

# CAMBRIA

ENVIRONMENTAL  
PROTECTION February 9, 2000

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

00 FEB 16 PM 4:18

Re: **Third Quarter 1999 Monitoring Report**  
Shell-branded Service Station  
4255 MacArthur Boulevard  
Oakland, California  
Incident #98995758  
Cambria Project #242-0524-002

*Handwritten:*  
#  
3169



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)
0.00	21.74

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

**Cambria  
Environmental  
Technology, Inc.**

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

## THIRD QUARTER 1999 ACTIVITIES

**Ground Water Monitoring:** Blaine Tech Services, Inc. (Blaine) of San Jose, California checked for SPH and gauged and sampled the site wells. No SPH was detected this quarter. Blaine calculated ground water elevations and compiled the gasoline constituents analytical data. Cambria compiled the bioattenuation parameters analytical data (Table 1) and prepared a ground water elevation contour map (Figure 1). The Blaine report, presenting the laboratory report and including supporting field documents, is included as Attachment A.

**Ground Water Extraction:** Cambria visited the site on July 30 and August 24, 1999 to oversee ground water extraction from monitoring well MW-2 and tank backfill well TB-2. Ground water was extracted from the wells using a vacuum truck and TB-2 was sampled for TPHg, BTEX, and MTBE by EPA Method 8020. During each visit, well MW-2 was dewatered after extracting approximately 100 gallons of ground water. Approximately 5,000 gallons of ground water were extracted during the July 30, 1999 visit, and approximately 2,500 gallons were extracted during the August 24, 1999 visit from wells MW-2 and TB-2. Ground water extraction data and hydrocarbon removal are summarized in Table 2 and laboratory analytical results for well TB-2 are included as Attachment B.



**Monitoring Well Installation:** As requested by the California Department of Transportation (CalTrans), Cambria submitted an application package, dated August 25, 1999, to obtain an encroachment permit for the installation of a second well in the CalTrans right-of-way along Interstate 580. CalTrans will not allow the installation of an additional well under the existing encroachment permit for monitoring well MW-4. The new encroachment permit application was denied. Caltrans requires an excessive amount of background information, plan preparation, and mapping, as well as a full explanation of alternatives to the proposed encroachment before the application will be considered. Before proceeding any further, Cambria will evaluate alternative well installation locations to further define the downgradient extent of the hydrocarbon plume.

## **FOURTH QUARTER 1999 ACTIVITIES**

**Ground Water Monitoring:** Blaine measured and removed detected SPH and gauged and sampled all wells and tabulated the data. Cambria prepared a monitoring report.

**Ground Water Extraction:** Cambria continued to perform monthly site visits to oversee ground water extraction at the site from wells MW-2 and TB-2.

**CLOSING**

We appreciate the opportunity to work with you on this project. Please call Brian Busch at (925) 973-3128 if you have any questions or comments.

Sincerely,  
**Cambria Environmental Technology, Inc**



*Brian Busch*

Brian Busch  
Project Environmental Scientist

*Ailsa S. Le May*

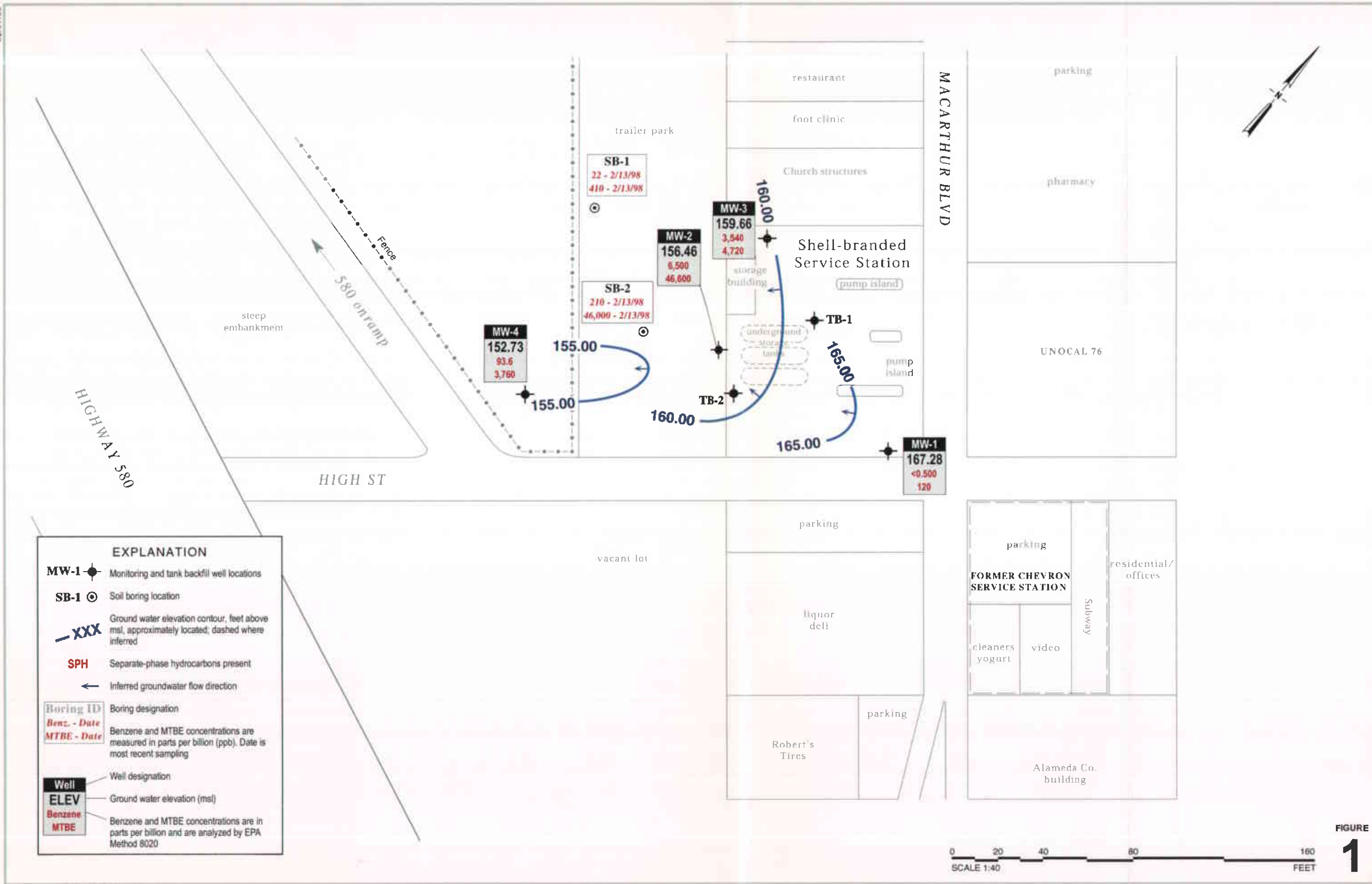
Ailsa S. Le May, R.G.  
Senior Geologist



