

# C A M B R I A

October 25, 2001

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

Re: **Third Quarter 2001 Monitoring Report**  
Shell-branded Service Station  
350 Grand Avenue  
Oakland, California  
Incident #98995755  
Cambria Project #243-0715-002



Dear Mr. Hwang:

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

## THIRD QUARTER 2001 ACTIVITIES

**Groundwater Monitoring:** Blaine Tech Services, Inc. (Blaine) of San Jose, California gauged and sampled wells S-1, S-2 and S-3 on July 9, 2001. Wells S-4 and S-5 were inaccessible during the initial site visit. On August 7, 2001, Blaine returned to collect samples from wells S-4 and S-5. Blaine calculated groundwater elevations and compiled the analytical. Cambria prepared a well survey/vicinity map and a groundwater elevation contour map using August 7, 2001 gauging data (Figures 1 and 2). Blaine's report, presenting the laboratory report and supporting field documents, is included as Attachment A.

**Dual-Phase Vacuum Extraction (DVE) Event:** Due to the elevated methyl tertiary butyl ether (MTBE) concentrations reported in well S-2 during recent monitoring events, Advanced Cleanup Technologies Inc. of Benicia, California and Cambria conducted a one-time 8-hour mobile DVE event on well S-2 using a vacuum truck. DVE is the process of applying high vacuum through an airtight well seal to simultaneously extract soil vapors from the vadose zone and enhance groundwater extraction from the saturated zone. Mobile DVE uses a vacuum truck to create the vacuum and contain extracted fluids. Mobile DVE equipment consists of a dedicated extraction "stinger" installed in the extraction well, a vacuum truck, and a carbon vapor treatment system.

Oakland, CA  
San Ramon, CA  
Sonoma, CA

Cambria  
Environmental  
Technology, Inc.

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

Table 1 presents the groundwater extraction mass removal data. Table 2 presents the vapor extraction mass removal data. The laboratory's analytical report and Cambria's field data sheet are presented as Attachment B. The following presents a summary of the DVE test results:

- Approximately 50 gallons of groundwater were extracted during the 8-hour test, equating to a flow rate of 0.104 gallons per minute. The groundwater generated during DVE was stored in a vacuum tank truck, then transported to the Martinez Refinery Corporation for disposal/recycling.
- Using third quarter 2001 quarterly monitoring data, the DVE test removed approximately 0.008 pounds of total petroleum hydrocarbons as gasoline (TPHg), 0.0004 pounds of benzene, and 0.009 pounds of MTBE through groundwater extraction.
- Vapor flow rates averaged 3.0 cubic feet per minute.
- Vapor concentrations were reported as 7,600 parts per million (ppm) of TPHg, 7.6 ppm of benzene, and 15 ppm of MTBE.
- Using the vapor concentrations reported, the DVE test removed approximately 2.44 pounds of TPHg, 0.002 pounds of benzene, and 0.005 pounds MTBE through vapor extraction.

The DVE event yielded an insignificant groundwater volume and a poor vapor extraction flow rate. This data is consistent with the low permeability soil (sandy-silt and silt) encountered at this site. The low permeability of the soil also limits the lateral extent of recovery by DVE events. The moderately high TPHg vapor concentration suggests a possible hydrocarbon source area in the vicinity of well S-2. However, it does not appear that mobile DVE events from well S-2 would effectively recover hydrocarbons. There is also the possibility that further DVE events from well S-2 could propagate migration of hydrocarbons towards the property line and off-site. Therefore, Cambria does not recommend further DVE events at the site.

## ANTICIPATED FUTURE ACTIVITIES

***Groundwater Monitoring:*** Blaine will gauge and sample selected wells and tabulate the data. Cambria will prepare a monitoring report.

***Plume-Delineation:*** Cambria recommends onsite plume delineation to help determine the MTBE source and the most practical remediation technology. To that end, Cambria will submit a work plan for plume delineation during the fourth quarter 2001.

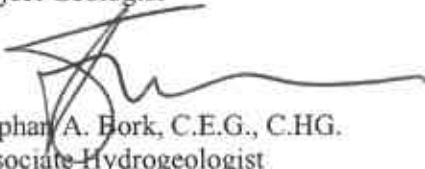
# C A M B R I A

Don Hwang  
October 25, 2001

## CLOSING

We appreciate the opportunity to work with you on this project. Please call Jacquelyn Jones at (510) 420-3316 if you have any questions or comments.

Sincerely,  
**Cambria Environmental Technology, Inc**

  
Jacquelyn L. Jones  
Project Geologist  
  
  
Stephan A. Bork, C.E.G., C.HG.  
Associate Hydrogeologist



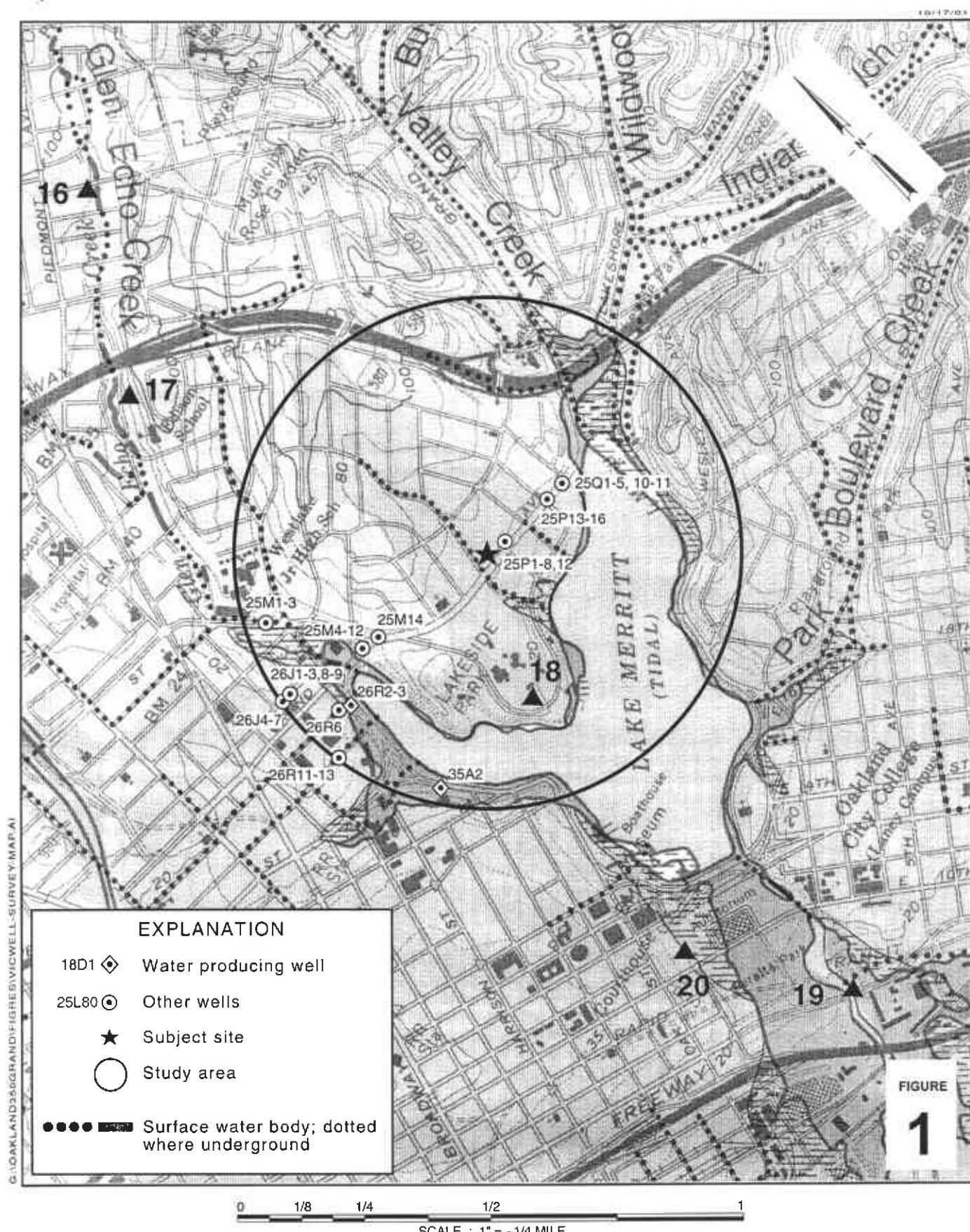
Figures:      1 - Vicinity/Area Well Survey Map  
                  2 - Groundwater Elevation Contour Map

