

**Shell Oil Products US**

June 28, 2004

Amir K. Gholami  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

**Subject: Shell-branded Service Station**  
540 Hegenberger Road  
Oakland, California

Alameda County  
JUL 02 2004  
Environmental Health

Dear Mr. Gholami:

Attached for your review and comment is a copy of the *First Quarter 2004 Monitoring Report* for the above referenced site. Upon information and belief, I declare, under penalty of perjury, that the information contained in the attached document is true and correct.

As always, please feel free to contact me directly at (559) 645-9306 with any questions or concerns.

Sincerely,

**Shell Oil Products US**

A handwritten signature in cursive script that reads "Karen Petryna".

Karen Petryna  
Sr. Environmental Engineer

June 28, 2004

Amir K. Gholami, REHS  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Re: **First Quarter 2004 Monitoring Report**  
Shell-branded Service Station  
540 Hegenberger Road  
Oakland, California  
Incident #98995752  
Cambria Project #246-0414-002



Dear Mr. Gholami:

On behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell), Cambria Environmental Technology, Inc. (Cambria) is submitting this groundwater monitoring report in accordance with the reporting requirements of 23 CCR 2652d.

### **FIRST QUARTER 2004 ACTIVITIES**


**Groundwater Monitoring:** Blaine Tech Services, Inc. (Blaine) of San Jose, California gauged water levels, sampled the monitoring wells, calculated groundwater elevations, and compiled the analytical data. The adjacent Arco station located at 566 Hegenberger Road was sampled concurrently. Cambria prepared a vicinity map which includes previously submitted well survey information (Figure 1) and a groundwater elevation contour map (Figure 2). Blaine's report, presenting the laboratory reports and supporting field documents is included as Attachment A. Data from the Arco site is presented on Figure 2 and included as Attachment B.

**Historical Interim Remediation Summary:** From July 1999 through June 2000, groundwater extraction (GWE) was performed at the site to remove dissolved-phase hydrocarbons and methyl tert-butyl ether (MTBE) from beneath the site. From June through December 2000, dual-phase vacuum extraction (DVE) was conducted to enhance GWE and to extract vapor-phase hydrocarbon and MTBE from the soil as well. DVE was discontinued after the December 2000 event, and monthly DVE events were resumed in May 2001. Due to low vapor mass-removal rates, DVE was discontinued in October 2001, and monthly GWE was re-initiated. Wells MW-1 and MW-3 and tank backfill well BW-D were used for extraction until April 2002, when

**Cambria  
Environmental  
Technology, Inc.**

5900 Hollis Street  
Suite A  
Emeryville, CA 94608  
Tel (510) 420-0700  
Fax (510) 420-9170

extraction from the tank backfill was switched from well BW-D to BW-B due to higher historic MTBE concentrations observed in this well. A total of 13.7 lbs. of MTBE was removed from the subsurface during DVE and GWE events. Monthly GWE events were discontinued in March 2003 when construction of a fixed GWE system was initiated.



**GWE System:** During the first quarter, Cambria continued to operate the GWE system. Monitoring wells MW-1, MW-3, and MW-5 were used as extraction wells. Extraction from well BW-B was discontinued on December 18, 2003 due to decreasing MTBE concentrations in groundwater in the tank backfill. This well was operated briefly during April 2004 to assist in dewatering the tank pit area during construction activities described below. On the date of the sampling event, the pumps in extraction wells MW-1 and MW-3 were not functioning properly, so minimal drawdown is observed during the sampling event. Subsequently the pump in MW-3 has been replaced, and the pump in MW-1 was cleaned and serviced, improving extraction from these two wells. Table 1 summarizes system analytical data. Groundwater level measurements and flow meter readings have been recorded at various times of operation to assess system production. Table 2 summarizes the field data and system operation and calculates mass removal. Based on the field data, the GWE system operated at average flow rates ranging from approximately 0.09 to 1.52 gallons per minute.

Through May 27, 2004, a total of 300,048 gallons of groundwater has been extracted. A total of 18.3 pounds of MTBE has been recovered. Mass removal data are presented in Table 2.

Influent samples collected from the GWE system continue to show a decreasing trend in MTBE concentrations since system operation was initiated. Data from the most recent influent sampling event on May 14, 2004 shows an MTBE concentration which has decreased to 270 parts per billion (ppb), a decrease of two orders of magnitude from its historical maximum of 29,000 ppb shortly after system startup. Groundwater monitoring well sampling data also continues to demonstrate decreasing trends in MTBE concentrations.

## ANTICIPATED SECOND QUARTER 2004 ACTIVITIES

**Underground Storage Tank System Upgrades:** During the second quarter, construction work was performed to add containment beneath the gasoline product dispensers and to install enhanced vapor recovery equipment. Cambria collected soil samples during these construction activities. A report documenting this work will be submitted separately.

**Groundwater Monitoring:** Blaine will gauge water levels, sample the monitoring wells using the non-purging method, and tabulate the data. In addition, Blaine will sample tank backfill well BW-D. The sampling event will take place concurrently with sampling at the Arco station located at 566 Hegenberger Road. Arco and Shell will exchange water level and analytical data on these events. Cambria will prepare a report documenting those activities.

**GWE System:** We will operate the system under the conditions of the East Bay Municipal Utility District discharge permit.



**CLOSING**

We appreciate the opportunity to work with you on this project. Please call Diane Lundquist at (510) 420-3334 if you have any questions or comments.

Sincerely,  
**Cambria Environmental Technology, Inc**

Diane Lundquist, P.E.  
Principal Engineer



Figures: 1 - Vicinity/Area Well Survey Map  
2 - Groundwater Elevation Contour Map

Tables: 1 - Groundwater Extraction – System Analytical Data  
2 - Groundwater Extraction – Operation and Mass Removal Data

Attachments: A - Blaine Groundwater Monitoring Report and Field Notes  
B - Arco Groundwater Data

cc: Karen Petryna, Shell Oil Products US, 20945 S. Wilmington Ave., Carson, CA 90810

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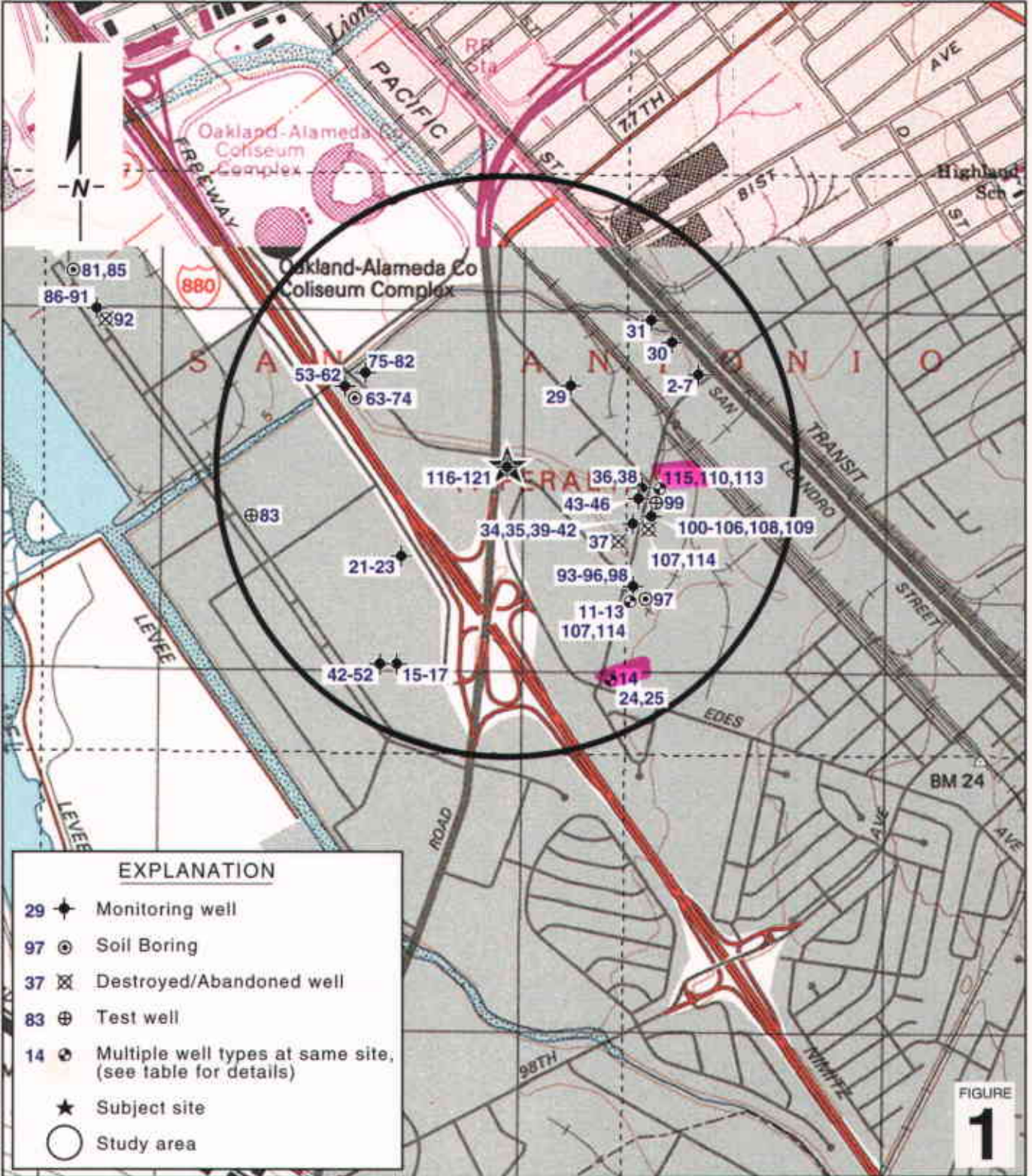
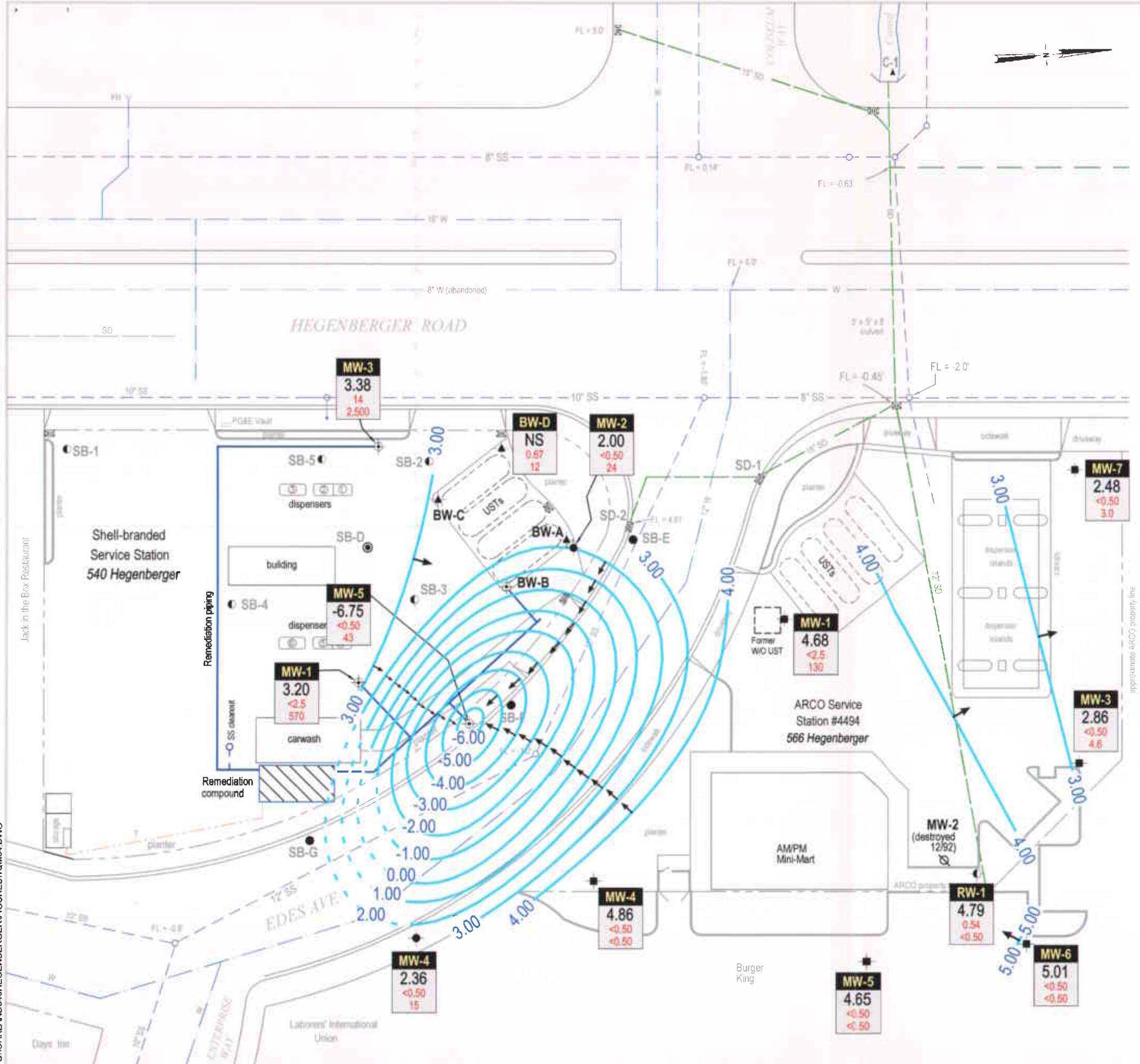