Figure: 1 - Ground Water Elevation Contour Map  
Table: 1 - Bioattenuation Parameters Analytical Data  
2 - Ground Water Extraction and Hydrocarbon Removal  
Attachment: A - Blaine Ground Water Monitoring Report and Field Notes  
B - Analytical Results for Ground Water Extraction Event

cc: Karen Petryna, Equiva Services LLC, P.O. Box 7869, Burbank, California 91501-7869  
Roland C. Malone, Jr., PO Box 2099, Houston, TX 77252

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**EXPLANATION**

- MW-1** ◆ Monitoring and tank backfill well locations
- SB-1** ⊙ Soil boring location
- XXX** Ground water elevation contour, feet above msl, approximately located; dashed where inferred
- SPH** Separate-phase hydrocarbons present
- ← Inferred groundwater flow direction

Boring ID	Boring designation
Benz. - Date	Benzene and MTBE concentrations are measured in parts per billion (ppb). Date is most recent sampling
MTBE - Date	

Well	Well designation
ELEV	Ground water elevation (msl)
Benzene	Benzene and MTBE concentrations are in parts per billion and are analyzed by EPA Method 8020
MTBE	



FIGURE 1



# CAMBRIA

**Table 1. Ground Water Analytical Data - Bioattenuation Parameters - Shell-branded Service Station Incident #98995758 - 4255 MacArthur Blvd., Oakland, California**

Well ID	Date	Ground Water Depth (ft)	DO	Total Alkalinity	Ferrous Iron	Nitrate as Nitrate	Sulfate	Notes
			← (Concentrations in mg/L) →					
MW-1	07/17/98	7.28	0.8	460	1.6	<1.0	12	
	07/23/99	8.51	1.0	480	0.790	7.49	28.6	
MW-2	07/17/98	11.75	---	---	---	---	---	SPH
	07/23/99	14.45	1.4	440	26.0	<1.00	3.24	
MW-3	07/17/98	11.51	1.3	860	5.3	<1.0	6.5	
	07/17/98	11.51	1.3	860	5.4	<1.0	5.8	duplicate
	07/23/99	14.95	1.3	920	76.0	<1.00	4.23	
MW-4	07/17/98	6.95	1.4	630	2.8	<1.0	13	
	07/23/99	11.33	0.9	620	46.0	7.41	6.03	

**Notes and Abbreviations:**

DO = Dissolved oxygen

ft = Feet

mg/L = Milligrams per liter

SPH = Separate-phase hydrocarbons in well; not sampled

--- = Not analyzed

<n = Below detection limit of n mg/L

Total alkalinity by EPA Method 310.2, concentrations in mg CaCO<sub>3</sub>/L

Ferrous iron by EPA Method 200.7

Nitrate as nitrate and sulfate by EPA Method 300.0

**TABLE 2**

**PETROLEUM HYDROCARBON MASS REMOVAL**

**Shell-branded Service Station**

**4255 MacArthur Boulevard**

**Oakland, California**

**Incident #98995758**

**SAP #135701**

Date	Well Number	Volume Groundwater Extracted (gallons)	Sample Date	TPPH (ug/L)	TPPH Removed (pounds)	Benzene (ug/L)	Benzene Removed (pounds)	MTBE (ug/L)	MTBE Removed (pounds)
23-Apr-99	MW-2	200	13-Apr-98	180,000	0.0003	2,800	0.00000	71,000	0.000
23-Apr-99	TB-2	4,800	24-Aug-99	6,240	0.0002	400	0.00002	86,100	0.003
24-May-99	MW-2	200	13-Apr-98	180,000	0.0003	2,800	0.00000	71,000	0.000
24-May-99	TB-2	4,800	24-Aug-99	6,240	0.0002	400	0.00002	86,100	0.003
28-Jun-99	MW-2	200	13-Apr-98	180,000	0.0003	2,800	0.00000	71,000	0.000
28-Jun-99	TB-2	4,800	24-Aug-99	6,240	0.0002	400	0.00002	86,100	0.003
30-Jul-99	MW-2	200	13-Apr-98	180,000	0.0003	2,800	0.00000	71,000	0.000
30-Jul-99	TB-2	4,800	24-Aug-99	6,240	0.0002	400	0.00002	86,100	0.003
24-Aug-99	MW-2	100	13-Apr-98	180,000	0.0002	2,800	0.00000	71,000	0.000
24-Aug-99	TB-2	2,400	24-Aug-99	6,240	0.0001	400	0.00001	86,100	0.002
<b>Total Gallons Extracted:</b>		<b>22,500</b>	<b>Total Pounds Removed:</b>		<b>0.0025</b>		<b>0.00009</b>		<b>0.016</b>

- Notes:
- 1) Mass removal calculations for MW-2 based on last available quarterly ground water data collected in April 1998. Calculations for backfill well TB-2 based on grab ground water sample collected during vacuum truck dewatering.
  - 2) MTBE concentrations based on results by EPA Method 8020.
  - 3) Ground water extracted by vacuum trucks provided by ECI. Water disposed of at Martinez Refinery.
  - 4) Mass removed = Volume extracted (gallons) x Concentration (ug/L) x (1 g/1e9 ug) x (1 pound/453.6 g) x (3.785 L/1 gallon)

**ATTACHMENT A**

Blaine Ground Water Monitoring Report  
and Field Notes

**BLAINE**  
TECH SERVICES INC.



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

September 2, 1999

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

Third Quarter 1999 Groundwater Monitoring at  
Shell-branded Service Station  
4255 MacArthur Boulevard  
Oakland, CA

Monitoring performed on July 23, 1999

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### Groundwater Monitoring Report 990723-M-1

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,

A handwritten signature in black ink, appearing to read "Deidre Kerwin". The signature is fluid and cursive, with a long horizontal stroke at the end.

