

# CAMBRIA

June 2, 1999

Barney Chan  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

*None only seen MTB 2 b, 8260 1 time.  
Will run MTB by 8260 on all wells  
next spring event.*

Re: **First Quarter 1999 Monitoring Report**  
Shell-branded Service Station  
4255 MacArthur Boulevard  
Oakland, California # 3769  
Incident #98995758  
Cambria Project #24-314-199



Dear Mr. Chan:

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

## HYDROCARBON REMOVAL SUMMARY

Separate-Phase Hydrocarbon Removal Summary	
This Quarter (pounds)	Cumulative Removal (pounds)
0.24	21.42

The table above summarizes the cumulative separate-phase hydrocarbon (SPH) removal from the site by manual bailing.

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

## FIRST QUARTER 1999 ACTIVITIES

Cambria  
Environmental  
Technology, Inc.

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

**Ground Water Monitoring:** Blaine Tech Services, Inc. (Blaine) of San Jose, California checked for and removed SPH and gauged and sampled the site wells. Blaine calculated ground water elevations and compiled the analytical data. Cambria prepared a ground water elevation contour map (Figure 1). The Blaine report, presenting the laboratory report, is included as Attachment A.

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PROTECTI  
ENVIROMEN

**ANTICIPATED SECOND QUARTER 1999 ACTIVITIES**

**Ground Water Monitoring:** Blaine will measure and remove detected SPH and gauge and sample all wells and tabulate the data. Cambria will prepare a monitoring report.

**Work Plan Implementation:** As approved in a letter dated March 30, 1999 from the Alameda County Health Care Services Agency, Cambria will implement our March 22, 1999 *Work Plan Addendum*.

OK.



**CLOSING**

We appreciate the opportunity to work with you on this project. Please call Brian Busch at (510) 420-3312 if you have any questions or comments.

Sincerely,  
**Cambria Environmental Technology, Inc**

Brian Busch  
Project Environmental Scientist

Ailsa S. Le May, R.G.  
Senior Geologist

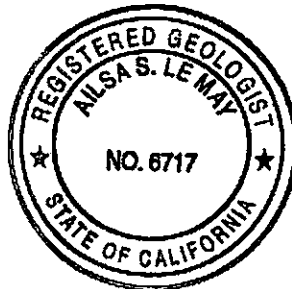
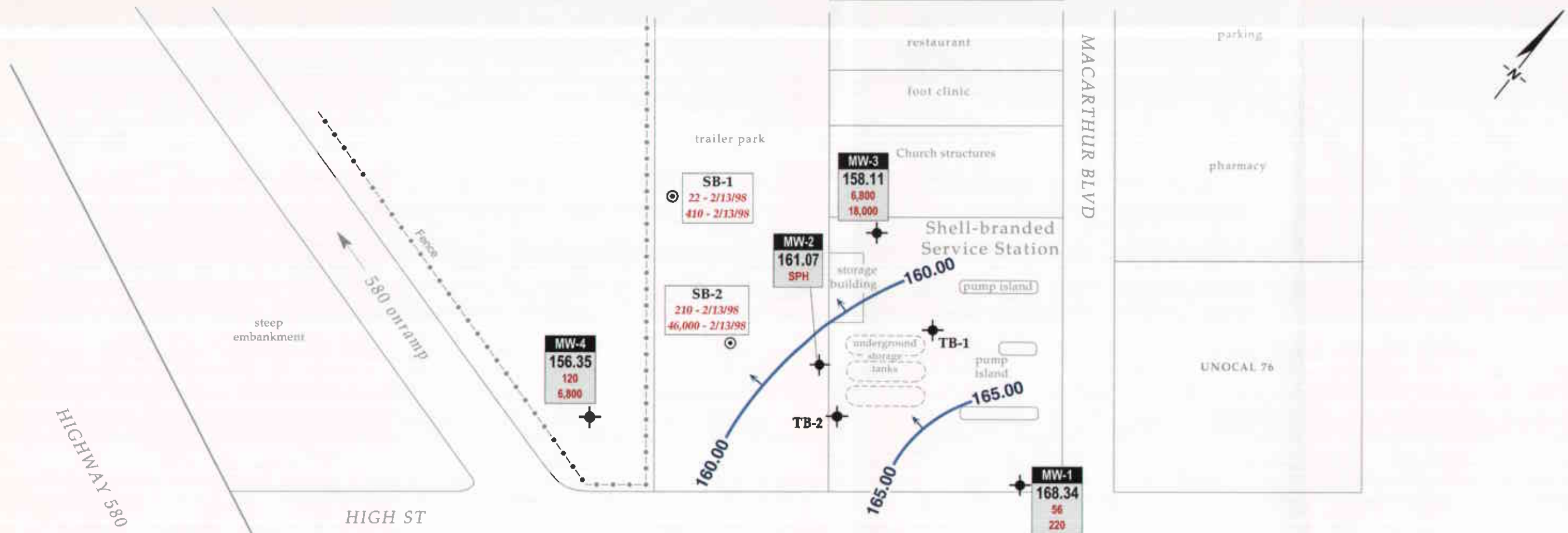


