98

CAMBRIA

Table 1. Ground Water Elevations and Analytical Data - Shell-branded Service Station WIC# 204-5508-5900 - 540 Hegenberger Road, Oakland, California

Sample ID	Date	GW Depth (ft)	GW Elevation (ft)	GW Gradient (ft/ft)	TPPH	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DO (mg/L)	Notes
					← (Concentrations in µg/L) →							
MW-1	08/26/98	7.91	2.63	NW/0.012	2,700	33,000	28	55	59	39	1.8	pre-purge
TOC = 10.54	08/26/98	7.91	2.63	NW/0.012	<1,000	17,000	22	<10	<10	<10	2.2	post-purge
MW-2	08/26/98	7.18	2.03	NW/0.012	<250	4,000	3.2	<2.5	<2.5	<2.5	2.4	pre-purge
TOC = 9.21	08/26/98	7.18	2.03	NW/0.012	<250	4,800	3.1	<2.5	<2.5	<2.5	2.7	post-purge
	08/26/98	7.18	2.03	NW/0.012	<250	3,300	4.8	<2.5	<2.5	6.0	2.7	duplicate
MW-3	08/26/98	6.52	2.93	NW/0.012	2,300	44,000	180	330	<0.50	420	1.8	pre-purge
TOC = 9.45	08/26/98	6.52	2.93	NW/0.012	<50	52,000(75,000)	<0.50	<0.50	<0.50	<0.50	2.3	post-purge
MCLs					NE	NE	1	150	700	1,750		

Abbreviations:

GW = Ground water
TPPH = Total purgeable petroleum hydrocarbons as gasoline by modified EPA Method 8015
MTBE = Methyl tert-butyl ether by EPA Method 8020; result in parentheses indicates confirmation by EPA Method 8260
DO = Dissolved oxygen
ft = Feet
µg/L = Micrograms per liter
mg/L = Milligrams per liter
TOC = Top of casing elevation
MCLs = California primary maximum contaminant levels for drinking water (22 CCR 64444)
NE = MCLs not established

Notes:

<n = Below detection limit of n µg/L
--- = Not analyzed/Not available

Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020

dl = 20 MTBE dl

- need to clarify TPPH / MTBE dilution / dl
- definitely have MTBE release - detached from TPHg

ATTACHMENT A

Blaine Ground Water Monitoring Report
and Field Notes

BLAINE
TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
(408) 573-7771 FAX
(408) 573-0555 PHONE

September 18, 1998

Equilon Enterprises, L.L.C.
P.O. Box 8080
Martinez, CA 94553

Attn: Karen Petryna

Shell WIC #204-5508-5900
540 Hegenberger Rd.
Oakland, California

3rd Quarter 1998

Groundwater Monitoring Report 980826-K-2

Blaine Tech Services, Inc. performs environmental monitoring and documentation as an independent third party. Copies of our Monitoring Report along with the laboratory's Certified Analytical Report are forwarded to the consultant overseeing work at this site. Submission of the assembled documents to interested regulatory agencies will be made by the designated consultant.

Groundwater monitoring at this site was performed in accordance with Standard Operating Procedures provided to the interested regulatory agencies. If you have any questions about the work performed at this site please call me at (408) 573-0555 ext. 201.

Yours truly,

Francis Thie

attachments: Table of Well Gauging Data
Chain of Custody
Field Data Sheets
Certified Analytical Report

cc: Cambria Environmental Technology, Inc.
1166 65th Street, Suite C
Oakland, CA 94608-2411
Attn: Aubrey Cool

(Any professional evaluations or recommendations will be made by the consultant under separate cover.)