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)
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
MW-1	04/29/1999	<50	4.5	<0.50	0.56	<0.50	140	196	175.79	7.58	NA	168.21	NA	1.2
MW-1	07/23/1999	<50.0	<0.500	<0.500	<0.500	<0.500	120	117	175.79	8.51	NA	167.28	NA	1.0
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	280,000 <sup>a</sup>	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

**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-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
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-2	04/29/1999	NA	NA	NA	NA	NA	NA	NA	170.91	9.86	9.81	161.09	0.05	NA
MW-2	07/23/1999	65,800	8,500	4,480	1,960	8,960	46,600	58,500	170.91	14.45	NA	156.46	NA	1.14
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

**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-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
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-3	04/29/1999	45,000	8,100	580	2,200	5,800	4,700	5,150	174.61	15.43	NA	159.18	NA	1.5
MW-3	07/23/1999	29,400	3,540	215	810	3,800	14,720	6,950	174.61	14.95	NA	159.66	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

**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-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	8	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
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
MW-4	04/29/1999	390	80	1.9	13	19	7,000	8,360	164.06	7.83	NA	156.23	NA	1.1
MW-4	07/23/1999	460	93.6	6.40	25.2	28.8	3,760	6,000	164.06	11.33	NA	152.73	NA	0.9
TB-1	04/29/1999	NA	NA	NA	NA	NA	NA	NA	NA	6.00	NA	NA	NA	3.8
TB-2	04/29/1999	NA	NA	NA	NA	NA	NA	NA	NA	4.76	NA	NA	NA	4.2

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

**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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SPH = Separate-Phase Hydrocarbons

GW = Groundwater

ug/L = parts per billion

msl = Mean sea level

ft = Feet

<n = Below detection limit

D = Duplicate sample

NA = Not applicable

Notes:

\* = Sample analyzed outside the EPA recommended holding time.

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).



August 11, 1999

Ann Pember  
Blaine Tech Services (Shell)  
1680 Rogers Avenue  
San Jose, CA 95112

RE: Shell 4255 McArthur Blvd./M907962

Dear Ann Pember

Enclosed are the results of analyses for sample(s) received by the laboratory on July 26, 1999. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Karvan Kinyai  
Project Manager D.M.

CA ELAP Certificate Number 1210







Blaine Tech Services (Shell) 1680 Rogers Avenue San Jose, CA 95112	Project: Equiva Project Number: 4255 McArthur Blvd. Project Manager: Ann Pember	Sampled: 7/23/99 Received: 7/26/99 Reported: 8/11/99
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**ANALYTICAL REPORT FOR M907962**

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
MW-1	M907962-01	Water	7/23/99
MW-2	M907962-02	Water	7/23/99
MW-3	M907962-03	Water	7/23/99
MW-4	M907962-04	Water	7/23/99





Blaine Tech Services (Shell) 1680 Rogers Avenue San Jose, CA 95112	Project: Equiva Project Number: 4255 McArthur Blvd. Project Manager: Ann Pember	Sampled: 7/23/99 Received: 7/26/99 Reported: 8/11/99
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**Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT  
Sequoia Analytical - Morgan Hill**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>MW-1</b>				<b>M907962-01</b>		<b>Water</b>		
Purgeable Hydrocarbons	9080235	8/4/99	8/4/99		50.0	ND	ug/l	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		0.500	ND	"	
Methyl tert-butyl ether	"	"	"		2.50	120	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	70.0-130		109	%	
<b>MW-2</b>				<b>M907962-02</b>		<b>Water</b>		
Purgeable Hydrocarbons	9080226	8/5/99	8/5/99		10000	65800	ug/l	1
Benzene	"	"	"		100	6500	"	
Toluene	"	"	"		100	4480	"	
Ethylbenzene	"	"	"		100	1960	"	
Xylenes (total)	"	"	"		100	8960	"	
Methyl tert-butyl ether	"	"	"		500	46600	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	70.0-130		96.9	%	
<b>MW-3</b>				<b>M907962-03</b>		<b>Water</b>		
Purgeable Hydrocarbons	9080157	8/3/99	8/4/99		5000	29400	ug/l	1
Benzene	"	"	"		50.0	3540	"	
Toluene	"	"	"		50.0	215	"	
Ethylbenzene	"	"	"		50.0	810	"	
Xylenes (total)	"	"	"		50.0	3800	"	
Methyl tert-butyl ether	"	"	"		250	4720	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	70.0-130		90.9	%	
<b>MW-4</b>				<b>M907962-04</b>		<b>Water</b>		
Purgeable Hydrocarbons	9080235	8/4/99	8/4/99		200	460	ug/l	1
Benzene	"	"	"		2.00	93.6	"	
Toluene	"	"	"		2.00	8.40	"	
Ethylbenzene	"	"	"		2.00	25.2	"	
Xylenes (total)	"	"	"		2.00	28.8	"	
Methyl tert-butyl ether	"	"	8/5/99		100	3760	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	8/4/99	70.0-130		106	%	