Tables:      1 - Groundwater Extraction – Mass Removal Data  
                  2 - Vapor Extraction – Mass Removal Data

Attachment: A - Blaine Groundwater Monitoring Report and Field Notes  
                  B - DVE Test Analytical Results and Field Notes

cc:      Karen Petryna, Equiva Services LLC, P.O. Box 7869, Burbank, California 91510-7869  
                  Gursharnjeet Cheema, 1060 St. Raphael Drive, Bay Point, CA 94565

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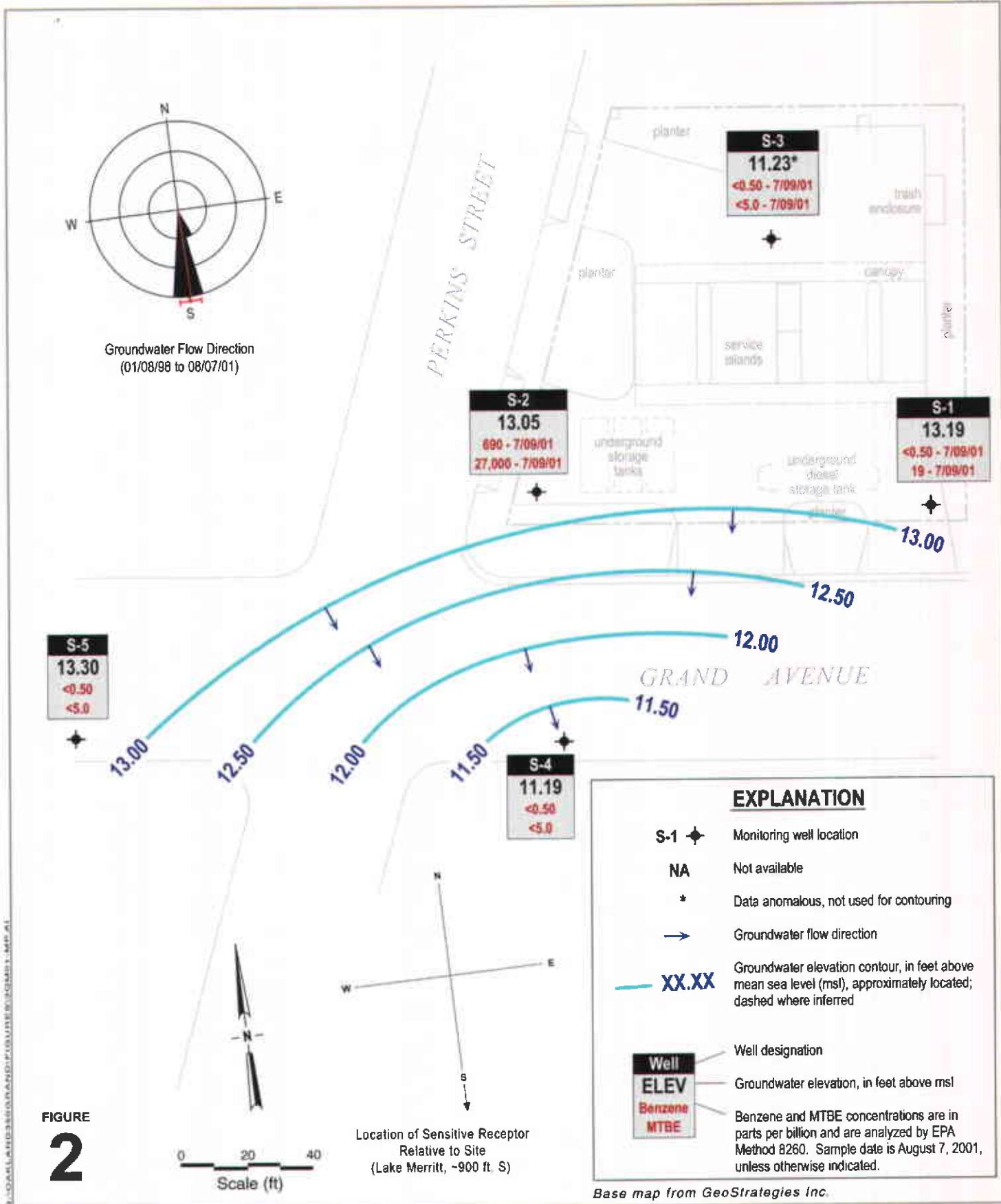
## Shell-branded Service Station

350 Grand Avenue  
Oakland, California  
Incident #98995755



C A M B R I A

## Vicinity / Area Well Survey Map



**Shell-branded Service Station**  
350 Grand Avenue  
Oakland, California  
Incident #98995755



**Groundwater Elevation  
Contour Map**

August 7, 2001

**Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995755, 350 Grand Avenue, Oakland, California**

Date Purged	Well ID	Cumulative			TPPH			Benzene			MTBE		
		Volume Pumped (gal)	Volume Pumped (gal)	Date Sampled	TPPH Concentration (ppb)	TPPH Removed (pounds)	TPPH Removed To Date (pounds)	Benzene Concentration (ppb)	Benzene Removed (pounds)	Benzene Removed To Date (pounds)	MTBE Concentration (ppb)	MTBE Removed (pounds)	MTBE Removed To Date (pounds)
06/27/01	S-2	50	50	02/16/01	20,000	0.008	0.008	990	0.0004	0.0004	21,000	0.009	0.009
<b>Total Gallons Extracted:</b>		<b>50</b>			<b>Total Pounds Removed:</b>	<b>0.008</b>			<b>0.0004</b>				<b>0.009</b>
					<b>Total Gallons Removed:</b>	<b>0.001</b>			<b>0.0001</b>				<b>0.001</b>

**Abbreviations & Notes:**

TPPH = Total purgeable hydrocarbons as gasoline

MTBE = Methyl tert-butyl ether

µg/L = Micrograms per liter

ppb = Parts per billion, equivalent to µg/L

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)

Volume removal data based on the formula: density (in gms/cc) x 9.339 (ccxlbs/gmsxgals)

TPPH, benzene, and MTBE analyzed by EPA Method 8260

Concentrations based on most recent groundwater monitoring results

If concentration is less than the laboratory detection limit, one half of the detection limit concentration is used in the mass removal calculation.

Groundwater extracted by vacuum trucks provided by ACTI. Water disposed of at a Martinez Refinery.

# CAMBRIA

**Table 2: Vapor Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995755, 350 Grand Avenue, Oakland, California**

Date	Well ID	Interval Hours of Operation	System Flow Rate (CFM)	Hydrocarbon Concentrations			TPHg		Benzene		MTBE	
				TPHg (Concentrations in ppmv)	Benzene	MTBE	TPHg Removal Rate (#/hour)	Cumulative TPHg Removed (#)	Benzene Removal Rate (#/hour)	Cumulative Benzene Removed (#)	MTBE Removal Rate (#/hour)	Cumulative MTBE Removed (#)
					(Concentrations in ppmv)	(#/hour)	(#)	(#)	(#)	(#)	(#)	
06/27/01	S-2	8.00	3.0	7,600	7.6	15	0.305	2.44	0.000	0.002	0.001	0.005
<b>Total Pounds Removed:</b>							<b>TPHg = 2.44</b>		<b>Benzene = 0.002</b>		<b>MTBE = 0.005</b>	

**Abbreviations and Notes:**

CFM = Cubic feet per minute

TPHg = Total petroleum hydrocarbons as gasoline (C6-C12) by modified EPA Method 8015 in 1 liter tedlar bag samples

ppmv = Parts per million by volume

# = Pounds

NA = Not available

TPHG, Benzene, and MTBE analyzed by EPA Method 8015/8020 in 1 liter tedlar bag samples

TPHg / Benzene / MTBE removal rate = Rate based on Bay Area Air Quality Management District's Manual of Procedures for Soil Vapor Extraction dated July 17, 1991.