Figure: 1 - Ground Water Elevation Contour Map  
Attachment: A - Blaine Ground Water Monitoring Report

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

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EXPLANATION	
<b>MW-1</b>	Monitoring and tank backfill well locations
<b>SB-1</b>	Soil boring location
<b>-XXX</b>	Ground water elevation contour, feet above msl, approximately located, dashed where inferred
<b>SPH</b>	Separate-phase hydrocarbons present
	Inferred groundwater flow direction
<b>Boring ID</b>	Boring designation
<b>Benz. - Date</b>	Benzene and MTBE concentrations are measured in parts per billion (ppb). Date is most recent sampling
<b>MTBE - Date</b>	
<b>Well</b>	Well designation
<b>ELEV</b>	Ground water elevation (msl)
<b>Benzene</b>	Benzene and MTBE concentrations are in parts per billion (ppb)
<b>MTBE</b>	



FIGURE 1



**ATTACHMENT A**

Blaine Ground Water Monitoring Report

**BLAINE**  
TECH SERVICES INC.



1680 ROGERS AVENUE  
SAN JOSE, CALIFORNIA 95112-1105  
(408) 573-7771 FAX  
(408) 573-0555 PHONE

April 2, 1999

Karen Petryna  
Equiva Services LLC  
P.O. Box 6249  
Carson, CA 90749-6249

First Quarter 1999 Groundwater Monitoring at  
Shell-branded Service Station  
4255 MacArthur Blvd.  
Oakland, CA

Monitoring performed on February 3, 1999

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Groundwater Monitoring Report **990203-K-2**

This report covers the routine monitoring of groundwater wells at this Shell-branded facility. In accordance with standard procedures that conform to Regional Water Quality Control Board requirements, routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, appropriate calculated purge volume (if applicable), elapsed evacuation time (if applicable), total volume of water removed (if applicable), and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purgewater (if applicable) is, likewise, collected and transported to the Martinez Refining Company.

Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL CONCENTRATIONS**. The full analytical report for the most recent samples and the field data sheets are attached to this report.

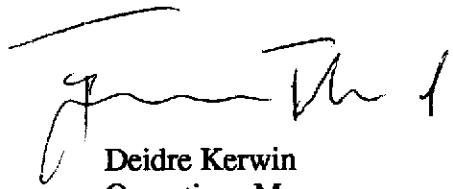
At a minimum, Blaine Tech Services, Inc. field personnel are certified on completion of a forty hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight hour refresher courses.

Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an

independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. concentrates on objective data collection and does not participate in the interpretation of analytical results, the definition of geological or hydrological conditions, the formulation of recommendations, or the marketing of remedial systems.

Please call if you have any questions.

Yours truly,



Deidre Kerwin  
Operations Manager

DK/ld

attachments: Cumulative Table of WELL CONCENTRATIONS  
Certified Analytical Report  
Field Data Sheets

cc: Anni Kreml  
Cambria Environmental Technology, Inc.  
1144 65<sup>th</sup> Street, Suite C  
Oakland, Ca 94608-2411

