3769

CAMBRIA

ENVIRONMENTAL PROTECTION
99 AUG 27 PM 2:03

August 25, 1999

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

Re: **Second Quarter 1999 Monitoring Report**
Shell-branded Service Station
4255 MacArthur Boulevard
Oakland, California
Incident #98995758
Cambria Project #241-0524-002

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)
0.32	21.74

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

SECOND QUARTER 1999 ACTIVITIES

Groundwater Monitoring: Blaine Tech Services, Inc. (Blaine) of San Jose, California checked for and removed SPH and gauged and sampled the site wells. MTBE concentrations in all sampled wells were confirmed by EPA Method 8260. Blaine calculated ground water elevations and compiled the analytical data. Cambria prepared a groundwater elevation contour map (Figure 1). The Blaine report, presenting the laboratory 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

ORC Installation: On April 29, 1999, Blaine installed oxygen release compounds (ORCs) in wells MW-1, MW-3, MW-4, TB-1, and TB-2. Prior to installing the ORCs, Blaine measured dissolved oxygen (DO) and oxidation reduction potential (ORP) in the wells.

Groundwater Extraction: Cambria visited the site on April 23, May 24, and June 28, 1999 to oversee groundwater extraction from monitoring well MW-2 and tank backfill wells TB-1 and TB-2. Ground water was extracted from the wells using a vacuum truck. During each visit, well MW-2 was dewatered after extracting approximately 300 gallons of ground water. A total of approximately 5,000 gallons of groundwater was extracted from wells MW-2, TB-1, and TB-2 during each visit.

ANTICIPATED THIRD QUARTER 1999 ACTIVITIES

Groundwater Monitoring: Blaine will measure and remove detected SPH and gauge and sample all wells and tabulate the data. Cambria will prepare a monitoring report, which will include a discussion of the effectiveness of groundwater extraction and an interpretation of DO and ORP measurements and bioattenuation parameter results.

Groundwater Extraction: Cambria will continue to perform monthly site visits to oversee groundwater extraction at the site from wells MW-2, TB-1, and TB-2.

Monitoring Well Installation: Once we obtain an encroachment permit for the installation of the proposed monitoring well in the Caltrans right-of-way, Cambria will install two monitoring wells as outlined in our June 29, 1998 *Additional Investigation Work Plan.* We anticipate well installations will take place in September 1999.