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	08/20/98	TOC	Pre-Development	NONE	--	--	7.96	24.37
MW-1	08/20/98	TOC	Post-Development	NONE	--	--	21.36	24.40
MW-1	08/26/98	TOC	ODOR	NONE	--	--	7.91	24.32
MW-2	08/20/98	TOC	Pre-Development	NONE	--	--	7.24	19.46
MW-2	08/20/98	TOC	Post-Development	NONE	--	--	16.90	19.60
MW-2*	08/26/98	TOC	ODOR	NONE	--	--	7.18	19.49
MW-3	08/20/98	TOC	Pre-Development	NONE	--	--	6.75	19.50
MW-3	08/20/98	TOC	Post-Development	NONE	--	--	16.40	19.50
MW-3	08/26/98	TOC	ODOR	NONE	--	--	6.52	19.40

* Sample DUP was a duplicate sample taken from well MW-2.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 980826-K2

Date:
Page 1 of 1

Site Address: 540 Hegenberger, Oakland, CA

WIC #: 204-5508-5900

Shell Engineer: Karen Petryna
Phone No.: (510) 236-9139
Fax #: 237-7821

Consultant Name & Address: Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, Ca 95112

Consultant Contact: Francis Thie
Phone No.: (408) 573-0555
Fax #: 573-7771

Comments:

Sampled by:

Printed Name: Mark Spindler

LAB: Sequoia 9808G73

CHECK ONE (1) BOX ONLY	C/D1	TURN AROUND TIME
G.W. Monitoring	4441	24 hours
Site Investigation	4441	48 hours
Soil Classify/Disposal	4442	10 days (Normal)
Water Classify/Disposal	4443	Other
Soil/Air Rem. or Sys. O & M	4452	NOTE: Notify Lab as soon as Possible of 24/48 hr. TAT.
Water Rem. or Sys. O & M	4453	
Other		

UST AGENCY:

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 INTER	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
Pre MW-1 01	8/26/98			↓		3						X						AT 27 1 32
Post MW-1 02						3						X						
Pre MW-2 03						3						X						
Post MW-2 04						3						X					Confirm highest HTBR by 8260"	
Pre MW-3 05						3						X						
Post MW-3 06						3						X						
DUP 07						3						X						
EB 08	↓			↓		3						X						

Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
	Mark Spindler	8/27/98	12:11				
		8/27/98					
						8/27	

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

Shell Chain of Custody

Sequoia Analytical

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

Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112
Attention: Fran Thie

Project: Shell 540 Hegenberger

Enclosed are the results from samples received at Sequoia Analytical on August 27, 1998. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9808G73 -01	LIQUID, Pre MW-1	08/26/98	TPPH/BTEX/MTBE (Concord)
9808G73 -02	LIQUID, Post MW-1	08/26/98	TPPH/BTEX/MTBE (Concord)
9808G73 -03	LIQUID, Pre MW-2	08/26/98	TPPH/BTEX/MTBE (Concord)
9808G73 -04	LIQUID, Post MW-2	08/26/98	TPPH/BTEX/MTBE (Concord)
9808G73 -05	LIQUID, Pre MW-3	08/26/98	TPPH/BTEX/MTBE (Concord)
9808G73 -06	LIQUID, Post MW-3	08/26/98	TPPH/BTEX/MTBE (Concord)
9808G73 -06	LIQUID, Post MW-3	08/26/98	CMTBMW Methyl t-Butyl Ethe
9808G73 -07	LIQUID, Dup	08/26/98	TPPH/BTEX/MTBE (Concord)
9808G73 -08	LIQUID, EB	08/26/98	TPPH/BTEX/MTBE (Concord)

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

Very truly yours,

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 988-9673
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Blaine Tech Services	Client Proj. ID: Shell 540 Hegenberger	Sampled: 08/26/98
1680 Rogers Avenue	Sample Descript: Pre MW-1	Received: 08/27/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 09/08/98
Attention: Fran Thie	Lab Number: 9808G73-01	Reported: 09/10/98

QC Batch Number: GC090898BTEX09A
Instrument ID: GCHP9

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2000	2700
Methyl t-Butyl Ether	100	33000
Benzene	20	28
Toluene	20	55
Ethyl Benzene	20	59
Xylenes (Total)	20	39
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	105

TPHg dil ≈ 20X MTBE dil

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

SEQUOIA ANALYTICAL - ELAP #1271

Peggy Perrier
Project Manager

Sequoia Analytical

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Blaine Tech Services	Client Proj. ID: Shell 540 Hegenberger	Sampled: 08/26/98
1680 Rogers Avenue	Sample Descript: Post MW-1	Received: 08/27/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 09/08/98
Attention: Fran Thie	Lab Number: 9808G73-02	Reported: 09/10/98