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**4255 MacArthur Boulevard**  
**Oakland, CA**  
**Wic #204-5510-0600**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
MW-1	11/17/1993	410	21	11	7.9	47	NA	NA	175.79	8.59	NA	167.20	NA	NA
MW-1	01/20/1994	1,200	180	19	48	47	NA	NA	175.79	8.22	NA	167.57	NA	NA
MW-1	04/25/1994	3,100	610	<10	130	27	NA	NA	175.79	7.63	NA	168.16	NA	NA
MW-1	07/07/1994	2,400	1,000	10	250	20	NA	NA	175.79	8.31	NA	167.48	NA	NA
MW-1	10/27/1994	2,200	500	3.1	72	1.8	NA	NA	175.79	8.84	NA	166.95	NA	NA
MW-1	11/17/1994	NA	NA	NA	NA	NA	NA	NA	175.79	7.60	NA	168.19	NA	NA
MW-1	11/28/1994	NA	NA	NA	NA	NA	NA	NA	175.79	7.56	NA	168.23	NA	NA
MW-1	01/13/1995	570	75	2.5	6.7	11	NA	NA	175.79	7.11	NA	168.68	NA	NA
MW-1	04/12/1995	1,800	480	<5.0	79	<5.0	NA	NA	175.79	7.08	NA	168.71	NA	NA
MW-1	07/25/1995	120	15	1.1	2.1	2.9	NA	NA	175.79	7.73	NA	168.06	NA	NA
MW-1 (D)	07/25/1995	300	88	2.4	11	6.5	NA	NA	175.79	7.73	NA	168.06	NA	NA
MW-1	10/18/1995	130	9.5	0.8	1.3	1.7	NA	NA	175.79	8.42	NA	167.37	NA	NA
MW-1 (D)	10/18/1995	120	11	0.8	1.4	1.8	NA	NA	175.79	8.42	NA	167.37	NA	NA
MW-1	01/17/1996	250	22	0.9	1.6	2.3	NA	NA	175.79	7.83	NA	167.96	NA	NA
MW-1	04/25/1996	<50	4.6	<0.5	<0.5	0.6	500b	NA	175.79	7.35	NA	168.44	NA	NA
MW-1	07/17/1996	<250	15	<2.5	<2.5	<2.5	540	NA	175.79	7.70	NA	168.09	NA	NA
MW-1	10/01/1996	1,200	500	12	57	82	1,900	NA	175.79	8.07	NA	167.72	NA	NA
MW-1	01/22/1997	640	170	4.3	33	33	1,200	NA	175.79	7.21	NA	168.58	NA	NA
MW-1	04/08/1997	<200	34	<2.0	3.3	4.3	950	NA	175.79	7.75	NA	168.04	NA	NA
MW-1 (D)	04/08/1997	<200	66	<2.0	6.4	8	740	NA	175.79	7.75	NA	168.04	NA	NA
MW-1	07/08/1997	190	49	1.2	5.8	8.6	560	NA	175.79	8.01	NA	167.78	NA	NA
MW-1	10/08/1997	<100	7	<1.0	<1.0	<1.0	620	NA	175.79	8.10	NA	167.69	NA	NA
MW-1	01/09/1998	970	390	12	48	71	1,200	NA	175.79	7.14	NA	168.65	NA	NA
MW-1	04/13/1998	<50	136	<0.50	1.5	1.8	170	NA	175.79	6.78	NA	169.01	NA	NA
MW-1	07/17/1998	2,500	750	11	88	67	150	NA	175.79	7.28	NA	168.51	NA	NA
MW-1	10/02/1998	8,000	970	36	270	440	35	NA	175.79	7.77	NA	168.02	NA	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**4255 MacArthur Boulevard**  
**Oakland, CA**  
**Wic #204-5510-0600**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
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MW-1	02/03/1999	210	56	0.82	<0.50	3.2	220	NA	175.79	7.45	NA	168.34	NA	1.4
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MW-2	11/17/1993	31,000	9,400	4,600	1,000	3,900	NA	NA	170.91	12.31	NA	158.60	NA	NA
MW-2	01/20/1994	40,000	6,900	5,600	780	4,100	NA	NA	170.91	11.48	NA	159.43	NA	NA
MW-2 (D)	01/20/1994	41,000	7,200	6,200	900	4,800	NA	NA	170.91	11.48	NA	159.43	NA	NA
MW-2	04/25/1994	60,000	9,300	6,100	1,400	6,200	NA	NA	170.91	10.84	NA	160.07	NA	NA
MW-2	07/07/1994	280,000a	40,000	26,000	8,100	32,000	NA	NA	170.91	11.89	NA	159.02	NA	NA
MW-2 (D)	07/07/1994	53,000	13,000	6,600	2,000	8,400	NA	NA	170.91	11.89	NA	159.02	NA	NA
MW-2	10/27/1994	130,000	14,000	12,000	2,400	13,000	NA	NA	170.91	12.89	NA	158.02	NA	NA
MW-2 (D)	10/27/1994	390,000	8,800	7,000	1,700	11,000	NA	NA	170.91	12.89	NA	158.02	NA	NA
MW-2	11/17/1994	NA	NA	NA	NA	NA	NA	NA	170.91	9.11	NA	161.80	NA	NA
MW-2	11/28/1994	NA	NA	NA	NA	NA	NA	NA	170.91	9.22	NA	161.69	NA	NA
MW-2	01/13/1995	75,000	5,900	12,000	3,100	17,000	NA	NA	170.91	8.10	NA	162.81	NA	NA
MW-2	04/12/1995	100,000	8,500	11,000	2,400	12,000	NA	NA	170.91	10.12	NA	160.79	NA	NA
MW-2 (D)	04/12/1995	80,000	4,200	9,300	2,500	12,000	NA	NA	170.91	10.12	NA	160.79	NA	NA
MW-2	07/25/1995	NA	NA	NA	NA	NA	NA	NA	170.91	11.53	NA	159.80	0.52	NA
MW-2	10/18/1995	NA	NA	NA	NA	NA	NA	NA	170.91	14.02	NA	156.99	0.13	NA
MW-2	01/17/1996	NA	NA	NA	NA	NA	NA	NA	170.91	10.27	NA	160.78	0.17	NA
MW-2	04/25/1996	NA	NA	NA	NA	NA	NA	NA	170.91	11.68	NA	159.25	0.03	NA
MW-2	07/17/1996	NA	NA	NA	NA	NA	NA	NA	170.91	12.78	NA	158.81	0.48	NA
MW-2	10/01/1996	NA	NA	NA	NA	NA	NA	NA	170.91	14.21	NA	156.70	0.28	NA
MW-2	01/22/1997	NA	NA	NA	NA	NA	NA	NA	170.91	10.92	NA	160.08	0.11	NA
MW-2	04/08/1997	NA	NA	NA	NA	NA	NA	NA	170.91	14.12	NA	156.95	0.20	NA
MW-2	07/08/1997	NA	NA	NA	NA	NA	NA	NA	170.91	14.98	NA	156.08	0.19	NA
MW-2	10/08/1997	NA	NA	NA	NA	NA	NA	NA	170.91	12.97	NA	157.98	0.05	NA
MW-2	01/08/1998	NA	NA	NA	NA	NA	NA	NA	170.91	12.54	NA	158.43	0.08	NA
MW-2	04/13/1998	180,000	2,800	5,200	2,400	13,000	71,000	NA	170.91	10.05	NA	160.86	NA	NA