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

REGISTERED GEOLOGIST
AILSA S. LE MAY
NO. 6717
STATE OF CALIFORNIA

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

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

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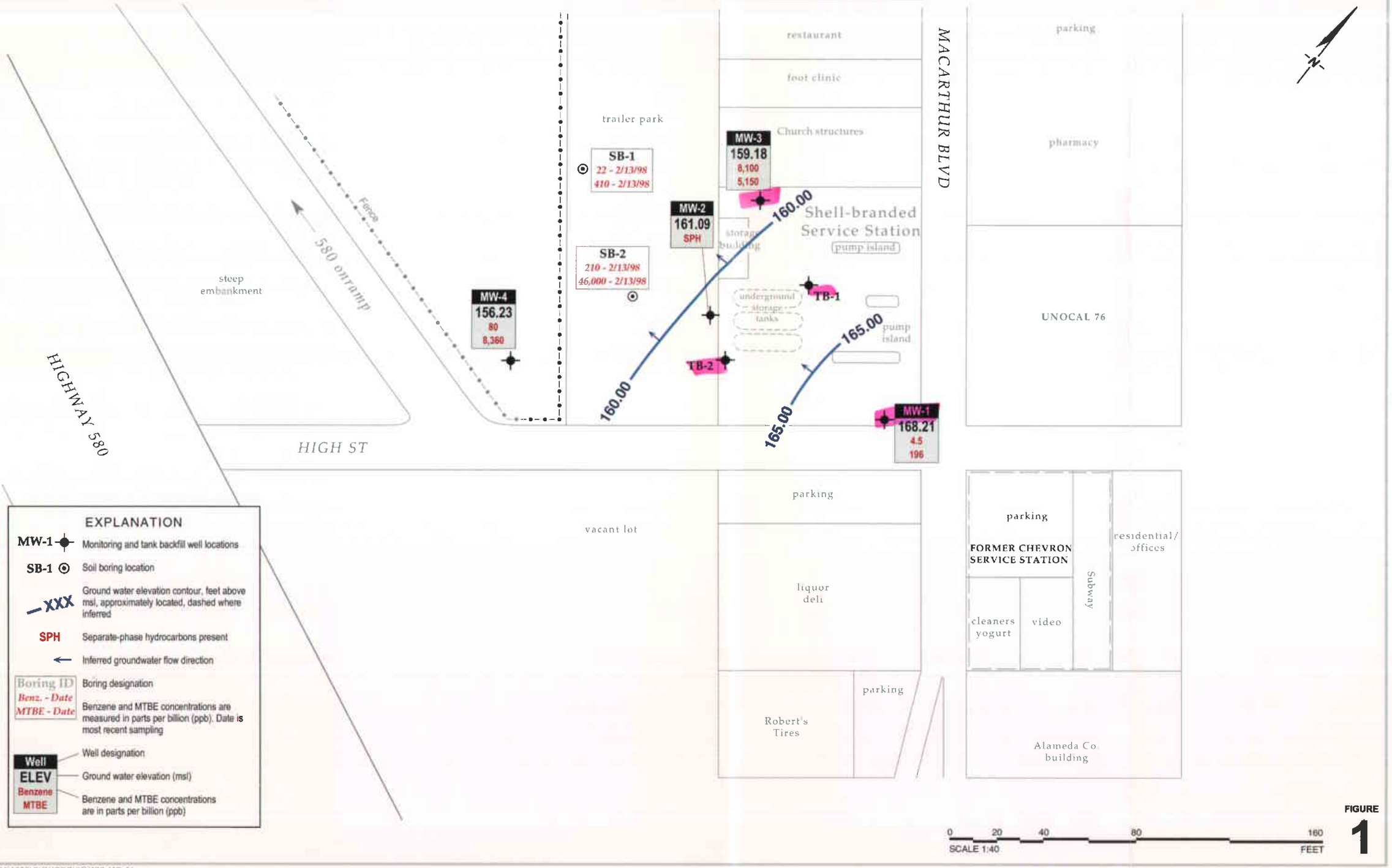
Ground Water Elevation Contour Map

April 29, 1999



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 / Benz. - Date / MTBE - Date — Boring designation; Benzene and MTBE concentrations are measured in parts per billion (ppb). Date is most recent sampling
- Well / ELEV / Benzene / MTBE — Well designation; Ground water elevation (msl); Benzene and MTBE concentrations are in parts per billion (ppb)

FIGURE **1**

Shell-branded Service Station
4255 MacArthur Boulevard
Oakland, California
Incident #98995758

CAMBRIA

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

June 1, 1999

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

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

Monitoring performed on April 29, 1999

Groundwater Monitoring Report **990429-R-3**

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, apprioriate 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 65th 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
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

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-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
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

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-2	04/29/1999	NA	NA	NA	NA	NA	NA	NA	170.91	9.86	9.81	161.09	0.05	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
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

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-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-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
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

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	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
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
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).

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 4255 Mac Arthur Blvd

Enclosed are the results from samples received at Sequoia Analytical on April 30, 1999. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9904B83 -01	LIQUID, MW-1	04/29/99	Purgeable TPH/BTEX/MTBE
9904B83 -02	LIQUID, MW-3	04/29/99	Purgeable TPH/BTEX/MTBE
9904B83 -03	LIQUID, MW-4	04/29/99	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

Margaret S. Foster

Project Manager

Sequoia Analytical

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Blaine Tech Services	Client Proj. ID: Shell 4255 Mac Arthur Blvd	Received: 04/30/99
1680 Rogers Avenue		
San Jose, CA 95112	Lab Proj. ID: 9904B83	Reported: 05/17/99
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.).

EPA Method 8260:
Method 8260 was subcontraced to Sequoia Analytical-San Carlos.
MTBE was confirmed by Method 8260.

EPA Method 8015Mod/8020:
Sample 9904b83-03 was analyzed twice per client's request, MTBE was reported from GCHP02 on 5/6/99.
Samples 9904B83-02 and 9904B83-03 were analyzed at a 200X and 2X dilution, respectively, due to target compounds in the samples.