Blaine Tech Services (Shell) 1680 Rogers Avenue San Jose, CA 95112	Project: Equiva Project Number: 4255 McArthur Blvd. Project Manager: Ann Pember	Sampled: 7/23/99 Received: 7/26/99 Reported: 8/11/99
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**Total Metals by EPA 6000/7000 Series Methods  
Sequoia Analytical - Morgan Hill**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
<u>MW-1</u> Ferrous Iron	9071022	7/30/99	7/30/99	<u>M907962-01</u> EPA 6010A	0.0100	0.790	<u>Water</u> mg/l	
<u>MW-2</u> Ferrous Iron	9071022	7/30/99	7/30/99	<u>M907962-02</u> EPA 6010A	0.0100	26.0	<u>Water</u> mg/l	
<u>MW-3</u> Ferrous Iron	9071022	7/30/99	7/30/99	<u>M907962-03</u> EPA 6010A	0.0100	76.0	<u>Water</u> mg/l	
<u>MW-4</u> Ferrous Iron	9071022	7/30/99	7/30/99	<u>M907962-04</u> EPA 6010A	0.0100	46.0	<u>Water</u> mg/l	





Blaine Tech Services (Shell) 1680 Rogers Avenue San Jose, CA 95112	Project: Equiva Project Number: 4255 McArthur Blvd. Project Manager: Ann Pember	Sampled: 7/23/99 Received: 7/26/99 Reported: 8/11/99
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**Conventional Chemistry Parameters by APHA/EPA Methods  
Sequoia Analytical - Morgan Hill**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
<b><u>MW-1</u></b> Total Alkalinity	9070960	7/28/99	7/28/99	<b><u>M907962-01</u></b> EPA 310.1	5.00	<b>480</b>	<b><u>Water</u></b> mg/l	
<b><u>MW-2</u></b> Total Alkalinity	9070960	7/28/99	7/28/99	<b><u>M907962-02</u></b> EPA 310.1	5.00	<b>440</b>	<b><u>Water</u></b> mg/l	
<b><u>MW-3</u></b> Total Alkalinity	9070960	7/28/99	7/28/99	<b><u>M907962-03</u></b> EPA 310.1	5.00	<b>920</b>	<b><u>Water</u></b> mg/l	
<b><u>MW-4</u></b> Total Alkalinity	9070960	7/28/99	7/28/99	<b><u>M907962-04</u></b> EPA 310.1	5.00	<b>620</b>	<b><u>Water</u></b> mg/l	





Blaine Tech Services (Shell) 1680 Rogers Avenue San Jose, CA 95112	Project: Equiva Project Number: 4255 McArthur Blvd. Project Manager: Ann Pember	Sampled: 7/23/99 Received: 7/26/99 Reported: 8/11/99
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**Anions by EPA Method 300.0  
Sequoia Analytical - Morgan Hill**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
<b><u>MW-1</u></b>				<b><u>M907962-01</u></b>			<b><u>Water</u></b>	
Nitrate as NO3	9070943	7/27/99	7/27/99	EPA 300.0	1.00	7.49	mg/l	
Sulfate as SO4	9070944	"	"	EPA 300.0	1.00	28.6	"	
<b><u>MW-2</u></b>				<b><u>M907962-02</u></b>			<b><u>Water</u></b>	
Nitrate as NO3	9070943	7/27/99	7/27/99	EPA 300.0	1.00	ND	mg/l	
Sulfate as SO4	9070944	"	"	EPA 300.0	1.00	3.24	"	
<b><u>MW-3</u></b>				<b><u>M907962-03</u></b>			<b><u>Water</u></b>	
Nitrate as NO3	9070943	7/27/99	7/27/99	EPA 300.0	1.00	ND	mg/l	
Sulfate as SO4	9070944	"	"	EPA 300.0	1.00	4.23	"	
<b><u>MW-4</u></b>				<b><u>M907962-04</u></b>			<b><u>Water</u></b>	
Nitrate as NO3	9070943	7/27/99	7/27/99	EPA 300.0	1.00	7.41	mg/l	
Sulfate as SO4	9070944	"	"	EPA 300.0	1.00	6.03	"	





Blaine Tech Services (Shell) 1680 Rogers Avenue San Jose, CA 95112	Project: Equiva Project Number: 4255 McArthur Blvd. Project Manager: Ann Pember	Sampled: 7/23/99 Received: 7/26/99 Reported: 8/11/99
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**Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control  
Sequoia Analytical - Morgan Hill**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 9080157</b>		<b>Date Prepared: 8/3/99</b>		<b>Extraction Method: EPA 5030B [P/T]</b>						
<b>Blank</b>		<b>9080157-BLK1</b>								
Purgeable Hydrocarbons	8/3/99			ND	ug/l	50.0				
Benzene	"			ND	"	0.500				
Toluene	"			ND	"	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	0.500				
Methyl tert-butyl ether	"			ND	"	2.50				
Surrogate: a,a,a-Trifluorotoluene	"	10.0		10.2	"	70.0-130	102			
<b>LCS</b>		<b>9080157-BS1</b>								
Benzene	8/3/99	10.0		8.94	ug/l	70.0-130	89.4			
Toluene	"	10.0		10.3	"	70.0-130	103			
Ethylbenzene	"	10.0		10.4	"	70.0-130	104			
Xylenes (total)	"	30.0		32.9	"	70.0-130	110			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		8.99	"	70.0-130	89.9			
<b>LCS Dup</b>		<b>9080157-BSD1</b>								
Benzene	8/4/99	10.0		7.78	ug/l	70.0-130	77.8	25.0	13.9	
Toluene	"	10.0		8.91	"	70.0-130	89.1	25.0	14.5	
Ethylbenzene	"	10.0		9.00	"	70.0-130	90.0	25.0	14.4	
Xylenes (total)	"	30.0		28.4	"	70.0-130	94.7	25.0	14.9	
Surrogate: a,a,a-Trifluorotoluene	"	10.0		8.19	"	70.0-130	81.9			
<b>Batch: 9080226</b>		<b>Date Prepared: 8/5/99</b>		<b>Extraction Method: EPA 5030B [P/T]</b>						
<b>Blank</b>		<b>9080226-BLK1</b>								
Purgeable Hydrocarbons	8/5/99			ND	ug/l	50.0				
Benzene	"			ND	"	0.500				
Toluene	"			ND	"	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	0.500				
Methyl tert-butyl ether	"			ND	"	2.50				
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.55	"	70.0-130	95.5			
<b>LCS</b>		<b>9080226-BS1</b>								
Benzene	8/5/99	10.0		8.98	ug/l	70.0-130	89.8			
Toluene	"	10.0		8.61	"	70.0-130	86.1			
Ethylbenzene	"	10.0		9.01	"	70.0-130	90.1			
Xylenes (total)	"	30.0		26.7	"	70.0-130	89.0			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.40	"	70.0-130	94.0			