(Rate = Concentration (ppmv) x system flow rate (cfm) x (1lb-mole/386ft<sup>3</sup>) x molecular weight (86 lb/lb-mole for TPHg, 78 lb/lb-mole for benzene, 88 lb/lb-mole for MTBE)  
x 60 min/hour x 1/1,000,000)

Cumulative TPHg / Benzene / MTBE removal = Previous removal rate multiplied by the hour-interval of operation plus the previous total

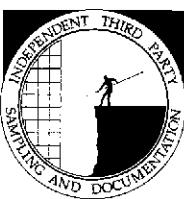
If concentration is less than the laboratory detection limit, one half of the detection limit concentration is used in the mass removal calculation.

**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](http://www.blainetech.com)

August 30, 2001

Karen Petryna  
Equiva Services LLC  
P.O. Box 7869  
Burbank, CA 91510-7869

Third Quarter 2001 Groundwater Monitoring at  
Shell-branded Service Station  
350 Grand Avenue  
Oakland, CA

Monitoring performed on July 9 and August 7, 2001

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#### Groundwater Monitoring Report 010709-C-2

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



Nick Sudano  
Project Coordinator

NS/jt

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

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

**WELL CONENTRATIONS**  
**Shell-branded Service Station**  
**350 Grand Avenue**  
**Oakland, CA**  
**Wic #204-5510-0204**

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
S-1	01/23/1991	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	20.84	9.73	11.11	NA
S-1	04/25/1991	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	20.84	7.37	13.47	NA
S-1	07/19/1991	<50	<50	6.8	<0.5	<0.5	<0.5	NA	NA	20.84	8.92	11.92	NA
S-1	10/09/1991	120	260d	10	<0.5	<0.5	<0.5	NA	NA	20.84	9.62	11.22	NA
S-1	01/23/1992	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	20.84	8.94	11.90	NA
S-1	04/27/1992	<50	70b	1.2	<0.5	<0.5	<0.5	NA	NA	20.84	7.06	13.78	NA
S-1	07/10/1992	<50	930	13	<0.5	<0.5	<0.5	NA	NA	20.84	8.31	12.53	NA
S-1	10/06/1992	62	110	<0.5	<0.5	<0.5	<0.5	NA	NA	20.84	9.55	11.29	NA
S-1	01/06/1993	85	81	1.1	<0.5	<0.5	<0.5	NA	NA	20.84	9.86	10.98	NA
S-1	04/26/1993	<50	53c	<0.5	<0.5	<0.5	<0.5	NA	NA	20.84	6.30	14.54	NA
S-1 (D)	04/26/1993	<50	53c	<0.5	<0.5	<0.5	<0.5	NA	NA	20.84	6.30	14.54	NA
S-1	07/20/1993	<50	140	<0.5	<0.5	<0.5	<0.5	NA	NA	20.84	8.78	12.06	NA
S-1	10/18/1993	<50	210	<0.5	<0.5	<0.5	<0.5	NA	NA	20.84	9.20	11.64	NA
S-1	01/07/1994	<50	<50	1.4	1.5	0.55	2.8	NA	NA	20.84	9.53	11.31	NA
S-1 (D)	01/07/1994	<50	53	1.2	1.5	<0.5	2.7	NA	NA	20.84	9.53	11.31	NA
S-1	04/11/1994	<50	320	2.8	<0.5	<0.5	<0.5	NA	NA	20.84	8.50	12.34	NA
S-1 (D)	04/11/1994	<50	220	2.6	<0.5	<0.5	<0.5	NA	NA	20.84	8.50	12.34	NA
S-1	07/14/1994	NA	NA	NA	NA	NA	NA	NA	NA	20.84	8.45	12.39	NA
S-1	07/19/1994	<50	110	<0.5	<0.5	<0.5	<0.5	NA	NA	20.84	9.07	11.77	NA
S-1	10/06/1994	110	370	1.4	<0.5	<0.5	<0.5	NA	NA	20.84	11.68	9.16	NA
S-1	01/04/1995	120	1,000	2.5	<0.5	1.5	1.7	NA	NA	20.84	8.51	12.33	NA
S-1	04/12/1995	<50	290	2.1	<0.5	<0.5	<0.5	NA	NA	20.84	6.66	14.18	NA
S-1 (D)	04/12/1995	<50	480	<0.5	<0.5	<0.5	<0.5	NA	NA	20.84	6.66	14.18	NA
S-1	07/07/1995	<50	370	5.5	<0.5	<0.5	<0.5	NA	NA	20.84	6.95	13.89	NA
S-1 (D)	07/07/1995	<50	450	6.5	<0.5	<0.5	<0.5	NA	NA	20.84	6.95	13.89	NA
S-1	10/05/1995	<50	200	3.9	1.2	<0.5	2.4	NA	NA	20.84	8.50	12.34	NA

**WELL CONENTRATIONS**  
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Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
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S-1	01/12/1996	230	1,500	2.5	<0.5	0.9	0.6	NA	NA	20.84	8.02	12.82	NA
S-1	04/02/1996	95	2,000	0.91	<0.5	<0.5	<0.5	140	NA	20.84	4.98	15.86	NA
S-1	07/30/1996	<50	510	<0.5	<0.5	<0.5	<0.5	67	NA	20.84	6.40	14.44	NA
S-1 (D)	07/30/1996	<50	380	<0.5	<0.5	<0.5	<0.5	68	NA	20.84	6.40	14.44	NA
S-1	10/02/1996	<50	250	<0.5	<0.5	<0.5	<0.5	96	NA	20.84	7.53	13.31	NA
S-1	09/19/1997	<50	120	<0.50	<0.50	<0.50	<0.50	37	NA	20.84	8.54	12.30	0.8
S-1	01/08/1998	<50	210	<0.50	<0.50	<0.50	<0.50	74	NA	20.84	9.09	11.75	2.6
S-1	07/17/1998	<50	99	<0.50	<0.50	<0.50	<0.50	25	NA	20.86	6.48	14.38	2.6
S-1	01/28/1999	92.7	212	4.5	1.83	1.59	12.1	2.17	NA	20.86	10.46	10.40	2.2
S-1	07/23/1999	537	<50	81.1	91.3	24.8	81.6	47.9	NA	20.86	10.02	10.84	2.1
S-1	01/24/2000	<50.0	79.6	<0.500	<0.500	<0.500	<0.500	8.41	NA	20.86	8.42	12.44	2.2
S-1	07/27/2000	<50.0	127	<0.500	<0.500	<0.500	<0.500	31.9	NA	20.86	7.34	13.52	1.6
S-1	01/12/2001	<50.0	225	<0.500	<0.500	<0.500	<0.500	35.9	NA	20.86	8.15	12.71	1.8
S-1	02/16/2001	<50	140	<0.50	<0.50	<0.50	1.0	NA	24	20.86	7.42	13.44	6.1
S-1	07/09/2001	<50	57	<0.50	<0.50	<0.50	<0.50	NA	19	20.86	7.95	12.91	5.4
S-1	08/07/2001	NA	NA	NA	NA	NA	NA	NA	NA	20.86	7.67	13.19	NA

