

R 486



Shell Oil Products US

February 26, 2003

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

Subject: Shell-branded Service Station
4255 MacArthur Boulevard
Oakland, California

94619

Dear Mr. Chan:

Attached for your review and comment is a copy of the *Fourth Quarter 2002 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

Karen Petryna

Karen Petryna
Sr. Environmental Engineer

February 26, 2003

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

Re: **Fourth Quarter 2002 Monitoring Report**
Shell-branded Service Station
4255 MacArthur Boulevard
Oakland, California
Incident #98995758
Cambria Project #245-0524-002



Dear Mr. Chan:

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.

HYDROCARBON REMOVAL SUMMARY

Groundwater Extraction (GWE): Monthly GWE using a vacuum truck has been conducted intermittently at the site since April 1999. Mobile GWE vacuum operations consist of lowering dedicated stingers into selected monitoring wells and extracting fluids using a vacuum truck. The volume of extracted fluid is recorded and used to calculate the quantity of aqueous-phase hydrocarbon removed from the subsurface. To date, an estimated 14.5 pounds of liquid-phase hydrocarbons and 26.2 pounds of liquid-phase methyl tert-butyl ether (MTBE) have been removed from the site.

Dual Phase Vapor Extraction (DVE): From November 2000 to June 2001 and from April through September 2002, hydrocarbon removal efforts were augmented by mobile DVE. DVE is the process of applying high vacuum through an airtight well seal to simultaneously extract soil vapors from the vadose zone and enhance GWE from the saturated zone. For mobile DVE, a vacuum truck is used to create the vacuum and contain extracted fluids. An estimated 10.75 pounds of vapor-phase hydrocarbon and 0.153 pounds of vapor-phase MTBE were removed by this method.

**Cambria
Environmental
Technology, Inc.**

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

Separate Phase Hydrocarbons (SPH): SPH were observed periodically in well MW-3 between 1994 and 1997. During that time, an estimated total of 21.80 pounds of SPH was removed from monitoring wells by manual bailing. SPH have again been observed in the third and fourth quarters of 2002.

The table below summarizes the aqueous-, separate-, and vapor-phase hydrocarbon removal data for the site.

Mass Removal	Cumulative MTBE (lbs)	Cumulative Hydrocarbons (lbs)
Aqueous-Phase	26.2	14.5
Separate-Phase	0.0	21.80
Vapor-Phase	0.153	10.75
Total	26.353	47.05



FOURTH QUARTER 2002 ACTIVITIES

Groundwater Monitoring: Blaine Tech Services, Inc. (Blaine) of San Jose, gauged and sampled the site wells, calculated groundwater elevations and compiled the gasoline constituents analytical data. 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 report and supporting field documents, is included as Attachment A.

Joint Groundwater Sampling: Cambria coordinated joint sampling with the adjacent (upgradient) TOSCO station #1156, located at the corner of High Street and MacArthur Boulevard. The coordinated sampling data was used to determine the groundwater elevation contours shown on Figure 2. The TOSCO groundwater monitoring data and analytical results table is included as Attachment B.

GWE: During this quarter, Onyx Industrial Services of Benicia, California conducted mobile GWE using monitoring well MW-2, MW-3 and tank backfill well TB-2. Mass-removal data for the site is presented in Table 1 and Table 2. GWE, DVE and quarterly monitoring data for MW-2 are depicted graphically in Figure 3.

Underground Storage Tank (UST) and Piping Removal: This service station was closed in December 2002. On December 9, 2002, Cambria submitted an *Underground Storage Tank Closure Sampling Plan* to outline the sampling activities to be conducted in conjunction with removal of the gasoline USTs, product piping and associated overexcavation.

Remediation by Natural Attenuation (RNA) Evaluation Report: In the *Third Quarter 2002 Quarterly Groundwater Monitoring Report* dated November 26, 2002, Miller Brooks Environmental indicated that an RNA evaluation report would be submitted for the site. Given that remediation trends are monitored, evaluated and reported on a quarterly basis at this site, we do not believe that a separate report is warranted at this time.



ANTICIPATED FIRST QUARTER 2003 ACTIVITIES

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

UST and Piping Removal Oversight: All USTs, fuel dispensers, and associated product piping are scheduled for removal in late January 2003. The potential source of the SPH observed in monitoring well MW-3 will be investigated during the onsite activities.

GWE: Monthly GWE will be performed using monitoring wells MW-2 and MW-3.

Joint Groundwater Sampling: Coordinated joint sampling with the adjacent (upgradient) TOSCO station #1156, located at the corner of High Street and MacArthur Boulevard, will continue.

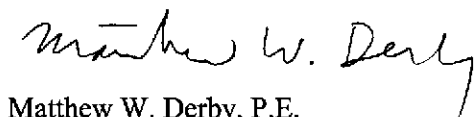
CLOSING

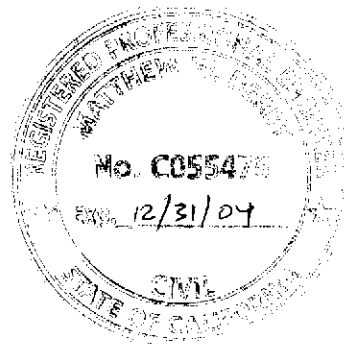
We appreciate the opportunity to work with you on this project. Please call Melody Munz at (510) 420-3324 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc




Melody Munz
Project Engineer


Matthew W. Derby, P.E.
Senior Project Engineer



Figures: 1 - Vicinity/Area Well Survey Map
2 - Groundwater Elevation Contour Map
3 - VacOps/DVE Effect on MTBE Concentration (MW-2)

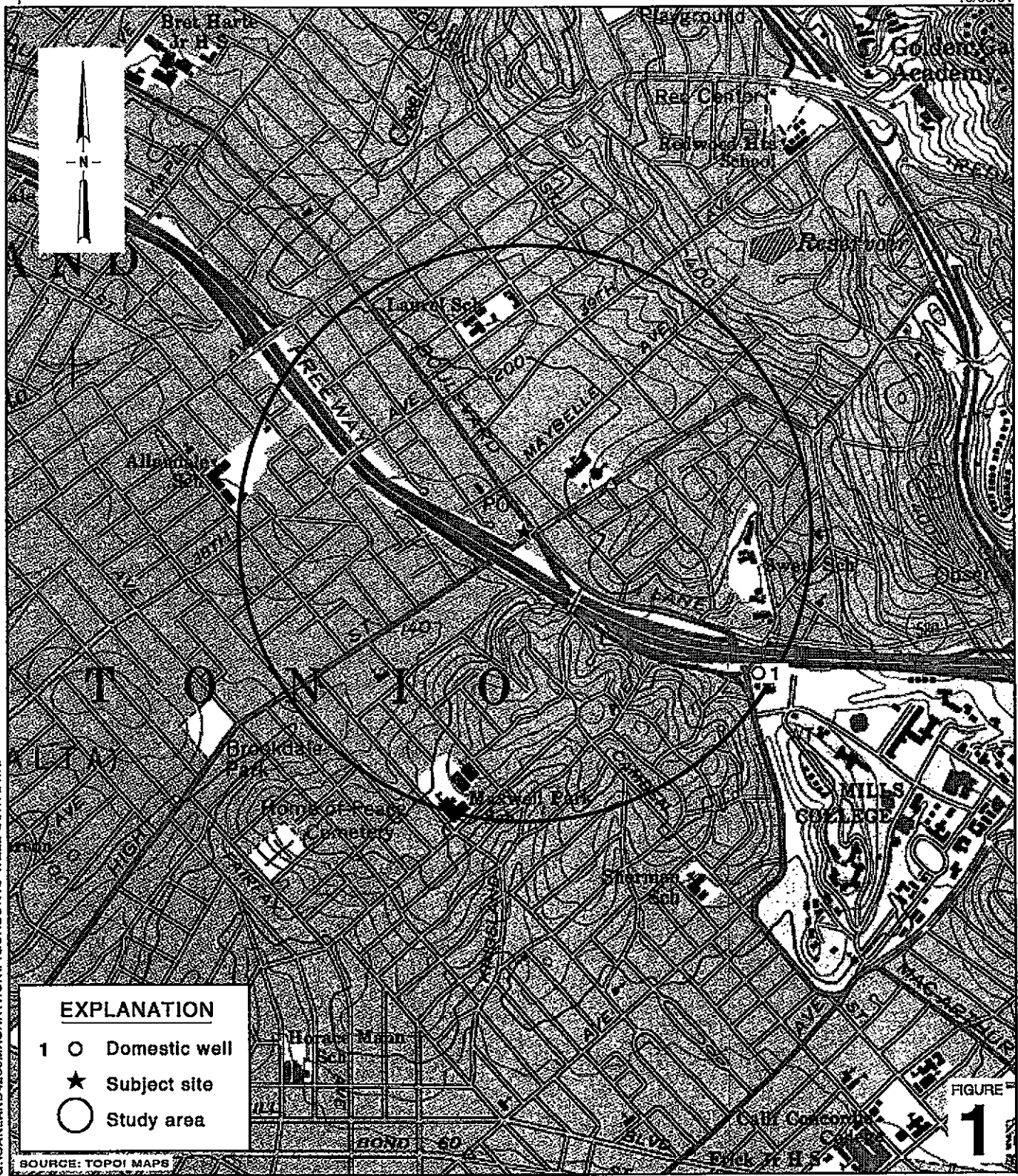
Tables: 1 - Groundwater Extraction - Mass Removal Data
2 - Vapor Extraction - Mass Removal Data

Attachments: A - Blaine Groundwater Monitoring Report and Field Notes
B - TOSCO 76 Service Station #1156 Groundwater Monitoring Data and Analytical Results

cc: Karen Petryna, Shell Oil Products US, P.O.Box 7869, Burbank, CA 91510-7869
Roland C. Malone, Jr., PO Box 2744, Castro Valley, CA 94546

G:\Oakland 4255 MacArthur\QM\4q02\4q02qm.doc

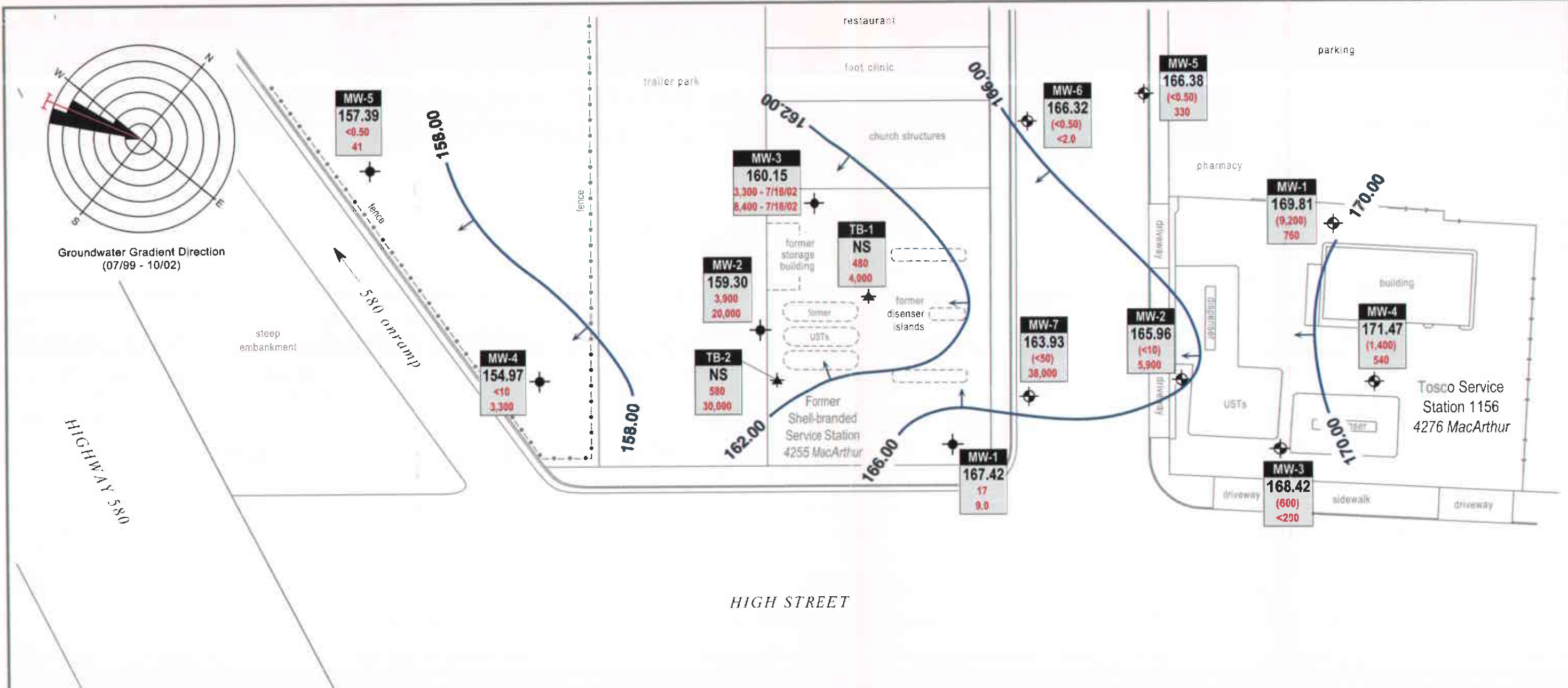
G:\OAKLAND\4286\MACARTHUR\FIGURES\VIC-WELL-SURVEY.AI