QC Batch Number: GC090898BTEX09A
Instrument ID: GCHP9

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	1000	N.D.
Methyl t-Butyl Ether	**50**	**17000**
Benzene	**10**	**22**
Toluene	10	N.D.
Ethyl Benzene	10	N.D.
Xylenes (Total)	10	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	104

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

SEQUOIA ANALYTICAL - ELAP #1271

Peggy Penner
Project Manager

Sequoia Analytical

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

Blaine Tech Services	Client Proj. ID: Shell 540 Hegenberger	Sampled: 08/26/98
1680 Rogers Avenue	Sample Descript: Pre MW-2	Received: 08/27/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 09/08/98
Attention: Fran Thie	Lab Number: 9808G73-03	Reported: 09/10/98

QC Batch Number: GC090898BTEX09A
Instrument ID: GCHP9

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	250	N.D.
Methyl t-Butyl Ether	**12**	**4000**
Benzene	**2.5**	**3.2**
Toluene	2.5	N.D.
Ethyl Benzene	2.5	N.D.
Xylenes (Total)	2.5	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	101

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

SEQUOIA ANALYTICAL - ELAP #1271

Peggy Penner
Project Manager

Sequoia Analytical

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

Blaine Tech Services	Client Proj. ID: Shell 540 Hegenberger	Sampled: 08/26/98
1680 Rogers Avenue	Sample Descript: Post MW-2	Received: 08/27/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 09/08/98
Attention: Fran Thie	Lab Number: 9808G73-04	Reported: 09/10/98

QC Batch Number: GC090898BTEX09A
Instrument ID: GCHP9

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	250	N.D.
Methyl t-Butyl Ether	**12**	**4800**
Benzene	**2.5**	**3.1**
Toluene	2.5	N.D.
Ethyl Benzene	2.5	N.D.
Xylenes (Total)	2.5	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	102

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

SEQUOIA ANALYTICAL - ELAP #1271

Peggy Penner
Project Manager

Sequoia Analytical

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Blaine Tech Services	Client Proj. ID: Shell 540 Hegenberger	Sampled: 08/26/98
1680 Rogers Avenue	Sample Descript: Pre MW-3	Received: 08/27/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 09/03/98
Attention: Fran Thie	Lab Number: 9808G73-05	Reported: 09/10/98

QC Batch Number: GC090398BTEX09A
Instrument ID: GCHP9

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**50**	**2300**
Methyl t-Butyl Ether	**2.5**	**44000**
Benzene	**0.50**	**180**
Toluene	**0.50**	**330**
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	**0.50**	**420**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	103

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

SEQUOIA ANALYTICAL - ELAP #1271

Peggy Penner
Project Manager

Sequoia Analytical

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Blaine Tech Services	Client Proj. ID: Shell 540 Hegenberger	Sampled: 08/26/98
1680 Rogers Avenue	Sample Descript: Post MW-3	Received: 08/27/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 09/03/98
Attention: Fran Thie	Lab Number: 9808G73-06	Reported: 09/10/98

QC Batch Number: GC090398BTEX09A
nstrument ID: GCHP9

Total Purgeable 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**	**52000**
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	103

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

SEQUOIA ANALYTICAL - ELAP #1271

Peggy Renner
Project Manager

Sequoia Analytical

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Blaine Tech Services	Client Proj. ID: Shell 540 Hegenberger	Sampled: 08/26/98
1680 Rogers Avenue	Sample Descript: Post MW-3	Received: 08/27/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: EPA 8260	Analyzed: 09/10/98
Attention: Fran Thie	Lab Number: 9808G73-06	Reported: 09/10/98

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/L	Sample Results ug/L
Methyl t-Butyl Ether	**2.0**	**75000**

Surrogates	Control Limits %		% Recovery
1,2-Dichloroethane-d4	76	114	Q
Toluene-d8	88	110	Q
4-Bromofluorobenzene	86	115	105

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

SEQUOIA ANALYTICAL - ELAP #1271

Peggy Penner
Project Manager

Sequoia Analytical

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Blaine Tech Services	Client Proj. ID: Shell 540 Hegenberger	Sampled: 08/26/98
1680 Rogers Avenue	Sample Descript: Dup	Received: 08/27/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 09/04/98
Attention: Fran Thie	Lab Number: 9808G73-07	Reported: 09/10/98