Blaine Tech Services (Shell) 1680 Rogers Avenue San Jose, CA 95112	Project: Equiva Project Number: 4255 McArthur Blvd. Project Manager: Ann Pember	Sampled: 7/23/99 Received: 7/26/99 Reported: 8/11/99
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**Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control  
Sequoia Analytical - Morgan Hill**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>LCS Dup</b>										
<b>9080226-BSD1</b>										
Benzene	8/5/99	10.0		9.81	ug/l	70.0-130	98.1	25.0	8.83	
Toluene	"	10.0		9.35	"	70.0-130	93.5	25.0	8.24	
Ethylbenzene	"	10.0		9.78	"	70.0-130	97.8	25.0	8.20	
Xylenes (total)	"	30.0		28.8	"	70.0-130	96.0	25.0	7.57	
Surrogate: a,a,a-Trifluorotoluene	"	10.0		8.96	"	70.0-130	89.6			
<b>Batch: 9080235</b>										
<b>Blank</b>										
<b>9080235-BLK1</b>										
Purgeable Hydrocarbons	8/4/99			ND	ug/l	50.0				
Benzene	"			ND	"	0.500				
Toluene	"			ND	"	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	0.500				
Methyl tert-butyl ether	"			ND	"	2.50				
Surrogate: a,a,a-Trifluorotoluene	"	10.0		10.9	"	70.0-130	109			
<b>LCS</b>										
<b>9080235-BS1</b>										
Purgeable Hydrocarbons	8/4/99	250		227	ug/l	70.0-130	90.8			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		13.4	"	70.0-130	134			2
<b>LCS Dup</b>										
<b>9080235-BSD1</b>										
Purgeable Hydrocarbons	8/4/99	250		227	ug/l	70.0-130	90.8	25.0	0	
Surrogate: a,a,a-Trifluorotoluene	"	10.0		13.3	"	70.0-130	133			2





Blaine Tech Services (Shell) 1680 Rogers Avenue San Jose, CA 95112	Project: Equiva Project Number: 4255 McArthur Blvd. Project Manager: Ann Pember	Sampled: 7/23/99 Received: 7/26/99 Reported: 8/11/99
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**Total Metals by EPA 6000/7000 Series Methods/Quality Control  
Sequoia Analytical - Morgan Hill**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 9071022</b>		<b>Date Prepared: 7/2/99</b>		<b>Extraction Method: EPA 3010A</b>						
<b>Blank</b>		<b>9071022-BLK1</b>								
Ferrous Iron	7/30/99			ND	mg/l	0.0100				
<b>LCS</b>		<b>9071022-BS1</b>								
Ferrous Iron	7/30/99	1.00		1.04	mg/l	80.0-120	104			
<b>Matrix Spike</b>		<b>9071022-MS1</b>		<b>M907885-01</b>						
Ferrous Iron	7/30/99	1.00	0.110	0.970	mg/l	80.0-120	86.0			
<b>Matrix Spike Dup</b>		<b>9071022-MSD1</b>		<b>M907885-01</b>						
Ferrous Iron	7/30/99	1.00	0.110	1.10	mg/l	80.0-120	99.0	20.0	14.1	







Blaine Tech Services (Shell) 1680 Rogers Avenue San Jose, CA 95112	Project: Equiva Project Number: 4255 McArthur Blvd. Project Manager: Ann Pember	Sampled: 7/23/99 Received: 7/26/99 Reported: 8/11/99
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**Conventional Chemistry Parameters by APHA/EPA Methods/Quality Control  
Sequoia Analytical - Morgan Hill**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 9070960</b>		<b>Date Prepared: 7/28/99</b>			<b>Extraction Method: General Preparation</b>					
<b>Blank</b>		<b>9070960-BLK1</b>								
Total Alkalinity	7/28/99			ND	mg/l	5.00				
<b>LCS</b>		<b>9070960-BS1</b>								
Total Alkalinity	7/28/99	100		98.0	mg/l	80.0-120	98.0			
<b>Matrix Spike</b>		<b>9070960-MS1</b>		<b>M907957-01</b>						
Total Alkalinity	7/28/99	100	150	240	mg/l	75.0-125	90.0			
<b>Matrix Spike Dup</b>		<b>9070960-MSD1</b>		<b>M907957-01</b>						
Total Alkalinity	7/28/99	100	150	240	mg/l	75.0-125	90.0	20.0	0	





Blaine Tech Services (Shell)  
1680 Rogers Avenue  
San Jose, CA 95112

Project: Equiva  
Project Number: 4255 McArthur Blvd.  
Project Manager: Ann Pember

Sampled: 7/23/99  
Received: 7/26/99  
Reported: 8/11/99

**Anions by EPA Method 300.0/Quality Control  
Sequoia Analytical - Morgan Hill**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 9070943</b>										
<b>Blank</b>										
<b>Extraction Method: General Preparation</b>										
Nitrate as NO3	7/27/99			ND	mg/l	1.00				
<b>LCS</b>										
Nitrate as NO3	7/27/99	100		92.2	mg/l	80.0-120	92.2			
<b>Matrix Spike</b>										
Nitrate as NO3	7/27/99	100	M907989-01 73.3	168	mg/l	75.0-125	94.7			
<b>Matrix Spike Dup</b>										
Nitrate as NO3	7/27/99	100	M907989-01 73.3	165	mg/l	75.0-125	91.7	20.0	3.22	
<b>Batch: 9070944</b>										
<b>Blank</b>										
<b>Extraction Method: General Preparation</b>										
Sulfate as SO4	7/27/99			ND	mg/l	1.00				
<b>LCS</b>										
Sulfate as SO4	7/27/99	100		99.7	mg/l	80.0-120	99.7			
<b>Matrix Spike</b>										
Sulfate as SO4	7/27/99	100	M907957-03 6.36	94.9	mg/l	75.0-125	88.5			
<b>Matrix Spike Dup</b>										
Sulfate as SO4	7/27/99	100	M907957-03 6.36	94.2	mg/l	75.0-125	87.8	20.0	0.794	