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



**Vicinity / Area Well
 Survey Map**
 (1/2 Mile Radius)

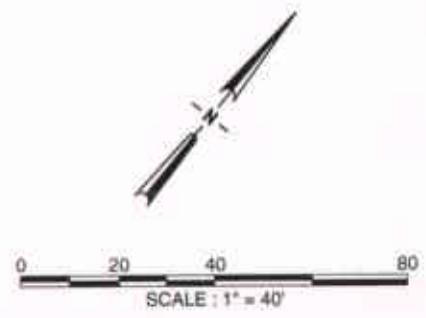


HIGH STREET

MACARTHUR BOULEVARD

EXPLANATION

- MW-1** Shell monitoring well location
- TB-1** Shell tank backfill well location
- MW-1** Tosco monitoring well location
- NS** Not surveyed
- XXX** Groundwater elevation contour, in feet above mean sea level (msl), approximately located; dashed where inferred
- ←** Inferred groundwater flow direction
- Well** Well designation
- ELEV** Groundwater elevation, in feet above msl
- Benzene** Benzene and MTBE concentrations are in parts per billion and are analyzed by EPA Method 8260. Results in parentheses were analyzed by EPA Method 8020.
- MTBE**



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

FIGURE 2

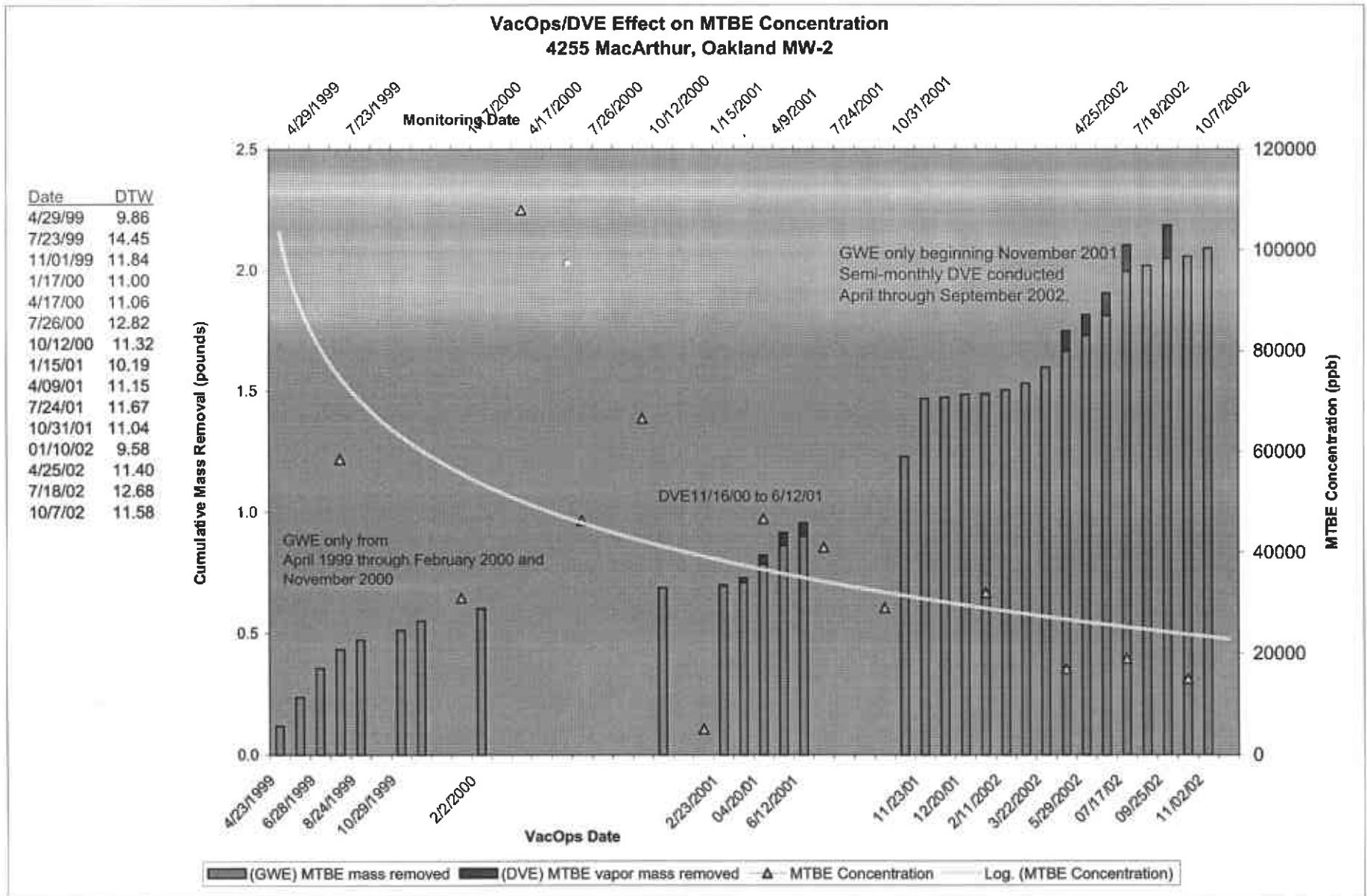


Figure 3

Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995758, 4255 MacArthur Boulevard, Oakland, CA

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	TPPH			Benzene			MTBE		
					TPPH Concentration (ppb)	TPPH Removed (lb)	TPPH Removed To Date (lb)	Benzene Concentration (ppb)	Benzene Removed (lb)	Benzene Removed to Date (lb)	MTBE Concentration (ppb)	MTBE Removed (lb)	MTBE Removed To Date (lb)
04/23/99	MW-2	200	200	04/13/98	180,000	0.30040	0.30040	2,800	0.00467	0.00467	71,000	0.11849	0.11849
05/24/99	MW-2	200	400	04/13/98	180,000	0.30040	0.60079	2,800	0.00467	0.00935	71,000	0.11849	0.23698
06/28/99	MW-2	200	600	04/13/98	180,000	0.30040	0.90119	2,800	0.00467	0.01402	71,000	0.11849	0.35547
07/30/99	MW-2	200	800	07/23/99	65,800	0.10981	1.01100	6,500	0.01085	0.02487	46,600	0.07777	0.43324
08/24/99	MW-2	100	900	07/23/99	65,800	0.05491	1.06591	6,500	0.00542	0.03029	46,600	0.03888	0.47212
10/29/99	MW-2	100	1,000	07/23/99	65,800	0.05491	1.12081	6,500	0.00542	0.03571	46,600	0.03888	0.51101
11/30/99	MW-2	100	1,100	07/23/99	65,800	0.05491	1.17572	6,500	0.00542	0.04114	46,600	0.03888	0.54989
02/02/00	MW-2	200	1,300	01/17/00	46,000	0.07677	1.25249	6,000	0.01001	0.05115	31,000	0.05174	0.60163
11/16/00	MW-2	150	1,450	10/12/00	63,200	0.07910	1.33159	5,840	0.00731	0.05846	66,600	0.08336	0.68499
02/23/01	MW-2	200	1,650	01/15/01	59,700	0.09963	1.43122	2,630	0.00439	0.06285	5,080	0.00848	0.69347
03/14/01	MW-2	300	1,950	01/15/01	59,700	0.14945	1.58067	2,630	0.00658	0.06943	5,080	0.01272	0.70618
04/20/01*	MW-2	200	2,150	04/09/01	56,900	0.09496	1.67563	1,860	0.00310	0.07254	46,600	0.07777	0.78395
05/30/01	MW-2	200	2,350	04/09/01	56,900	0.09496	1.77059	1,860	0.00310	0.07564	46,600	0.07777	0.86172
06/12/01	MW-2	100	2,450	04/09/01	56,900	0.04748	1.81807	1,860	0.00155	0.07719	46,600	0.03888	0.90061
11/06/01	MW-2	1,350	3,800	10/31/01	45,000	0.50692	2.32499	2,200	0.02478	0.10198	29,000	0.32668	1.22729
11/23/01	MW-2	1,000	4,800	10/31/01	45,000	0.37550	2.70048	2,200	0.01836	0.12033	29,000	0.24199	1.46927
12/04/01	MW-2	20	4,820	10/31/01	45,000	0.00751	2.70799	2,200	0.00037	0.12070	29,000	0.00484	1.47411
12/20/01	MW-2	50	4,870	10/31/01	45,000	0.01877	2.72677	2,200	0.00092	0.12162	29,000	0.01210	1.48621
01/14/02	MW-2	10	4,880	01/10/02	28,000	0.00234	2.72911	840	0.00007	0.12169	32,000	0.00267	1.48888
02/11/02	MW-2	62	4,942	01/10/02	28,000	0.01449	2.74359	840	0.00043	0.12212	32,000	0.01656	1.50544
02/25/02	MW-2	100	5,042	01/10/02	28,000	0.02336	2.76696	840	0.00070	0.12282	32,000	0.02670	1.53214
03/08/02*	MW-2	125	5,167	01/10/02	28,000	0.02921	2.79616	840	0.00088	0.12370	32,000	0.03338	1.56552
03/22/02	MW-2	125	5,292	01/10/02	28,000	0.02921	2.82537	840	0.00088	0.12458	32,000	0.03338	1.59890
04/10/02	MW-2	53	5,345	01/10/02	28,000	0.01238	2.83775	840	0.00037	0.12495	32,000	0.01415	1.61305
04/16/02	MW-2	100	5,445	01/10/02	28,000	0.02336	2.86111	840	0.00070	0.12565	32,000	0.02670	1.63975
04/24/02	MW-2	100	5,545	01/10/02	28,000	0.02336	2.88448	840	0.00070	0.12635	32,000	0.02670	1.66645
05/08/02	MW-2	29	5,574	04/25/02	41,000	0.00992	2.89440	1,900	0.00046	0.12681	17,000	0.00411	1.67057
05/22/02	MW-2	300	5,874	04/25/02	41,000	0.10264	2.99703	1,900	0.00476	0.13157	17,000	0.04256	1.71312

Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995758, 4255 MacArthur Boulevard, Oakland, CA