FIGURE 1

**Shell-branded Service Station**  
 540 Hegenberger Road  
 Oakland, California  
 Incident #98995752



**Area Well Survey**  
 (1/2-Mile Radius)



### EXPLANATION

- MW-2 ● Shell monitoring well
- BW-A ▲ Tank backfill well
- MW-1 ⊕ Well used for groundwater extraction
- MW-1 ⊕ ARCO monitoring well
- RW-1 ⊕ ARCO recovery well
- SB-1 ● Soil boring location (March 1998)
- SB-D ● Soil boring location (July 1998)
- SB-E ● Soil boring location (August 2000)
- C-1 ▲ Canal sampling location
- FH ◊ Fire hydrant
- FL = 5.0' Flowline elevation (msl)
- - - Sanitary sewer main (SS)
- Water line (W)
- Storm drain (SD)
- - - Telephone line (T)
- ▶ Flow direction
- NS Not surveyed
- Groundwater flow direction
- XX.XX Groundwater elevation contour, in feet above msl, approximately located, dashed where inferred

Well	ELEV	Benzene	MTBE
MW-3	3.38	14	2.500
MW-2	2.00	<0.50	24
MW-5	-6.75	<0.50	43
MW-1	3.20	<2.5	570
MW-1	4.68	<2.5	130
MW-3	2.86	<0.50	4.6
MW-4	4.86	<0.50	<0.50
MW-4	2.36	<0.50	15
MW-5	4.65	<0.50	<0.50
MW-6	5.01	<0.50	<0.50
MW-7	2.48	<0.50	3.0

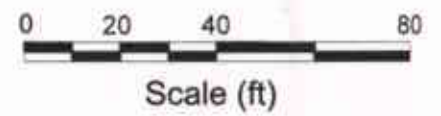
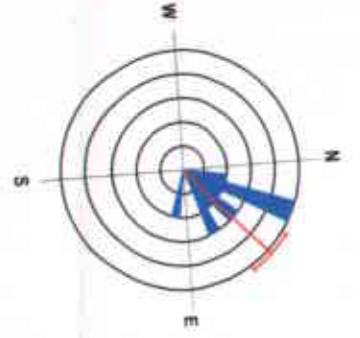


FIGURE  
**2**

**Groundwater Elevation  
Contour Map**

March 18, 2004

C A M B R I A

**Shell-branded Service Station**

540 Hegenberger Road  
Oakland, California  
Incident #98995752

**Table 1: Groundwater Extraction - System Analytical Data - Shell-branded Service Station, Incident #98995752, 540 Hegenberger, Oakland, CA**

Sample Date (mm/dd/yyyy)	Influent			Midfluent 1			Midfluent 2			Effluent		
	TPHg Conc. (ppb)	Benzene Conc. (ppb)	MTBE Conc (ppb)	TPHg Conc. (ppb)	Benzene Conc (ppb)	MTBE Conc. (ppb)	TPHg Conc. (ppb)	Benzene Conc (ppb)	MTBE Conc. (ppb)	TPHg Conc. (ppb)	Benzene Conc. (ppb)	MTBE Conc (ppb)
04/28/2003	<1,000	<10	2,700	<50	<0.50	<0.50	<50	<0.50	<0.50	<50	<0.50	<0.50
05/12/2003	<10,000	<100	21,000	51 <sup>a</sup>	<0.50	<0.50	140 <sup>a</sup>	<0.50	<0.50	99 <sup>a</sup>	<0.50	<0.50
05/27/2003	<10,000	<100	29,000	<50	<0.50	<0.50	<50	<0.50	<0.50	<50	<0.50	<0.50
06/09/2003	<25,000	<250	20,000	<50	<0.50	<0.50	<50	<0.50	<0.50	<50	<0.50	<0.50
06/23/2003	<500	<5.0	1,300	<50	<0.50	<0.50	<50	<0.50	<0.50	<50	<0.50	<0.50
07/08/2003	<1,000	<10	2,000	<50	<0.50	<0.50	<50	<0.50	<0.50	<50	<0.50	<0.50
07/25/2003	<500	<50	16,000	<50	<0.50	<0.50	<50	<0.50	<0.50	<50	<0.50	<0.50
08/05/2003	<5,000	<50	11,000	<50	<0.50	<5.0	<50	<0.50	<5.0	<50	<0.50	<5.0
08/19/2003	<10,000	<100	13,000	<50	<0.50	<5.0	<50	<0.50	<5.0	<50	<0.50	<5.0
09/05/2003	<5,000	<50	8,900	<50	<0.50	<5.0	<50	<0.50	<5.0	<50	<0.50	<5.0
09/19/2003	<2,000	<20	6,900	58	<0.50	<5.0	<50	<0.50	<5.0	<50	<0.50	<5.0
10/01/2003	<2,500	<25	5,300	<100	<1.0	<10	<50	<0.50	<5.0	<50	<0.50	<5.0
11/14/2003	<1,300	20	1,300	<50	<0.50	<5.0	<50	<0.50	<5.0	<50	<0.50	<5.0
12/02/2003	<1,300	45	1,200	<50	<0.50	<5.0	<50	<0.50	<5.0	<50	<0.50	<5.0
12/18/2003	<1,000	11	1,200	<500	<5.0	<50	<50	<0.50	<5.0	<50	<0.50	<5.0
01/06/2004	<250	<2.5	240	<500	<5.0	<50	<50	<0.50	<5.0	<50	<0.50	<5.0
02/04/2004	<500	<5.0	620	<50	<0.50	<0.50	<50	<0.50	<0.50	<50	<0.50	<0.50
03/09/2004	<100	<1.0	100	<50	<0.50	<0.50	NS	NS	NS	NS	NS	NS
04/02/2004	<100	<1.0	110	<50	<0.50	<0.50	NS	NS	NS	NS	NS	NS
05/14/2004	<100	<1.0	270	<50	<0.50	<5.0	NS	NS	NS	NS	NS	NS

**Abbreviations & Notes:**

TPHg = Total purgeable hydrocarbons as gasoline

**Table 1: Groundwater Extraction - System Analytical Data - Shell-branded Service Station, Incident #98995752, 540 Hegenberger, Oakland, CA**

Sample Date (mm/dd/yyyy)	Influent			Midfluent 1			Midfluent 2			Effluent		
	TPHg Conc. (ppb)	Benzene Conc. (ppb)	MTBE Conc (ppb)	TPHg Conc. (ppb)	Benzene Conc (ppb)	MTBE Conc. (ppb)	TPHg Conc. (ppb)	Benzene Conc (ppb)	MTBE Conc. (ppb)	TPHg Conc. (ppb)	Benzene Conc. (ppb)	MTBE Conc (ppb)

MTBE = Methyl tert-butyl ether

Conc. = Concentration

ppb = parts per billion, equivalent to µg/l

TPHg, benzene, and MTBE analyzed by EPA Method 8260B

a = Hydrocarbons reported in the gasoline range do not match the laboratory gasoline standard.



**Table 2: Groundwater Extraction - Operation and Mass Removal Data - Shell-branded Service Station, Incident #98995752, 540 Hegenberger Road , Oakland, CA**