SEQUOIA ANALYTICAL

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 4255 Mac Arthur Blvd	Sampled: 04/29/99
1680 Rogers Avenue	Sample Descript: MW-1	Received: 04/30/99
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 05/04/99
Attention: Fran Thie	Lab Number: 9904B83-01	Reported: 05/17/99

QC Batch Number: GC050499BTEX03A
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	N.D.
Methyl t-Butyl Ether	**2.5**	**140**
Benzene	**0.50**	**4.5**
Toluene	0.50	N.D.
Ethyl Benzene	**0.50**	**0.56**
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	79

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

SEQUOIA ANALYTICAL - ELAP #1210

Margaret S. Foster

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 4255 Mac Arthur Blvd	Sampled: 04/29/99
1680 Rogers Avenue	Sample Descript: MW-3	Received: 04/30/99
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 05/04/99
Attention: Fran Thie	Lab Number: 9904B83-02	Reported: 05/17/99

QC Batch Number: GC050499BTEX03A
Instrument ID: GCHP03

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**10000**	**45000**
Methyl t-Butyl Ether	**500**	**4700**
Benzene	**100**	**8100**
Toluene	**100**	**580**
Ethyl Benzene	**100**	**2200**
Xylenes (Total)	**100**	**5800**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	85

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

SEQUOIA ANALYTICAL - ELAP #1210

Margaret S. Tobin

Project Manager

Sequoia Analytical

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

Blaine Tech Services	Client Proj. ID: Shell 4255 Mac Arthur Blvd	Sampled: 04/29/99
1680 Rogers Avenue	Sample Descript: MW-4	Received: 04/30/99
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 05/06/99
Attention: Fran Thie	Lab Number: 9904B83-03	Reported: 05/17/99

QC Batch Number: GC050699BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	100	390
Methyl t-Butyl Ether	125	7000
Benzene	1.0	80
Toluene	1.0	1.9
Ethyl Benzene	1.0	13
Xylenes (Total)	1.0	19
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	108

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

SEQUOIA ANALYTICAL - ELAP #1210

Margaret S. Foster

Project Manager

Sequoia Analytical

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

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

Client Project ID: Shell, 4255 Mac Arthur Blvd

QC Sample Group: 9904B83-01 thru -03

Reported: May 17, 1999

QUALITY CONTROL DATA REPORT

Matrix:	Liquid
Method:	EPA 8015
Analyst:	JAB
ANALYTE	Gasoline

QC Batch #: GC050499BTEX03A

Sample No.:	GW9904B96-5
Date Prepared:	5/4/99
Date Analyzed:	5/4/99
Instrument I.D.#:	GCHP03
Sample Conc., ug/L:	N.D.
Conc. Spiked, ug/L:	250
Matrix Spike, ug/L:	250
% Recovery:	100.0
Matrix Spike Duplicate, ug/L	240
% Recovery:	96
Relative % Differenc	4.1
RPD Control Limits:	0-25

LCS Batch#: GC050499BTEX03A

Date Prepared:	5/4/99
Date Analyzed:	5/4/99
Instrument I.D.#:	GCHP03
Conc. Spiked, ug/L:	250
LCS Recovery, ug/L:	220
LCS % Recovery:	88

Percent Recovery Control Limits:

MS/MSD	60-140
LCS	70-130

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

SEQUOIA ANALYTICAL

Margaret S. Tobias for

Kayvan Kimyai
Project Manager

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

Sequoia
Analytical

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

May 14, 1999

Kayvan Kimyai
Sequoia - Redwood City
680 Chesapeake Drive
Redwood City, CA 94063

RE: Kayvan Kimyai/L905092

Dear Kayvan Kimyai:

Enclosed are the results of analyses for sample(s) received by the laboratory on May 7, 1999. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Wayne Stevenson

Wayne Stevenson
Project Manager

Sequoia Analytical

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

Sequoia - Redwood City	Project:	Kayvan Kimyai	Sampled:	4/29/99
680 Chesapeake Drive	Project Number:	9904B83/BLAINE	Received:	5/7/99
Redwood City, CA 94063	Project Manager:	Kayvan Kimyai	Reported:	5/14/99 10:38

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
9904B83-01/MW-1	L905092-01	Water	4/29/99
9904B83-02/MW-3	L905092-02	Water	4/29/99
9904B83-03/MW-4	L905092-03	Water	4/29/99