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	TPPH			Benzene			MTBE		
					TPPH Concentration (ppb)	TPPH Removed (lb)	TPPH Removed To Date (lb)	Benzene Concentration (ppb)	Benzene Removed (lb)	Benzene Removed to Date (lb)	MTBE Concentration (ppb)	MTBE Removed (lb)	MTBE Removed To Date (lb)
05/29/02	MW-2	122	5,996	04/25/02	41,000	0.04174	3.03877	1,900	0.00193	0.13350	17,000	0.01731	1.73043
06/05/02	MW-2	30	6,026	04/25/02	41,000	0.01026	3.04904	1,900	0.00048	0.13398	17,000	0.00426	1.73468
06/19/02	MW-2	500	6,526	04/25/02	41,000	0.17106	3.22010	1,900	0.00793	0.14190	17,000	0.07093	1.80561
06/26/02	MW-2	50	6,576	04/25/02	41,000	0.01711	3.23720	1,900	0.00079	0.14270	17,000	0.00709	1.81270
07/10/02	MW-2	900	7,476	04/25/02	41,000	0.30791	3.54511	1,900	0.01427	0.15696	17,000	0.12767	1.94037
07/17/02	MW-2	400	7,876	04/25/02	41,000	0.13685	3.68196	1,900	0.00634	0.16331	17,000	0.05674	1.99711
08/21/02	MW-2	100	7,976	07/18/02	87,000	0.07260	3.75455	2,000	0.00167	0.16498	19,000	0.01585	2.01297
08/27/02	MW-2	50	8,026	07/18/02	87,000	0.03630	3.79085	2,000	0.00083	0.16581	19,000	0.00793	2.02089
09/25/02	MW-2	178	8,204	07/18/02	87,000	0.12922	3.92007	2,000	0.00297	0.16878	19,000	0.02822	2.04912
10/22/02	MW-2	50	8,254	10/07/02	110,000	0.04589	3.96596	3,900	0.00163	0.17041	20,000	0.00834	2.05746
11/01/02	MW-2	152	8,406	10/07/02	110,000	0.13952	4.10548	3,900	0.00495	0.17535	20,000	0.02537	2.08283
11/02/02	MW-2	56	8,462	10/07/02	110,000	0.05140	4.15688	3,900	0.00182	0.17718	20,000	0.00935	2.09217
01/13/03	MW-2	40	8,502	01/06/03	65,000	0.02170	4.17858	2,400	0.00080	0.17798	26,000	0.00868	2.10085
05/30/01	MW-3	50	50	04/09/01	33,800	0.01410	0.01410	7,100	0.00296	0.00296	13,000	0.00542	0.00542
06/12/01	MW-3	50	100	04/09/01	33,800	0.01410	0.02820	7,100	0.00296	0.00592	13,000	0.00542	0.01085
08/27/02	MW-3	300	400	07/18/02	56,000	0.14019	0.16839	3,300	0.00826	0.01419	8,400	0.02103	0.03188
09/25/02	MW-3	200	600	07/18/02	56,000	0.09346	0.26185	3,300	0.00551	0.01969	8,400	0.01402	0.04589
10/22/02	MW-3	125	725	07/18/02	56,000	0.05841	0.32026	3,300	0.00344	0.02313	8,400	0.00876	0.05466
11/01/02	MW-3	100	825	07/18/02	56,000	0.04673	0.36698	3,300	0.00275	0.02589	8,400	0.00701	0.06166
11/02/02	MW-3	250	1,075	07/18/02	56,000	0.11682	0.48381	3,300	0.00688	0.03277	8,400	0.01752	0.07919
01/13/03	MW-3	60	1,135	01/06/03	57,000	0.02854	0.51234	3,200	0.00160	0.03437	5,100	0.00255	0.08174
09/05/01	TB-1	300	300	10/31/01	1,000	0.00250	0.00250	85	0.00021	0.00021	4,100	0.01026	0.01026
09/19/01	TB-1	1,400	1,700	10/31/01	1,000	0.01168	0.01419	85	0.00099	0.00121	4,100	0.04790	0.05816
10/16/01	TB-1	1,200	2,900	10/31/01	1,000	0.01001	0.02420	85	0.00085	0.00206	4,100	0.04105	0.09921
04/16/02	TB-1	1,111	4,011	10/31/01	5,000	0.04635	0.07055	410	0.00380	0.00586	9,000	0.08344	0.18265

Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995758, 4255 MacArthur Boulevard, Oakland, CA

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	<u>TPPH</u>			<u>Benzene</u>			<u>MTBE</u>		
					TPPH Concentration (ppb)	TPPH Removed (lb)	TPPH Removed To Date (lb)	Benzene Concentration (ppb)	Benzene Removed (lb)	Benzene Removed to Date (lb)	MTBE Concentration (ppb)	MTBE Removed (lb)	MTBE Removed To Date (lb)
04/23/99	TB-2	4,800	4,800	08/24/99	6,240	0.24993	0.24993	400	0.01602	0.01602	86,100	3.44856	3.44856
05/24/99	TB-2	4,800	9,600	08/24/99	6,240	0.24993	0.49986	400	0.01602	0.03204	86,100	3.44856	6.89711
06/28/99	TB-2	4,800	14,400	08/24/99	6,240	0.24993	0.74979	400	0.01602	0.04806	86,100	3.44856	10.34567
07/30/99	TB-2	4,800	19,200	08/24/99	6,240	0.24993	0.99972	400	0.01602	0.06408	86,100	3.44856	13.79422
08/24/99	TB-2	2,400	21,600	08/24/99	6,240	0.12497	1.12469	400	0.00801	0.07210	86,100	1.72428	15.51850
10/29/99	TB-2	2,255	23,855	10/29/99	7,460	0.14037	1.26506	656	0.01234	0.08444	442	0.00832	15.52682
11/30/99	TB-2	3,800	27,655	10/29/99	7,460	0.23655	1.50160	656	0.02080	0.10524	442	0.01402	15.54083
02/02/00	TB-2	4,500	32,155	01/31/00	2,070	0.07773	1.57933	108	0.00406	0.10930	6,550	0.24595	15.78678
11/16/00	TB-2	974	33,129	11/16/00	107,000	0.86963	2.44896	3,390	0.02755	0.13685	16,800	0.13654	15.92332
02/23/01	TB-2	2,506	35,635	02/23/01	80,600	1.68542	4.13439	2,410	0.05040	0.18724	38,100	0.79671	16.72003
03/14/01	TB-2	1,075	36,710	02/23/01	80,600	0.72300	4.85738	2,410	0.02162	0.20886	38,100	0.34176	17.06179
04/20/01*	TB-2	1,760	38,470	04/09/01	46,600	0.68437	5.54175	1,240	0.01821	0.22707	31,300	0.45967	17.52147
05/30/01	TB-2	2,100	40,570	04/09/01	46,600	0.81658	6.35833	1,240	0.02173	0.24880	31,300	0.54847	18.06994
06/12/01	TB-2	2,400	42,970	04/09/01	46,600	0.93323	7.29156	1,240	0.02483	0.27363	31,300	0.62683	18.69677
08/07/01	TB-2	2,510	43,080	07/24/01	11,000	0.23039	7.52195	630	0.01319	0.28683	11,000	0.23039	18.92716
08/21/01	TB-2	2,700	45,670	07/24/01	11,000	0.24783	7.76978	630	0.01419	0.30102	11,000	0.24783	19.17499
09/05/01	TB-2	2,100	45,180	07/24/01	11,000	0.19275	7.96253	630	0.01104	0.31206	11,000	0.19275	19.36774
09/19/01	TB-2	1,500	47,170	07/24/01	11,000	0.13768	8.10022	630	0.00789	0.31995	11,000	0.13768	19.50542
10/16/01	TB-2	1,750	46,930	07/24/01	11,000	0.16063	8.26085	630	0.00920	0.32915	11,000	0.16063	19.66605
11/06/01	TB-2	1,500	48,670	10/31/01	7,500	0.09387	8.35472	530	0.00663	0.33578	2,500	0.03129	19.69734
11/23/01	TB-2	1,500	48,430	10/31/01	7,500	0.09387	8.44859	530	0.00663	0.34241	2,500	0.03129	19.72863
10/04/01	TB-2	2,900	51,570	10/31/01	7,500	0.18149	8.63008	530	0.01283	0.35524	2,500	0.06050	19.78913
12/20/01	TB-2	2,950	51,380	10/31/01	7,500	0.18462	8.81470	530	0.01305	0.36829	2,500	0.06154	19.85067
01/14/02	TB-2	2,542	54,112	01/10/02	<5,000	0.05303	8.86773	480	0.01018	0.37847	12,000	0.25454	20.10521
02/11/02	TB-2	1,300	52,680	01/10/02	<5,000	0.02712	8.89485	480	0.00521	0.38367	12,000	0.13017	20.23538
02/25/02	TB-2	2,400	56,512	01/10/02	<5,000	0.05007	8.94492	480	0.00961	0.39329	12,000	0.24032	20.47570
03/08/02*	TB-2	3,052	55,732	01/10/02	<5,000	0.06367	9.00858	480	0.01222	0.40551	12,000	0.30560	20.78130
03/22/02	TB-2	2,234	58,746	01/10/02	<5,000	0.04660	9.05519	480	0.00895	0.41446	12,000	0.22370	21.00499

Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995758, 4255 MacArthur Boulevard, Oakland, CA

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	TPPH			Benzene			MTBE		
					TPPH Concentration (ppb)	TPPH Removed (lb)	TPPH Removed To Date (lb)	Benzene Concentration (ppb)	Benzene Removed (lb)	Benzene Removed to Date (lb)	MTBE Concentration (ppb)	MTBE Removed (lb)	MTBE Removed To Date (lb)
04/10/02	TB-2	2,156	57,888	01/10/02	<5,000	0.04498	9.10016	480	0.00864	0.42309	12,000	0.21589	21.22088
04/24/02	TB-2	1,308	60,054	01/10/02	<5,000	0.02729	9.12745	480	0.00524	0.42833	12,000	0.13097	21.35185
05/08/02	TB-2	1,400	59,288	04/27/02	4,700	0.05491	9.18235	470	0.00549	0.43382	7,400	0.08645	21.43830
05/22/02	TB-2	1,707	61,761	04/27/02	4,700	0.06695	9.24930	470	0.00669	0.44052	7,400	0.10540	21.54370
05/29/02	TB-2	900	60,188	04/27/02	4,700	0.03530	9.28460	470	0.00353	0.44405	7,400	0.05557	21.59928
06/05/02	TB-2	1,615	63,376	04/27/02	4,700	0.06334	9.34793	470	0.00633	0.45038	7,400	0.09972	21.69900
06/19/02	TB-2	400	60,588	04/27/02	4,700	0.01569	9.36362	470	0.00157	0.45195	7,400	0.02470	21.72370
06/26/02	TB-2	1,027	64,403	04/27/02	4,700	0.04028	9.40390	470	0.00403	0.45598	7,400	0.06342	21.78712
07/10/02	TB-2	165	60,753	04/27/02	4,700	0.00647	9.41037	470	0.00065	0.45662	7,400	0.01019	21.79730
07/17/02	TB-2	315	64,718	04/27/02	4,700	0.01235	9.42272	470	0.00124	0.45786	7,400	0.01945	21.81676
08/21/02	TB-2	634	61,387	07/18/02	7,500	0.03968	9.46240	630	0.00333	0.46119	44,000	0.23277	22.04953
08/27/02	TB-2	34	64,752	07/18/02	7,500	0.00213	9.46453	630	0.00018	0.46137	44,000	0.01248	22.06201
09/25/02	TB-2	1,200	62,587	07/18/02	7,500	0.07510	9.53963	630	0.00631	0.46768	44,000	0.44058	22.50259
10/22/02	TB-2	1,520	66,272	10/07/02	<10,000	0.06342	9.60305	580	0.00736	0.47504	30,000	0.38050	22.88310
11/01/02	TB-2	1,952	64,539	10/07/02	<10,000	0.08144	9.68449	580	0.00945	0.48448	30,000	0.48865	23.37174
11/02/02	TB-2	2,000	68,272	10/07/02	<10,000	0.08344	9.76793	580	0.00968	0.49416	30,000	0.50066	23.87240
01/13/03	TB-2	2,616	67,155	01/06/03	120	0.00262	9.77055	4.8	0.00010	0.49427	220	0.00480	23.87721
Total Gallons Extracted:			108,505	Total Pounds Removed:			14.53202	Total Pounds Removed:			0.71248	26.24245	
				Total Gallons Removed:			2.38230				0.09760	4.23265	

Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995758, 4255 MacArthur Boulevard, Oakland, CA

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	<u>TPPH</u>			<u>Benzene</u>			<u>MTBE</u>		
					TPPH Concentration (ppb)	TPPH Removed (lb)	TPPH Removed To Date (lb)	Benzene Concentration (ppb)	Benzene Removed (lb)	Benzene Removed to Date (lb)	MTBE Concentration (ppb)	MTBE Removed (lb)	MTBE Removed To Date (lb)

Abbreviations & Notes:

TPPH = Total purgeable hydrocarbons as gasoline, analyzed by EPA Method 8015

MtBE = Methyl tert-butyl ether by EPA Method 8020; MTBE results in bold are analyzed by EPA Method 8260

ppb = Parts per billion

lb = Pound

gal = Gallon

* = Purge volume estimated

Mass removed based on the formula: volume extracted (gal) x Concentration (µg/L) x (g/10⁶µg) 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)

Benzene analyzed by EPA Method 8020

Table 2: Vapor Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995758, 4255 MacArthur Boulevard, Oakland, CA

Date	Well ID	Interval Hours of Operation (hours)	System Flow Rate (CFM)	Hydrocarbon Concentrations			TPHg		Benzene		MTBE	
				TPHg	Benzene	MTBE	TPHg Removal Rate (#/hour)	Cumulative TPHg Removed (#)	Benzene Removal Rate (#/hour)	Cumulative Benzene Removed (#)	MTBE Removal Rate (#/hour)	Cumulative MTBE Removed (#)
11/16/00	MW-2	0.67	0.5	663.0	7.00	42.0	0.004	0.003	0.000	0.000	0.000	0.000
02/23/01	MW-2	7.00	3.2	24.1	0.93	11.9	0.001	0.010	0.000	0.000	0.001	0.004
03/14/01	MW-2	6.00	4.0	203	4.13	51.9	0.011	0.075	0.000	0.001	0.003	0.021
04/20/01*	MW-2	4.00	6.2	310	4.4	49	0.026	0.178	0.000	0.003	0.004	0.037
05/30/01	MW-2	3.00	7.7	360	4.4	50	0.037	0.289	0.000	0.004	0.005	0.053
06/12/01	MW-2	3.00	5.1	56	0.33	2.0	0.004	0.301	0.000	0.004	0.000	0.054
04/16/02	MW-2	6.00	7.7	1,600	7.2	47	0.165	1.289	0.001	0.008	0.005	0.083
05/22/02	MW-2	2.00	7.5	160	1.3	13	0.016	1.321	0.000	0.008	0.001	0.086
06/19/02	MW-2	5.00	11.5	95	0.94	10	0.015	1.394	0.000	0.009	0.002	0.094
07/17/02	MW-2	6.00	10.0	420	3.2	18	0.056	1.731	0.000	0.011	0.002	0.109
09/25/02	MW-2	4.00	27.3	980	4.0	20	0.358	3.161	0.001	0.017	0.007	0.139
05/30/01	MW-3	3.00	4.0	4,200	7.1	14	0.225	0.674	0.000	0.001	0.001	0.002
06/12/01	MW-3	3.00	3.3	2,400	5.8	9.8	0.106	0.991	0.000	0.002	0.000	0.004
09/25/02	MW-3	3.00	18.7	8,800	11	14	2.200	7.591	0.002	0.009	0.004	0.014
Total Pounds Removed:							TPHg =	10.752	Benzene =	0.026	MTBE =	0.153

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

Table 2: Vapor Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995758, 4255 MacArthur Boulevard, Oakland, CA

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/386ft³) 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

* = Interval hours of operation estimated.

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

October 30, 2002

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

Fourth Quarter 2002 Groundwater Monitoring at
Shell-branded Service Station
4255 MacArthur Boulevard
Oakland, CA

Monitoring performed on October 7, 2002

Groundwater Monitoring Report 021007-AM-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, 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/jt

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

cc: Heidi Bauer
Miller Brooks Environmental, Inc.
2525 West 14th Street, Suite D2
Oakland, CA 94607

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
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)	Depth to SPH (ft)	GW Elevation (MSL)	SPH Thickness (ft)	DO Reading (ppm)	ORP Reading (mV)
MW-1	11/17/1993	410	21	11	7.9	47	NA	NA	175.79	8.59	NA	167.20	NA	NA	NA
MW-1	01/20/1994	1,200	180	19	48	47	NA	NA	175.79	8.22	NA	167.57	NA	NA	NA
MW-1	04/25/1994	3,100	610	<10	130	27	NA	NA	175.79	7.63	NA	168.16	NA	NA	NA
MW-1	07/07/1994	2,400	1,000	10	250	20	NA	NA	175.79	8.31	NA	167.48	NA	NA	NA
MW-1	10/27/1994	2,200	500	3.1	72	1.8	NA	NA	175.79	8.84	NA	166.95	NA	NA	NA
MW-1	11/17/1994	NA	NA	NA	NA	NA	NA	NA	175.79	7.60	NA	168.19	NA	NA	NA
MW-1	11/28/1994	NA	NA	NA	NA	NA	NA	NA	175.79	7.56	NA	168.23	NA	NA	NA
MW-1	01/13/1995	570	75	2.5	6.7	11	NA	NA	175.79	7.11	NA	168.68	NA	NA	NA
MW-1	04/12/1995	1,800	480	<5.0	79	<5.0	NA	NA	175.79	7.08	NA	168.71	NA	NA	NA
MW-1	07/25/1995	120	15	1.1	2.1	2.9	NA	NA	175.79	7.73	NA	168.06	NA	NA	NA
MW-1 (D)	07/25/1995	300	88	2.4	11	6.5	NA	NA	175.79	7.73	NA	168.06	NA	NA	NA
MW-1	10/18/1995	130	9.5	0.8	1.3	1.7	NA	NA	175.79	8.42	NA	167.37	NA	NA	NA
MW-1 (D)	10/18/1995	120	11	0.8	1.4	1.8	NA	NA	175.79	8.42	NA	167.37	NA	NA	NA
MW-1	01/17/1996	250	22	0.9	1.6	2.3	NA	NA	175.79	7.83	NA	167.96	NA	NA	NA
MW-1	04/25/1996	<50	4.6	<0.5	<0.5	0.6	500b	NA	175.79	7.35	NA	168.44	NA	NA	NA
MW-1	07/17/1996	<250	15	<2.5	<2.5	<2.5	540	NA	175.79	7.70	NA	168.09	NA	NA	NA
MW-1	10/01/1996	1,200	500	12	57	82	1,900	NA	175.79	8.07	NA	167.72	NA	NA	NA
MW-1	01/22/1997	640	170	4.3	33	33	1,200	NA	175.79	7.21	NA	168.58	NA	NA	NA
MW-1	04/08/1997	<200	34	<2.0	3.3	4.3	950	NA	175.79	7.75	NA	168.04	NA	NA	NA
MW-1 (D)	04/08/1997	<200	66	<2.0	6.4	8	740	NA	175.79	7.75	NA	168.04	NA	NA	NA
MW-1	07/08/1997	190	49	1.2	5.8	8.6	560	NA	175.79	8.01	NA	167.78	NA	NA	NA
MW-1	10/08/1997	<100	7	<1.0	<1.0	<1.0	620	NA	175.79	8.10	NA	167.69	NA	NA	NA
MW-1	01/09/1998	970	390	12	48	71	1,200	NA	175.79	7.14	NA	168.65	NA	NA	NA
MW-1	04/13/1998	<50	136	<0.50	1.5	1.8	170	NA	175.79	6.78	NA	169.01	NA	NA	NA
MW-1	07/17/1998	2,500	750	11	88	67	150	NA	175.79	7.28	NA	168.51	NA	NA	NA
MW-1	10/02/1998	8,000	970	36	270	440	35	NA	175.79	7.77	NA	168.02	NA	NA	NA

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
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.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
---------	------	----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	----------------------------	--------------------------	--------------------------	---------------------------	------------------------	------------------------

MW-1	02/03/1999	210	56	0.82	<0.50	3.2	220	NA	175.79	7.45	NA	168.34	NA	1.4	NA
MW-1	04/29/1999	<50	4.5	<0.50	0.56	<0.50	140	196	175.79	7.58	NA	168.21	NA	1.2	140
MW-1	07/23/1999	<50.0	<0.500	<0.500	<0.500	<0.500	120	111*	175.79	8.51	NA	167.28	NA	1.0	NA
MW-1	11/01/1999	<50.0	<0.500	<0.500	<0.500	<0.500	2.90	NA	175.79	8.30	NA	167.49	NA	1.4	-71
MW-1	01/17/2000	<50	<0.50	<0.50	<0.50	<0.50	3.30	NA	175.79	8.04	NA	167.75	NA	16.9	64
MW-1	04/17/2000	<50.0	1.08	<0.500	<0.500	<0.500	<2.50	NA	175.79	8.00	NA	167.79	NA	1.8	112
MW-1	07/26/2000	125	54.3	2.16	5.45	9.86	33.1	NA	175.79	7.52	NA	168.27	NA	13.2	-140
MW-1	10/12/2000	101	40.7	2.68	3.00	5.18	25.0	NA	175.79	7.71	NA	168.08	NA	>20	534
MW-1	01/15/2001	<50.0	0.633	<0.500	0.505	1.74	<2.50	NA	175.79	7.33	NA	168.46	NA	16.9	-127
MW-1	04/09/2001	<50.0	<0.500	<0.500	<0.500	0.927	<2.50	NA	175.79	7.68	NA	168.11	NA	12.8	-117
MW-1	07/24/2001	<50	4.0	0.65	0.53	1.3	NA	<5.0	175.79	8.00	NA	167.79	NA	>20	43
MW-1	10/31/2001	<50	4.4	<0.50	<0.50	0.98	NA	<5.0	175.79	7.94	NA	167.85	NA	13.6	123
MW-1	01/10/2002	<50	2.2	<0.50	<0.50	1.2	NA	6.1	175.79	7.63	NA	168.16	NA	0.1	63
MW-1	04/25/2002	<50	2.0	<0.50	<0.50	<0.50	NA	<5.0	175.79	7.76	NA	168.03	NA	0.3	54
MW-1	07/18/2002	<50	6.1	<0.50	<0.50	0.98	NA	<5.0	175.79	8.29	NA	167.50	NA	1.1	32
MW-1	10/07/2002	500	17	14	11	60	NA	9.0	175.76	8.34	NA	167.42	NA	2.8	-26