Site Visit (mm/dd/yy)	Hour Meter (hours)	Period				TPHg			Benzene			MTBE		
		Flow Meter Reading (gal)	Period Volume (gal)	Operational Flow Rate (gpm)	Cumulative Volume (gal)	TPHg Conc. (ppb)	Period Removal (pounds)	Cumulative Removal (pounds)	Benzene Conc. (ppb)	Period Removal (pounds)	Cumulative Removal (pounds)	MTBE Conc. (ppb)	Period Removal (pounds)	Cumulative Removal (pounds)
04/28/03	3.3	840	0	0.00	0	<1,000	0.000	0.000	<10	0.000	0.000	2,700	0.000	0.000
05/02/03	101.3	6,680	5,840	0.99	5,840		0.024	0.024		0.000	0.000		0.132	0.132
05/12/03	341.2	23,885	17,205	1.20	23,045	<10,000	0.718	0.742	<100	0.007	0.007	21,000	3.015	3.146
05/27/03	699.9	45,085	21,200	0.99	44,245	<10,000	0.885	1.627	<100	0.009	0.016	29,000	5.130	8.277
06/09/03	1011.8	58,453	13,368	0.71	57,613	<25,000	1.394	3.021	<250	0.014	0.030	20,000	2.231	10.507
06/23/03	1347.2	67,082	8,629	0.43	66,242	<500	0.018	3.039	<5.0	0.000	0.030	1,300	0.094	10.601
07/08/03	1706.9	80,092	13,010	0.60	79,252	<1,000	0.054	3.093	<10	0.001	0.031	2,000	0.217	10.818
07/25/03	2113.6	97,580	17,488	0.72	96,740	<500	0.036	3.130	<50	0.004	0.035	16,000	2.335	13.153
08/05/03	2136.0	98,536	956	0.71	97,696	<5,000	0.020	3.150	<50	0.000	0.035	11,000	0.088	13.241
08/19/03	2473.8	114,245	15,709	0.78	113,405	<10,000	0.655	3.805	<100	0.007	0.041	13,000	1.704	14.945
09/05/03	2881.3	125,020	10,775	0.44	124,180	<5,000	0.225	4.030	<50	0.002	0.044	8,900	0.800	15.745
09/19/03	3218.8	136,594	11,574	0.57	135,754	<2,000	0.097	4.126	<20	0.001	0.045	6,900	0.666	16.411
10/01/03	3503.6	145,329	8,735	0.51	144,489	<2,500	0.091	4.218	<25	0.001	0.045	5,300	0.386	16.798
10/17/03	3821.0	154,978	9,649	0.51	154,138		0.101	4.318		0.001	0.046		0.427	17.224
10/31/03	4155.5	165,292	10,314	0.51	164,452		0.108	4.426		0.001	0.048		0.456	17.681
11/14/03	4299.6	171,405	6,113	0.71	170,565	<1,300	0.033	4.459	20	0.001	0.049	1,300	0.066	17.747
11/19/03	4300.4	171,405	0	0.00	170,565		0.000	4.459		0.000	0.049		0.000	17.747
11/26/03	4468.3	179,248	7,843	0.78	178,408		0.043	4.502		0.001	0.050		0.085	17.832
12/02/03	4614.1	186,020	6,772	0.77	185,180	<1,300	0.037	4.538	45	0.003	0.052	1,200	0.068	17.900
12/18/03	5000.8	205,130	19,110	0.82	204,290		0.104	4.642		0.007	0.060		0.191	18.091
01/02/04	5361.9	209,447	4,317	0.20	208,607		0.023	4.665		0.002	0.061		0.043	18.134
01/06/04	5451.1	210,081	634	0.12	209,241	<250	0.001	4.666	<2.5	0.000	0.061	240	0.001	18.136
01/20/04	5788.5	214,091	4,010	0.20	213,251		0.004	4.670		0.000	0.061		0.008	18.144
01/28/04	5842.8	215,451	1,360	0.42	214,611		0.001	4.672		0.000	0.061		0.003	18.146
02/04/04	5987.0	220,414	4,963	0.57	219,574	<500	0.010	4.682	<5.0	0.000	0.061	620	0.026	18.172
02/18/04	6343.4	222,732	2,318	0.11	221,892		0.005	4.687		0.000	0.061		0.012	18.184
02/20/04	6392.8	223,811	1,079	0.36	222,971		0.002	4.689		0.000	0.061		0.006	18.190
03/09/04	6688.4	229,070	5,259	0.30	228,230	<100	0.002	4.691	<1.0	0.000	0.061	100	0.004	18.194
03/25/04	7074.7	234,471	5,401	0.23	233,631		0.002	4.693		0.000	0.061		0.005	18.199
04/02/04	7262.7	237,008	2,537	0.22	236,168	<100	0.001	4.695	<1.0	0.000	0.062	110	0.002	18.201
04/14/04	7554.7	238,665	1,657	0.09	237,825		0.001	4.695		0.000	0.062		0.002	18.202
04/27/04	7864.7	266,992	28,327	1.52	266,152		0.012	4.707		0.000	0.062		0.026	18.228

**Table 2: Groundwater Extraction - Operation and Mass Removal Data - Shell-branded Service Station, Incident #98995752, 540 Hegenberger Road , Oakland, CA**

Site Visit (mm/dd/yy)	Hour Meter (hours)	Period				TPHg			Benzene			MTBE		
		Flow Meter Reading (gal)	Period Volume (gal)	Operational Flow Rate (gpm)	Cumulative Volume (gal)	TPHg Conc. (ppb)	Period Removal (pounds)	Cumulative Removal (pounds)	Benzene Conc. (ppb)	Period Removal (pounds)	Cumulative Removal (pounds)	MTBE Conc. (ppb)	Period Removal (pounds)	Cumulative Removal (pounds)
05/14/04	8271.1	280,917	13,925	0.57	280,077	<100	0.006	4.713	<1.0	0.000	0.062	270	0.031	18.260
05/26/04	8556.7	300,888	19,972	1.17	300,048		0.008	4.721		0.000	0.062		0.045	18.305
		<b>Total Extracted Volume= 300,048</b>				<b>Total Pounds Removed: 4.721</b>			<b>Total Pounds Removed: 0.062</b>			<b>Total Pounds Removed: 18.305</b>		
		<b>Average Period Operational Flow Rate= 0.58</b>				<b>Total Gallons Removed: 0.765</b>			<b>Total Gallons Removed: 0.010</b>			<b>Total Gallons Removed: 2.964</b>		

**Abbreviations & Notes:**

TPHg = Total purgeable hydrocarbons as gasoline

MTBE = Methyl tert-butyl ether

Conc. = Concentration

ppb = Parts per billion, equivalent to µg/L

µg/L = Micrograms per liter

L = Liter gal = Gallon g = Gram

Mass removed based on the formula: volume extracted (gal) x Concentration (µg/L) x (g/10<sup>6</sup>µg) x (pound/453.6g) x (3.785 L/gal)

When constituents are not detected, the concentration is assumed to be equal to half the detection limit in subsequent calculations.

Volume removal data based on the formula: mass (pounds) x (density)<sup>-1</sup> (cc/g) x 453.6 (g/pound) x (L/1000 cc) \* (gal/3.785 L)

Density inputs: TPHg = 0.73 g/cc, TPHd = 0.87 g/cc, MTBE = 0.74 g/cc

TPHg, BTEX, and MTBE analyzed by EPA Method 8260B

System started on 4/28/03 with 3.3 hours and 880 gallons on flow meter.

**ATTACHMENT A**  
**Blaine Groundwater Monitoring Report**  
**and Field Notes**

**BLAINE**  
TECH SERVICES, INC.



1680 ROGERS AVENUE  
SAN JOSE, CA 95112-1105  
(408) 573-7771 FAX  
(408) 573-0555 PHONE  
CONTRACTOR'S LICENSE #746684  
www.blainetech.com

May 7, 2004

Karen Petryna  
Shell Oil Products US  
P.O. Box 7869  
Burbank, CA 91510-7869

First Quarter 2004 Groundwater Monitoring at  
Shell-branded Service Station  
540 Hegenberger Road  
Oakland, CA

Monitoring performed on March 18, 2004

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**Groundwater Monitoring Report 040318-DW-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, 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. Our activities at this site consisted of objective data and sample collection only. No interpretation of analytical results, defining of hydrological conditions or formulation of recommendations was performed.

Please call if you have any questions.

Yours truly,

Leon Gearhart  
Project Coordinator

LG/ks

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

cc: Anni Kreml  
Cambria Environmental Technology, Inc.  
5900 Hollis Street, Suite A  
Oakland, CA 94608

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**540 Hegenberger Road**  
**Oakland, CA**

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.)	GW Elevation (MSL)	DO Reading (ppm)
MW-1 (a)	08/26/1998	2,700	28	55	59	39	33,000	NA	10.54	7.91	2.63	1.8
MW-1 (b)	08/26/1998	<1,000	22	<10	<10	<10	17,000	NA	10.54	7.91	2.63	2.2
MW-1	12/28/1998	<5,000	<50.0	<50.0	<50.0	<50.0	153,000	33,000	10.54	8.75	1.79	1.9
MW-1	03/29/1999	<2,000	<20.0	<20.0	<20.0	<20.0	693,000	NA	10.54	8.32	2.22	2.0
MW-1	06/22/1999	20,000	<200	<200	<200	<200	150,000	NA	10.54	9.05	1.49	1.7
MW-1	09/30/1999	<2,500	<25.0	<25.0	<25.0	<25.0	30,900	NA	10.54	8.35	2.19	2.6
MW-1	11/19/1999	NA	NA	NA	NA	NA	NA	NA	10.54	9.58	0.96	NA
MW-1	11/24/1999	NA	NA	NA	NA	NA	NA	NA	10.54	9.65	0.89	NA
MW-1	12/02/1999	NA	NA	NA	NA	NA	NA	NA	10.54	9.55	0.99	NA
MW-1	12/10/1999	<50.0	29.7	<20.0	<20.0	<20.0	76,300	NA	10.54	8.86	1.68	1.2
MW-1	03/02/2000	<2,500	<25.0	<25.0	<25.0	<25.0	27,600	NA	10.54	8.83	1.71	3.2
MW-1	06/08/2000	<2,000	<20.0	<20.0	<20.0	<20.0	59,000	67,600	10.54	7.78	2.76	1.9
MW-1	09/05/2000	<10,000	411	<100	<100	<100	71,100	115,000e	10.54	7.84	2.70	NA
MW-1	12/15/2000	35,600	1,310	<50.0	<50.0	<50.0	136,000	f	10.54	7.65	2.89	NA
MW-1	03/09/2001	<10,000	1,390	<100	<100	<100	89,600	164,000	10.54	6.44	4.10	NA
MW-1	06/27/2001	<5,000	<50	<50	<50	<50	NA	19,000	10.54	8.46	2.08	NA
MW-1	09/19/2001	<5,000	<50	<50	<50	<50	NA	52,000	10.54	8.10	2.44	NA
MW-1	12/31/2001	<5,000	<25	<25	<25	<25	NA	17,000	10.54	7.31	3.23	NA
MW-1	03/14/2002	<20,000	<200	<200	<200	<200	NA	60,000	10.54	7.68	2.86	NA
MW-1	06/25/2002	<5,000	<50	<50	<50	<50	NA	34,000	10.54	8.40	2.14	NA
MW-1	09/19/2002	<2,500	<25	<25	<25	<25	NA	18,000	10.52	8.58	1.94	NA
MW-1	12/12/2002	<5,000	<50	<50	<50	<50	NA	30,000	10.52	8.41	2.11	NA
MW-1	01/02/2003	NA	<0.50	<0.50	<0.50	<1.0	NA	NA	10.52	7.45	3.07	NA
MW-1	03/20/2003 g	3,800	<25	<25	<25	<25	5,500	NA	10.52	8.21	2.31	NA
MW-1	06/23/2003	<10,000	<100	<100	<100	<200	NA	35,000	10.52	9.02	1.50	NA
MW-1	09/22/2003	<5,000	<50	<50	<50	<100	NA	15,000	10.52	15.74	-5.22	NA
MW-1	12/03/2003	<1,300	<13	<13	<13	<25	NA	3,600	10.52	18.35 h	NA	NA
MW-1	03/18/2004	<250	<2.5	<2.5	<2.5	<5.0	NA	570	10.52	7.32	3.20	NA
MW-2 (a)	08/26/1998	<250	3.2	<2.5	<2.5	<2.5	4,000	NA	9.21	7.18	2.03	2.4

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**540 Hegenberger Road**  
**Oakland, CA**