Sequoia Analytical

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

Sequoia - Redwood City	Project:	Kayvan Kimyai	Sampled: 4/29/99
680 Chesapeake Drive	Project Number:	9904B83/BLAINE	Received: 5/7/99
Redwood City, CA 94063	Project Manager:	Kayvan Kimyai	Reported: 5/14/99 10:38

9904B83-02/MW-3
[L905092-02]

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
Sequoia Analytical - San Carlos								
MTBE Confirmation by EPA Method 8260A								
Methyl tert-butyl ether	9050046	5/13/99	5/13/99		100	**5150**	ug/l	
Surrogate: 1,2-Dichloroethane-d4	"	"	"	*76.0-114*		*111*	%	

K 470 (8020)

Sequoia Analytical

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

Sequoia - Redwood City	Project:	Kayvan Kimyai	Sampled: 4/29/99
680 Chesapeake Drive	Project Number:	9904B83/BLAINE	Received: 5/7/99
Redwood City, CA 94063	Project Manager:	Kayvan Kimyai	Reported: 5/14/99 10:38

9904B83-01/MW-1
[L905092-01]

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
Sequoia Analytical - San Carlos								
MTBE Confirmation by EPA Method 8260A								
Methyl tert-butyl ether	9050046	5/13/99	5/13/99		2.00	**196**	ug/l	
Surrogate: 1,2-Dichloroethane-d4	"	"	"	*76.0-114*		*112*	%	

5/14 (8020)

Sequoia Analytical

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

Sequoia - Redwood City	Project:	Kayvan Kimyai	Sampled: 4/29/99
680 Chesapeake Drive	Project Number:	9904B83/BLAINE	Received: 5/7/99
Redwood City, CA 94063	Project Manager:	Kayvan Kimyai	Reported: 5/14/99 10:38

9904B83-03/MW-4
[L905092-03]

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
Sequoia Analytical - San Carlos								
MTBE Confirmation by EPA Method 8260A								
Methyl tert-butyl ether	9050046	5/13/99	5/14/99		200	**8360**	ug/l	
Surrogate: 1,2-Dichloroethane-d4	"	"	"	*76.0-114*		*109*	%	

vs 7000 (8020)

Sequoia Analytical

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

Sequoia - Redwood City	Project:	Kayvan Kimyai	Sampled: 4/29/99
680 Chesapeake Drive	Project Number:	9904B83/BLAINE	Received: 5/7/99
Redwood City, CA 94063	Project Manager:	Kayvan Kimyai	Reported: 5/14/99 10:38

MTBE Confirmation 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*
Batch: 9050046	**Date Prepared: 5/11/99**					**Extraction Method: EPA 5030B [P/T]**				
Blank	**9050046-BLK1**									
Methyl tert-butyl ether	5/11/99			**ND**	ug/l	**2.00**				
Surrogate: 1,2-Dichloroethane-d4	"	*50.0*		*52.4*	"	*76.0-114*	*105*			
Blank	**9050046-BLK2**									
Methyl tert-butyl ether	5/13/99			**ND**	ug/l	**2.00**				
Surrogate: 1,2-Dichloroethane-d4	"	*50.0*		*52.9*	"	*76.0-114*	*106*			
LCS	**9050046-BS1**									
Methyl tert-butyl ether	5/11/99	50.0		50.7	ug/l	70.0-130	101			
Surrogate: 1,2-Dichloroethane-d4	"	*50.0*		*53.9*	"	*76.0-114*	*108*			
LCS	**9050046-BS2**									
Methyl tert-butyl ether	5/13/99	50.0		54.4	ug/l	70.0-130	109			
Surrogate: 1,2-Dichloroethane-d4	"	*50.0*		*53.8*	"	*76.0-114*	*108*			
Matrix Spike	**9050046-MS1**		**L905046-01**							
Methyl tert-butyl ether	5/12/99	50.0	12.1	65.7	ug/l	60.0-140	**107**			
Surrogate: 1,2-Dichloroethane-d4	"	*50.0*		*54.7*	"	*76.0-114*	*109*			
Matrix Spike Dup	**9050046-MSD1**		**L905046-01**							
Methyl tert-butyl ether	5/12/99	50.0	12.1	73.1	ug/l	60.0-140	**122**	25.0	**13.1**	
Surrogate: 1,2-Dichloroethane-d4	"	*50.0*		*56.7*	"	*76.0-114*	*113*			