Blaine Tech Services (Shell) 1680 Rogers Avenue San Jose, CA 95112	Project: Equiva Project Number: 4255 McArthur Blvd. Project Manager: Ann Pember	Sampled: 7/23/99 Received: 7/26/99 Reported: 8/11/99
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**Notes and Definitions**

#	Note
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- 1 Chromatogram Pattern: Gasoline C6-C12
- 2 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- Recov. Recovery
- RPD Relative Percent Difference





# Sequoia Analytical

1551 Industrial Road  
San Carlos, CA 94070-4111  
(650) 232-9600  
FAX (650) 232-9612

August 13, 1999

Kayvan Kimyai  
Sequoia - Morgan Hill  
885 Jarvis Drive  
Morgan Hill, CA 95037

RE: 1/L908080

Dear Kayvan Kimyai:

Enclosed are the results of analyses for sample(s) received by the laboratory on August 12, 1999. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Wayne Stevenson  
Project Manager

CA ELAP Certificate Number I-2360





Sequoia - Morgan Hill  
885 Jarvis Drive  
Morgan Hill, CA 95037

Project: 1  
Project Number: M907962(Blaine-Equiva)  
Project Manager: Kayvan Kimyai

Sampled: 7/23/99  
Received: 8/12/99  
Reported: 8/13/99

**ANALYTICAL REPORT FOR L908080**

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
M907962-01/MW-1	L908080-01	Water	7/23/99
M907962-02/MW-2	L908080-02	Water	7/23/99
M907962-03/MW-3	L908080-03	Water	7/23/99
M907962-04/MW-4	L908080-04	Water	7/23/99





# Sequoia Analytical

1551 Industrial Road  
 San Carlos, CA 94070-4111  
 (650) 232-9600  
 FAX (650) 232-9612

Sequoia - Morgan Hill 885 Jarvis Drive Morgan Hill, CA 95037	Project: 1 Project Number: M907962(Blaine-Equiva) Project Manager: Kayvan Kimyai	Sampled: 7/23/99 Received: 8/12/99 Reported: 8/13/99
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**Sample Description:** M907962-01/MW-1  
**Laboratory Sample Number:** L908080-01

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
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Sequoia Analytical - San Carlos

<b>MTBE by EPA Method 8260A</b>								<u>1</u>
Methyl tert-butyl ether	9080068	8/13/99	8/13/99		2.00	<b>111</b>	ug/l	
Surrogate: 1,2-Dichloroethane-d4	"	"	"	76.0-114		107	%	





Sequoia - Morgan Hill 885 Jarvis Drive Morgan Hill, CA 95037	Project: 1 Project Number: M907962(Blaine-Equiva) Project Manager: Kayvan Kimyai	Sampled: 7/23/99 Received: 8/12/99 Reported: 8/13/99
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**Sample Description:** M907962-02/MW-2  
**Laboratory Sample Number:** L908080-02

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
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Sequoia Analytical - San Carlos

<u>MTBE by EPA Method 8260A</u>								1
Methyl tert-butyl ether	9080068	8/13/99	8/13/99		1000	58500	ug/l	
Surrogate: 1,2-Dichloroethane-d4	"	"	"	76.0-114		104	%	





Sequoia - Morgan Hill 885 Jarvis Drive Morgan Hill, CA 95037	Project: 1 Project Number: M907962(Blaine-Equiva) Project Manager: Kayvan Kimyai	Sampled: 7/23/99 Received: 8/12/99 Reported: 8/13/99
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**Sample Description:** M907962-03/MW-3  
**Laboratory Sample Number:** L908080-03

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>Sequoia Analytical - San Carlos</b>								
<u>MTBE by EPA Method 8260A</u>								<u>1</u>
Methyl tert-butyl ether	9080068	8/13/99	8/13/99		100	6950	ug/l	
Surrogate: 1,2-Dichloroethane-d4	"	"	"	76.0-114		105	%	







Sequoia - Morgan Hill 885 Jarvis Drive Morgan Hill, CA 95037	Project: I Project Number: M907962(Blaine-Equiva) Project Manager: Kayvan Kimyai	Sampled: 7/23/99 Received: 8/12/99 Reported: 8/13/99
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**Sample Description:** M907962-04/MW-4  
**Laboratory Sample Number:** L908080-04

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
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Sequoia Analytical - San Carlos

<b>MTBE by EPA Method 8260A</b>								<u>1</u>
<b>Methyl tert-butyl ether</b>	9080068	8/13/99	8/13/99		100	<b>6000</b>	ug/l	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	"	"	"	76.0-114		100	%	





Sequoia - Morgan Hill 885 Jarvis Drive Morgan Hill, CA 95037	Project: 1 Project Number: M907962(Blaine-Equiva) Project Manager: Kayvan Kimyai	Sampled: 7/23/99 Received: 8/12/99 Reported: 8/13/99
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**MTBE by EPA Method 8260A/Quality Control  
Sequoia Analytical - San Carlos**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 9080068</b>			<b>Date Prepared: 8/13/99</b>			<b>Extraction Method: EPA 5030B [P/T]</b>				
<b>Blank</b>			<b>9080068-BLK1</b>							
Methyl tert-butyl ether	8/13/99			ND	ug/l	2.00				
Surrogate: 1,2-Dichloroethane-d4	"	50.0		53.3	"	76.0-114	107			
<b>LCS</b>			<b>9080068-BS1</b>							
Methyl tert-butyl ether	8/13/99	50.0		51.8	ug/l	70.0-130	104			
Surrogate: 1,2-Dichloroethane-d4	"	50.0		52.9	"	76.0-114	106			