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.)	GW Elevation (MSL)	DO Reading (ppm)
MW-2 (b)	08/26/1998	<250	3.1	<2.5	<2.5	<2.5	4,800	NA	9.21	7.18	2.03	2.7
MW-2 (D)(b)	08/26/1998	<250	4.8	<2.5	<2.5	6.0	3,300	NA	9.21	7.18	2.03	2.7
MW-2	12/28/1998	<50.0	<0.500	<0.500	<0.500	<0.500	28.8	NA	9.21	7.34	1.87	2.1
MW-2	03/29/1999	235	<0.500	<0.500	<0.500	3.4	101	NA	9.21	6.85	2.36	2.0
MW-2	06/22/1999	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	9.21	7.10	2.11	1.9
MW-2	09/30/1999	<50.0	<0.500	<0.500	<0.500	<0.500	1,700	NA	9.21	8.06	1.15	1.0
MW-2	12/10/1999	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	9.21	8.61	0.60	1.4
MW-2	03/02/2000	<500	11.5	<5.00	<5.00	<5.00	5,280	NA	9.21	6.33	2.88	0.4
MW-2	06/08/2000	<50.0	0.670	<0.500	<0.500	<0.500	3,160	NA	9.21	6.87	2.34	1.6
MW-2	09/05/2000	<1,000	<10.0	<10.0	<10.0	<10.0	9,600	NA	9.21	6.79	2.42	NA
MW-2	12/15/2000	<200	<2.00	<2.00	<2.00	<2.00	6,320	NA	9.21	6.76	2.45	NA
MW-2	03/09/2001	<500	<5.00	<5.00	<5.00	<5.00	17,200	NA	9.21	6.28	2.93	NA
MW-2	06/27/2001	<100	1.4	<1.0	<1.0	<2.0	NA	470	9.21	7.12	2.09	NA
MW-2	09/19/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	330	9.21	7.17	2.04	NA
MW-2	12/31/2001	<100	<1.0	<1.0	<1.0	<1.0	NA	420	9.21	6.24	2.97	NA
MW-2	03/14/2002	<250	4.5	3.3	<2.5	<2.5	NA	1,600	9.21	6.72	2.49	NA
MW-2	06/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	110	9.21	7.23	1.98	NA
MW-2	09/19/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	90	9.19	7.48	1.71	NA
MW-2	12/12/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	170	9.19	7.33	1.86	NA
MW-2	03/20/2003 g	56	<0.50	<0.50	<0.50	<0.50	58	NA	9.19	7.65	1.54	NA
MW-2	06/23/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	44	9.19	8.72	0.47	NA
MW-2	09/22/2003	<250	<2.5	<2.5	<2.5	<5.0	NA	37	9.19	8.84	0.35	NA
MW-2	12/03/2003	<250	<2.5	<2.5	<2.5	<5.0	NA	99	9.19	8.95	0.24	NA
<b>MW-2</b>	<b>03/18/2004</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>NA</b>	<b>24</b>	<b>9.19</b>	<b>7.19</b>	<b>2.00</b>	<b>NA</b>
MW-3 (a)	08/26/1998	2,300	180	330	<0.50	420	44,000	NA	9.45	6.52	2.93	1.8
MW-3 (b)	08/26/1998	<50	<0.50	<0.50	<0.50	<0.50	52,000	75,000	9.45	6.52	2.93	2.3
MW-3	12/28/1998	<5,00	139	<50.0	<50.0	<50.0	15,100	NA	9.45	6.73	2.72	1.7
MW-3	03/29/1999	52,500	5,500	6,900	1,360	6,250	508,000	630,000 (c)	9.45	6.21	3.24	2.1
MW-3	06/22/1999	58,000	6,600	9,850	1,640	6,950	677,000	653,000	9.45	7.00	2.45	1.3

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**540 Hegenberger Road**  
**Oakland, CA**

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.)	GW Elevation (MSL)	DO Reading (ppm)
MW-3	09/30/1999	4,360	121	122	36.1	647	33,700	35,600	9.45	6.84	2.61	0.6
MW-3	11/19/1999	NA	NA	NA	NA	NA	NA	NA	9.45	7.93	1.52	NA
MW-3	11/24/1999	NA	NA	NA	NA	NA	NA	NA	9.45	8.25	1.20	NA
MW-3	12/02/1999	NA	NA	NA	NA	NA	NA	NA	9.45	7.55	1.90	NA
MW-3	12/10/1999	4,220	973	26.3	273	584	88,200	NA	9.45	7.28	2.17	2.5
MW-3	03/02/2000	65,300	5,210	10,300	2,650	15,100	56,800	59,800e	9.45	5.87	3.58	d
MW-3	06/08/2000	72,700	3,570	10,200	2,100	13,400	44,400	NA	9.45	5.32	4.13	1.1
MW-3	09/05/2000	26,100	959	2,910	1,090	5,640	24,000	NA	9.45	5.60	3.85	NA
MW-3	12/15/2000	5,190	438	8.39	483	530	19,100	11,800f	9.45	6.27	3.18	NA
MW-3	03/09/2001	5,880	472	42.2	392	1,290	41,800	NA	9.45	5.71	3.74	NA
MW-3	06/27/2001	9,100	330	79	140	1,600	NA	31,000	9.45	6.88	2.57	NA
MW-3	09/19/2001	790	14	18	17	67	NA	8,100	9.45	6.70	2.75	NA
MW-3	12/31/2001	<5,000	220	<50	86	<50	NA	22,000	9.45	5.92	3.53	NA
MW-3	03/14/2002	<2,500	<25	<25	<25	<25	NA	12,000	9.45	6.25	3.20	NA
MW-3	06/25/2002	<10,000	160	<100	<100	<100	NA	42,000	9.45	6.65	2.80	NA
MW-3	09/19/2002	<10,000	650	<100	280	360	NA	84,000	9.45	6.51	2.94	NA
MW-3	12/12/2002	<10,000	170	<100	<100	<100	NA	45,000	9.45	6.97	2.48	NA
MW-3	01/02/2003	NA	59	<5.0	5.3	<10	NA	NA	9.45	5.90	3.55	NA
MW-3	03/20/2003 g	5,100	<50	<50	<50	<50	4,400	NA	9.45	6.87	2.58	NA
MW-3	06/23/2003	<5,000	<50	<50	<50	<100	NA	8,100	9.45	13.80	-4.35	NA
MW-3	09/22/2003	<250	<2.5	4.6	<2.5	<5.0	NA	470	9.45	6.31	3.14	NA
MW-3	12/03/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	180	9.45	14.77 h	NA	NA
<b>MW-3</b>	<b>03/18/2004</b>	<b>&lt;1,000</b>	<b>14</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;20</b>	<b>NA</b>	<b>2,500</b>	<b>9.45</b>	<b>6.07</b>	<b>3.38</b>	<b>NA</b>
MW-4	09/25/2000	NA	NA	NA	NA	NA	NA	NA	9.88	7.64	2.24	NA
MW-4	12/15/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	9.88	7.55	2.33	NA
MW-4	03/09/2001	<50.0	<0.500	0.730	<0.500	0.529	3.16	NA	9.88	7.04	2.84	NA
MW-4	06/27/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.88	7.76	2.12	NA
MW-4	09/19/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.88	7.69	2.19	NA
MW-4	12/31/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.88	7.08	2.80	NA



**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**540 Hegenberger Road**  
**Oakland, CA**

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.)	GW Elevation (MSL)	DO Reading (ppm)
MW-4	03/14/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.88	7.57	2.31	NA
MW-4	06/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.88	8.50	1.38	NA
MW-4	09/19/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.88	8.22	1.66	NA
MW-4	12/12/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.88	8.08	1.80	NA
MW-4	03/20/2003 g	<50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	9.88	7.92	1.96	NA
MW-4	06/23/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	<5.0	9.88	8.18	1.70	NA
MW-4	09/22/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	16	9.88	8.28	1.60	NA
MW-4	12/03/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	15	9.88	8.44	1.44	NA
<b>MW-4</b>	<b>03/18/2004</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>NA</b>	<b>15</b>	<b>9.88</b>	<b>7.52</b>	<b>2.36</b>	<b>NA</b>
MW-5	06/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	8.36	NA	NA
MW-5	06/25/2002	<10,000	<100	<100	<100	<100	NA	60,000	NA	8.30	NA	NA
MW-5	09/19/2002	<2,000	<20	<20	<20	<20	NA	7,200	10.03	8.44	1.59	NA
MW-5	12/12/2002	<5,000	<50	<50	<50	<50	NA	33,000	10.03	8.49	1.54	NA
MW-5	03/20/2003 g	12,000	<50	<50	<50	<50	15,000	NA	10.03	8.23	1.80	NA
MW-5	06/23/2003	<1,000	<10	<10	<10	<20	NA	1,700	10.03	16.70	-6.67	NA
MW-5	09/22/2003	<2,500	<25	<25	<25	<50	NA	4,400	10.03	16.70	-6.67	NA
MW-5	12/03/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	70	10.03	16.79	-6.76	NA
<b>MW-5</b>	<b>03/18/2004</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>NA</b>	<b>43</b>	<b>10.03</b>	<b>16.78</b>	<b>-6.75</b>	<b>NA</b>
C-1	09/19/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	1.44	NA	NA
C-1	03/29/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	2.59	NA	NA
C-1	06/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	3.72	NA	NA
C-1	09/19/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	3.08	NA	NA
C-1	12/12/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	0.64	NA	NA
C-1	03/20/2003 g	<50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	NA	4.61	NA	NA
SD-1	09/19/2001	Unable to sample		NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	03/29/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	06/25/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**540 Hegenberger Road**  
**Oakland, CA**

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.)	GW Elevation (MSL)	DO Reading (ppm)
SD-1	09/19/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	12/12/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	03/20/2003	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	09/19/2001	Unable to sample		NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	03/29/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	06/25/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	09/19/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	12/12/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	03/20/2003	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BW-A	06/22/1999	318	<0.50	<0.50	0.590	1.48	4,470	NA	NA	4.71	NA	1.1
BW-A	06/25/2002	<500	<5.0	<5.0	<5.0	18	NA	3,100	NA	5.14	NA	NA
BW-A	09/19/2002	<200	<2.0	<2.0	<2.0	<2.0	NA	<20	NA	7.19	NA	NA
BW-A	12/12/2002	<500	<5.0	<5.0	<5.0	<5.0	NA	2,900	NA	6.40	NA	NA
BW-A	03/20/2003 g	<2,500	<25	<25	<25	<25	<250	NA	NA	5.36	NA	NA
BW-A	06/23/2003	<1,000	<10	<10	<10	<20	NA	<100	NA	10.27	NA	NA
BW-B	06/22/1999	<250	<2.5	<2.5	<2.5	<2.5	8,600	NA	NA	5.90	NA	1.2
BW-B	06/27/2001	<5,000	<50	<50	<50	<50	NA	40,000	NA	5.83	NA	NA
BW-B	12/31/2001	<2,000	<20	<20	<20	<20	NA	9,200	NA	4.19	NA	NA
BW-B	03/14/2002	<2,000	<20	<20	<20	<20	NA	9,400	NA	5.24	NA	NA
BW-B	06/25/2002	<2,000	<20	<20	<20	<20	NA	6,600	NA	6.19	NA	NA
BW-B	09/19/2002	<500	<5.0	<5.0	<5.0	<5.0	NA	<50	NA	8.46	NA	NA
BW-B	12/12/2002	<500	<5.0	<5.0	<5.0	<5.0	NA	1,700	NA	7.46	NA	NA
BW-B	03/20/2003 g	170	<1.0	<1.0	<1.0	<1.0	190	NA	NA	6.23	NA	NA
BW-B	06/23/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	43	NA	9.95	NA	NA
BW-C	06/22/1999	<50	<0.50	<0.50	<0.50	0.98	11,000	NA	NA	5.91	NA	1.6
BW-C	06/25/2002	<5,000	<50	<50	<50	<50	NA	20,000	NA	6.49	NA	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**540 Hegenberger Road**  
**Oakland, CA**

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.)	GW Elevation (MSL)	DO Reading (ppm)
BW-C	09/19/2002	<1,000	<10	<10	<10	<10	NA	400	NA	8.52	NA	NA
BW-C	12/12/2002	<2,000	<20	<20	<20	<20	NA	8,000	NA	7.57	NA	NA
BW-C	03/20/2003 g	270	<1.0	<1.0	<1.0	<1.0	250	NA	NA	6.48	NA	NA
BW-C	06/23/2003	<1,000	<10	<10	<10	<20	NA	170	NA	11.48	NA	NA
BW-D	06/22/1999	<50.0	<0.500	<0.500	<0.500	<0.500	2,190	NA	NA	4.78	NA	1.4
BW-D	06/25/2002	Well inaccessible		NA	NA	NA	NA	NA	NA	NA	NA	NA
BW-D	07/02/2002	<1,000	23	<10	<10	<10	NA	<100	NA	6.36	NA	NA
BW-D	09/19/2002	<250	<2.5	<2.5	<2.5	<2.5	NA	<25	NA	7.25	NA	NA
BW-D	12/12/2002	<5,000	<50	<50	<50	<50	NA	16,000	NA	6.21	NA	NA
BW-D	03/20/2003 g	71	<0.50	<0.50	<0.50	<0.50	55	NA	NA	5.23	NA	NA
BW-D	06/23/2003	<1,000	<10	<10	<10	<20	NA	<100	NA	10.25	NA	NA
BW-D	09/22/2003	<100	<1.0	<1.0	<1.0	<2.0	NA	120	NA	10.18	NA	NA
BW-D	12/03/2003	<1,300	110	<13	<13	29	NA	560	NA	10.20	NA	NA
BW-D	03/18/2004	<50	0.67	<0.50	<0.50	<1.0	NA	12	NA	3.42	NA	NA

Abbreviations:

TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to June 27, 2001, analyzed by EPA Method 8015.

BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to June 27, 2001, analyzed by EPA Method 8020.

MTBE = Methyl-tertiary-butyl ether

TOC = Top of Casing Elevation

GW = Groundwater

DO = Dissolved Oxygen

ppm = Parts per million

ug/L = Parts per billion

MSL = Mean sea level

ft = Feet

<n = Below detection limit

D = Duplicate sample

NA = Not applicable

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**540 Hegenberger Road**  
**Oakland, CA**

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.)	GW Elevation (MSL)	DO Reading (ppm)
---------	------	----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	----------------------------	--------------------------	------------------------

Notes:

a = Pre-purge

b = Post purge

c = Lab confirmed MTBE by mistake. MTBE value at MW-1 should have been confirmed instead.

d = DO reading not taken.

e = Sample was analyzed outside of the EPA recommended holding time.

f = The second highest MTBE hit was mistakenly confirmed. MTBE for MW-1 should have been confirmed.

g = On March 20, 2003, all analyses run by EPA Method 8015/8020.

h = Depth to top of pump; pump prevented depth to water measurement.

Site surveyed September 21, 2000, by Virgil Chavez Land Surveying of Vallejo, California.

C-1 is a canal sample location.

SD-1 and SD-2 are storm drains.

Wells MW-1 through MW-5 surveyed January 24 and June 19, 2002, by Virgil Chavez Land Surveying of Vallejo, California.

**Blaine Tech Services, Inc.**

March 31, 2004

1680 Rogers Avenue  
San Jose, CA 95112-1105  
Attn.: Leon Gearhart  
Project#: 040318-DW2  
Project: 98995752  
Site: 540 Hegenberger Road, Oakland

Dear Mr. Gearhart,

Attached is our report for your samples received on 03/19/2004 14:35

This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 05/03/2004 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

You can also contact me via email. My email address is: [vvancil@stl-inc.com](mailto:vvancil@stl-inc.com)

Sincerely,



Vincent Vancil  
Project Manager

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* [www.stl-inc.com](http://www.stl-inc.com) \* CA DHS ELAP# 2496

**Gas/BTEX/MTBE by 8260B (C6-C12)**

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue

San Jose, CA 95112-1105

Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 040318-DW2

98995752

Received: 03/19/2004 14:35

Site: 540 Hegenberger Road, Oakland

**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
MW-1	03/18/2004 14:47	Water	1
MW-2	03/18/2004 14:03	Water	2
MW-3	03/18/2004 15:16	Water	3
MW-4	03/18/2004 13:23	Water	4
MW-5	03/18/2004 14:55	Water	5
BW-D	03/18/2004 14:12	Water	6

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

03/31/2004 18:48

**Gas/BTEX/MTBE by 8260B (C6-C12)**

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue  
San Jose, CA 95112-1105  
Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 040318-DW2  
98995752

Received: 03/19/2004 14:35

Site: 540 Hegenberger Road, Oakland

Prep(s):	5030B	Test(s):	8260B
Sample ID:	MW-1	Lab ID:	2004-03-0669 - 1
Sampled:	03/18/2004 14:47	Extracted:	3/29/2004 12:34
Matrix:	Water	QC Batch#:	2004/03/29-1A.68
Analysis Flag: o ( See Legend and Note Section )			

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	250	ug/L	5.00	03/29/2004 12:34	
Benzene	ND	2.5	ug/L	5.00	03/29/2004 12:34	
Toluene	ND	2.5	ug/L	5.00	03/29/2004 12:34	
Ethylbenzene	ND	2.5	ug/L	5.00	03/29/2004 12:34	
Total xylenes	ND	5.0	ug/L	5.00	03/29/2004 12:34	
Methyl tert-butyl ether (MTBE)	570	2.5	ug/L	5.00	03/29/2004 12:34	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	106.8	76-130	%	5.00	03/29/2004 12:34	
Toluene-d8	97.4	78-115	%	5.00	03/29/2004 12:34	

**Gas/BTEX/MTBE by 8260B (C6-C12)**

Blaine Tech Services, Inc.

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San Jose, CA 95112-1105

Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 040318-DW2

98995752

Received: 03/19/2004 14:35

Site: 540 Hegenberger Road, Oakland

Prep(s):	5030B	Test(s):	8260B
Sample ID:	MW-4	Lab ID:	2004-03-0669 - 4
Sampled:	03/18/2004 13:23	Extracted:	3/28/2004 12:19
Matrix:	Water	QC Batch#:	2004/03/28-1A.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	03/28/2004 12:19	
Benzene	ND	0.50	ug/L	1.00	03/28/2004 12:19	
Toluene	ND	0.50	ug/L	1.00	03/28/2004 12:19	
Ethylbenzene	ND	0.50	ug/L	1.00	03/28/2004 12:19	
Total xylenes	ND	1.0	ug/L	1.00	03/28/2004 12:19	
Methyl tert-butyl ether (MTBE)	15	0.50	ug/L	1.00	03/28/2004 12:19	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	86.9	76-130	%	1.00	03/28/2004 12:19	
Toluene-d8	87.6	78-115	%	1.00	03/28/2004 12:19	



**Gas/BTEX/MTBE by 8260B (C6-C12)**

Blaine Tech Services, Inc.

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San Jose, CA 95112-1105  
Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 040318-DW2  
98995752

Received: 03/19/2004 14:35

Site: 540 Hegenberger Road, Oakland

Prep(s):	5030B	Test(s):	8260B
Sample ID:	MW-5	Lab ID:	2004-03-0669 - 5
Sampled:	03/18/2004 14:55	Extracted:	3/28/2004 13:16
Matrix:	Water	QC Batch#:	2004/03/28-1A.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	03/28/2004 13:16	
Benzene	ND	0.50	ug/L	1.00	03/28/2004 13:16	
Toluene	ND	0.50	ug/L	1.00	03/28/2004 13:16	
Ethylbenzene	ND	0.50	ug/L	1.00	03/28/2004 13:16	
Total xylenes	ND	1.0	ug/L	1.00	03/28/2004 13:16	
Methyl tert-butyl ether (MTBE)	43	0.50	ug/L	1.00	03/28/2004 13:16	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	89.8	76-130	%	1.00	03/28/2004 13:16	
Toluene-d8	84.3	78-115	%	1.00	03/28/2004 13:16	

**Gas/BTEX/MTBE by 8260B (C6-C12)**

Blaine Tech Services, Inc.

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1680 Rogers Avenue

San Jose, CA 95112-1105

Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 040318-DW2

98995752

Received: 03/19/2004 14:35

Site: 540 Hegenberger Road, Oakland

Prep(s):	5030B	Test(s):	8260B
Sample ID:	BW-D	Lab ID:	2004-03-0669 - 6
Sampled:	03/18/2004 14:12	Extracted:	3/30/2004 02:29
Matrix:	Water	QC Batch#:	2004/03/29-2B.66

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	03/30/2004 02:29	
Benzene	0.67	0.50	ug/L	1.00	03/30/2004 02:29	
Toluene	ND	0.50	ug/L	1.00	03/30/2004 02:29	
Ethylbenzene	ND	0.50	ug/L	1.00	03/30/2004 02:29	
Total xylenes	ND	1.0	ug/L	1.00	03/30/2004 02:29	
Methyl tert-butyl ether (MTBE)	12	0.50	ug/L	1.00	03/30/2004 02:29	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	116.3	76-130	%	1.00	03/30/2004 02:29	
Toluene-d8	99.6	78-115	%	1.00	03/30/2004 02:29	

**Gas/BTEX/MTBE by 8260B (C6-C12)**

Blaine Tech Services, Inc.

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San Jose, CA 95112-1105  
Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 040318-DW2  
98995752

Received: 03/19/2004 14:35

Site: 540 Hegenberger Road, Oakland

Batch QC Report					
Prep(s): 5030B				Test(s): 8260B	
Method Blank		Water		QC Batch # 2004/03/28-1A.68	
MB: 2004/03/28-1A.68-026				Date Extracted: 03/28/2004 10:26	

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	03/28/2004 10:26	
Benzene	ND	0.5	ug/L	03/28/2004 10:26	
Toluene	ND	0.5	ug/L	03/28/2004 10:26	
Ethylbenzene	ND	0.5	ug/L	03/28/2004 10:26	
Total xylenes	ND	1.0	ug/L	03/28/2004 10:26	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	03/28/2004 10:26	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	89.2	76-130	%	03/28/2004 10:26	
Toluene-d8	88.6	78-115	%	03/28/2004 10:26	

**Gas/BTEX/MTBE by 8260B (C6-C12)**

Blaine Tech Services, Inc.