**WELL CONCENTRATIONS**  
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**Wic #204-5510-0600**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
MW-2	07/17/1998	NA	NA	NA	NA	NA	NA	NA	170.91	11.75	NA	159.24	0.10	NA
MW-2	10/02/1998	NA	NA	NA	NA	NA	NA	NA	170.91	16.78	NA	154.22	0.11	NA
MW-2	02/03/1999	NA	NA	NA	NA	NA	NA	NA	170.91	9.90	9.82	161.07	0.08	NA
MW-3	11/17/1993	18,000	5,400	660	720	2,200	NA	NA	174.61	15.40	NA	159.21	NA	NA
MW-3	01/20/1994	55,000	13,000	2,600	2,200	6,500	NA	NA	174.61	14.61	NA	160.00	NA	NA
MW-3	04/25/1994	96,000	11,000	1,600	3,100	9,900	NA	NA	174.61	13.12	NA	161.49	NA	NA
MW-3 (D)	04/25/1994	78,000	12,000	1,900	2,600	7,300	NA	NA	174.61	13.12	NA	161.49	NA	NA
MW-3	07/07/1994	NA	NA	NA	NA	NA	NA	NA	174.61	14.54	NA	160.07	0.02	NA
MW-3	10/27/1994	NA	NA	NA	NA	NA	NA	NA	174.61	15.62	NA	159.03	0.05	NA
MW-3	11/17/1994	NA	NA	NA	NA	NA	NA	NA	174.61	13.83	NA	160.78	NA	NA
MW-3	11/28/1994	NA	NA	NA	NA	NA	NA	NA	174.61	14.02	NA	160.59	NA	NA
MW-3	01/13/1995	180,000	3,200	2,700	1,700	5,200	NA	NA	174.61	12.13	NA	162.48	NA	NA
MW-3 (D)	01/13/1995	23,000	4,000	690	960	3,000	NA	NA	174.61	12.13	NA	162.48	NA	NA
MW-3	04/12/1995	56,000	8,700	1,500	2,100	6,300	NA	NA	174.61	12.96	NA	161.65	NA	NA
MW-3	07/25/1995	NA	NA	NA	NA	NA	NA	NA	174.61	14.28	NA	160.38	0.06	NA
MW-3	10/18/1995	NA	NA	NA	NA	NA	NA	NA	174.61	15.88	NA	158.77	0.05	NA
MW-3	01/17/1996	NA	NA	NA	NA	NA	NA	NA	174.61	13.86	NA	160.94	0.24	NA
MW-3	04/25/1996	NA	NA	NA	NA	NA	NA	NA	174.61	13.82	NA	160.81	0.02	NA
MW-3	07/17/1996	NA	NA	NA	NA	NA	NA	NA	174.61	16.11	NA	158.52	0.03	NA
MW-3	10/01/1996	46,000	7,300	530	1,700	3,900	3,200	NA	174.61	16.56	NA	158.05	NA	NA
MW-3 (D)	10/01/1996	47,000	7,100	530	1,700	4,000	2,900	NA	174.61	16.56	NA	158.05	NA	NA
MW-3	01/22/1997	82,000	5,200	1,300	2,800	8,900	1,100	NA	174.61	13.07	NA	161.54	NA	NA
MW-3 (D)	01/22/1997	61,000	8,400	1,100	2,300	7,000	2,700	NA	174.61	13.07	NA	161.54	NA	NA
MW-3	04/08/1997	NA	NA	NA	NA	NA	NA	NA	174.61	17.09	NA	157.54	0.03	NA
MW-3	07/08/1997	56,000	8,800	580	2,000	4,900	2,800	NA	174.61	15.85	NA	158.76	NA	NA
MW-3	10/08/1997	48,000	8,000	590	1,700	3,400	5,100	NA	174.61	16.22	NA	158.39	NA	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