S-2	01/23/1991	2,500	1,200	550	15	33	42	NA	NA	21.24	10.55	10.69	NA
S-2	04/25/1991	32,000	20,000b	2,900	480	1,400	2,300	NA	NA	21.24	8.24	13.00	NA
S-2	07/19/1991	21,000	30,000b	4,700	430	1,200	2,400	NA	NA	21.24	9.55	11.69	NA
S-2	10/09/1991	29,000	32,000b	6,300	510	1,700	2,400	NA	NA	21.24	10.26	10.98	NA
S-2	01/23/1992	31,000	36,000b	5,800	480	2,000	2,700	NA	NA	21.24	9.51	11.73	NA
S-2	04/27/1992	21,000d	12,000b	4,800	320	1,600	1,400	NA	NA	21.24	7.83	13.41	NA
S-2	07/10/1992	31,000	3,700e	7,500	940	3,400	3,500	NA	NA	21.24	8.57	12.67	NA
S-2	10/06/1992	57,000	4,500e	9,300	1,200	4,000	4,900	NA	NA	21.24	9.49	11.75	NA
S-2	01/06/1993	55,000	5,600	5,600	360	3,000	3,000	NA	NA	21.24	8.56	12.68	NA

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S-2	04/26/1993	32,000	9,400e	10,000	500	4,400	3,600	NA	NA	21.24	6.84	14.40	NA
S-2	07/20/1993	25,000	8,400e	5,800	300	2,700	1,400	NA	NA	21.24	8.52	12.72	NA
S-2 (D)	07/20/1993	25,000	8,900e	5,900	310	2,800	1,400	NA	NA	21.24	8.52	12.72	NA
S-2	10/18/1993	23,000	18,000e	3,700	200	2,100	1,600	NA	NA	21.24	9.36	11.88	NA
S-2 (D)	10/18/1993	28,000	14,000e	3,700	210	2,100	1,600	NA	NA	21.24	9.36	11.88	NA
S-2	01/07/1994	120,000	22,000e	6,900	400	3,100	2,600	NA	NA	21.24	8.37	12.87	NA
S-2	04/11/1994	34,000	17,000e	4,800	170	1,900	880	NA	NA	21.24	6.96	14.28	NA
S-2	07/14/1994	NA	NA	NA	NA	NA	NA	NA	NA	21.24	7.49	13.75	NA
S-2	07/19/1994	23,000	NA	4,300	210	1,100	1,000	NA	NA	21.24	8.02	13.22	NA
S-2 (D)	07/19/1994	29,000	NA	4,700	270	1,200	1,200	NA	NA	21.24	8.02	13.22	NA
S-2	10/06/1994	61,000	NA	4,600	290	1,900	1,900	NA	NA	21.24	11.00	10.24	NA
S-2 (D)	10/06/1994	52,000	NA	5,200	270	2,100	1,900	NA	NA	21.24	11.00	10.24	NA
S-2	01/04/1994	23,000	NA	4,500	49	1,300	500	NA	NA	21.24	8.07	13.17	NA
S-2 (D)	01/04/1995	18,000	NA	3,800	33	1,100	390	NA	NA	21.24	8.07	13.17	NA
S-2	04/12/1995	29,000	NA	4,300	210	990	700	NA	NA	21.24	6.12	15.12	NA
S-2	07/07/1995	26,000	NA	4,200	180	1,100	730	NA	NA	21.24	6.35	14.89	NA
S-2	10/05/1995	26,000	10,000	3,500	150	1,100	640	NA	NA	21.24	7.36	13.88	NA
S-2 (D)	10/05/1995	33,000	9,400	4,200	210	1,500	850	NA	NA	21.24	7.36	13.88	NA
S-2	01/12/1996	36,000	13,000	4,100	240	1,400	790	NA	NA	21.24	7.64	13.60	NA
S-2 (D)	01/12/1996	40,000	11,000	4,100	260	1,400	860	NA	NA	21.24	7.64	13.60	NA
S-2	04/02/1996	12,000	7,300	1,300	120	460	150	4,000	NA	21.24	6.18	15.06	NA
S-2 (D)	04/02/1996	17,000	5,800	1,800	29	590	140	7,600	NA	21.24	6.18	15.06	NA
S-2	07/30/1996	18,000	13,000	3,000	100	1,200	420	17,000	19,000	21.24	7.22	14.02	NA
S-2	10/02/1996	28,000	18,000	3,700	110	1,100	260	20,000	NA	21.24	7.60	13.64	NA
S-2 (D)	10/02/1996	25,000	31,000	3,500	100	1,100	260	19,000	NA	21.24	7.60	13.64	NA
S-2	09/19/1997	21,000	11,000	2,300	120	500	110	11,000	NA	21.24	7.45	13.79	2.1

**WELL CONENTRATIONS**  
**Shell-branded Service Station**  
**350 Grand Avenue**  
**Oakland, CA**  
**Wic #204-5510-0204**

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
S-2	01/08/1998	35,000	8,100	3,200	260	850	320	23,000	NA	21.24	6.96	14.28	2.3
S-2 (D)	01/08/1998	27,000	5,400	3,400	190	860	200	23,000	NA	21.24	6.96	14.28	2.3
S-2	07/17/1998	19,000	12,000	1,700	130	610	130	13,000	NA	21.24	6.67	14.57	2.3
S-2	01/28/1999	482	99	24	7.52	5.41	63.7	11	NA	21.24	10.63	10.61	2.4
S-2	07/23/1999	320	223	52.0	54.5	14.7	48.6	33.9	NA	21.24	10.12	11.12	2.6
S-2	01/24/2000	18,500	7,600	1,440	140	472	68.9	6,940	NA	21.24	8.63	12.61	1.6
S-2	07/27/2000	14,900	10,200	1,250	98.8	437	<50.0	22,200	30,200	21.24	7.94	13.30	2.0
S-2f	01/12/2001	<50.0	96.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	21.24	8.82	12.42	1.9
S-2	02/16/2001	20,000	<5,000	990	93	450	63	NA	21,000	21.24	7.10	14.14	1.6
S-2	07/09/2001	16,000	26,000	690	62	210	<50	NA	27,000	21.24	8.35	12.89	2.1
S-2	08/07/2001	NA	NA	NA	NA	NA	NA	NA	NA	21.24	8.19	13.05	NA
S-3	01/23/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	14.67	8.03	NA
S-3	04/25/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	12.96	9.74	NA
S-3	07/19/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	12.45	10.25	NA
S-3	10/09/1991	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	12.98	9.72	NA
S-3	01/23/1992	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	13.06	9.64	NA
S-3	04/27/1992	<50	100	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	7.25	15.45	NA
S-3	07/10/1992	<50	68	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	8.46	14.24	NA
S-3	10/06/1992	<50	<10	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	11.77	10.93	NA
S-3	01/06/1993	<50	<10	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	12.53	10.17	NA
S-3	04/26/1993	<50	69	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	4.28	18.42	NA
S-3	07/20/1993	<50	120	<0.5	0.6	<0.5	<0.5	NA	NA	22.70	5.70	17.00	NA
S-3	10/18/1993	<50	160	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	10.30	12.40	NA
S-3 a	01/07/1994	160	58	59	26	4.9	22	NA	NA	22.70	12.40	10.30	NA
S-3	04/11/1994	<50	<50	<0.52	<0.5	<0.5	<0.5	NA	NA	22.70	10.94	11.76	NA

**WELL CONENTRATIONS**  
**Shell-branded Service Station**  
**350 Grand Avenue**  
**Oakland, CA**  
**Wic #204-5510-0204**