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San Jose, CA 95112-1105  
Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 040318-DW2  
98995752

Received: 03/19/2004 14:35

Site: 540 Hegenberger Road, Oakland

Batch QC Report		
Prep(s): 5030B		Test(s): 8260B
Method Blank	Water	QC Batch # 2004/03/29-1A-68
MB: 2004/03/29-1A-68-044		Date Extracted: 03/29/2004 08:44

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	03/29/2004 08:44	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	03/29/2004 08:44	
Benzene	ND	0.5	ug/L	03/29/2004 08:44	
Toluene	ND	0.5	ug/L	03/29/2004 08:44	
Ethylbenzene	ND	0.5	ug/L	03/29/2004 08:44	
Total xylenes	ND	1.0	ug/L	03/29/2004 08:44	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	91.4	76-130	%	03/29/2004 08:44	
Toluene-d8	95.8	78-115	%	03/29/2004 08:44	

Sewern Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

03/31/2004 18:48

**Gas/BTEX/MTBE by 8260B (C6-C12)**

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue  
San Jose, CA 95112-1105  
Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 040318-DW2  
98995752

Received: 03/19/2004 14:35

Site: 540 Hegenberger Road, Oakland

Batch QC Report					
Prep(s): 5030B				Test(s): 8260B	
Method Blank		Water		QC Batch # 2004/03/29-2B.66	
MB: 2004/03/29-2B.66-017				Date Extracted: 03/29/2004 18:17	

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	03/29/2004 18:17	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	03/29/2004 18:17	
Benzene	ND	0.5	ug/L	03/29/2004 18:17	
Toluene	ND	0.5	ug/L	03/29/2004 18:17	
Ethylbenzene	ND	0.5	ug/L	03/29/2004 18:17	
Total xylenes	ND	1.0	ug/L	03/29/2004 18:17	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	105.0	76-130	%	03/29/2004 18:17	
Toluene-d8	100.8	78-115	%	03/29/2004 18:17	

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03/31/2004 18:48

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San Jose, CA 95112-1105  
Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 040318-DW2  
98995752

Received: 03/19/2004 14:35

Site: 540 Hegenberger Road, Oakland

Batch QC Report									
Prep(s): 5030B					Test(s): 8260B				
Laboratory Control Spike			Water			QC Batch # 2004/03/28-1A.68			
LCS	2004/03/28-1A.68-007		Extracted: 03/28/2004			Analyzed: 03/28/2004 10:07			
LCSD	2004/03/28-1A.68-047		Extracted: 03/28/2004			Analyzed: 03/28/2004 09:47			

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	23.9	25.2	25	95.6	100.8	5.3	69-129	20		
Toluene	24.6	25.5	25	98.4	102.0	3.6	70-130	20		
Methyl tert-butyl ether (MTBE)	24.6	24.0	25	98.4	96.0	2.5	65-165	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	417	413	500	83.4	82.6		76-130			
Toluene-d8	450	466	500	90.0	93.2		78-115			

**Gas/BTEX/MTBE by 8260B (C6-C12)**

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue

San Jose, CA 95112-1105

Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 040318-DW2

98995752

Received: 03/19/2004 14:35

Site: 540 Hegenberger Road, Oakland

Batch QC Report			
Prep(s): 5030B		Test(s): 8260B	
Laboratory Control Spike		Water	QC Batch # 2004/03/29-1A.68
LCS	2004/03/29-1A.68-006	Extracted: 03/29/2004	Analyzed: 03/29/2004 08:06
LCSD	2004/03/29-1A.68-025	Extracted: 03/29/2004	Analyzed: 03/29/2004 08:25

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Methyl tert-butyl ether (MTBE)	23.8	26.8	25	95.2	107.2	11.9	65-165	20		
Benzene	26.9	28.0	25	107.6	112.0	4.0	69-129	20		
Toluene	26.8	28.3	25	107.2	113.2	5.4	70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	402	430	500	80.4	86.0		76-130			
Toluene-d8	487	503	500	97.4	100.6		78-115			

Severn Trent Laboratories, Inc.

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Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

03/31/2004 18:48

**Gas/BTEX/MTBE by 8260B (C6-C12)**

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue  
San Jose, CA 95112-1105  
Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 040318-DW2  
98995752

Received: 03/19/2004 14:35

Site: 540 Hegenberger Road, Oakland

Batch QC Report										
Prep(s): 5030B						Test(s): 8260B				
Laboratory Control Spike				Water			QC Batch # 2004/03/29-2B.66			
LCS	2004/03/29-2B.66-029			Extracted: 03/29/2004			Analyzed: 03/29/2004 17:29			
LCSD	2004/03/29-2B.66-053			Extracted: 03/29/2004			Analyzed: 03/29/2004 17:53			
Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Methyl tert-butyl ether (MTBE)	29.4	28.5	25	117.6	114.0	3.1	65-165	20		
Benzene	28.5	29.8	25	114.0	119.2	4.5	69-129	20		
Toluene	26.9	27.6	25	107.6	110.4	2.6	70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	512	492	500	102.4	98.4		76-130			
Toluene-d8	530	498	500	106.0	99.6		78-115			



**Gas/BTEX/MTBE by 8260B (C6-C12)**

Blaine Tech Services, Inc.

Attn.: Leon Gearhart

1680 Rogers Avenue  
San Jose, CA 95112-1105  
Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 040318-DW2  
98995752

Received: 03/19/2004 14:35

Site: 540 Hegenberger Road, Oakland

Batch QC Report			
Prep(s):	5030B		Test(s): 8260B
<b>Matrix Spike ( MS / MSD )</b>		<b>Water</b>	<b>QC Batch # 2004/03/28-1A.68</b>
MW-4 >> MS			Lab ID: 2004-03-0669 - 004
MS: 2004/03/28-1A.68-038		Extracted: 03/28/2004	Analyzed: 03/28/2004 12:38
			Dilution: 1.00
MSD: 2004/03/28-1A.68-057		Extracted: 03/28/2004	Analyzed: 03/28/2004 12:57
			Dilution: 1.00

Compound	Conc. ug/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample		ug/L	MS	MSD	RPD	Rec.	RPD	MS
Benzene	25.0	24.2	ND	25	100.0	96.8	3.3	69-129	20		
Toluene	25.4	24.5	ND	25	101.6	98.0	3.6	70-130	20		
Methyl tert-butyl ether	39.5	41.4	15.4	25	96.4	104.0	7.6	65-165	20		
<b>Surrogate(s)</b>											
1,2-Dichloroethane-d4	421	435		500	84.2	87.0		76-130			
Toluene-d8	451	437		500	90.2	87.4		78-115			

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03/31/2004 18:48

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Phone: (408) 573-0555 Fax: (408) 573-7771

Project: 040318-DW2  
98995752

Received: 03/19/2004 14:35

Site: 540 Hegenberger Road, Oakland

**Legend and Notes**

**Analysis Flag**

o

Reporting limits were raised due to high level of analyte present in the sample.

# SHELL Chain Of Custody Record

84077

Lab Identification (if necessary):

Address:

City, State, Zip:

Shell Project Manager to be invoiced:

- SCIENCE & ENGINEERING
- TECHNICAL SERVICES
- CRUISE/CLUSTER

Karen Petryna

2004-03-0669

INCIDENT NUMBER (S&E ONLY)

9 8 9 9 5 7 5 2

SAP or CRMT NUMBER (ITS/CRMT)

DATE: 3-18-04

PAGE: 1 of 1

ANALYZING COMPANY <b>Blaine Tech Services</b>	LOW LEVEL <b>BTSS</b>	SITE ADDRESS (Street and City) <b>540 Hegenberger Road, Oakland</b>	GLOBAL ID NO. <b>T0600102123</b>
ADDRESS <b>1680 Rogers Avenue, San Jose, CA 95112</b>		(IF DELIVERABLE TO) Responsible Party or Designee <b>Annal Kraml</b>	PHONE NO. <b>(510) 420-3338</b>
PROJECT CONTACT (If necessary or EDP Report Not) <b>Leon Gearhart</b>		CONSULTANT PROJECT NO. <b>040518-00-2</b>	

TELEPHONE <b>408-573-0555</b>	FAX <b>408-573-7771</b>	EMAIL <b>gearhart@blainetech.com</b>	LAB USE ONLY <p style="font-size: 24pt; font-weight: bold; text-align: center;">Dave Walter</p>
----------------------------------	----------------------------	---	--

TURNAROUND TIME (BUSINESS DAYS):  
 10 DAYS  5 DAYS  72 HOURS  48 HOURS  24 HOURS  LESS THAN 24 HOURS

LA - RWQCB REPORT FORMAT  UST AGENCY:

GCMS MTBE CONFIRMATION: HIGHEST \_\_\_\_\_ HIGHEST per BORING \_\_\_\_\_ ALL \_\_\_\_\_

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EGO IS NOT NEEDED

**REQUESTED ANALYSIS**

Field Sample Identification	SAMPLING DATE	TIME	APR. RIX	AC CO.	TPH's Conc. Purifiable	BTEX	MTBE (R201B - 801B RL)	MYBE (R250B - 0.6ppb RL)	Oxyphenates (S) by (R280B)	Ethanol (R260B)	Methanol	1,2-DCA (R260B)	EDB (R260B)	THH - Diesel, Extractable (R01.5m)
MW-1	3-16	14:47	W	3		X	X	X						
MW-2		14:03				X	X	X						
MW-3		15:16				X	X	X						
MW-4		13:53				X	X	X						
MW-5		14:55				X	X	X						
BW-D		MID				X	X	X						

**FIELD NOTES:**  
 Container/Preservative  
 or PID Readings  
 or Laboratory Notes

2.0°C

TEMPERATURE ON RECEIPT °C

Released by (Signature) <i>David C. Walk</i>	Received by (Signature) <i>Steve</i>
Released by (Signature) <i>Steve</i> 3/19/04 1720	Received by (Signature)
Released by (Signature)	Received by (Signature)

Date: 3/19/04	Time: 1435
Date:	Time:
Date: 3/19/04	Time: 1720

Nourna Is.



## SHELL WELL MONITORING DATA SHEET

3TS #: <u>030418-DW-2</u>	Site: <u>540 Hegenberger Rd Oakland</u>
Sampler: <u>Dave W.</u>	Date: <u>3-18-04</u>
Well I.D.: <u>MW-1</u>	Well Diameter: <u>(2)</u> 3 4 6 8
Total Well Depth (TD): <u>-</u>	Depth to Water (DTW): <u>7.32</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>(PVC)</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: Bailer      Waterra      Sampling Method: ~~Bailer~~  
 Disposable Bailer      Peristaltic      ~~Disposable Bailer~~  
 Positive Air Displacement       Extraction Pump      ~~Extraction Port~~  
 Electric Submersible      Other \_\_\_\_\_      Dedicated Tubing

(Gals.) X <u>3 ext.</u> = _____ Gals. 1 Case Volume      Specified Volumes      Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F)	pH	Cond. (mS or $\mu$ S)	Turbidity (NTUs)	Gals. Removed	Observations
14:47	64.8	7.7	8988	2	-	clear
						Let port run for 3 min prior to sampling

Did well dewater?    Yes    No      Gallons actually evacuated: -

Sampling Date: 3-18-04    Sampling Time: 14:47    Depth to Water:

Sample I.D.: MW-1      Laboratory: (ST)    Other \_\_\_\_\_

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

EB I.D. (if applicable): \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D. (if applicable): \_\_\_\_\_

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

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

## SHELL WELL MONITORING DATA SHEET

BTS #: <u>030418-DW-2</u>	Site: <u>540 Hegenberger Rd Oakland</u>
Sampler: <u>Dave W.</u>	Date: <u>3-18-04</u>
Well I.D.: <u>MW-2</u>	Well Diameter: <u>2</u> 3 4 6 8
Total Well Depth (TD): <u>19.90</u>	Depth to Water (DTW): <u>7.19</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>9.73</u>	

Purge Method: <input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Disposable Bailer <input type="checkbox"/> Positive Air Displacement <input type="checkbox"/> Electric Submersible	Waterra <input type="checkbox"/> Peristaltic <input type="checkbox"/> Extraction Pump Other: _____	Sampling Method: <input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Disposable Bailer <input type="checkbox"/> Extraction Port <input type="checkbox"/> Dedicated Tubing Other: _____
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$\frac{2}{1} \text{ (Gals.)} \times \frac{3}{\text{Specified Volumes}} = \frac{6}{\text{Calculated Volume}} \text{ Gals.}$	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> + 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> + 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> + 0.163														

Time	Temp (°F)	pH	Cond. (mS or $\mu$ S)	Turbidity (NTUs)	Gals. Removed	Observations
13:52	68.9	7.4	3217	160	2	cloudy
13:55	70.1	7.3	3518	158	4	"
13:58	70.4	7.3	3673	195	6	"