Sequoia Analytical

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

Sequoia - Redwood City	Project:	Kayvan Kimyai	Sampled: 4/29/99
680 Chesapeake Drive	Project Number:	9904B83/BLAINE	Received: 5/7/99
Redwood City, CA 94063	Project Manager:	Kayvan Kimyai	Reported: 5/14/99 10:38

Notes and Definitions

#	Note
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

SUB-CHAIN OF CUSTODY

SEQUOIA ANALYTICAL
680 CHESAPEAKE DRIVE
REDWOOD CITY, CA 94063
TEL415-364-9600 FAX415-364-9233

PROJECT SUBBED TO: SC

TAT REQUESTED: ☐ 24H ☐ 48H ☐ 72H ☐ 5D ☐ 10D

DUE DATE: 5/12/99

REPORT TO: K. Kimyai

WORKORDER # 9904B83

PROJECT NAME: Blaine

L905092

FRACTION NUMBER	SAMPLE DESCRIPTION	MATRIX	NUMBER OF CONT.	TYPE CONT.	SAMPLING TIME/DATE	Confirm MTBE by 8260	ANALYSIS REQUESTED	REMARKS
01	MW-1	L	1	VOA	4/29/99	X	01	
02	1 3	1	1	1	1	X	02	
03	" 4	"	"	"	"	X	03	

RELINQUISHED FROM SEQUOIA BY: DATE TIME
Noelle Lau 5/7/99

RELINQUISHED BY: DATE TIME
[signature] 5-7 1330

RELINQUISHED BY: DATE TIME

RECEIVED BY: DATE TIME
[signature] 5-7 1310

RECEIVED BY: DATE TIME

RECEIVED BY: DATE TIME
[signature] 5-7-99 1330

SAMPLE CONDITION?

TEMP?

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 990022R-3

Date: 4-29-99
Page 1 of 1

Site Address: 4255 MacArthur Blvd., Oakland

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: 9904B83

Sampled by: J.M. Rosa

Printed Name:

LAB: Sequoia

CHECK ONE (1) BOX ONLY		CT/DT	TURN AROUND TIME	
Quarterly Monitoring	XX	6441	24 hours	☐
Site Investigation	☐	6441	48 hours	☐
Soil Closure/Disposal	☐	6442	10 days	XX (Normal)
Water Closure/Disposal	☐	6443	Other	☐
Soil/Air Rem. or Sys. O & M	☐	6462	NOTE: Notify Lab as soon as possible of 24/48 hr. TAT.	
Water Rem. or Sys. O & M	☐	6463		
Other	☐			

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)	[redacted]	Combination TPH 8015 & BTEX 8020 /MTBE	Alkalinity	Sulfate	Nitrate	Ferrous Iron	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
01 MW-1	4/29/99			W		6					X	X	X	X	X	X			Confirm MTBE	
02 MW-3	4/29/99			W		6					X	X	X	X	X	X			by EPA 8260.	
03 MW-4	4/29/99			W		6					X	X	X	X	X	X				

Relinquished By (signature):	Printed Name: J.M. Rosa	Date: 4/30 Time: 10:45	Received (signature):	Printed Name: Curtis Andrusky	Date: 4-30 Time: 1145
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature):	Printed Name: Pauline Epre	Date: 4-30 Time: 1136
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature):	Printed Name:	Date: Time:

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

WELL GAUGING DATA

Project # 990429R-3 Date 4-29-99 Client Shell

Site 4255 MacArthur Blvd. 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	4					7.58	23.32	TOC	ORC
MW-2	4		9.81	.05	200ml	9.86	-		
MW-3	4	odor				15.43	21.84		ORC
MW-4	2	odor				7.83	30.50		ORC
			ORP Readings / D.O. Readings						
TB-1	4	odor	-132	DTW	6.00	DTB 13.52	3.8		ORC
TB-2	4	odor	-108	DTW	4.76	DTB 13.03	4.2		ORC

SHELL WELL MONITORING DATA SHEET

Project #: 990429 R-3	WIC #: 204-5510-0600
Sampler: SR	Date: 4-29-99
Well I.D.: MW-1	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 23.32	Depth to Water: 7.58
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^2 * 0.163