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
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S-3	07/14/1994	NA	NA	NA	NA	NA	NA	NA	NA	22.70	7.90	14.80	NA
S-3	07/19/1994	<50	110d	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	8.12	14.58	NA
S-3	10/06/1994	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	12.15	10.55	NA
S-3	01/04/1995	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	11.18	11.52	NA
S-3	04/12/1995	<50	110	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	3.76	18.94	NA
S-3	07/07/1995	<50	410	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	4.72	17.98	NA
S-3	10/05/1995	<50	160	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	5.80	16.90	NA
S-3	01/12/1996	100	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	22.70	7.00	15.70	NA
S-3	04/02/1996	<50	170	<0.5	<0.5	<0.5	<0.5	3.4	NA	22.70	3.42	19.28	NA
S-3	07/30/1996	<50	92	<0.5	<0.5	<0.5	<0.5	4.3	NA	22.70	5.89	16.81	NA
S-3	10/02/1996	<50	160	<0.5	<0.5	<0.5	<0.5	4.1	NA	22.70	7.20	15.50	NA
S-3	09/19/1997	<50	260	<0.50	<0.50	<0.50	<0.50	4.3	NA	22.70	6.92	15.78	1.4
S-3 (D)	09/19/1997	<50	290	<0.50	<0.50	<0.50	<0.50	5.2	NA	22.70	6.92	15.78	1.4
S-3	01/08/1998	<50	170	<0.50	<0.50	<0.50	0.92	120	NA	22.70	5.77	16.93	2.7
S-3	07/17/1998	<50	97	<0.50	<0.50	<0.50	<0.50	33	NA	22.71	4.17	18.54	2.7
S-3	01/28/1999	656	<50.0	45.4	10.2	4.98	83.2	87.2	NA	22.71	8.15	14.56	1.8
S-3	07/23/1999	<50.0	77.3	<0.500	<0.500	<0.500	<0.500	39.3	NA	22.71	7.46	15.25	1.9
S-3	01/24/2000	<50.0	77.2	<0.500	<0.500	<0.500	<0.500	12.0	NA	22.71	5.92	16.79	2.1
S-3	07/27/2000	<50.0	142	<0.500	<0.500	<0.500	<0.500	<5.00	NA	22.71	6.54	16.17	1.7
S-3f	01/12/2001	17,200	8,050	930	88.8	497	57.0	23,200	18,500	22.71	8.25	14.46	1.7
S-3	02/16/2001	<50	<50	<0.50	<0.50	<0.50	<0.50	NA	2.0	22.71	11.37	11.34	NA
S-3	07/09/2001	<50	<50	<0.50	0.54	<0.50	<0.50	NA	<5.0	22.71	9.70	13.01	1.4
S-3	08/07/2001	NA	NA	NA	NA	NA	NA	NA	NA	22.71	11.48	11.23	NA

S-4	07/17/1998	<50	220	<0.50	<0.50	<0.50	<0.50	<2.5	NA	19.96	6.59	13.37	2.5
S-4 (D)	07/17/1998	<50	260	<0.50	<0.50	<0.50	<0.50	<2.5	NA	19.96	6.59	13.37	2.5

**WELL CONENTRATIONS**  
**Shell-branded Service Station**  
**350 Grand Avenue**  
**Oakland, CA**  
**Wic #204-5510-0204**

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
S-4	01/28/1999	<50.0	356	0.882	<0.500	<0.500	0.71	<2.00	NA	19.96	10.57	9.39	3.0
S-4	07/23/1999	<50.0	<50	<0.500	<0.500	<0.500	<0.500	8.27	NA	19.96	10.06	9.90	2.1
S-4	01/24/2000	Unable to sample		NA	NA	NA	NA	NA	NA	19.96	8.29	11.67	NA
S-4	02/02/2000	<50.0	410	<0.500	<0.500	<0.500	<0.500	<5.00	NA	19.96	9.93	10.03	2.0
S-4	07/27/2000	Well inaccessible		NA	NA	NA	NA	NA	NA	19.96	NA	NA	NA
S-4	08/02/2000	<50.0	265	<0.500	<0.500	<0.500	<0.500	<2.50	NA	19.96	8.05	11.91	2.0
S-4	01/12/2001	Well inaccessible		NA	NA	NA	NA	NA	NA	19.96	NA	NA	NA
S-4	01/25/2001	<50.0	235	<0.500	0.629	0.656	4.65	<2.50	NA	19.96	10.12	9.84	2.0
S-4	02/16/2001	Well inaccessible		NA	NA	NA	NA	NA	NA	19.96	NA	NA	NA
S-4	07/09/2001	Well Inaccessible		NA	NA	NA	NA	NA	NA	19.96	NA	NA	NA
S-4	08/07/2001	<50	<50	<0.50	<0.50	<0.50	<1.0	NA	<5.0	19.96	8.77	11.19	2.3
S-5	07/17/1998	<50	110	<0.50	<0.50	<0.50	<0.50	<2.5	NA	22.27	6.78	15.49	2.2
S-5	01/28/1999	<50.0	109	<0.500	<0.500	<0.500	<0.500	<2.00	NA	22.27	10.75	11.52	2.0
S-5	07/23/1999	<50.0	204	<0.500	<0.500	<0.500	<0.500	5.95	NA	22.27	10.21	12.06	1.8
S-5	01/24/2000	Unable to sample		NA	NA	NA	NA	NA	NA	22.27	8.23	14.04	NA
S-5	02/02/2000	<50.0	172	<0.500	<0.500	<0.500	<0.500	<5.00	NA	22.27	10.15	12.12	1.9
S-5	07/27/2000	<50.0	119	<0.500	<0.500	<0.500	<0.500	<5.00	NA	22.27	7.41	14.86	2.0
S-5	01/12/2001	<50.0	NA	<0.500	<0.500	<0.500	<0.500	<2.50	NA	22.27	8.80	13.47	NA
S-5	01/25/2001	NA	193	NA	NA	NA	NA	NA	NA	22.27	9.77	12.50	1.7
S-5	02/16/2001	Well inaccessible		NA	NA	NA	NA	NA	NA	22.27	NA	NA	NA
S-5	07/09/2001	Well inaccessible		NA	NA	NA	NA	NA	NA	22.27	NA	NA	NA
S-5	08/07/2001	<50	<50	<0.50	<0.50	<0.50	<1.0	NA	<5.0	22.27	8.97	13.30	2.2
HP-1	01/27/1993	22,000	14,000	2,500	130	1,400	140	NA	NA	NA	NA	NA	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**350 Grand Avenue**  
**Oakland, CA**  
**Wic #204-5510-0204**

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
HP-2	01/27/1993	<50	NA	<0.5	4.4	<0.5	<0.5	NA	NA	NA	NA	NA	NA
HP-3	01/27/1993	<50	NA	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA

Abbreviations:

TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to February 16, 2001 analyzed by EPA Method 8015.

TEPH = Total petroleum hydrocarbons as diesel by modified EPA Method 8015.

BTEX = benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to February 16, 2001 analyzed by EPA Method 8020.

MTBE = methyl-tertiary-butyl ether

TOB = Top of Wellbox Elevation

GW = Groundwater

DO = Dissolved Oxygen

ug/L = parts per billion

ppm =parts per million

msl = Mean sea level

ft = Feet

<n = Below detection limit

D = Duplicate sample

HP = Hydropunch ground water sample

NA = Not applicable

**WELL CONENTRATIONS**  
**Shell-branded Service Station**  
**350 Grand Avenue**  
**Oakland, CA**  
**Wic #204-5510-0204**

Well ID	Date	TPPH (ug/L)	TEPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOB (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
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Notes:

- a = TPPH/BETX concentrations anomalous with historical data. Lab verified concentrations.
  - b = Compounds reported as TPH-D appear to be the less volatile constituents of gasoline.
  - c = Compounds reported as TPH-D are primarily due to the presence of a heavier petroleum product, possibly motor oil.
  - d = Chromatogram pattern indicated an unidentified hydrocarbon.
  - e = Compounds reported as TPH-D are primarily due to the presence of lighter petroleum product, possibly gasoline.
  - f = Wells resampled due to anomalous data.
- Wells S-1, S-3, S-4, and S-5 surveyed on May 4, 1998 by Virgil Chavez Land Surveying of Vallejo, California.