Did well dewater? Yes  No  Gallons actually evacuated: 6

Sampling Date: 3-18-04 Sampling Time: 14:03 Depth to Water: 9.72

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

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

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

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

D.O. (if req'd):	Pre-purge:	$\frac{mg}{L}$	Post-purge:	$\frac{mg}{L}$
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

## SHELL WELL MONITORING DATA SHEET

BTS #: <u>030418-DW-2</u>	Site: <u>540 Heegenberger Rd Oakland</u>
Sampler: <u>Dave W.</u>	Date: <u>3-18-04</u>
Well I.D.: <u>MW-3</u>	Well Diameter: <u>(2)</u> 3 4 6 8
Total Well Depth (TD): <u>—</u>	Depth to Water (DTW): <u>607</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>(PVC)</u> Grade	D.O. Meter (if req'd): YSI HACH

DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:

Purge Method: Bailer      Waterra      Sampling Method: Bailer  
 Disposable Bailer      Peristaltic      Disposable Bailer  
 Positive Air Displacement      Extraction Pump      Extraction Port  
 Electric Submersible      Other \_\_\_\_\_      Dedicated Tubing

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

(Gals.) X <u>3 ext.</u> = _____ Gals.																	
I Case Volume      Specified Volumes      Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F)	pH	Cond. (mS or $\mu$ S)	Turbidity (NTUs)	Gals. Removed	Observations
15:16	71.3	7.3	13500	52	—	cloudy
	pulled	pump	Took grab	sample		

Did well dewater?    Yes    No      Gallons actually evacuated: —

Sampling Date: 3-18-04    Sampling Time: 15:16      Depth to Water:

Sample I.D.: MW-3      Laboratory: (STL)    Other \_\_\_\_\_

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

EB I.D. (if applicable): \_\_\_\_\_ @ \_\_\_\_\_ Time      Duplicate I.D. (if applicable):

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

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





## SHELL WELL MONITORING DATA SHEET

3TS #: <u>030418-DW-2</u>	Site: <u>540 Hegenberger Rd Oakland</u>
Sampler: <u>Dave W.</u>	Date: <u>3-18-04</u>
Well I.D.: <u>MW-5</u>	Well Diameter: 2 3 <u>(4)</u> 6 8
Total Well Depth (TD): <u>—</u>	Depth to Water (DTW): <u>16.78</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>(PVC)</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: Bailer      Waterra      Sampling Method: Bailer  
 Disposable Bailer      Peristaltic      Disposable Bailer  
 Positive Air Displacement      Extraction Pump      Extraction Port  
 Electric Submersible      Other \_\_\_\_\_      Dedicated Tubing

(Gals.) X <u>3 ext.</u> = _____ Gals.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														
I Case Volume	Specified Volumes      Calculated Volume																

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
<u>14:55</u>	<u>66.5</u>	<u>7.1</u>	<u>8107</u>	<u>2</u>	<u>—</u>	<u>clear</u>
	<u>Let port run for 3 min prior to sampling</u>					

Did well dewater?    Yes    No      Gallons actually evacuated: —

Sampling Date: 3-18-04    Sampling Time: 14:55    Depth to Water:

Sample I.D.: MW-5      Laboratory: (ST)    Other \_\_\_\_\_

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

EB I.D. (if applicable): \_\_\_\_\_ @ \_\_\_\_\_ Time    Duplicate I.D. (if applicable): \_\_\_\_\_

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

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

## SHELL WELL MONITORING DATA SHEET

BTS #: <u>030418-DW-2</u>	Site: <u>540 Hegenberger Rd Oakland</u>
Sampler: <u>Dave W.</u>	Date: <u>3-18-04</u>
Well I.D.: <u>BW-D</u>	Well Diameter: 2 3 4 6 8 <u>(15)</u>
Total Well Depth (TD): <u>12.30</u>	Depth to Water (DTW): <u>3.42</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>(PVC)</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>5.19</u>	

Purge Method:  Bailer  Disposable Bailer  Positive Air Displacement  Electric Submersible

Water:  Peristaltic  Extraction Pump  Other \_\_\_\_\_

Sampling Method:  Bailer  Disposable Bailer  Extraction Port  Dedicated Tubing  Other \_\_\_\_\_

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> + 0.163

52.1 (Gals.) X 3 = 156.3 Gals.  
 Case Volume Specified Volumes Calculated Volume

Time	Temp (°F)	pH	Cond. (mS or <u>µS</u> )	Turbidity (NTUs)	Gals. Removed	Observations
<u>13:45</u>	<u>71.3</u>	<u>6.8</u>	<u>3982</u>	<u>16</u>	<u>52.1</u>	
<u>13:56</u>	<u>72.9</u>	<u>6.7</u>	<u>4319</u>	<u>10</u>	<u>104.2</u>	
<u>14:07</u>	<u>74.0</u>	<u>6.7</u>	<u>4501</u>	<u>6</u>	<u>156.3</u>	

Did well dewater? Yes  No  Gallons actually evacuated: 156.3

Sampling Date: 3-18-04 Sampling Time: 14:12 Depth to Water: 5.20

Sample I.D.: BW-D Laboratory: (STI) Other \_\_\_\_\_

Analyzed for: (TPH-D) (BTEX) (MTBE) TPH-D Other: \_\_\_\_\_

EB I.D. (if applicable): \_\_\_\_\_ @ \_\_\_\_\_ Time Duplicate I.D. (if applicable): \_\_\_\_\_

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

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

**ATTACHMENT B**  
**Arco Groundwater Data**

**Table 1**  
**Groundwater Elevation and Analytical Data**

ARCO Service Station #4494  
566 Hegenberger Road  
Oakland, California

Well Number	Date Sampled	Top of Riser Elevation <sup>c</sup> (ft)	Depth to Top of Screen (ft., bgs)	Total Well Depth (ft., bgs)	Depth to Groundwater (ft. TOC)	Groundwater Elevation (ft)	GRO/TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Oxygen (mg/L) <sup>(e)</sup>	pH <sup>(e)</sup>	
MW-1	06/20/00	106.10	13.0	22.7	7.02	99.08	ND<1,000	ND<10	ND<10	ND<10	ND<20	14,000/15,000 <sup>a</sup>	NA	NA	
	09/28/00				7.07	99.03	ND<500	ND<5.0	ND<5.0	ND<5.0	ND<5.0	13000/18,800 <sup>a</sup>	NA	NA	
	12/17/00				6.95	99.15	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	10,600	NA	NA	
	03/28/01				6.88	99.22	ND<500	ND<5.0	ND<5.0	ND<5.0	ND<5.0	16,900	NA	NA	
	06/21/01				7.18	98.92	ND<1,000	ND<10	ND<10	ND<10	ND<10	3,400	NA	NA	
	09/23/01				7.11	98.99	ND<1,000	ND<10	ND<10	ND<10	ND<10	2200/1800 <sup>a</sup>	NA	NA	
	12/31/01				6.91	99.19	ND<5,000	ND<50	ND<50	ND<50	ND<50	14,000	NA	NA	
	03/14/02				6.85	99.25	ND<5,000	ND<50	ND<50	ND<50	ND<50	6,200	NA	NA	
	04/17/02				5.89	100.21	ND<5,000	ND<50	ND<50	ND<50	ND<50	4,500	NA	NA	
	08/08/02				7.19	98.91	230 <sup>b</sup>	ND<2.0	ND<2.0	ND<2.0	ND<2.0	660/440 <sup>a</sup>	4.5	7.8	
	12/12/02				7.28	98.82	630 <sup>d</sup>	ND<5.0	ND<5.0	ND<5.0	ND<5.0	1300/830 <sup>a</sup>	1.9	7.6	
	03/20/03 <sup>e</sup>				6.91	99.19	1,100	ND<5.0	ND<5.0	ND<5.0	ND<5.0	780	2.2	8.5	
	06/23/03				7.61	98.49	530	ND<5.0	ND<5.0	ND<5.0	ND<5.0	260	1.2	7.6	
	09/22/03				11.36	7.78	3.58	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	17	3.5	7.7
	12/03/03				7.90	3.46	410	2.6	9.8	ND<2.5	11	260	2.1	6.9	
	03/18/04	6.68	4.68	ND<250	ND<2.5	ND<2.5	ND<2.5	ND<2.5	130	2.4	7.0				
MW-3	06/20/00	106.29	7.0	17.7	9.18	97.11	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	27/27 <sup>a</sup>	NA	NA	
	09/28/00				9.33	96.96	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4.3/ND<2.0 <sup>a</sup>	NA	NA	
	12/17/00				9.31	96.98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	03/28/01				9.23	97.06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7.42	NA	NA	
	06/21/01				9.58	96.71	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	09/23/01				9.76	96.53	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	12/31/01				8.78	97.51	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	03/14/02				9.25	97.04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4	NA	NA	
	04/17/02				8.44	97.85	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	08/08/02				9.63	96.66	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	2.6	7.9	
	12/12/02				9.51	96.78	ND<50 <sup>d</sup>	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	3.0	6.8	
	03/20/03 <sup>e</sup>				9.40	96.89	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	6.1	1.2	7.0	
	06/23/03				9.36	96.93	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	5.2	0.9	8.2	
	09/22/03				11.62	9.48	2.14	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	3.9	1.4	7.9
	12/03/03				9.44	2.18	NS	NS	NS	NS	NS	NS	NS	NS	
	03/18/04	8.76	2.86	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	4.6	0.8	7.3			

**Table 1**  
**Groundwater Elevation and Analytical Data**

ARCO Service Station #4494  
566 Hegenberger Road  
Oakland, California

Well Number	Date Sampled	Top of Riser Elevation <sup>f</sup> (ft)	Depth to Top of Screen (ft., bgs)	Total Well Depth (ft., bgs)	Depth to Groundwater (ft, TOC)	Groundwater Elevation (ft)	GRO/TPH as		Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Oxygen (mg/L) <sup>(g)</sup>	pH <sup>(g)</sup>
							Gasoline (µg/L)	Benzene (µg/L)						
MW-4	06/20/00	107.40	7.0	16.3	8.49	98.91	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<10	NA	NA
	09/28/00				8.70	98.70	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<2.5	NA	NA
	12/17/00				8.53	98.87	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	03/28/01				8.59	98.81	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	06/21/01				8.79	98.61	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	09/23/01				8.67	98.73	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	12/31/01				8.03	99.37	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	03/14/02				8.48	98.92	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	04/17/02				7.79	99.61	ND<50	ND<0.5	ND<0.5	ND<0.5	5.6	NA	NA	
	08/08/02				8.90	98.50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.5	4.5	8.0	
	12/12/02				9.07	98.33	ND<50 <sup>d</sup>	ND<0.5	ND<0.5	ND<0.5	ND<2.5	5.6	6.2	
	03/20/03 <sup>e</sup>				8.85	98.55	ND<50	ND<0.50	ND<0.50	ND<0.50	0.50	ND<0.50	4.8	7.8
	06/23/03				9.26	98.14	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	6.3	7.5
	09/22/03				13.18	9.22	3.96	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	7.4	8.0
	12/03/03				9.48	3.70	NS	NS	NS	NS	NS	NS	NS	NS
	03/18/04	8.32	4.86	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	4.5	8.4			
MW-5	06/20/00	105.19	8.0	16.6	7.65	97.54	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<10	NA	NA
	09/28/00				6.82	98.37	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<2.5	NA	NA
	12/17/00				6.50	98.69	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	03/28/01				6.34	98.85	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	06/21/01				7.88	97.31	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	09/23/01				6.98	98.21	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	12/31/01				5.01	100.18	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	03/14/02				5.93	99.26	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA	
	04/17/02				5.37	99.82	ND<50	ND<0.5	ND<0.5	ND<0.5	8.5	NA	NA	
	08/08/02				6.85	98.34	ND<50 <sup>b</sup>	ND<0.5	ND<0.5	ND<0.5	ND<2.5	0.7	7.3	
	12/12/02				6.53	98.66	ND<50 <sup>d</sup>	2.2	4.7	1.3	6.8	ND<2.5	1.3	7.0
	03/20/03 <sup>e</sup>				6.40	98.79	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.7	7.1
	06/23/03				6.72	98.47	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.3	7.2
	09/22/03				10.63	6.76	3.87	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.7	7.2
	12/03/03				6.56	4.07	NS	NS	NS	NS	NS	NS	NS	NS
	03/18/04	5.98	4.65	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.7	7.3			