Purge Method: Bailer / Middleburg / (Electric Submersible) / Extraction Pump / Other: ___

Sampling Method: (Bailer) / Extraction Port / Other: ___

10.2 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 30.6 Gals. (Calculated Volume)

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
12:36	68.8	7.6	1100	71	11	ORC
12:38	68.3	7.5	923	48	22	Installed
12:40	67.8	7.3	896	32	31	

Did well dewater? Yes (No) Gallons actually evacuated: 31

Sampling Time: 12:46 Sampling Date: 4-29-99

Sample I.D.: MW-1 Laboratory: (Sequoia) BCA

~~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: Alkalinity, Ferrous Iron, Nitrate, Sulfate

D.O. (if req'd):	(Pre-purge):	1.2 mg/L	Post-purge:		mg/L
O.R.P. (if req'd):	(Pre-purge):	140 mV	Post-purge:		mV

Background ?

SHELL WELL MONITORING DATA SHEET

Project #: 990429 R-3	WIC #: 204-5560-0600
Sampler: SR	Date: 4-29-99
Well I.D.: MW-2	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: —	Depth to Water: 9.86
Depth to Free Product: 9.81	Thickness of Free Product (feet): .05
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: ____

____ (1 Case Volume (Gals.)) X ____ (Specified Volumes) = ____ Gals. (Calculated Volume)

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
14:30		Bailed SPH		200 ml.		(.05)

Did well dewater? Yes No — Gallons actually evacuated:

Sampling Time: — Sampling Date: 4-29-99

Sample I.D.: MW-2 — 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:

~~DO~~. (if req'd): ORP — Pre-purge: ____ mg/L — ~~Post-purge~~: ____ mg/L

SHELL WELL MONITORING DATA SHEET

Project #: 990429R-3	WIC #: 204-5510-0600
Sampler: SR	Date: 4-29-99
Well I.D.: MW-3	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 21.84	Depth to Water: 15.43
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^2 * 0.163

Purge Method: Bailer / Middleburg / (Electric Submersible) / Extraction Pump / Other: ___

Sampling Method: (Bailer) / Extraction Port / Other: ___

4.1 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 12.3 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
13:52	71.3	6.6	1476	134	4.5	odor
13:53	71.0	6.6	1500	82	9	mildly turbid
13:54	70.6	6.6	1510	51	13	/
	ORC	Installed	/	Emptied	Skimmer & FP	

Did well dewater? Yes (No)	Gallons actually evacuated: 13
Sampling Time: 14:02	Sampling Date: 4-29-99
Sample I.D.: MW-3	Laboratory: (Sequoia) BCA
Analyzed for: (TPH-G BTEX MTBE) TPH-D	Other: nitrate, sulfate, ferrous iron, Alkalinity
Equipment Blank I.D.: @ Time	Duplicate I.D.:
Analyzed for: TPH-G BTEX MTBE TPH-D	Other:

D.O. (if req'd):	(Pre-purge):	1.5 mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	(Pre-purge):	-68 mV	Post-purge:	mV

SHELL WELL MONITORING DATA SHEET

Project #: 990429R-3	WIC #: 204-5510-0600
Sampler: SR	Date: 4-29-99
Well I.D.: MW-4	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 30.50	Depth to Water: 8.02
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^2 * 0.163

Purge Method: Bailer (Middleburg) Electric Submersible Extraction Pump Other: ___

Sampling Method: (Bailer) Extraction Port Other: ___

3.5	X	3	=	10.5 Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
13:12	62.3	6.7	1166	>200	3.5	turbid
13:17	63.0	6.8	1210	>200	6.5	odor
13:22	62.6	6.7	1205	109	10.5	/
						ORC
						Installed

Did well dewater? Yes (No)	Gallons actually evacuated: 10.5
Sampling Time: 13:31	Sampling Date: 4-29-99
Sample I.D.: MW-4	Laboratory: (Sequoia) BCA
Analyzed for: (TPH-G BTEX MTBE TPH-D)	Other: Alkalinity, Nitrate, Sulfate, Ferrous Iron
Equipment Blank I.D.: @ Time	Duplicate I.D.:
Analyzed for: TPH-G BTEX MTBE TPH-D	Other:

D.O. (if req'd):	(Pre-purge):	1.1 mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	(Pre-purge):	-125 mV	Post-purge:	mV