QC Batch Number: GC090398BTEX09A
Instrument ID: GCHP9

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	250	N.D.
Methyl t-Butyl Ether	**12**	**3300**
Benzene	**2.5**	**4.8**
Toluene	2.5	N.D.
Ethyl Benzene	2.5	N.D.
Xylenes (Total)	**2.5**	**6.0**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	104

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

SEQUOIA ANALYTICAL - ELAP #1271

Peggy Penner
Project Manager

Sequoia Analytical

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

Blaine Tech Services	Client Proj. ID: Shell 540 Hegenberger	Sampled: 08/26/98
1680 Rogers Avenue	Sample Descript: EB	Received: 08/27/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 09/04/98
Attention: Fran Thie	Lab Number: 9808G73-08	Reported: 09/10/98

QC Batch Number: GC090398BTEX09A
Instrument ID: GCHP9

Total Purgeable 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 #1271

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (925) 988-9600, FAX (925) 988-9673
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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Blaine Tech Services, Inc.	Client Project ID:	Shell 540 Hegenberger	
1680 Rogers Ave.	Matrix:	Liquid	
San Jose, CA 95112			
Attention: Fran Thie	Work Order #:	9808G73 -01-04	Reported: Sep 11, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	BTEX as TPH
QC Batch#:	GC090898802009A	GC090898802009A	GC090898802009A	GC090898802009A	GC090898802009A
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 #:	8090163	8090163	8090163	8090163	8090163
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	9/8/98	9/8/98	9/8/98	9/8/98	9/8/98
Analyzed Date:	9/8/98	9/8/98	9/8/98	9/8/98	9/8/98
Instrument I.D.#:	HP9	HP9	HP9	HP9	HP9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	280 µg/L
Result:	16	18	19	58	260
MS % Recovery:	80	90	95	97	93
Dup. Result:	17	18	20	61	260
MSD % Recov.:	85	90	100	102	93
RPD:	6.1	0.0	5.1	5.0	0.0
RPD Limit:	0-20	0-20	0-20	0-20	0-50

LCS #:	LCS090898	LCS090898	LCS090898	LCS090898	LCS090898
Prepared Date:	9/8/98	9/8/98	9/8/98	9/8/98	9/8/98
Analyzed Date:	9/8/98	9/8/98	9/8/98	9/8/98	9/8/98
Instrument I.D.#:	HP9	HP9	HP9	HP9	HP9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	280 µg/L
LCS Result:	20	21	23	71	270
LCS % Recov.:	100	105	115	118	96

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

SEQUOIA ANALYTICAL
Elap #1271

Peggy Penner
Project Manager

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

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

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Blaine Tech Services, Inc.	Client Project ID:	Shell 540 Hegenberger	
1680 Rogers Ave.	Matrix:	Liquid	
San Jose, CA 95112			
Attention: Fran Thie	Work Order #:	9808G73-05-08	Reported: Sep 11, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	BTEX as TPH
QC Batch#:	GC090398802009A	GC090398802009A	GC090398802009A	GC090398802009A	GC090398802009A
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 #:	8080909	8080909	8080909	8080909	8080909
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	9/3/98	9/3/98	9/3/98	9/3/98	9/3/98
Analyzed Date:	9/3/98	9/3/98	9/3/98	9/3/98	9/3/98
Instrument I.D.#:	HP9	HP9	HP9	HP9	HP9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	230 µg/L
Result:	18	19	21	63	260
MS % Recovery:	90	95	105	105	113
Dup. Result:	18	20	21	64	260
MSD % Recov.:	90	100	105	107	113
RPD:	0.0	5.1	0.0	1.6	0.0
RPD Limit:	0-20	0-20	0-20	0-20	0-50
LCS #:	LCS090398	LCS090398	LCS090398	LCS090398	LCS090398
Prepared Date:	9/3/98	9/3/98	9/3/98	9/3/98	9/3/98
Analyzed Date:	9/3/98	9/3/98	9/3/98	9/3/98	9/3/98
Instrument I.D.#:	HP9	HP9	HP9	HP9	HP9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	230 µg/L
LCS Result:	19	21	23	69	280
LCS % Recov.:	95	105	115	115	122
MS/MSD Control Limits	60-140	60-140	60-140	60-140	
LCS Control Limits	70-130	70-130	70-130	70-130	60-140