Report Number : 21201

Date : 8/17/2001

Nick Sudano  
Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112-1105

Subject : 3 Water Samples  
Project Name : 350 Grand Ave., Oakland  
Project Number : 010709-C2  
P.O. Number : 98995755

Dear Mr. Sudano,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

A handwritten signature in black ink that reads "Joel Kiff".  
Joel Kiff



Report Number : 21201

Date : 8/17/2001

Project Name : 350 Grand Ave., Oakland

Project Number : 010709-C2

Sample : S-1-

Matrix : Water

Lab Number : 21201-01

Sample Date : 7/9/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	7/15/2001
Toluene	< 0.50	0.50	ug/L	EPA 8260B	7/15/2001
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	7/15/2001
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	7/15/2001
Methyl-t-butyl ether (MTBE)	19	5.0	ug/L	EPA 8260B	7/15/2001
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	7/15/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	7/15/2001
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	7/15/2001
TPH as Diesel	57	50	ug/L	M EPA 8015	7/18/2001

Sample : S-2-

Matrix : Water

Lab Number : 21201-02

Sample Date : 7/9/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	690	50	ug/L	EPA 8260B	7/15/2001
Toluene	62	50	ug/L	EPA 8260B	7/15/2001
Ethylbenzene	210	50	ug/L	EPA 8260B	7/15/2001
Total Xylenes	< 50	50	ug/L	EPA 8260B	7/15/2001
Methyl-t-butyl ether (MTBE)	27000	500	ug/L	EPA 8260B	7/15/2001
TPH as Gasoline	16000	5000	ug/L	EPA 8260B	7/15/2001
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	7/15/2001
4-Bromofluorobenzene (Surr)	98.3		% Recovery	EPA 8260B	7/15/2001
TPH as Diesel	26000	100	ug/L	M EPA 8015	7/25/2001

Approved By: Joel Kiff



Report Number : 21201

Date : 8/17/2001

Project Name : 350 Grand Ave., Oakland

Project Number : 010709-C2

Sample : S-3-

Matrix : Water

Lab Number : 21201-03

Sample Date : 7/9/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	7/15/2001
Toluene	0.54	0.50	ug/L	EPA 8260B	7/15/2001
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	7/15/2001
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	7/15/2001
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	7/15/2001
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	7/15/2001
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	7/15/2001
4-Bromofluorobenzene (Surr)	106		% Recovery	EPA 8260B	7/15/2001
TPH as Diesel	< 50	50	ug/L	M EPA 8015	7/18/2001

Approved By: Joel Kiff

Report Number : 21201

Date : 8/17/2001

Project Name : **350 Grand Ave., Oakland**

Project Number : **010709-C2**

21201 Quality Control Data - Method Blank

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel	< 50	50	ug/L	M EPA 8015	7/13/2001

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC 720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 21201

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 8/17/2001

Project Name : 350 Grand Ave., Oakland

Project Number : 010709-C2

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Recov.	Duplicate Spiked Sample Recov.	Relative Percent Diff.	Spiked Sample Recov.	Relative Percent Diff.
Spike Recovery Data														
TPH as Diesel	Blank	<50	1000	1000	1300	1280	ug/L	M EPA 8015	7/13/2001 130	128	1.40	70-130	25	

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 21201

Date : 8/17/2001

Project Name : **350 Grand Ave., Oakland**

Project Number : **010709-C2**

21201 Quality Control Data - Method Blank

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	7/15/2001
Toluene	< 0.50	0.50	ug/L	EPA 8260B	7/15/2001
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	7/15/2001
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	7/15/2001
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	7/15/2001
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	7/15/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	7/15/2001
4-Bromofluorobenzene (Surr)	98.1		% Recovery	EPA 8260B	7/15/2001

Approved By: Joel Kiff

Report Number : 21201

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 8/17/2001

Project Name : 350 Grand Ave., Oakland

Project Number : 010709-C2

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Recov.	Duplicate Spiked Sample Recov.	Relative Percent Diff.	Spiked Sample Percent Recov.	Relative Percent Diff.
Spike Recovery Data														
Benzene	21211-01	<0.50	21.8	20.9	20.8	19.7	ug/L	EPA 8260B	7/15/2001	95.2	94.2	1.00	70-130	25
Toluene	21211-01	<0.50	21.8	20.9	21.6	20.3	ug/L	EPA 8260B	7/15/2001	98.8	97.3	1.56	70-130	25
Tert-Butanol	21211-01	<5.0	109	104	103	99.0	ug/L	EPA 8260B	7/15/2001	94.2	94.8	0.587	70-130	25
Methyl-t-Butyl Ether	21211-01	<0.50	21.8	20.9	22.4	22.7	ug/L	EPA 8260B	7/15/2001	102	109	5.96	70-130	25

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Approved By: Joel Kiff



Report Number : 21201

QC Report : Laboratory Control Sample (LCS)

Date : 8/17/2001

Project Name : **350 Grand Ave., Oakland**

Project Number : **010709-C2**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	19.6	ug/L	EPA 8260B	7/14/2001	94.4	70-130
Toluene	19.6	ug/L	EPA 8260B	7/14/2001	97.9	70-130
Tert-Butanol	97.8	ug/L	EPA 8260B	7/14/2001	96.6	70-130
Methyl-t-Butyl Ether	19.6	ug/L	EPA 8260B	7/14/2001	92.6	70-130

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Approved By: Joel Kiff

LAB: Kiff

EQUIVA Services LLC Chain Of Custody Record

Lab identification (if necessary):

**Address:**

**City, State, Zip:**

Equiva Project Manager to be invoiced:		INCIDENT NUMBER: SITE ONLY						
<input checked="" type="checkbox"/> SCIENCE & ENGINEERING	Karen Petryna	9	8	9	9	5	7	5
<input type="checkbox"/> TECHNICAL SERVICES		DATE: 7-9-01						
<input type="checkbox"/> CRMT HOUSTON		PAGE: 1 of 1						

## **REQUESTED ANALYSIS**

## **FIELD NOTES:**

**Container/Preservative  
or PID Readings  
or Laboratory Notes**

**Retired by:** (Signature)

Received by (Signature)

Date: \_\_\_\_\_

Page 11 of 12

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Page 1

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DISTRIBUTION: Write with final report. Green to File, Yellow and Pink to Client

Received by: [Signature]  
John Cutts / Kiffle analytical

57169 v

120K



Report Number : 21664

Date : 8/28/2001

Nick Sudano  
Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112-1105

Subject : 2 Water Samples  
Project Name : 350 Grand Ave., Oakland  
Project Number : 010807-J1  
P.O. Number : 98995755

Dear Mr. Sudano,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

A handwritten signature in black ink that reads "Joel Kiff".