Sequoia - Morgan Hill 885 Jarvis Drive Morgan Hill, CA 95037	Project: 1 Project Number: M907962(Blaine-Equiva) Project Manager: Kayvan Kimyai	Sampled: 7/23/99 Received: 8/12/99 Reported: 8/13/99
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**Notes and Definitions**

#	Note
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- 1 This sample was analyzed outside the EPA recommended holding time.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- Recov. Recovery
- RPD Relative Percent Difference



CHAIN OF CUSTODY  
**990723-m1**

CLIENT  
Equiva - Karen Petryna

SITE  
4255 McArthur Blvd.  
Oakland, CA

SAMPLE I.D.	date	time	MATRIX		CONTAINERS
			S = SOIL W = H <sub>2</sub> O	TOTAL	
MW-1	7-23-99	9:08	w	6	
MW-2	↓	10:15	↓	6	
MW-3	↓	9:55	↓	6	
MW-4	↓	9:38	↓	6	

C = COMPOSITE ALL CONTAINERS

CONDUCT ANALYSIS TO DETECT									
TPH - gas, BTEX	MTBE by 8020	MTBE by 8260	TPH-diesel	Oxygenates by 8260	1,2-DCA & EDB by 8010	Alkalinity EPA 3102, Sulfate EPA 3102	Nitrate EPA 300.0, Ferrrous Iron		
X	X					X	X		
X	X					X	X		
X	X					X	X		
X	X					X	X		

LAB SEQUOIA DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND

EPA  RWQCB REGION

LIA

OTHER

**M907962**

SPECIAL INSTRUCTIONS

Send invoice to Equiva

Incident # 98995758

Send report to Blaine Tech Services

Attn: Ann Pember

ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
Confirm MTBE by 8260			
			261119

SAMPLING COMPLETED	DATE	TIME	SAMPLING PERFORMED BY	RESULTS NEEDED NO LATER THAN	
	7-23-99	10:15	Mark Tomlinson		
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
<i>[Signature]</i>	7-24-99	9:42	<i>[Signature]</i>	7-26-99	9:43
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
<i>[Signature]</i>			<i>[Signature]</i>	7/26/99	11:19
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
SHIPPED VIA	DATE SENT	TIME SENT	COOLER #		



## EQUIVA WELL MONITORING DATA SHEET

Project #: <u>990723-m1</u>	Job # <u>204 5510 0600</u>
Sampler: <u>MT</u>	Date: <u>7-23-99</u>
Well I.D.: <u>MW-1</u>	Well Diameter: 2 3 <u>(4)</u> 6 8
Total Well Depth: <u>23.30</u>	Depth to Water: <u>8.51</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> <u>Grade</u>	D.O. Meter (if req'd): <u>YSI</u> <u>HACH</u>

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius <sup>2</sup> * 0.163

Purge Method: Bailer Middleburg Electric Submersible Extraction Pump

Sampling Method: Bailer Extraction Port Other: \_\_\_\_\_

Other: \_\_\_\_\_

<u>9.6</u>	<u>x</u>	<u>3</u>	<u>=</u>	<u>28.8</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
9:01	65.5	9.6	1071	61	10	
9:03	65.3	9.6	1065	42	20	
9:05	65.3	9.7	1064	19	29	

Did well dewater? Yes  No  Gallons actually evacuated: 29

Sampling Time: 9:08 Sampling Date: 7-23-99

Sample I.D.: MW-1 Laboratory: Sequoia BC Other \_\_\_\_\_

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

D.O. (if req'd):	Pre-purge: <u>1.0</u> mg/L	Post-purge: _____ mg/L
O.R.P. (if req'd):	Pre-purge: _____ mV	Post-purge: _____ mV

## EQUIVA WELL MONITORING DATA SHEET

Project #: <u>990723-m/</u>	Job # <u>204-5510 0600</u>
Sampler: <u>MT</u>	Date: <u>7-23-94</u>
Well I.D.: <u>MW-2</u>	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: <u>19.60</u>	Depth to Water: <u>14.45</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> <u>Grade</u>	D.O. Meter (if req'd): <u>YSI</u> <u>HACH</u>

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius <sup>2</sup> * 0.163

Purge Method: Bailer      Sampling Method: Bailer  
Middleburg      Extraction Port  
Electric Submersible      Other: \_\_\_\_\_  
Extraction Pump

<u>3.3</u>	x	<u>3</u>	=	<u>9.9</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
<u>10:06</u>	<u>64.0</u>	<u>8.0</u>	<u>1545</u>	<u>7200</u>	<u>3.5</u>	
<u>10:06</u>	<u>65.4</u>	<u>7.9</u>	<u>1513</u>	<u>7200</u>	<u>7</u>	
<u>10:07</u>	<u>66.1</u>	<u>7.9</u>	<u>1492</u>	<u>7200</u>	<u>10</u>	

Did well dewater? Yes  No       Gallons actually evacuated: 10

Sampling Time: 10:15      Sampling Date: 7-23-94

Sample I.D.: MW-2      Laboratory: Sequoia BC Other \_\_\_\_\_

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

D.O. (if req'd):	Pre-purge: <u>1.4</u> mg/L	Post-purge: _____ mg/L
O.R.P. (if req'd):	Pre-purge: _____ mV	Post-purge: _____ mV

## EQUIVA WELL MONITORING DATA SHEET

Project #: 990723-mf	Job # 204 55100600
Sampler: MT	Date: 7-23-99
Well I.D.: MW-3	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: 21.84	Depth to Water: 14.95
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	radius <sup>2</sup> * 0.163