MW-2	11/17/1993	31,000	9,400	4,600	1,000	3,900	NA	NA	170.91	12.31	NA	158.60	NA	NA	NA
MW-2	01/20/1994	40,000	6,900	5,600	780	4,100	NA	NA	170.91	11.48	NA	159.43	NA	NA	NA
MW-2 (D)	01/20/1994	41,000	7,200	6,200	900	4,800	NA	NA	170.91	11.48	NA	159.43	NA	NA	NA
MW-2	04/25/1994	60,000	9,300	6,100	1,400	6,200	NA	NA	170.91	10.84	NA	160.07	NA	NA	NA
MW-2	07/07/1994	280,000 ^a	40,000	26,000	8,100	32,000	NA	NA	170.91	11.89	NA	159.02	NA	NA	NA
MW-2 (D)	07/07/1994	53,000	13,000	6,600	2,000	8,400	NA	NA	170.91	11.89	NA	159.02	NA	NA	NA
MW-2	10/27/1994	130,000	14,000	12,000	2,400	13,000	NA	NA	170.91	12.89	NA	158.02	NA	NA	NA
MW-2 (D)	10/27/1994	390,000	8,800	7,000	1,700	11,000	NA	NA	170.91	12.89	NA	158.02	NA	NA	NA
MW-2	11/17/1994	NA	NA	NA	NA	NA	NA	NA	170.91	9.11	NA	161.80	NA	NA	NA
MW-2	11/28/1994	NA	NA	NA	NA	NA	NA	NA	170.91	9.22	NA	161.69	NA	NA	NA

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
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.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
MW-2	01/13/1995	75,000	5,900	12,000	3,100	17,000	NA	NA	170.91	8.10	NA	162.81	NA	NA	NA
MW-2	04/12/1995	100,000	8,500	11,000	2,400	12,000	NA	NA	170.91	10.12	NA	160.79	NA	NA	NA
MW-2 (D)	04/12/1995	80,000	4,200	9,300	2,500	12,000	NA	NA	170.91	10.12	NA	160.79	NA	NA	NA
MW-2	07/25/1995	NA	NA	NA	NA	NA	NA	NA	170.91	11.53	NA	159.80	0.52	NA	NA
MW-2	10/18/1995	NA	NA	NA	NA	NA	NA	NA	170.91	14.02	NA	156.99	0.13	NA	NA
MW-2	01/17/1996	NA	NA	NA	NA	NA	NA	NA	170.91	10.27	NA	160.78	0.17	NA	NA
MW-2	04/25/1996	NA	NA	NA	NA	NA	NA	NA	170.91	11.68	NA	159.25	0.03	NA	NA
MW-2	07/17/1996	NA	NA	NA	NA	NA	NA	NA	170.91	12.78	NA	158.81	0.48	NA	NA
MW-2	10/01/1996	NA	NA	NA	NA	NA	NA	NA	170.91	14.21	NA	156.70	0.28	NA	NA
MW-2	01/22/1997	NA	NA	NA	NA	NA	NA	NA	170.91	10.92	NA	160.08	0.11	NA	NA
MW-2	04/08/1997	NA	NA	NA	NA	NA	NA	NA	170.91	14.12	NA	156.95	0.20	NA	NA
MW-2	07/08/1997	NA	NA	NA	NA	NA	NA	NA	170.91	14.98	NA	156.08	0.19	NA	NA
MW-2	10/08/1997	NA	NA	NA	NA	NA	NA	NA	170.91	12.97	NA	157.98	0.05	NA	NA
MW-2	01/08/1998	NA	NA	NA	NA	NA	NA	NA	170.91	12.54	NA	158.43	0.08	NA	NA
MW-2	04/13/1998	180,000	2,800	5,200	2,400	13,000	71,000	NA	170.91	10.05	NA	160.86	NA	NA	NA
MW-2	07/17/1998	NA	NA	NA	NA	NA	NA	NA	170.91	11.75	NA	159.24	0.10	NA	NA
MW-2	10/02/1998	NA	NA	NA	NA	NA	NA	NA	170.91	16.78	NA	154.22	0.11	NA	NA
MW-2	02/03/1999	NA	NA	NA	NA	NA	NA	NA	170.91	9.90	9.82	161.07	0.08	NA	NA
MW-2	04/29/1999	NA	NA	NA	NA	NA	NA	NA	170.91	9.86	9.81	161.09	0.05	NA	NA
MW-2	07/23/1999	65,800	6,500	4,480	1,960	8,960	46,600	58,500*	170.91	14.45	NA	156.46	NA	1.4	NA
MW-2	11/01/1999	NA	NA	NA	NA	NA	NA	NA	170.91	11.84	11.81	159.09	0.03	NA	NA
MW-2	01/17/2000	46,000	6,000	2,400	1,500	5,500	50,000	31,000	170.91	11.00	NA	159.91	NA	1.3	-54
MW-2	04/17/2000	96,300	8,150	10,200	2,820	14,900	112,000	108,000	170.91	11.06	NA	159.85	NA	2.6	125
MW-2	07/26/2000	72,400	8,680	5,620	2,810	13,400	66,200	46,300	170.91	12.82	NA	158.09	NA	2.2	113
MW-2	10/12/2000	63,200	5,840	4,180	2,310	11,100	61,200	66,600	170.91	11.32	NA	159.59	NA	0.4	55
MW-2	01/15/2001	59,700	2,630	4,800	2,050	11,500	44,400	5,080	170.91	10.19	NA	160.72	NA	1.1	-22
MW-2	04/09/2001	56,900	1,860	2,550	1,810	9,720	40,000	46,600	170.91	11.15	NA	159.76	NA	1.0	-55

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
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.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
MW-2	07/24/2001	84,000	3,000	4,600	2,500	13,000	NA	41,000	170.91	11.67	NA	159.24	NA	0.2	53
MW-2	10/31/2001	45,000	2,200	3,000	1,500	7,700	NA	29,000	170.91	11.04	NA	159.87	NA	1.2	-17
MW-2	01/10/2002	28,000	840	740	760	3,300	NA	32,000	170.91	9.58	NA	161.33	NA	2.1	-76
MW-2	04/25/2002	41,000	1,900	2,000	1,200	6,900	NA	17,000	170.91	11.40	NA	159.51	NA	0.8	-95
MW-2	07/18/2002	87,000	2,000	2,200	1,400	10,000	NA	19,000	170.91	12.68	NA	158.23	NA	0.7	-34
MW-2	10/07/2002	110,000	3,900	6,700	2,700	15,000	NA	20,000	170.88	11.58	NA	159.30	NA	1.4	-52
MW-3	11/17/1993	18,000	5,400	660	720	2,200	NA	NA	174.61	15.40	NA	159.21	NA	NA	NA
MW-3	01/20/1994	55,000	13,000	2,600	2,200	6,500	NA	NA	174.61	14.61	NA	160.00	NA	NA	NA
MW-3	04/25/1994	96,000	11,000	1,600	3,100	9,900	NA	NA	174.61	13.12	NA	161.49	NA	NA	NA
MW-3 (D)	04/25/1994	78,000	12,000	1,900	2,600	7,300	NA	NA	174.61	13.12	NA	161.49	NA	NA	NA
MW-3	07/07/1994	NA	NA	NA	NA	NA	NA	NA	174.61	14.54	NA	160.07	0.02	NA	NA
MW-3	10/27/1994	NA	NA	NA	NA	NA	NA	NA	174.61	15.62	NA	159.03	0.05	NA	NA
MW-3	11/17/1994	NA	NA	NA	NA	NA	NA	NA	174.61	13.83	NA	160.78	NA	NA	NA
MW-3	11/28/1994	NA	NA	NA	NA	NA	NA	NA	174.61	14.02	NA	160.59	NA	NA	NA
MW-3	01/13/1995	180,000	3,200	2,700	1,700	5,200	NA	NA	174.61	12.13	NA	162.48	NA	NA	NA
MW-3 (D)	01/13/1995	23,000	4,000	690	960	3,000	NA	NA	174.61	12.13	NA	162.48	NA	NA	NA
MW-3	04/12/1995	56,000	8,700	1,500	2,100	6,300	NA	NA	174.61	12.96	NA	161.65	NA	NA	NA
MW-3	07/25/1995	NA	NA	NA	NA	NA	NA	NA	174.61	14.28	NA	160.38	0.06	NA	NA
MW-3	10/18/1995	NA	NA	NA	NA	NA	NA	NA	174.61	15.88	NA	158.77	0.05	NA	NA
MW-3	01/17/1996	NA	NA	NA	NA	NA	NA	NA	174.61	13.86	NA	160.94	0.24	NA	NA
MW-3	04/25/1996	NA	NA	NA	NA	NA	NA	NA	174.61	13.82	NA	160.81	0.02	NA	NA
MW-3	07/17/1996	NA	NA	NA	NA	NA	NA	NA	174.61	16.11	NA	158.52	0.03	NA	NA
MW-3	10/01/1996	46,000	7,300	530	1,700	3,900	3,200	NA	174.61	16.56	NA	158.05	NA	NA	NA
MW-3 (D)	10/01/1996	47,000	7,100	530	1,700	4,000	2,900	NA	174.61	16.56	NA	158.05	NA	NA	NA
MW-3	01/22/1997	82,000	5,200	1,300	2,800	8,900	1,100	NA	174.61	13.07	NA	161.54	NA	NA	NA
MW-3 (D)	01/22/1997	61,000	8,400	1,100	2,300	7,000	2,700	NA	174.61	13.07	NA	161.54	NA	NA	NA

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
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.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
MW-3	04/08/1997	NA	NA	NA	NA	NA	NA	NA	174.61	17.09	NA	157.54	0.03	NA	NA
MW-3	07/08/1997	56,000	8,800	580	2,000	4,900	2,800	NA	174.61	15.85	NA	158.76	NA	NA	NA
MW-3	10/08/1997	48,000	8,000	590	1,700	3,400	5,100	NA	174.61	16.22	NA	158.39	NA	NA	NA
MW-3	01/08/1998	47,000	9,400	810	2,300	4,700	6,300	NA	174.61	13.80	NA	160.81	NA	NA	NA
MW-3 (D)	01/08/1998	48,000	8,100	750	2,000	4,100	5,800	NA	174.61	13.80	NA	160.81	NA	NA	NA
MW-3	04/13/1998	32,000	6,800	540	1,400	3,400	4,000	NA	174.61	12.97	NA	161.64	NA	NA	NA
MW-3 (D)	04/13/1998	36,000	7,300	660	1,600	3,700	4,000	NA	174.61	12.97	NA	161.64	NA	NA	NA
MW-3	07/17/1998	71,000	11,000	590	2,200	6,900	3,900	NA	174.61	11.51	NA	163.10	NA	NA	NA
MW-3 (D)	07/17/1998	76,000	12,000	700	2,600	8,000	3,000	NA	174.61	11.51	NA	163.10	NA	NA	NA
MW-3	10/02/1998	66,000	8,900	510	2,000	4,900	4,600	NA	174.61	16.50	NA	158.11	NA	NA	NA
MW-3 (D)	10/02/1998	59,000	9,400	460	2,000	4,900	4,700	NA	174.61	16.50	NA	158.11	NA	NA	NA
MW-3	02/03/1999	36,000	6,800	300	1,600	2,900	18,000	NA	174.61	15.21	NA	159.40	NA	1.3	NA
MW-3	04/29/1999	45,000	8,100	580	2,200	5,800	4,700	5,150	174.61	15.43	NA	159.18	NA	1.5	-68
MW-3	07/23/1999	29,400	3,540	215	810	3,800	4,720	6,950*	174.61	14.95	NA	159.66	NA	1.3	NA
MW-3	11/01/1999	20,000	4,190	294	1,060	1,740	5,540	8,590	174.61	14.66	NA	159.95	NA	0.6	-110
MW-3	01/17/2000	17,000	3,900	89	1,100	1,200	7,900	NA	174.61	13.94	NA	160.67	NA	1.3	-40
MW-3	04/17/2000	28,100	5,240	247	1,540	2,750	16,600	NA	174.61	14.00	NA	160.61	NA	1.1	-86
MW-3	07/26/2000	24,300	6,680	159	1,610	1,640	17,100	NA	174.61	13.72	NA	160.89	NA	0.9	-70
MW-3	10/12/2000	14,300	2,630	86.7	241	1,360	16,300	NA	174.61	14.15	NA	160.46	NA	0.9	50
MW-3	01/15/2001	22,100	4,400	266	977	2,990	13,200	NA	174.61	13.05	NA	161.56	NA	1.3	-40
MW-3	04/09/2001	33,800	7,100	147	1,700	2,660	13,000	NA	174.61	13.59	NA	161.02	NA	0.6	-56
MW-3	07/24/2001	220,000	5,600	1,900	4,400	19,000	NA	12,000	174.61	14.43	NA	160.18	NA	0.4	29
MW-3	10/31/2001	65,000	2,700	510	1,800	7,200	NA	9,800	174.61	14.59	NA	160.02	NA	0.9	-27
MW-3	01/10/2002	66,000	2,400	490	1,700	6,600	NA	5,500	174.61	12.65	NA	161.96	NA	1.7	-76
MW-3	04/25/2002	55,000	4,600	460	2,400	6,900	NA	8,100	174.61	14.13	NA	160.48	NA	1.2	-96
MW-3	07/18/2002	56,000	3,300	270	1,700	5,000	NA	8,400	174.61	15.48	15.45	159.15	0.03	0.8	-41
MW-3	10/07/2002	NA	NA	NA	NA	NA	NA	NA	174.59	14.60	14.40	160.15	0.20	NA	NA