Joel Kiff



Report Number : 21664

Date : 8/28/2001

Project Name : 350 Grand Ave., Oakland

Project Number : 010807-J1

Sample : S-4

Matrix : Water

Lab Number : 21664-01

Sample Date : 8/7/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	8/10/2001
Toluene	< 0.50	0.50	ug/L	EPA 8260B	8/10/2001
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	8/10/2001
Total Xylenes	< 1.0	1.0	ug/L	EPA 8260B	8/10/2001
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	8/10/2001
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	8/10/2001
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	8/10/2001
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	8/10/2001
TPH as Diesel	< 50	50	ug/L	M EPA 8015	8/15/2001

Sample : S-5

Matrix : Water

Lab Number : 21664-02

Sample Date : 8/7/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	8/10/2001
Toluene	< 0.50	0.50	ug/L	EPA 8260B	8/10/2001
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	8/10/2001
Total Xylenes	< 1.0	1.0	ug/L	EPA 8260B	8/10/2001
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	8/10/2001
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	8/10/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	8/10/2001
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	8/10/2001
TPH as Diesel	< 50	50	ug/L	M EPA 8015	8/15/2001

Approved By: Joel Kiff

Report Number : 21664

Date : 8/28/2001

Project Name : **350 Grand Ave., Oakland**

Project Number : **010807-J1**

21664 Quality Control Data - Method Blank

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel	< 50	50	ug/L	M EPA 8015	8/15/2001

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC    720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 21664

## QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 8/28/2001

Project Name : 350 Grand Ave., Oakland

Project Number : 010807-J1

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Recov.	Duplicate Spiked Sample Recov.	Relative Percent Diff.	Spiked Sample Recov. Limit	Relative Percent Diff. Limit
<b>Spike Recovery Data</b>														
TPH as Diesel	Blank	<50	1000	1000	1240	1140	ug/L	M EPA 8015	8/15/2001	1124	114	7.57	70-130	25

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Approved By: Joel Kiff



Report Number : 21664

Date : 8/28/2001

Project Name : **350 Grand Ave., Oakland**

Project Number : **010807-J1**

**21664 Quality Control Data - Method Blank**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	8/11/2001
Toluene	< 0.50	0.50	ug/L	EPA 8260B	8/11/2001
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	8/11/2001
Total Xylenes	< 1.0	1.0	ug/L	EPA 8260B	8/11/2001
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	8/11/2001
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	8/11/2001
Toluene - d8 (Surrogate)	99.3		% Recovery	EPA 8260B	8/11/2001
4-Bromofluorobenzene (Surrogate)	102		% Recovery	EPA 8260B	8/11/2001

Approved By: *Joel Kiff*

Report Number : 21664

## QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 8/28/2001

Project Name : 350 Grand Ave., Oakland

Project Number : 010807-J1

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Recov.	Spiked Sample Percent	Duplicate Spiked Sample Recov.	Duplicate Spiked Sample Percent	Relative Percent Diff.	Spiked Sample Recov.	Spiked Sample Percent	Relative Percent Diff.
<b>Spike Recovery Data</b>																	
Benzene	21664-02	<0.50	19.4	19.1	20.4	20.2	ug/L	EPA 8260B	8/10/2001105	106	0.497	70-130	25				
Toluene	21664-02	<0.50	19.4	19.1	19.8	19.6	ug/L	EPA 8260B	8/10/2001102	102	0.294	70-130	25				
Tert-Butanol	21664-02	<5.0	96.9	95.5	87.3	88.0	ug/L	EPA 8260B	8/10/200190.1	92.1	2.23	70-130	25				
Methyl-t-Butyl Ether	21664-02	0.56	19.4	19.1	17.0	16.3	ug/L	EPA 8260B	8/10/200185.1	82.2	3.40	70-130	25				

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Approved By: Joel Kiff



QC Report : Laboratory Control Sample (LCS)

Report Number : 21664

Date : 8/28/2001

Project Name : **350 Grand Ave., Oakland**

Project Number : **010807-J1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	19.3	ug/L	EPA 8260B	8/10/2001	105	70-130
Toluene	19.3	ug/L	EPA 8260B	8/10/2001	101	70-130
Tert-Butanol	96.3	ug/L	EPA 8260B	8/10/2001	91.5	70-130
Methyl-t-Butyl Ether	19.3	ug/L	EPA 8260B	8/10/2001	79.6	70-130

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Approved By:

  
Joel Kiff

BLAINE TECH SERVICES, INC.

LAB: Kiff

EQUIVA Services LLC Chain Of Custody Record 21664

DISSEMINATION: What will you do next? Go to the Year-end Plan to Create

ט'ז ב' טבת ה'תרכז

## WELL GAUGING DATA

Project # 010807-J1 Date 8-7-01 Client Egawa

Site 350 Grand Ave Oakland CA.

# EQUIVA WELL MONITORING DATA SHEET

BTS #:	010807-J1	Site:	350 Grand Ave., Oakland						
Sampler:	JIC	Date:	8-7-01						
Well I.D.:	S-4	Well Diameter:	2	3	4	6	8	10	
Total Well Depth:	14.91	Depth to Water:	8.77						
Depth to Free Product:		Thickness of Free Product (feet):							
Referenced to:	PVC	Grade	D.O. Meter (if req'd):	YSI	HACH				

Purge Method: Bailer

Disposable Bailer

Middleburg

Electric Submersible

Wateria

**Peristaltic**

Extraction Pump

Other

Sampling Method:

Bailer

Disposable Bailer

Extraction Port

Dedicated Tubing

Other

<b>0.25</b> (Gals.) X	<b>3</b>	=	Gals.
1 Case Volume	Specified Volumes	Calculated Volume	

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	5"	1.17
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
0930	68.9	6.9	920	>200	0.25	
0935	67.5	6.7	1005	>200	0.50	
0942	67.4	6.6	1020	>200	0.75	

Did well dewater? Yes  No  Gallons actually evacuated:

**0.75**

Sampling Time: **0950** Sampling Date: **8-7-01**

Sample I.D.: **S-4** Laboratory:  Kiff  Sequoia  Other

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

EB I.D. (if applicable): <sup>@</sup> 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

BLAINE

TECH SERVICES

1680 FOGERS AVE. • SAN JOSE, CA 95110-1105 • (408) 670-0555 • FAX (408) 670-7771 • CONTRACTOR'S LICENSE #26001

# EQUIVA WELL MONITORING DATA SHEET

BTS #:	010807-JI	Site:	350 Grand Ave., Oakland					
Sampler:	JK	Date:	8-7-01					
Well I.D.:	S-5	Well Diameter:	2	3	4	6	8	1
Total Well Depth:	13.45	Depth to Water:	8.97					
Depth to Free Product:		Thickness of Free Product (feet):						
Referenced to:	PVC	Grade	D.O. Meter (if req'd):	YSI	HACH			

Purge Method: Bailer  
 Disposable Bailer  
 Middleburg  
 Electric Submersible

Waterra  
 Peristaltic ✓  
 Extraction Pump  
 Other \_\_\_\_\_

Sampling Method: Bailer  
 Disposable Bailer  
 Extraction Port  
 Dedicated Tubing

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

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

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	1"	0.65
2"	0.16	6"	1.17
3"	0.37	Other	radius <sup>2</sup> + 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
0834	64.6	6.1	2037	16	0.2	
0839	64.9	6.1	2042	52	0.4	
0843	65.2	6.1	2102	71	0.6	
-	well dewatered	during sampling	/	2.75 vols filled.		DTW = 13.40
1000	DTW = 13.52	filled remaining (3rd)	vols.	/ only 3 vols filled.		
Did well dewater?	Yes	No		Gallons actually evacuated:	0.6	

Sampling Time:	0845	Sampling Date:	8-7-01
Sample I.D.:	S-5	Laboratory:	Kiff Sequoia Other _____

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

EB I.D. (if applicable):	(a)	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
--------------------	------------	----	-------------	----

## WELL GAUGING DATA

Project # 010704-C2 Date 7-9-01 Client Frigidaire

Site 350 Grand Ave - Oakland

# EQUIVA WELL MONITORING DATA SHEET

BTS #: 010709-C2	Site: 350 Grand Ave	
Sampler: Hank	Date: 7-9-01	
Well I.D.: S-1	Well Diameter: 2 (3) 4 6 8	
Total Well Depth: 17.67	Depth to Water: 7.95	
Depth to Free Product:	Thickness of Free Product (feet):	
Referenced to: PVC	Grade	D.O. Meter (if req'd): YSI HACH

Purge Method:

Bailer  
Disposable Bailer  
Middleburg  
 Electric Submersible

Sampling Method:  Bailer

Disposable Bailer  
Extraction Port  
Dedicated Tubing

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

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

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.	Turbidity	Gals. Removed	Observations
1240	72.5	6.1	615	68	3.5	
1241	72.4	6.3	595	60	7	
1242	72.8	6.5	598	63	10.5	