SEQUOIA ANALYTICAL
Elap #1271

Peggy Penner
Project Manager

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Blaine Tech Services, Inc.	Client Project ID:	Shell 540 Hegenberger	
1680 Rogers Ave.	Matrix:	Liquid	
San Jose, CA 95112			
Attention: Fran Thie	Work Order #:	9808G73-06	Reported: Sep 11, 1998

QUALITY CONTROL DATA REPORT

Analyte:	MTBE
QC Batch#:	MS0909988260S2A
Analy. Method:	EPA 8260
Prep. Method:	EPA 5030
Analyst:	N. Nelson
MS/MSD #:	8090595
Sample Conc.:	N.D.
Prepared Date:	9/10/98
Analyzed Date:	9/10/98
Instrument I.D.#:	GCMS2
Conc. Spiked:	50 µg/L
Result:	55
MS % Recovery:	110
Dup. Result:	58
MSD % Recov.:	116
RPD:	5.3
RPD Limit:	0-25

LCS #:	LCS091098
Prepared Date:	9/10/98
Analyzed Date:	9/10/98
Instrument I.D.#:	GCMS2
Conc. Spiked:	50 µg/L
LCS Result:	54
LCS % Recov.:	108

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

SEQUOIA ANALYTICAL
Elap #1271

Peggy Penner
Project Manager

Please Note:
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Sequoia Analytical

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Blaine Tech Services	Client Proj. ID: Shell 540 Hegenberger	Received: 08/27/98
1680 Rogers Avenue		
San Jose, CA 95112	Lab Proj. ID: 9808G73	Reported: 09/10/98
Attention: Fran Thie		

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 14 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

WELL GAUGING DATA

Project # 980826-K2 Date 8/26/98 Client Shell

Site 540 Hegenberger Rd. Oakland, CA

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
MW-1	2					7.91	24.32	TOC	
MW-2	2					7.48	19.49	↓	
MW-3	2					6.52	19.40	↓	

SHELL WELL MONITORING DATA SHEET

Project #: 480826-K2	WIC #: 204-8708-5900
Sampler: MS	Date: 8/26/98
Well I.D.: MW-1	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 24.32	Depth to Water: 7.91
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius² * 0.163

Purge Method: Bailer ✓ Middleburg Electric Submersible Extraction Pump Other: ___

Sampling Method: Bailer ✓ Extraction Port Other: ___

2.7 (1 Case Volume (Gals.)) X 3 (Specified Volumes) = 8.1 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
Pre Purge 1118	70.5	7.3	>10,000 ✓	>200	—	
1129	70.5	7.3	>10,000	>200	2.75	grey cloudy
1134	69.2	7.3	>10,000	>200	5.50	slight odor
1139	69.3	7.3	>10,000	>200	8.25	
	✓ - recalibrated ultrameter					

Did well dewater? Yes (No) Gallons actually evacuated: 8.25

Sampling Time: 1120 / 1145 Sampling Date: 8/26/98

Sample I.D.: Pre Purge / Post Purge-1 Laboratory: (Sequoia) Crosby

Analyzed for: (TPH-G BTEX MTBE) TPH-D Other:

Equipment Blank I.D.: EB @ Time 1150 Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd): Pre-purge: 1.8 mg/L Post-purge: 2.2 mg/L

SHELL WELL MONITORING DATA SHEET

Project #: 980826-K2	WIC #: 204-7508-3900
Sampler: Mark	Date: 8/26/98
Well I.D.: MW-2	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 19.49	Depth to Water: 7.18
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (TOC) Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius² * 0.163

Purge Method: Bailer ✕ | Middleburg | Electric Submersible | Extraction Pump | Other: ___