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**Wic #204-5510-0600**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
MW-3	01/08/1998	47,000	9,400	810	2,300	4,700	6,300	NA	174.61	13.80	NA	160.81	NA	NA
MW-3 (D)	01/08/1998	48,000	8,100	750	2,000	4,100	5,800	NA	174.61	13.80	NA	160.81	NA	NA
MW-3	04/13/1998	32,000	6,800	540	1,400	3,400	4,000	NA	174.61	12.97	NA	161.64	NA	NA
MW-3 (D)	04/13/1998	36,000	7,300	660	1,600	3,700	4,000	NA	174.61	12.97	NA	161.64	NA	NA
MW-3	07/17/1998	71,000	11,000	590	2,200	6,900	3,900	NA	174.61	11.51	NA	163.10	NA	NA
MW-3 (D)	07/17/1998	76,000	12,000	700	2,600	8,000	3,000	NA	174.61	11.51	NA	163.10	NA	NA
MW-3	10/02/1998	66,000	8,900	510	2,000	4,900	4,600	NA	174.61	16.50	NA	158.11	NA	NA
MW-3 (D)	10/02/1998	59,000	9,400	460	2,000	4,900	4,700	NA	174.61	16.50	NA	158.11	NA	NA
MW-3	02/03/1999	36,000	6,800	300	1,600	2,900	18,000	NA	174.61	15.21	NA	159.40	NA	1.3
MW-4	11/17/1994	NA	NA	NA	NA	NA	NA	NA	164.06	6.62	NA	157.44	NA	NA
MW-4	11/28/1994	2,900	200	17	76	260	NA	NA	164.06	6.11	NA	157.95	NA	NA
MW-4	01/13/1995	1,900	130	5.6	13	40	NA	NA	164.06	6.05	NA	158.01	NA	NA
MW-4	04/12/1995	680	150	<2.0	10	13	NA	NA	164.06	6.31	NA	157.75	NA	NA
MW-4	07/25/1995	340	100	0.8	8.8	3	NA	NA	164.06	7.36	NA	156.70	NA	NA
MW-4	10/18/1995	150	31	<0.5	3.5	0.8	NA	NA	164.06	8.54	NA	155.52	NA	NA
MW-4	01/17/1996	290	14	<0.5	1.8	0.8	NA	NA	164.06	8.48	NA	155.58	NA	NA
MW-4	04/25/1996	<500	65	<5	<5	<5	1,700	NA	164.06	7.40	NA	156.66	NA	NA
MW-4 (D)	04/25/1996	<500	66	<5	8.7	<5	1,500	NA	164.06	7.40	NA	156.66	NA	NA
MW-4	07/17/1996	<500	84	<5.0	6.5	<5.0	1,500	NA	164.06	7.75	NA	156.31	NA	NA
MW-4 (D)	07/17/1996	<500	54	<5.0	<5.0	<5.0	1,700	2,100	164.06	7.75	NA	156.31	NA	NA
MW-4	10/01/1996	<500	1.9	<5.0	<5.0	<5.0	3,000	NA	164.06	8.82	NA	155.24	NA	NA
MW-4	01/22/1997	580	130	<2.5	18	5.2	1,200	NA	164.06	7.51	NA	156.55	NA	NA
MW-4	04/08/1997	770	200	7	26	55	1,500	NA	164.06	7.18	NA	156.88	NA	NA
MW-4	07/08/1997	570	78	<5.0	14	11	1,200	NA	164.06	9.00	NA	155.06	NA	NA
MW-4 (D)	07/08/1997	640	81	<5.0	16	19	1,600	NA	164.06	9.00	NA	155.06	NA	NA
MW-4	10/08/1997	<500	40	<5.0	7.4	5.4	1,400	NA	164.06	8.97	NA	155.09	NA	NA