**Table 1  
Groundwater Elevation and Analytical Data**

ARCO Service Station #4494  
566 Hegenberger Road  
Oakland, California

Well Number	Date Sampled	Top of Riser Elevation <sup>f</sup> (ft)	Depth to Top of Screen (ft., bgs)	Total Well Depth (ft., bgs)	Depth to Groundwater (ft., TOC)	Groundwater Elevation (ft)	GRO/TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Oxygen (mg/L) <sup>(a)</sup>	pH <sup>(a)</sup>	
MW-6	06/20/00	105.07	8.0	17.8	6.24	98.83	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<10	NA	NA	
	09/28/00				6.45	98.62	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<2.5	NA	NA
	12/17/00				6.26	98.81	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	03/28/01				6.10	98.97	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	06/21/01				7.68	97.39	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	09/23/01				6.72	98.35	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	12/23/01				4.68	100.39	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	03/14/02				5.55	99.52	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	04/17/02				4.96	100.11	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7	NA	NA
	08/08/02				6.46	98.61	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	0.7	7.3
	12/12/02				6.18	98.89	65 <sup>d</sup>	3.3	8.4	2.7	14	ND<2.5	1.1	6.9	
	03/20/03 <sup>e</sup>				6.18	98.89	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.2	7.0
	06/23/03				6.15	98.92	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.0	7.1
	09/22/03	10.41	6.43	3.98	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.5	7.0			
	12/03/03	6.12	4.29	NS	NS	NS	NS	NS	NS	NS	NS	NS			
03/18/04	5.40	5.01	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.9	7.2				
MW-7	06/20/00	105.52	9.0	13.7	8.65	96.87	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	13/13 <sup>g</sup>	NA	NA	
	09/28/00				8.75	96.77	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<1.0	136/261 <sup>h</sup>	NA	NA
	12/17/00				8.62	96.90	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	27.1	NA	NA
	03/28/01				8.66	96.86	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	51.5	NA	NA
	06/21/01				8.84	96.68	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	53	NA	NA
	09/23/01				8.75	96.77	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	35/21 <sup>g</sup>	NA	NA
	12/23/01				7.79	97.73	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	440	NA	NA
	03/14/02				8.30	97.22	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	18	NA	NA
	04/17/02				7.43	98.09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	67	NA	NA
	08/08/02				8.61	96.91	55 <sup>b</sup>	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	130/100 <sup>g</sup>	1.1	7.1
	12/12/02				**	8.55	NC	75 <sup>d</sup>	ND<0.5	ND<0.5	ND<0.5	ND<0.5	160/130 <sup>g</sup>	1.2	7.0
	03/20/03 <sup>e</sup>				8.38	NC	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	32	2.2	7.2
	06/23/03				8.37	NC	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	14	0.8	7.1
	09/22/03	10.51	8.95	1.56	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	5.3	2.2	7.2			
	12/03/03	8.86	1.65	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	4.2	0.1	7.2			
03/18/04	8.03	2.48	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	3.0	1.0	7.2				

**Table 1  
Groundwater Elevation and Analytical Data**

ARCO Service Station #4494  
566 Hegenberger Road  
Oakland, California

Well Number	Date Sampled	Top of Riser Elevation <sup>f</sup> (ft)	Depth to Top of Screen (ft., bgs)	Total Well Depth (ft., bgs)	Depth to Groundwater (ft, TOC)	Groundwater Elevation (ft)	GRO/TPH as					MTBE (µg/L)	Dissolved Oxygen (mg/L) <sup>(g)</sup>	pH <sup>(g)</sup>
							Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)			
RW-1	06/20/00	NE	NA	11.0	8.21	NC	ND<50	ND<0.5	1.1	ND<0.5	ND<1.0	ND<10	NA	NA
	09/28/00				8.28	NC	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<2.5	NA	NA
	12/17/00				8.29	NC	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	03/28/01				8.16	NC	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	06/21/01				9.37	NC	160	5.1	ND<0.5	1.1	3.2	ND<2.5	NA	NA
	09/23/01				8.75	NC	57	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	12/31/01				6.80	NC	520	3.1	ND<0.5	6.4	4.7	ND<2.5	NA	NA
	03/14/02				7.86	NC	240	3.7	ND<0.5	0.7	2.8	ND<2.5	NA	NA
	04/17/02				7.13	NC	ND<50	ND<0.5	1.6	ND<0.5	0.72	ND<2.5	NA	NA
	08/08/02				8.48	NC	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.7/ND<0.5 <sup>h,c</sup>	1.1	7.0
	12/12/02				8.63	NC	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	1.9	6.9
	03/20/03 <sup>e</sup>				8.08	NC	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.9	7.3
	06/23/03				8.28	NC	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.1	7.3
	09/22/03	11.97			8.42	NC	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.8	7.1
	12/03/03				8.05	NS	NS	NS	NS	NS	NS	NS	NS	NS
	03/18/04				7.18	4.79	50	0.54	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.9	7.1

- ft., bgs = feet below ground surface
  - GRO = Gasoline Range Organics
  - MTBE = Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted. (prior to 3/20/03)
  - mg/L = Milligrams per liter
  - NA = Not available, not applicable, or not analyzed
  - NC = Not calculated
  - ND< = Not detected at or above specified laboratory reporting limit.
  - NE = Not surveyed/No elevation
  - NS = Not sampled
  - TOC = Top of casing
  - TPH = Total Petroleum Hydrocarbons analyzed by EPA Method 8015M. (prior to 3/20/03)
  - µg/L = Micrograms per liter
  - a = Analyzed by EPA Method 8260
  - b = Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.
  - c = This sample was analyzed beyond the EPA recommended holding time. The results may still be useful for their intended purpose.
  - d = Analyzed by EPA Method 8215B/8021B for Gasoline Range Organics
  - e = TPH-g, BTEX, and MTBE analyzed by EPA method 8260B beginning on 2003 sampling event (03/20/03)
  - f = Top of casing elevations were re-surveyed on July 18, 2003 by URS Corporation of Pleasant Hill, CA
  - g = pH and DO are field measurements.
  - \*\* = Top of casing was found shattered on December 12, 2002. Top of Casing (TOC) unknown.
- Source: The data within this table collected prior to August 2002 was provided to URS by Atlantic Richfield Company and their previous consultants. URS has not verified the accuracy of this information.

**Table 2**  
**Groundwater Flow Direction and Gradient**

ARCO Service Station #4494  
566 Hegenberger Road  
Oakland, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
06/20/00	North-Northeast	0.015
09/28/00	North	0.018
12/17/00	North-Northwest	0.013
03/28/01	Northwest	0.011
06/21/01	North	0.017
09/23/01	North	0.020
12/31/01	North-Northwest	0.023
03/14/02	North-Northwest	0.017
04/14/02	Northwest	0.007
08/08/02	North-Northwest	0.022
12/12/02	North-Northwest	0.017
03/20/03	North-Northwest	0.016
06/23/03	Northwest	0.014
09/22/03	Northwest	0.017
12/03/03	Northwest	0.013
<b>03/18/04</b>	<b>North-Northwest</b>	<b>0.011</b>

Note:

The data within this table collected prior to August 2002 was provided to URS by Atlantic Richfield Company and their previous consultants. URS has not verified the accuracy of this information.



**Table 3**  
**Fuel Oxygenate Analytical Data**

ARCO Service Station # 4494  
566 Hegenberger Road  
Oakland, California

Well Number	Date Sampled	Ethanol (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-1	03/20/03	ND<1,000	640	780	ND<5.0	ND<5.0	ND<5.0	NA	NA
	06/23/03	ND<1,000	ND<200	260	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
	09/22/03	ND<100	250	17	ND<0.50	ND<0.50	ND<0.50	NA	NA
	12/03/03	ND<500	ND<100	260	ND<2.5	ND<2.5	ND<2.5	NA	NA
	<b>03/18/04</b>	<b>ND&lt;500</b>	<b>ND&lt;100</b>	<b>130</b>	<b>ND&lt;2.5</b>	<b>ND&lt;2.5</b>	<b>ND&lt;2.5</b>	<b>ND&lt;2.5</b>	<b>ND&lt;2.5</b>
MW-3	03/20/03	ND<100	ND<20	601	ND<0.50	ND<0.50	1.1	NA	NA
	06/23/03	ND<100	ND<20	5.2	ND<0.50	ND<0.50	0.75	ND<0.50	ND<0.50
	09/22/03	ND<100	ND<20	3.9	ND<0.50	ND<0.50	ND<0.50	NA	NA
	<b>03/18/04</b>	<b>ND&lt;100</b>	<b>ND&lt;20</b>	<b>4.6</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>
MW-4	03/20/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	06/23/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	09/22/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	<b>03/18/04</b>	<b>ND&lt;100</b>	<b>ND&lt;20</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>
MW-5	03/20/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	06/23/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	09/22/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	<b>03/18/04</b>	<b>ND&lt;100</b>	<b>ND&lt;20</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>
MW-6	03/20/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	06/23/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	09/22/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	<b>03/18/04</b>	<b>ND&lt;100</b>	<b>ND&lt;20</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>
MW-7	03/20/03	ND<100	ND<20	32	ND<0.50	ND<0.50	0.62	NA	NA
	06/23/03	ND<100	170	14	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	09/22/03	ND<100	170	5.3	ND<0.50	ND<0.50	ND<0.50	NA	NA
	12/03/03	ND<100	85	4.2	ND<0.50	ND<0.50	ND<0.50	NA	NA
	<b>03/18/04</b>	<b>ND&lt;100<sup>(a)</sup></b>	<b>ND&lt;20</b>	<b>3.0</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>
RW-1	03/20/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	06/23/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	09/22/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	<b>03/18/04</b>	<b>ND&lt;100</b>	<b>ND&lt;20</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>

**Table 3**  
**Fuel Oxygenate Analytical Data**

ARCO Service Station # 4494  
566 Hegenberger Road  
Oakland, California

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Note = All fuel oxygenate compounds analyzed using EPA Method 8260B  
1,2-DCA = 1,2-Dichloroethane  
DIPE = Di-isopropyl ether  
EDB = 1,2-Dibromoethane  
ETBE = Ethyl tert butyl ether  
MTBE = Methyl tert-butyl ether  
NA = Not analyzed  
ND< = Not detected at or above laboratory reporting limit  
TAME = tert-Amyl methyl ether  
TBA = tert-Butyl alcohol  
µg/L = micrograms per liter

Notes:

- a = The continuing calibration verification was outside of client contractual acceptance limits. However, it was within method acceptance limits and should be useful for its intended purpose.