Sampling Method: Bailer ✕ | Extraction Port | Other: ___

1.9 (1 Case Volume (Gals.)) X 3 (Specified Volumes) = 5.7 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1215 0821	71.6	7.4	1230	>200	2	cloudy
1230	71.7	7.5	917	>200	4	odor
1233	71.6	7.6	987	>200	4	
1236	70.9	7.5	1077	>200	6	

Did well dewater? Yes (No) Gallons actually evacuated: 6

Sampling Time: Pre-Purge 1223 / Post Purge 1240 Sampling Date: 8/26/98

Sample I.D.: Pre MW-2 / Post MW-2 Laboratory: (Sequoia) Crosby

Analyzed for: (TPH-G BTEX MTBE) TPH-D Other:

Equipment Blank I.D.: ___ @ Time Duplicate I.D.: DUP after purge

Analyzed for: (TPH-G BTEX MTBE) TPH-D Other:

D.O. (if req'd): (Pre-purge): 2.4 mg/L (Post-purge): 2.7 mg/L

SHELL WELL MONITORING DATA SHEET

Project #: 980826-K2	WIC #: 204-7508-7900
Sampler: MS	Date: 8/26/98
Well I.D.: MW-3	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 19.40	Depth to Water: 6.52
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
X 2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius² * 0.163

Purge Method: Bailer X
Middleburg
Electric Submersible
Extraction Pump
Other: _____

Sampling Method: Bailer X
Extraction Port
Other: _____

2	X	3	=	6	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1158	71.7	7.3	>10,000	>200	~~2~~	cloudy, gray
1204	71.6	7.3	>10,000	>200	2	odor
1208	71.4	7.3	>10,000	>200	4	
1210	71.1	7.3	>10,000	>200	6	
	✓✓ - recalibrated Hach meter					

Did well dewater? Yes (No)	Gallons actually evacuated: 6
Sampling Time: 1159 / 1215	Sampling Date: 8/26
Sample I.D.: Pre-MW-3 / Post-MW-3	Laboratory: (Sequoia) Crosby
Analyzed for: (TPH-G BTEX MTBE) TPH-D	Other:
Equipment Blank I.D.: @ Time	Duplicate I.D.:
Analyzed for: TPH-G BTEX MTBE TPH-D	Other:
D.O. (if req'd): (Pre-purge) 1.8 mg/L	(Post-purge) 2.3 mg/L

WELL DEVELOPMENT DATA SHEET

Project #: 980820-G2	Client: Shell
Developer: MC	Date Developed: 8/20/98
Well I.D. MW-1	Well Diameter: (circle one) (2) 3 4 6 __
Total Well Depth:	Depth to Water:
Before 24.37 After 24.40	Before 7.96 After
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF):	Well dia.		VCF
{12 x (d^2/4) x π} /231	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

2.6	X	10	=	26
1 Case Volume		Specified Volumes		gallons

Purging Device: Bailer ☐ Electric Submersible ☐
Middleburg ☒ Suction Pump ☐

Type of Installed Pump _____
Other equipment used _____

TIME	TEMP (F)	pH	COND.	TURBIDITY	VOLUME REMOVED:	NOTATIONS:
1228	68.1	7.2	15,000	>200	3	Surge Block for
1231	68.3	7.3	12,000	>200	6	5 min. Gray, turbid.
1234	68.4	7.2	14,700	>200	9	TD = 24.37', hard bottom.
1237	67.8	7.1	15,400	>200	12	Small amount of silt in
1240	67.6	7.1	16,200	>200	15	first 4 case volumes.
1243	67.2	7.1	18,100	>200	18	Very little silt after 4 c.v.
1246	67.0	7.1	18,600	>200	21	
1249	67.3	7.0	19,400	>200	24	
1252	67.0	7.0	19,800	>200	27	TD = 24.40'
1253	Well Dewatered @ 28 gallons				~~30~~	hard bottom
						DTW = 21.36'

Did Well Dewater? Yes If yes, note above. Gallons Actually Evacuated: 28

WELL DEVELOPMENT DATA SHEET

Project #: 980820-G2	Client: Shell
Developer: MG	Date Developed: 8/20/98
Well I.D. MW-2	Well Diameter: (circle one) (2) 3 4 6 __
Total Well Depth:	Depth to Water:
Before 19.46 After 19.60	Before 7.24 After
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF):	Well dia.		VCF
(12 x (d^2/4) x π) /231	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