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
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.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
MW-4	11/17/1994	NA	NA	NA	NA	NA	NA	NA	164.06	6.62	NA	157.44	NA	NA	NA
MW-4	11/28/1994	2,900	200	17	76	260	NA	NA	164.06	6.11	NA	157.95	NA	NA	NA
MW-4	01/13/1995	1,900	130	5.6	13	40	NA	NA	164.06	6.05	NA	158.01	NA	NA	NA
MW-4	04/12/1995	680	150	<2.0	10	13	NA	NA	164.06	6.31	NA	157.75	NA	NA	NA
MW-4	07/25/1995	340	100	0.8	8.8	3	NA	NA	164.06	7.36	NA	156.70	NA	NA	NA
MW-4	10/18/1995	150	31	<0.5	3.5	0.8	NA	NA	164.06	8.54	NA	155.52	NA	NA	NA
MW-4	01/17/1996	290	14	<0.5	1.8	0.8	NA	NA	164.06	8.48	NA	155.58	NA	NA	NA
MW-4	04/25/1996	<500	65	<5	<5	<5	1,700	NA	164.06	7.40	NA	156.66	NA	NA	NA
MW-4 (D)	04/25/1996	<500	66	<5	8.7	<5	1,500	NA	164.06	7.40	NA	156.66	NA	NA	NA
MW-4	07/17/1996	<500	84	<5.0	6.5	<5.0	1,500	NA	164.06	7.75	NA	156.31	NA	NA	NA
MW-4 (D)	07/17/1996	<500	54	<5.0	<5.0	<5.0	1,700	2,100	164.06	7.75	NA	156.31	NA	NA	NA
MW-4	10/01/1996	<500	1.9	<5.0	<5.0	<5.0	3,000	NA	164.06	8.82	NA	155.24	NA	NA	NA
MW-4	01/22/1997	580	130	<2.5	18	5.2	1,200	NA	164.06	7.51	NA	156.55	NA	NA	NA
MW-4	04/08/1997	770	200	7	26	55	1,500	8	164.06	7.18	NA	156.88	NA	NA	NA
MW-4	07/08/1997	570	78	<5.0	14	11	1,200	NA	164.06	9.00	NA	155.06	NA	NA	NA
MW-4 (D)	07/08/1997	640	81	<5.0	16	19	1,600	NA	164.06	9.00	NA	155.06	NA	NA	NA
MW-4	10/08/1997	<500	40	<5.0	7.4	5.4	1,400	NA	164.06	8.97	NA	155.09	NA	NA	NA
MW-4 (D)	10/08/1997	<500	36	<5.0	5.9	<5.0	1,400	NA	164.06	8.97	NA	155.09	NA	NA	NA
MW-4	01/08/1998	<1,000	55	<10	13	<10	2,000	NA	164.06	7.90	NA	156.16	NA	NA	NA
MW-4	04/13/1998	350	110	2.4	20	26	<2.5	NA	164.06	7.35	NA	156.71	NA	NA	NA
MW-4	07/17/1998	210	66	0.78	5.4	9.8	1,700	NA	164.06	6.95	NA	157.11	NA	NA	NA
MW-4	10/02/1998	<50	0.69	<0.50	<0.50	<0.50	2,900	NA	164.06	7.35	NA	156.71	NA	NA	NA
MW-4	02/03/1999	560	120	2.5	29	34	6,800	NA	164.06	7.71	NA	156.35	NA	0.9	NA
MW-4	04/29/1999	390	80	1.9	13	19	7,000	8,360	164.06	7.83	NA	156.23	NA	1.1	-125
MW-4	07/23/1999	460	93.6	8.40	25.2	28.8	3,760	6,000*	164.06	11.33	NA	152.73	NA	0.9	NA
MW-4	11/01/1999	77.3	0.520	<0.500	<0.500	<0.500	539	NA	164.06	10.66	NA	153.40	NA	2.8	3

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
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.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
---------	------	----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	----------------------------	--------------------------	--------------------------	---------------------------	------------------------	------------------------

MW-4	01/17/2000	160	27	<0.50	12	6.3	12,000	NA	164.06	10.15	NA	153.91	NA	3.9	-17
MW-4	04/17/2000	<500	26	6.38	9.35	10.4	9,070	NA	164.06	10.10	NA	153.96	NA	1.7	-129
MW-4	07/26/2000	<500	22.7	<5.00	7.59	6.96	7,660	NA	164.06	10.09	NA	153.97	NA	1.4	-137
MW-4	10/12/2000	172	19.8	<0.500	7.47	4.50	8,290	NA	164.06	9.35	NA	154.71	NA	3.5	529
MW-4	01/15/2001	53.6	1.50	<0.500	2.45	1.80	9,260	NA	164.06	8.77	NA	155.29	NA	2.3	53
MW-4	04/09/2001	<500	<5.00	<5.00	<5.00	5.52	10,300	NA	164.06	7.75	NA	156.31	NA	1.0	-133
MW-4	07/24/2001	58	3.8	<0.50	3.2	2.9	NA	1,700	164.06	10.07	NA	153.99	NA	0.5	106
MW-4	10/31/2001	<1,000	<10	<10	<10	<10	NA	7,400	164.06	9.97	NA	154.09	NA	0.8	22
MW-4	01/10/2002	<2,000	<20	<20	<20	<20	NA	12,000	164.06	8.53	NA	155.53	NA	8.9	224
MW-4	04/25/2002	<2,000	<20	<20	<20	<20	NA	7,900	164.06	7.33	NA	156.73	NA	3.6	-84
MW-4	07/18/2002	<2,000	<20	<20	<20	<20	NA	7,200	164.06	9.05	NA	155.01	NA	1.7	120
MW-4	10/07/2002	<1,000	<10	<10	<10	<10	NA	3,300	164.03	9.06	NA	154.97	NA	2.5	33

MW-5	01/04/2002	NA	NA	NA	NA	NA	NA	NA	NA	5.62	NA	NA	NA	NA	NA
MW-5	01/10/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	110	164.06	5.88	NA	158.18	NA	3.3	172
MW-5	04/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	73	164.06	6.81	NA	157.25	NA	0.3	-44
MW-5	07/18/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	75	164.06	7.38	NA	156.68	NA	0.4	170
MW-5	10/07/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	41	164.14	6.75	NA	157.39	NA	1.5	16

TB-1	04/29/1999	NA	NA	NA	NA	NA	NA	NA	NA	6.00	NA	NA	NA	3.8	-132
TB-1	11/01/1999	NA	NA	NA	NA	NA	NA	NA	NA	12.65	NA	NA	NA	0.2	-165
TB-1	01/17/2000	NA	NA	NA	NA	NA	NA	NA	NA	7.72	NA	NA	NA	0.8	-178
TB-1	04/17/2000	NA	NA	NA	NA	NA	NA	NA	NA	7.65	NA	NA	NA	0.5	-152
TB-1	07/26/2000	NA	NA	NA	NA	NA	NA	NA	NA	5.13	NA	NA	NA	1.0	-124
TB-1	10/12/2000	NA	NA	NA	NA	NA	NA	NA	NA	5.20	NA	NA	NA	0.7	-73
TB-1	01/15/2001	NA	NA	NA	NA	NA	NA	NA	NA	5.09	NA	NA	NA	1.2	-118
TB-1	04/09/2001	NA	NA	NA	NA	NA	NA	NA	NA	4.96	NA	NA	NA	1.0	-72

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
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.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
TB-1	07/24/2001	NA	NA	NA	NA	NA	NA	NA	NA	6.03	NA	NA	NA	1.4	31
TB-1	10/31/2001	1,000	85	<10	<10	42	NA	4,100	NA	5.89	NA	NA	NA	1.8	88
TB-1	01/10/2002	5,000	410	390	65	620	NA	9,000	NA	7.47	NA	NA	NA	2.0	95
TB-1	04/25/2002	5,000	780	60	49	91	NA	6,000	NA	11.71	NA	NA	NA	1.7	-136
TB-1	07/18/2002	Insufficient water		NA	NA	NA	NA	NA	NA	13.50	NA	NA	NA	NA	NA
TB-1	10/07/2002	4,600	480	36	98	200	NA	4,000	NA	12.95	NA	NA	NA	1.6	-48
TB-2	04/29/1999	NA	NA	NA	NA	NA	NA	NA	NA	4.76	NA	NA	NA	4.2	-108
TB-2	11/01/1999	NA	NA	NA	NA	NA	NA	NA	NA	11.33	NA	NA	NA	0.5	-148
TB-2	01/17/2000	NA	NA	NA	NA	NA	NA	NA	NA	9.79	NA	NA	NA	0.7	-162
TB-2	04/17/2000	NA	NA	NA	NA	NA	NA	NA	NA	9.75	NA	NA	NA	0.9	-121
TB-2	07/26/2000	NA	NA	NA	NA	NA	NA	NA	NA	4.73	NA	NA	NA	0.9	-85
TB-2	10/12/2000	NA	NA	NA	NA	NA	NA	NA	NA	4.05	NA	NA	NA	0.6	-47
TB-2	01/15/2001	NA	NA	NA	NA	NA	NA	NA	NA	3.87	NA	NA	NA	0.7	-91
TB-2	04/09/2001	46,600	1,240	1,310	1,110	12,100	31,300	NA	NA	3.76	NA	NA	NA	0.8	-24
TB-2	07/24/2001	11,000	630	<25	310	200	NA	11,000	NA	4.75	NA	NA	NA	0.4	-51
TB-2	10/31/2001	7,500	530	1,500	100	500	NA	2,500	NA	4.24	NA	NA	NA	0.6	-7
TB-2	01/10/2002	<5,000	480	47	34	110	NA	12,000	NA	6.26	NA	NA	NA	1.3	-81
TB-2	04/25/2002	4,700	470	140	<20	80	NA	7,400	NA	11.78	NA	NA	NA	0.9	-107
TB-2	07/18/2002	7,500	630	650	<25	390	NA	44,000	NA	12.34	NA	NA	NA	0.9	-67
TB-2	10/07/2002	<10,000	580	<100	<100	180	NA	30,000	NA	11.62	NA	NA	NA	1.0	-41

WELL CONCENTRATIONS
Shell-branded Service Station
4255 MacArthur Boulevard
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.)	Depth to SPH (ft.)	GW Elevation (MSL)	SPH Thickness (ft.)	DO Reading (ppm)	ORP Reading (mV)
---------	------	----------------	-------------	-------------	-------------	-------------	------------------------	------------------------	--------------	----------------------------	--------------------------	--------------------------	---------------------------	------------------------	------------------------

Abbreviations:

TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to July 24, 2001, analyzed by EPA Method 8015.

BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to July 24, 2001, analyzed by EPA Method 8020.