Purge Method: Bailer Middleburg Electric Submersible Extraction Pump

Sampling Method: Bailer Extraction Port

Other: \_\_\_\_\_

4.4	x	3	=	13.2	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
9:50	60.5	8.9	1058	7200	4.5	
9:51	61.4	8.9	1053	85	9	
9:52	62.3	9.0	1085	46	13.5	

Did well dewater? Yes  No  Gallons actually evacuated: 13.5

Sampling Time: 9:55 Sampling Date: 7-23-99

Sample I.D.: MW-3 Laboratory: Sequoia BC Other \_\_\_\_\_

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

D.O. (if req'd):	Pre-purge: 1.3 mg/L	Post-purge: mg/L
O.R.P. (if req'd):	Pre-purge: mV	Post-purge: mV



### SHELL WELL MONITORING DATA SHEET

Project #: 990723-m	WIC #: 204 5510 0600
Sampler: MT	Date: 7-23-94
Well I.D.: MW-4	Well Diameter: (2) 3 4 6 8
Total Well Depth: 30.50	Depth to Water: 11.33
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	radius <sup>2</sup> * 0.163

Purge Method: Bailer  
 Middleburg  
 Electric Submersible  
 Extraction Pump  
 Other: \_\_\_\_\_

Sampling Method: Bailer  
 Extraction Port  
 Other: \_\_\_\_\_

30	x	3	=	9	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
9:28	64.3	8.4	1214	> 200	3	
9:32	64.9	8.1	1213	> 200	6	
9:36	64.8	8.0	1210	> 200	9	

Did well dewater? Yes  No

Gallons actually evacuated: 9

Sampling Time: 9:38 Sampling Date: 7-23-94

Sample I.D.: MW-4 Laboratory: Sequoia Crosby

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

Equipment Blank I.D.: @ \_\_\_\_\_ Duplicate I.D.: \_\_\_\_\_

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

D.O. (if req'd):	Pre-purge: 9 mg/L	Post-purge: _____ mg/L
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**ATTACHMENT B**

Analytical Results for Ground Water Extraction Event



# Sequoia Analytical

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

August 27, 1999

Brian Busch  
Cambria Environmental - Oakland  
1144 65th St., Suite C  
Oakland, CA 94608

RE: Shell Oil Co./P908573

Dear Brian Busch

Enclosed are the results of analyses for sample(s) received by the laboratory on August 25, 1999. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Matt Sakai  
Project Manager

CA ELAP Certificate Number I-2374





Cambria Environmental - Oakland 1144 65th St., Suite C Oakland, CA 94608	Project: Shell Oil Co. Project Number: 4255 MacArthur Blvd., Oakland Project Manager: Brian Busch	Sampled: 8/24/99 Received: 8/25/99 Reported: 8/27/99
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**ANALYTICAL REPORT FOR P908573**

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
TB-2	P908573-01	Water	8/24/99





Cambria Environmental - Oakland 1144 65th St., Suite C Oakland, CA 94608	Project: Shell Oil Co. Project Number: 4255 MacArthur Blvd., Oakland Project Manager: Brian Busch	Sampled: 8/24/99 Received: 8/25/99 Reported: 8/27/99
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**Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M  
Sequoia Analytical - Petaluma**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>TB-2</b>				<b>P908573-01</b>			<b>Water</b>	
Gasoline	9080581	8/25/99	8/25/99		50.0	6240	ug/l	
Benzene	"	"	"		0.500	400	"	
Toluene	"	"	"		0.500	327	"	
Ethylbenzene	"	"	"		0.500	118	"	
Xylenes (total)	"	"	"		0.500	512	"	
Methyl tert-butyl ether	"	"	8/27/99		1000	86100	"	
Surrogate: <i>a,a,a</i> -Trifluorotoluene	"	"	8/25/99	65.0-135		89.3	%	
Surrogate: 4-Bromofluorobenzene	"	"	"	65.0-135		95.3	"	





Cambria Environmental - Oakland 1144 65th St., Suite C Oakland, CA 94608	Project: Shell Oil Co. Project Number: 4255 MacArthur Blvd., Oakland Project Manager: Brian Busch	Sampled: 8/24/99 Received: 8/25/99 Reported: 8/27/99
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**Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M/Quality Control  
 Sequoia Analytical - Petaluma**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 9080581</b>		<b>Date Prepared: 8/25/99</b>			<b>Extraction Method: EPA 5030 waters</b>					
<b>Blank</b>		<b>9080581-BLK1</b>								
Gasoline	8/25/99			ND	ug/l	50.0				
Benzene	"			ND	"	0.500				
Toluene	"			ND	"	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	0.500				
Methyl tert-butyl ether	"			ND	"	2.00				
Surrogate: <i>a,a,a</i> -Trifluorotoluene	"	300		307	"	65.0-135	102			
Surrogate: 4-Bromofluorobenzene	"	300		265	"	65.0-135	88.3			
<b>LCS</b>		<b>9080581-BS1</b>								
Gasoline	8/25/99	1000		880	ug/l	65.0-135	88.0			
Surrogate: 4-Bromofluorobenzene	"	300		266	"	65.0-135	88.7			
<b>Matrix Spike</b>		<b>9080581-MS1</b>		<b>P908516-01</b>						
Gasoline	8/25/99	1000	ND	932	ug/l	65.0-135	93.2			
Surrogate: 4-Bromofluorobenzene	"	300		256	"	65.0-135	85.3			
<b>Matrix Spike Dup</b>		<b>9080581-MSD1</b>		<b>P908516-01</b>						
Gasoline	8/25/99	1000	ND	958	ug/l	65.0-135	95.8	20.0	2.75	
Surrogate: 4-Bromofluorobenzene	"	300		258	"	65.0-135	86.0			





Cambria Environmental - Oakland 1144 65th St., Suite C Oakland, CA 94608	Project: Shell Oil Co. Project Number: 4255 MacArthur Blvd., Oakland Project Manager: Brian Busch	Sampled: 8/24/99 Received: 8/25/99 Reported: 8/27/99
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**Notes and Definitions**

#	Note
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- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- Recov. Recovery
- RPD Relative Percent Difference