2.0	X	10		20
1 Case Volume		Specified Volumes	=	gallons

Purging Device: Bailer ☐ Electric Submersible ☐
Middleburg ☒ Suction Pump ☐

Type of Installed Pump _____
Other equipment used _____

TIME	TEMP (F)	pH	COND.	TURBIDITY	VOLUME REMOVED:	NOTATIONS:
1312	69.1	7.7	1550	>200	2.0	~~Grap~~ Surge Block
1314	70.0	7.6	1230	>200	4.0	(5 min.) Gray, Silt,
1316	70.0	7.5	1110	>200	6.0	TD = 19.46' (soft
1318	70.0	7.4	1080	>200	8.0	bottom). Very turbid.
1320	69.8	7.4	1040	>200	10.0	
1321	Well	Dewatered @	11 gallons			TD = 19.60' (hard
						bottom)
						DTW = 16.90'

Did Well Dewater? Yes If yes, note above. Gallons Actually Evacuated: 11

WELL DEVELOPMENT DATA SHEET

Project #: 980820-62	Client: Shell
Developer: MG	Date Developed: 8/20/98
Well I.D. MW-3	Well Diameter: (circle one) (2) 3 4 6 __
Total Well Depth:	Depth to Water:
Before 19.50 After 19.50	Before 6.75 After
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF):
(12 x (d^2/4) x π) /231
where
12 = in / foot
d = diameter (in.)
π = 3.1416
231 = in 3/gal

Well dia.		VCF
2"	=	0.16
3"	=	0.37
4"	=	0.65
6"	=	1.47
10"	=	4.08
12"	=	6.87

2.0	X	10		20
1 Case Volume		Specified Volumes	=	gallons

Purging Device: Bailer ☐ Electric Submersible ☐
Middleburg ☒ Suction Pump ☐

Type of Installed Pump _____
Other equipment used _____

TIME	TEMP (F)	pH	COND.	TURBIDITY	VOLUME REMOVED:	NOTATIONS:
1335	70.0	7.3	10,300	~~>200~~	2.0	Surge Block (5 min.)
1337	71.0	7.3	11,300	>200	4.0	Grayish Brown
1339	70.8	7.2	11,800	>200	6.0	Very little silt.
1341	69.9	7.3	13,100	>200	8.0	TD = 19.50' (hard
1343	69.6	7.2	13,300	>200	10.0	bottom)
1345	69.4	7.2	13,500	>200	12.0	TD = 19.50' (hard
1347	69.5	7.2	13,800	>200	14.0	bottom)
1348	Well	dewatered	@ 15	gallons		DTW = 16.40'

Did Well Dewater? Yes If yes, note above. Gallons Actually Evacuated: 15

Virgil Chavez Land Surveying
312 Georgia Street, Suite 200
Vallejo, California 94590
(707) 553-2476 • Fax (707) 553-8698

September 11, 1998
Project No. 1603-22

Maureen Feineman
Cambria Environmental
1144 65th Street, Suite C
Oakland, Ca. 94608

Subject: Monitoring Well Survey
Shell Service Station
540 Hegenburger Road
Oakland, Ca.

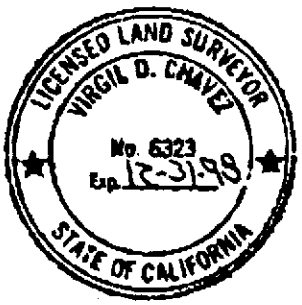
Dear Maureen:

This is to confirm that we have proceeded at your request to survey the ground water monitoring wells located at the above referenced location. The survey was performed on September 2, 1998. The benchmark the survey was a PK nail & shiner in the median island on Hegenburger opposite the site.
Benchmark Elev. = 10.76 Ft., MSL.

Monitoring Well No.	Rim Elevation	Top of Casing Elevation
MW - 1	11.10′	10.54′
MW - 2	9.84′	9.21′
MW - 3	9.72′	9.45′

Measurements taken at approximate north side of top of box, top of casings were marked at location of measurements.

Sincerely,



Virgil D. Chavez, PLS 6323