**WELL CONCENTRATIONS**  
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**4255 MacArthur Boulevard**  
**Oakland, CA**  
**Wic #204-5510-0600**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)
MW-4 (D)	10/08/1997	<500	36	<5.0	5.9	<5.0	1,400	NA	164.06	8.97	NA	155.09	NA	NA
MW-4	01/08/1998	<1,000	55	<10	13	<10	2,000	NA	164.06	7.90	NA	156.16	NA	NA
MW-4	04/13/1998	350	110	2.4	20	26	<2.5	NA	164.06	7.35	NA	156.71	NA	NA
MW-4	07/17/1998	210	66	0.78	5.4	9.8	1,700	NA	164.06	6.95	NA	157.11	NA	NA
MW-4	10/02/1998	<50	0.69	<0.50	<0.50	<0.50	2,900	NA	164.06	7.35	NA	156.71	NA	NA
MW-4	02/03/1999	560	120	2.5	29	34	6,800	NA	164.06	7.71	NA	156.35	NA	0.9

Abbreviations:

TPPH= Total petroleum hydrocarbons as gasoline by modified EPA Method 8015

BTEX = benzene, toluene, ethylbenzene, xylenes by EPA Method 8020

MTBE = methyl-tertiary-butyl ether

TOC = Top of Casing Elevation

SPH = Separate-Phase Hydrocarbons

GW = Groundwater

ug/L = parts per billion

msl = Mean sea level

ft = Feet

<n = Below detection limit

D = Duplicate sample

Notes:

a = Ground water surface had a sheen when sampled

b = MTBE value is estimated by Sequoia Analytical of Redwood City, California

When separate-phase hydrocarbons are present, ground water elevation is adjusted using the relation:

Corrected ground water elevation = Top-of-casing elevation - depth to water + (0.8 x hydrocarbon thickness).



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

Client Proj. ID: Shell 4255 MacArthur Blvd Oak  
Lab Proj. ID: 9902307

Received: 02/04/99  
Reported: 02/19/99

### LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 3 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

TPGM2W: Sample 9902307-03 was run twice per client's request, MTBE was reported from GCHP03 on 2/5/99.  
Sample 9902307-01 was run twice per client's request, MTBE was reported from GCHP02 on 2/11/99.

SEQUOIA ANALYTICAL

  
Project Manager

Page: 1





# Sequoia Analytical

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

Project: Shell 4255 MacArthur Blvd Oak

Enclosed are the results from samples received at Sequoia Analytical on February 4, 1999.  
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
1902307 -01	LIQUID, MW-1	02/03/99	Purgeable TPH/BTEX/MTBE
1902307 -02	LIQUID, MW-3	02/03/99	Purgeable TPH/BTEX/MTBE
1902307 -03	LIQUID, MW-4	02/03/99	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

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

Client Proj. ID: Shell 4255 MacArthur Blvd Oak  
 Sample Descript: MW-1  
 Matrix: LIQUID  
 Analysis Method: 8015Mod/8020  
 Lab Number: 9902307-01

Sampled: 02/03/99  
 Received: 02/04/99  
 Analyzed: 02/10/99  
 Reported: 02/19/99


QC Batch Number: GC021099BTEX03A  
 Instrument ID: GCHP03

## Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	210
Methyl t-Butyl Ether	13	220
Benzene	0.50	56
Toluene	0.50	0.82
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	3.2
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	111

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

**SEQUOIA ANALYTICAL** - ELAP #1210

  
 Project Manager





**Sequoia  
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Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell 4255 MacArthur Blvd Oak Sample Descript: MW-3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9902307-02	Sampled: 02/03/99 Received: 02/04/99 Analyzed: 02/08/99 Reported: 02/19/99
--	--	---