Did well dewater? Yes  No Gallons actually evacuated: 10.5

Sampling Time: 1247 Sampling Date: 7-9-01

Sample I.D.: S-1 Laboratory: Sequoia Columbia Other  171

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

EB I.D. (if applicable): @ \_\_\_\_\_ 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 45.4

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

# EQUIVA WELL MONITORING DATA SHEET

BTS #: 010709-C2	Site: 350 Grand Ave
Sampler: Hank	Date: 7-9-01
Well I.D.: S-2	Well Diameter: 2 <input checked="" type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 6 <input type="radio"/> 8
Total Well Depth: 15.13	Depth to Water: 8.35
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC	D.O. Meter (if req'd): YSI HACH

Purge Method: Sampling Method:  Bailer  
 Bailer Watera Disposable Bailer Extraction Port  
 Disposable Bailer Peristaltic Dedicated Tubing  
 Middleburg Extraction Pump  
 Electric Submersible Other \_\_\_\_\_

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

2.5 (Gals.) X  = 7.5 Gals.  
 1 Case Volume Specified Volumes Calculated Volume

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1325	75.4	6.5	467	>200	2.5	
1326	76.6	6.4	714	>200	5	
1327	75.6	6.6	772	>200	7.5	

Did well dewater? Yes  No Gallons actually evacuated: 7.5

Sampling Time: 1333 Sampling Date: 7-9-01

Sample I.D.: S-2 Laboratory: Sequoia Columbia Other  174

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

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

C.R.P. (if req'd): Pre-purge: mV Post-purge: mV

# EQUIVA WELL MONITORING DATA SHEET

BTS #: 010709-C2	Site: 150 Grand Ave
Sampler: Hank	Date: 7-9-01
Well I.D.: S-3	Well Diameter: 2 3 4 6 8
Total Well Depth: 15.07	Depth to Water: 9.70
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC	D.O. Meter (if req'd): YSI HACH

Purge Method: Sampling Method:  Bailei  
 Bailei Waterra  Disposable Bailei Disposable Bailei  
 Disposable Bailei Peristaltic Extraction Port  
 Middleburg Extraction Pump Dedicated Tubing  
 Electric Submersible 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

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

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1305	75.2	6.9	727	>200	2	
1306	75.7	6.7	595	>200	4	
1307	75.2	6.6	609	>200	6	

Did well dewater? Yes  No Gallons actually evacuated: 6

Sampling Time: 1312 Sampling Date: 7-9-01

Sample I.D.: S-3 Laboratory: Sequoia Columbia Other  174

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

EB I.D. (if applicable): @ \_\_\_\_\_ 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: 1.4 mg/L

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

# EQUIVA WELL MONITORING DATA SHEET

BTS #: 010709-C2	Site: 350 Grand Ave
Sampler: Hank	Date: 7-9-01
Well I.D.: 5-4	Well Diameter: 2 <input checked="" type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 6 <input type="radio"/> 8
Total Well Depth:	Depth to Water:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC	D.O. Meter (if req'd): <input checked="" type="radio"/> YSI <input type="radio"/> HACH

Purge Method:

Bailer

Waterra

Sampling Method:  Bailer

Disposable Bailer

Peristaltic

Disposable Bailer

Middleburg

Extraction Pump

Extraction Port

Electric Submersible

Other \_\_\_\_\_

Dedicated Tubing

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

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

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.	Turbidity	Gals. Removed	Observations

Did well dewater? Yes No Gallons actually evacuated:

Sampling Time: Sampling Date: 7-9-01

Sample I.D.: Laboratory: Sequoia Columbia Other  174

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

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

# EQUITVA WELL MONITORING DATA SHEET

BTS #: 010709-C2	Site: 350 Grand Ave
Sampler: Hank	Date: 7-9-01
Well I.D.: S-5	Well Diameter: 2 <input checked="" type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 6 <input type="radio"/> 8 <input type="radio"/>
Total Well Depth:	Depth to Water:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC	D.O. Meter (if req'd): <input checked="" type="radio"/> YSI <input type="radio"/> HACH

Purge Method:

Bailer  
Disposable Bailer  
Middleburg  
Electric Submersible

Waterra  
Peristaltic  
Extraction Pump  
Other \_\_\_\_\_

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

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

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.	Turbidity	Gals. Removed	Observations

Paved over? Inaccessible

Did well dewater? Yes  No  Gallons actually evacuated:

Sampling Time: Sampling Date: 7-9-01

Sample I.D.: Laboratory: Sequoia Columbia Other  174

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

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

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

D.O. (if req'd): Pre-purge:  Post-purge:

O.R.P. (if req'd): Pre-purge:  Post-purge:

**ATTACHMENT B**

**DVE Test Analytical Results and Field Notes**



Report Number : 21007

Date : 7/5/2001

Jaquelyn Jones  
Cambria Environmental Technology, Inc.  
1144 65th Street, Suite B  
Oakland, CA 94608

Subject : 1 Air Sample  
Project Name : 350 GRAND AVE, OAKLAND, CA  
Project Number :  
P.O. Number : 98995755

Dear Ms. Jones,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

A handwritten signature in black ink that reads "Joel Kiff". Below the signature, the name "Joel Kiff" is printed in a smaller, black, sans-serif font.



Report Number : 21007

Date : 7/5/2001

Project Name : 350 GRAND AVE, OAKLAND, CA

Project Number :

Sample : S-2

Matrix : Air

Lab Number : 21007-01

Sample Date : 6/27/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	7.6	2.0	ppmv	EPA 8260B	6/29/2001
Toluene	<2.0	2.0	ppmv	EPA 8260B	6/29/2001
Ethylbenzene	2.9	2.0	ppmv	EPA 8260B	6/29/2001
Total Xylenes	<2.0	2.0	ppmv	EPA 8260B	6/29/2001
Methyl-t-butyl ether	15	4.0	ppmv	EPA 8260B	6/29/2001
TPH as Gasoline	7600	200	ppmv	EPA 8260B	6/29/2001
Toluene - d8 (Surrogate)	82.4		% Recovery	EPA 8260B	6/29/2001
4-Bromofluorobenzene (Surrogate)	107		% Recovery	EPA 8260B	6/29/2001

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF

21007

EQUIVA Services LLC Chain Of Custody Record

Equiva Project Manager (To be Involved):		INCIDENT NUMBER (S&E)	DATE:
Science & Engineering (S&E)	X	98995755	6/27/01
Technical Services (TS)		SAP or CRMT NUMBER (TS/CRMT)	PAGE: / OF /
CRMT Houston			

CONSULTANT COMPANY: <b>CAMDRIA ENV.</b>		SITE ADDRESS (Street and City): <b>530 GRAND AVE, OAKLAND, CA.</b>
ADDRESS: <b>1144 65TH ST.</b>	PROJECT CONTACT (Report to): <b>JACQUELYN JONES</b>	CONSULTANT PROJECT NO.:
CITY: <b>OAKLAND, CA</b>	SAMPLER NAME (if PWD): <b>JIMMIE CONCH</b>	LAB USE ONLY
TEL: <b>(510)420-3316</b>	FAX: <b>(510)420-9170</b>	EMAIL:

**REQUESTED ANALYSIS**

DISTRIBUTION: White with final report, Green to File, Yellow and Pink to Client

SORTS/100 Review

DVE Vac Ops Field Data

Date: 6/27/01  
Technician: (initials)  
Site Address: 350 Grand

**FAXED**  
10/12

1 PG.

TO: JACQUELINE  
FROM: DAD

A/B WELL VAC S-Z

Notes: -30 GAL. H<sub>2</sub>O

- RE-CALIBRATED HORIBA @ 10:00 AM

- SAMPLES TAKEN @ 11:45

- DRUMS WILL BE DROPPED ON SITE AFTER EVENT

- LABELED DRUMS W/ NON-HAZARDOUS LABELS

3

Fixed or  
28 May  
to AK