MTBE = Methyl-tertiary-butyl ether

TOC = Top of Casing Elevation

SPH = Separate-Phase Hydrocarbons

GW = Groundwater

ug/L = Parts per billion

MSL = Mean sea level

ft = Feet

<n = Below detection limit

D = Duplicate sample

NA = Not applicable

DO = Dissolved Oxygens

ppm = Parts per million

ORP = Oxidation Reduction Potential

mV = Millivolts

Notes:

* = Sample analyzed outside the EPA recommended holding time.

a = Ground water surface had a sheen when sampled.

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

Site surveyed March 14, 2002, by Virgil Chavez Land Surveying of Vallejo, California.

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

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



Report Number : 29067

Date : 10/15/2002

Leon Gearhart
Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112-1105

Subject : 6 Water Samples
Project Name : 4255 MacArthur Boulevard, Oakland
Project Number : 021007-AM2
P.O. Number : 98995758

Dear Mr. Gearhart,

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". The signature is written in a cursive style with a large initial "J".

Joel Kiff



Report Number : 29067

Date : 10/15/2002

Subject : 6 Water Samples
Project Name : 4255 MacArthur Boulevard, Oakland
Project Number : 021007-AM2
P.O. Number : 98995758

Case Narrative

Matrix Spike/Matrix Spike Duplicate Results associated with samples TB-1, MW-2, MW-4, TB-2 for the analyte Benzene were affected by the analyte concentrations already present in the un-spiked sample.

Approved By:  _____
Joel Kiff



Report Number : 29067

Date : 10/15/2002

Project Name : 4255 MacArthur Boulevard, Oakland

Project Number : 021007-AM2

Sample : MW-1

Matrix : Water

Lab Number : 29067-01

Sample Date :10/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	17	0.50	ug/L	EPA 8260B	10/11/2002
Toluene	14	0.50	ug/L	EPA 8260B	10/11/2002
Ethylbenzene	11	0.50	ug/L	EPA 8260B	10/11/2002
Total Xylenes	60	0.50	ug/L	EPA 8260B	10/11/2002
Methyl-t-butyl ether (MTBE)	9.0	5.0	ug/L	EPA 8260B	10/11/2002
TPH as Gasoline	500	50	ug/L	EPA 8260B	10/11/2002
Toluene - d8 (Surr)	95.9		% Recovery	EPA 8260B	10/11/2002
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	10/11/2002

Sample : MW-2

Matrix : Water

Lab Number : 29067-02

Sample Date :10/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	3900	50	ug/L	EPA 8260B	10/13/2002
Toluene	6700	50	ug/L	EPA 8260B	10/13/2002
Ethylbenzene	2700	50	ug/L	EPA 8260B	10/13/2002
Total Xylenes	15000	50	ug/L	EPA 8260B	10/13/2002
Methyl-t-butyl ether (MTBE)	20000	500	ug/L	EPA 8260B	10/13/2002
TPH as Gasoline	110000	5000	ug/L	EPA 8260B	10/13/2002
Toluene - d8 (Surr)	99.9		% Recovery	EPA 8260B	10/13/2002
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	10/13/2002

Approved By:  Joel Kiff



Report Number : 29067

Date : 10/15/2002

Project Name : 4255 MacArthur Boulevard, Oakland

Project Number : 021007-AM2

Sample : MW-4

Matrix : Water

Lab Number : 29067-03

Sample Date :10/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 10	10	ug/L	EPA 8260B	10/13/2002
Toluene	< 10	10	ug/L	EPA 8260B	10/13/2002
Ethylbenzene	< 10	10	ug/L	EPA 8260B	10/13/2002
Total Xylenes	< 10	10	ug/L	EPA 8260B	10/13/2002
Methyl-t-butyl ether (MTBE)	3300	100	ug/L	EPA 8260B	10/13/2002
TPH as Gasoline	< 1000	1000	ug/L	EPA 8260B	10/13/2002
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	10/13/2002
4-Bromofluorobenzene (Surr)	97.8		% Recovery	EPA 8260B	10/13/2002

Sample : MW-5

Matrix : Water

Lab Number : 29067-04

Sample Date :10/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/11/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/11/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/11/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/11/2002
Methyl-t-butyl ether (MTBE)	41	5.0	ug/L	EPA 8260B	10/11/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/11/2002
Toluene - d8 (Surr)	93.5		% Recovery	EPA 8260B	10/11/2002
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	10/11/2002

Approved By:  Joel Kiff



Report Number : 29067

Date : 10/15/2002

Project Name : 4255 MacArthur Boulevard, Oakland

Project Number : 021007-AM2

Sample : TB-1

Matrix : Water

Lab Number : 29067-05

Sample Date :10/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	480	10	ug/L	EPA 8260B	10/13/2002
Toluene	36	10	ug/L	EPA 8260B	10/13/2002
Ethylbenzene	98	10	ug/L	EPA 8260B	10/13/2002
Total Xylenes	200	10	ug/L	EPA 8260B	10/13/2002
Methyl-t-butyl ether (MTBE)	4000	100	ug/L	EPA 8260B	10/13/2002
TPH as Gasoline	4600	1000	ug/L	EPA 8260B	10/13/2002
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	10/13/2002
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	10/13/2002

Sample : TB-2

Matrix : Water

Lab Number : 29067-06

Sample Date :10/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	580	100	ug/L	EPA 8260B	10/15/2002
Toluene	< 100	100	ug/L	EPA 8260B	10/15/2002
Ethylbenzene	< 100	100	ug/L	EPA 8260B	10/15/2002
Total Xylenes	180	100	ug/L	EPA 8260B	10/15/2002
Methyl-t-butyl ether (MTBE)	30000	1000	ug/L	EPA 8260B	10/15/2002
TPH as Gasoline	< 10000	10000	ug/L	EPA 8260B	10/15/2002
Toluene - d8 (Surr)	99.7		% Recovery	EPA 8260B	10/15/2002
4-Bromofluorobenzene (Surr)	97.5		% Recovery	EPA 8260B	10/15/2002

Approved By:  Joel Kiff

QC Report : Method Blank DataProject Name : **4255 MacArthur Boulevard, Oakland**Project Number : **021007-AM2**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/12/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/12/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/12/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/12/2002
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	10/12/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/12/2002
Toluene - d8 (Surr)	101		%	EPA 8260B	10/12/2002
4-Bromofluorobenzene (Surr)	105		%	EPA 8260B	10/12/2002
Benzene	< 0.50	0.50	ug/L	EPA 8260B	10/11/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	10/11/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	10/11/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	10/11/2002
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	10/11/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	10/11/2002
Toluene - d8 (Surr)	97.1		%	EPA 8260B	10/11/2002
4-Bromofluorobenzene (Surr)	104		%	EPA 8260B	10/11/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
-----------	----------------	------------------------	-------	-----------------	---------------

KIFF ANALYTICAL, LLC

2795 2nd St. Suite 300 Davis, CA 95616 530-297-4800

Approved By:  Joel Kiff

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : 4255 MacArthur

Project Number : 021007-AM2

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	29085-02	61	39.8	39.9	88.9	88.9	ug/L	EPA 8260B	10/12/02	69.6	69.3	0.387	70-130	25
Toluene	29085-02	0.91	39.8	39.9	43.0	43.2	ug/L	EPA 8260B	10/12/02	106	106	0.122	70-130	25
Tert-Butanol	29085-02	48	199	200	254	254	ug/L	EPA 8260B	10/12/02	103	103	0.293	70-130	25
Methyl-t-Butyl Ether	29085-02	7.2	39.8	39.9	46.8	46.9	ug/L	EPA 8260B	10/12/02	99.4	99.5	0.137	70-130	25
Benzene	29085-01	<0.50	40.0	40.0	42.0	41.8	ug/L	EPA 8260B	10/11/02	105	104	0.548	70-130	25
Toluene	29085-01	<0.50	40.0	40.0	41.0	39.2	ug/L	EPA 8260B	10/11/02	102	98.0	4.44	70-130	25
Tert-Butanol	29085-01	<5.0	200	200	215	208	ug/L	EPA 8260B	10/11/02	108	104	3.59	70-130	25
Methyl-t-Butyl Ether	29085-01	<0.50	40.0	40.0	44.6	44.2	ug/L	EPA 8260B	10/11/02	112	110	0.900	70-130	25

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Approved By:  Joel Kiff

QC Report : Laboratory Control Sample (LCS)

Project Name : **4255 MacArthur**Project Number : **021007-AM2**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	10/12/02	108	70-130
Toluene	40.0	ug/L	EPA 8260B	10/12/02	108	70-130
Tert-Butanol	200	ug/L	EPA 8260B	10/12/02	101	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	10/12/02	105	70-130
Benzene	40.0	ug/L	EPA 8260B	10/11/02	100	70-130
Toluene	40.0	ug/L	EPA 8260B	10/11/02	97.3	70-130
Tert-Butanol	200	ug/L	EPA 8260B	10/11/02	106	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	10/11/02	94.8	70-130

KIFF ANALYTICAL, LLC

Approved By: 
Joel Kiff

SMELL Chain of Custody Record

Lab Identification (if necessary):

Address:

City, State, Zip:

Shell Project Manager to be Invoiced:

SCIENCE & ENGINEERING
 TECHNICAL SERVICES
 CRMT HOUSTON

Karen Petryna

29067

INCIDENT NUMBER (S&E ONLY)

9 8 9 9 5 7 5 8

SAP or CRMT NUMBER (TS/CRMT)

DATE: 10-7-02

PAGE: 1 of 1

SAMPLING COMPANY: Blaine Tech Services		LOG CODE: BTSS	SITE ADDRESS (Street and City): 4255 MacArthur Boulevard, Oakland		GLOBAL ID NO.: T0600101261
ADDRESS: 1680 Rogers Avenue, San Jose, CA 95112			EDF DELIVERABLE TO (Responsible Party or Designee): Heidi Bauer	PHONE NO.: (510) 891-0092	E-MAIL: hbauer@millerbrooksenv.com
PROJECT CONTACT (Hardcopy or PDF Report to): Leon Gearhart			SAMPLER NAME(S) (Print): ALBERT MARRO		CONSULTANT PROJECT NO. 021007-AMZ
TELEPHONE: 408-573-0555	FAX: 408-573-7771	E-MAIL: lgearhart@blainetech.com	LAB USE ONLY		

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

LA - RWQCB REPORT FORMAT UST AGENCY:

GC/MS MTBE CONFIRMATION: HIGHEST _____ HIGHEST per BORING _____ ALL _____

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

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING		MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTEX	MTBE (8021B - 5ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (5) by (8260B)	Ethanol (8260B)	Methanol	1,2-DCA (8260B)	EDB (8260B)	TPH - Diesel, Extractable (8015m)	Total Alkalinity	Ferrous Iron	Nitrate as Nitrate	Sulfate	MTBE (8260B) Confirmation, See Note	TEMPERATURE ON RECEIPT °	FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes		
		DATE	TIME																					
	MW-1	10/7	1547	W	3	X	X	X														-01		
	MW-2		1520			X	X	X															-02	
	MW-4		1445			X	X	X															-03	
	MW-5		1502			X	X	X															-04	
	TB-1		1605			X	X	X															-05	
	TB-2		1620			X	X	X															-06	

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date: 100802	Time: 1100
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature) <i>John Little</i>	Date:	Time:

O&G Graphic (714) 898-9702

WELL GAUGING DATA

Project # 021007Am-2 Date 10-7-02 Client Shell

Site 4255 MacArthur Blvd OAKLAND

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC
MW-1	4					8.34	23.32	↓
MW-2	4			no SPW detected		11.56	19.71	
MW-3	4		17.40	0.20	492.05 ml	14.60	21.94	
MW-4	2					9.06	30.50	
MW-5	2					6.75	19.96	
TB-1	4					12.95	13.65	
TB-2	4					11.62	12.96	