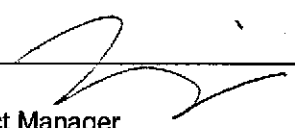
GC Batch Number: GC020899BTEX03A  
Instrument ID: GCHP03

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	20000	36000
Methyl t-Butyl Ether	1000	18000
Benzene	200	6800
Toluene	200	300
Ethyl Benzene	200	1600
Xylenes (Total)	200	2900
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70	130

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

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Project Manager





**Sequoia  
Analytical**

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Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell 4255 MacArthur Blvd Oak Sample Descript: MW-4 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9902307-03	Sampled: 02/03/99 Received: 02/04/99  Analyzed: 02/09/99 Reported: 02/19/99
Attention: Fran Thie		

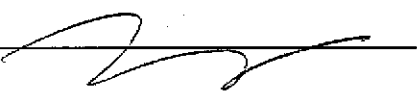
QC Batch Number: GC020999BTEX03A  
Instrument ID: GCHP03

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	100	560
Methyl t-Butyl Ether	50	6800
Benzene	1.0	120
Toluene	1.0	2.5
Ethyl Benzene	1.0	29
Xylenes (Total)	1.0	34
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	111

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

**SEQUOIA ANALYTICAL** - ELAP #1210

  
Project Manager







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

Client Project ID: Shell 4255 MacArthur Blvd Oak

QC Sample Group: 9902307-01

Reported: Feb 19, 1999

**QUALITY CONTROL DATA REPORT**

Matrix: Liquid  
Method: EPA 8020  
Analyst: BTF

**ANALYTE** Benzene Toluene Ethylbenzene Xylenes

QC Batch #: GC021099BTEX03A

Sample No.: GW9902302-1MS

Date Prepared:	2/10/99	2/10/99	2/10/99	2/10/99
Date Analyzed:	2/10/99	2/10/99	2/10/99	2/10/99
Instrument I.D.#:	GCHP03	GCHP03	GCHP03	GCHP03

Sample Conc., ug/L:	N.D.	N.D.	N.D.	N.D.
Conc. Spiked, ug/L:	10	10	10	30

Matrix Spike, ug/L:	7.8	7.9	8.0	24
% Recovery:	78	79	80	78

Matrix Spike Duplicate, ug/L:	7.5	7.8	7.8	23
% Recovery:	75	78	78	78

Relative % Difference:	3.9	1.3	2.5	0.0
------------------------	-----	-----	-----	-----

RPD Control Limits:	0-25	0-25	0-25	0-25
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LCS Batch#: GWLCS021099A

Date Prepared:	2/10/99	2/10/99	2/10/99	2/10/99
Date Analyzed:	2/10/99	2/10/99	2/10/99	2/10/99
Instrument I.D.#:	GCHP03	GCHP03	GCHP03	GCHP03

Conc. Spiked, ug/L:	10	10	10	30
---------------------	----	----	----	----

LCS Recovery, ug/L:	8.5	8.8	8.8	26
LCS % Recovery:	85	88	88	88

Percent Recovery Control Limits:

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

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

Please Note:

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

**SEQUOIA ANALYTICAL**

*Kayvan Kimyai*  
Project Manager





# Sequoia Analytical

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

Client Project ID: Shell 4255 MacArthur Blvd Oak

QC Sample Group: 9902307-02

Reported: Feb 19, 1999

## QUALITY CONTROL DATA REPORT

Matrix: Liquid  
Method: EPA 8020  
Analyst: BTF

ANALYTE	Benzene	Toluene	Ethylbenzene	Xylenes
---------	---------	---------	--------------	---------

QC Batch #: GC020899BTEX03A

Sample No.: GW9902308-1MS

	Benzene	Toluene	Ethylbenzene	Xylenes
Date Prepared:	2/8/99	2/8/99	2/8/99	2/8/99
Date Analyzed:	2/8/99	2/8/99	2/8/99	2/8/99
Instrument I.D.#:	GCHP03	GCHP03	GCHP03	GCHP03
Sample Conc., ug/L:	N.D.	N.D.	N.D.	N.D.
Conc. Spiked, ug/L:	10	10	10	30
Matrix Spike, ug/L:	7.7	7.8	7.7	24
% Recovery:	77	78	77	79
<b>Matrix</b>				
Spike Duplicate, ug/L:	7.2	7.0	7.0	21
% Recovery:	72	70	70	69
Relative % Difference:	6.7	11	9.5	14
RPD Control Limits:	0-25	0-25	0-25	0-25

LCS Batch#: GWLCS020899A

	Benzene	Toluene	Ethylbenzene	Xylenes
Date Prepared:	2/8/99	2/8/99	2/8/99	2/8/99
Date Analyzed:	2/8/99	2/8/99	2/8/99	2/8/99
Instrument I.D.#:	GCHP03	GCHP03	GCHP03	GCHP03
Conc. Spiked, ug/L:	10	10	10	30
LCS Recovery, ug/L:	9.1	9.7	9.8	30
LCS % Recovery:	91	97	98	99

Percent Recovery Control Limits:

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

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

Please Note:

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

SEQUOIA ANALYTICAL

Kayvan Kimyai  
Project Manager





**Sequoia  
Analytical**

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

Client Project ID: Shell 4255 MacArthur Blvd Oak

QC Sample Group: 9902307-03

Reported: Feb 19, 1999

**QUALITY CONTROL DATA REPORT**

**Matrix:** Liquid  
**Method:** EPA 8015  
**Analyst:** BTF

**ANALYTE** Gasoline

**QC Batch #:** GC020999BTEX03A

**Sample No.:** GW9902346-07MS

**Date Prepared:** 2/9/99

**Date Analyzed:** 2/9/99

**Instrument I.D.#:** GCHP03

**Sample Conc., ug/L:** N.D.

**Conc. Spiked, ug/L:** 250

**Matrix Spike, ug/L:** 270

**% Recovery:** 109

**Matrix**

**Spike Duplicate, ug/L:** 260

**% Recovery:** 105

**Relative % Difference:** 3.7

**RPD Control Limits:** 0-25

**LCS Batch#:** GWLCS020999A

**Date Prepared:** 2/9/99

**Date Analyzed:** 2/9/99

**Instrument I.D.#:** GCHP03

**Conc. Spiked, ug/L:** 250

**LCS Recovery, ug/L:** 280

**LCS % Recovery:** 112

**Percent Recovery Control Limits:**

MS/MSD 60-140

LCS 70-130

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

**Please Note:**

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

**SEQUOIA ANALYTICAL**

*Kayvan Kimyar*  
Project Manager





**SHELL OIL COMPANY**  
**RETAIL ENVIRONMENTAL ENGINEERING - WEST**

**CHAIN OF CUSTODY RECORD**

Serial No: 990203-K2

Date: \_\_\_\_\_  
 Page 2 of 11

Site Address: 4255 MacArthur Blvd., Oakland

**Analysis Required**

LAB: Sequoia

WIC#: 204-5510-0600

Shell Engineer: Alex Perez Phone No.: (510) 675-6168  
 Fax #: 675-6172

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

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

Comments:

Sampled by: [Signature]  
 Printed Name: Mark Spandler

Sample ID	Date	Sludge	Soil	Water	Air	No. of conds.
MW-1 ✓	2/1/99			6		W
MW-3 ✓	↓			6		W
MW-4 ✓	↓			6		W

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 8020/602	Asbestos	Container Size	Preparation Used	Composite Y/N
					X				
					X				
					X				

CHECK ONE (1) BOX ONLY	CI/DI	TURN AROUND TIME
Quarterly Monitoring <input checked="" type="checkbox"/> 6441		24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/> 6441		48 hours <input type="checkbox"/>
Soil Classfy/Disposal <input type="checkbox"/> 6442		16 days <input checked="" type="checkbox"/> (Normal)
Water Classfy/Disposal <input type="checkbox"/> 6443		Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/> 6442		
Water Rem. or Sys. O & M <input type="checkbox"/> 6443		
Other <input type="checkbox"/>		

MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
9902307	01 FE 4 12 30
	02
	03

Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u>Mark Spandler</u>	Date: <u>2/4/99</u>	Received (signature): <u>[Signature]</u>	Printed Name: <u>FUTcher</u>	Date: <u>2/4/99</u>
Relinquished By (signature): <u>[Signature]</u>	Printed Name:	Date: <u>2/4/99</u>	Received (signature): <u>[Signature]</u>	Printed Name:	Date: <u>2-9-99</u>
Relinquished By (signature): <u>[Signature]</u>	Printed Name:	Date:	Received (signature): <u>[Signature]</u>	Printed Name: <u>B.C. BURNEB</u>	Date: <u>1238</u>

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