* released w/ sludges

SHELL WELL MONITORING DATA SHEET

BTS #: 021007-Am 2	Site: Shell
Sampler: An	Date: 10-7-02
Well I.D.: mw-1	Well Diameter: 2 3 <u>(4)</u> 6 8
Total Well Depth (TD): 23.32	Depth to Water (DTW): 6.34
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>(PVC)</u> Grade	D.O. Meter (if req'd): <u>(YSI)</u> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 80% 11.32	

Purge Method:	Water	Sampling Method:
Bailer	Peristaltic	<input checked="" type="checkbox"/> Bailer
Disposable Bailer	Extraction Pump	Disposable Bailer
Middleburg	Other _____	Extraction Port
Electric Submersible <input checked="" type="checkbox"/>		Dedicated Tubing
		Other: _____

$\frac{9.7 \text{ (Gals.)} \times 3}{\text{Specified Volumes}} = \frac{29.1 \text{ Gals.}}{\text{Calculated Volume}}$	<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>radius² * 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 ² * 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 ² * 0.163														

Time	Temp (°F)	pH	Cond. (mS or <u>µS</u>)	Turbidity (NTUs)	Gals. Removed	Observations
15:40	60.9	4.0	1113	123	9.7	Cloudy
15:42	76.7	7.9	1125	62	19.4	ll ll
15:48	76.0	7.9	1130	65	29.1	ll ll

Did well dewater? Yes No Gallons actually evacuated: 29.1

Sampling Date: 10-7-02 Sampling Time: 15:47 Depth to Water: ≈ 10.95

Sample I.D.: mw-1 Laboratory: (Kiff) SPL 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: 2.6 mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge: -26 mV	Post-purge:	mV

SHELL WELL MONITORING DATA SHEET

BTS #: 021007-AM 2	Site: Shell
Sampler: An	Date: 10-7-02
Well I.D.: MW-2	Well Diameter: 2 3 ④ 6 8
Total Well Depth (TD): 19.71	Depth to Water (DTW): 11.56
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 80% = 13.2	

Purge Method: Bailer Water: Peristaltic Sampling Method: Bailer
 Disposable Bailer Extraction Pump Disposable Bailer
 Middleburg Other: _____ Extraction Port
 Electric Submersible Other: _____ Dedicated Tubing

$\frac{5.2 \text{ (Gals.)} \times 3}{\text{Specified Volumes}} = \frac{15.6 \text{ Gals.}}{\text{Calculated Volume}}$	<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>radius² = 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 ² = 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 ² = 0.163														

Time	Temp (°F)	pH	Cond. (mS or μS)	Turbidity (NTUs)	Gals. Removed	Observations
15:12	89.9	7.2	506	>200	5.2	Cloudy / odor
15:13	87.7	7.1	605	>200	10.4	" "
15:14	83.9	7.1	697	>200	15.6	" "

Did well dewater? Yes No Gallons actually evacuated: 15.6

Sampling Date: 10-7-02 Sampling Time: 15:20 Depth to Water: ≥ 12.95

Sample I.D.: MW-2 Laboratory: (Kiff) SPL Other: _____

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) 6.4 mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	(Pre-purge) -52 mV	Post-purge:	mV

SHELL WELL MONITORING DATA SHEET

BTS #: <u>021007-A-2</u>	Site: <u>Shell</u>
Sampler: <u>Am</u>	Date: <u>10-7-02</u>
Well I.D.: <u>mu-3</u>	Well Diameter: 2 3 <u>(4)</u> 6 8 _____
Total Well Depth (TD): <u>21.94</u>	Depth to Water (DTW): <u>14:60</u>
Depth to Free Product: <u>14.40</u>	Thickness of Free Product (feet): <u>0.20</u>
Referenced to: <u>(PVC)</u> Grade	D.O. Meter (if req'd): <u>(Ysh)</u> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method:	Water	Sampling Method:
Bailer	Peristaltic	Bailer
Disposable Bailer	Extraction Pump	Disposable Bailer
Middleburg	Other _____	Extraction Port
Electric Submersible		Dedicated Tubing
		Other: _____

_____ (Gals.) X _____ = _____ Gals. I Case Volume Specified Volumes Calculated Volume	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Well Diameter</th> <th style="text-align: left;">Multiplier</th> <th style="text-align: left;">Well Diameter</th> <th style="text-align: left;">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>radius² * 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 ² * 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 ² * 0.163														

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
						<u>Spk @ 492.05 m could not bail</u>
						<u>Free Product because drum on site full</u>
						<u>& could not sample</u>

Did well dewater? Yes No Gallons actually evacuated: _____

Sampling Date: _____ Sampling Time: _____ Depth to Water: _____

Sample I.D.: _____ Laboratory: Kiff SPL 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 #: 021007-AM 2	Site: Shell
Sampler: An	Date: 10-7-02
Well I.D.: TB-1	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth (TD): 13.65	Depth to Water (DTW): 12.95
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 80% = 13.09	

Purge Method: Bailer Disposable Bailer Middleburg Electric Submersible
 Water: Peristaltic Extraction Pump Other _____
 Sampling Method: Bailer Disposable Bailer Extraction Port Dedicated Tubing
 Other: _____

$0.4 \text{ (Gals.)} \times 3 = 1.2 \text{ Gals.}$ <p style="font-size: small; margin: 0;">I Case Volume Specified Volumes Calculated Volume</p>	<table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <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>radius² * 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 ² * 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 ² * 0.163														

Time	Temp (°F)	pH	Cond. (mS or <u>µS</u>)	Turbidity (NTUs)	Gals. Removed	Observations
16:00	79.3	7.2	785	140	0.4	clear
16:01	79.1	7.2	765	92	8	" "
16:02	78.6	7.2	745	85	1.2	" "

Did well dewater? Yes No Gallons actually evacuated: ~ 1.2

Sampling Date: 10-7-02 Sampling Time: 16:05 Depth to Water: ~ 13.05

Sample I.D.: TB-1 Laboratory: Kiff SPL 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): <u>Pre-purge</u>	1.6	mg/L	Post-purge:		mg/L
O.R.P. (if req'd): <u>Pre-purge</u>	-48	mV	Post-purge:		mV

SHELL WELL MONITORING DATA SHEET

BTS #: 021007-A-2	Site: Shell
Sampler: Am	Date: 10-7-02
Well I.D.: TB-2	Well Diameter: 2 3 4 6 8
Total Well Depth (TD): 12.96	Depth to Water (DTW): 11.62
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 40% 11.82	

Purge Method: Bailer Water Sampling Method: Bailer
 Disposable Bailer Peristaltic Disposable Bailer
 Middleburg Extraction Pump Extraction Port
 Electric Submersible Other _____ Dedicated Tubing

Other: _____

$0.8 \text{ (Gals.)} \times 3 = 2.4 \text{ Gals.}$ <p style="font-size: small; margin: 0;">I Case Volume Specified Volumes Calculated Volume</p>	<table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <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>radius² * 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 ² * 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 ² * 0.163														

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
16:15	76.6	7.1	607	60	0.8	Clear
16:16	76.2	7.1	623	65	1.6	" "
16:17	76.2	7.1	795	40	2.4	" "

Did well dewater? Yes **No** Gallons actually evacuated: 2.4

Sampling Date: 10-7-02 Sampling Time: 16:20 Depth to Water: 11.59

Sample I.D.: TB-2 Laboratory: **Kitt** SPL Other _____

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: 1.0	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge: -41	mV	Post-purge:	mV

ATTACHMENT B
TOSCO 76 Service Station #1156
Groundwater Monitoring Data and Analytical Results

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco 76 Service Station #1156
4276 MacArthur Boulevard
Oakland, California

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft. bgs)	GWE (msl)	Product							
					Tthickness (ft.)	TPH-D (pph)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-1												
174.86	07/20/99 ⁵	7.50	5.0-25.0	167.36	--	16,000 ²	120,000	11,000	27,000	3,300	18,000	ND ¹
	09/28/99	8.75		166.11	<0.01	2,410 ²	6,020 ⁶	1,030	1,040	68.5	412	321/333 ³
	01/07/00	9.05		165.83**	0.02	7,870 ^{2,4}	72,700 ⁶	7,410	13,900	2,070	9,620	ND ¹
	03/31/00	7.18		167.68	0.00	3,600 ²	92,000 ⁶	10,000	23,000	3,200	14,000	ND ¹
	07/14/00	7.68		167.18	0.00	8,580 ²	108,000 ⁶	8,250	18,700	3,750	17,800	ND ¹
	10/03/00	7.99		166.87	0.00	9,260 ²	96,000 ⁶	8,760	20,000	3,350	15,600	ND ¹
	01/03/01	9.18		165.68	0.00	11,000 ⁸	37,000 ⁶	5,800	13,000	1,700	8,100	2,200
	04/04/01	8.05		166.81	0.00	14,000 ⁸	86,900 ⁶	7,780	18,500	2,470	11,800	¹ ND/481 ³
	07/17/01	7.01		167.85	0.00	2,200 ⁸	79,000 ⁶	5,600	11,000	2,800	12,000	¹ ND/230 ³
177.54	10/03/01	7.89		169.65	0.00	--	99,000 ⁶	8,200	18,000	3,000	16,000	<2,500
	10/05/01	7.91		169.63	0.00	13,000 ²	--	--	--	--	--	--
	01/28/02	5.98		171.56	0.00	4,400 ¹¹	110,000 ¹²	8,900	19,000	2,600	12,000	3,000/440 ³
	04/25/02	6.19		171.35	0.00	9,000 ¹³	93,000	8,100	18,000	3,000	15,000	810/670 ³
	07/18/02	6.99		170.55	0.00	9,200 ¹³	69,000	5,400	10,000	2,100	10,000	<500/620 ³
	10/07/02	7.73		169.81	0.00	3,400	82,000	9,200	20,000	2,600	13,000	1,300/760 ³
	01/06/03	5.48		172.06	0.00	5,100¹³	82,000	6,500	18,000	2,700	11,000	<1,000/790^{3,4}
MW-2												
173.01	07/20/99	5.40	5.0-25.0	167.61	--	--	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹	4,500/11,000 ^{3,4}
	09/28/99	5.60		167.41	0.00	--	1,390 ⁶	124	ND ¹	62.9	43.1	5,280/6,150 ³
	01/07/00	5.92		167.09	0.00	--	1,450 ⁶	99.0	ND ¹	23.8	16.0	33,100
	03/31/00	5.23		167.78	0.00	--	ND ¹	42	ND ¹	ND ¹	ND ¹	17,000
	07/14/00	5.52		167.49	0.00	--	ND ¹	44.7	ND ¹	ND ¹	ND ¹	66,500
	10/03/00	6.04		166.97	0.00	--	ND ¹	56.7	ND ¹	ND ¹	ND ¹	57,500
	01/03/01	6.42		166.59	0.00	--	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹	49,000

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco 76 Service Station #1156
4276 MacArthur Boulevard
Oakland, California

WELL ID/ TOC*(ft.)	DATE	DFW (ft.)	S.I. (ft. bgs)	GWE (msl)	Product								
					Thickness (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	
MW-2	04/04/01	6.14	5.0-25.0	166.87	0.00	--	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹	38,700/37,800 ³
(cont)	07/17/01	5.30		167.71	0.00	--	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹	65,000/56,000 ³
173.50	10/03/01	7.38		166.12	0.00	--	<250	2.7	<2.5	<2.5	<2.5	<2.5	14,000/18,000 ³
	01/28/02	5.68		167.82	0.00	--	<250	2.5	4.4	2.8	7.4		11,000/10,000 ³
	04/25/02	5.82		167.68	0.00	--	<50	<0.50	<0.50	<0.50	<0.50		8,400/8,100 ³
	07/18/02	6.90		166.60	0.00	--	<500	<5.0	<5.0	<5.0	<5.0		4,300/8,800 ³
	10/07/02	7.54		165.96	0.00	--	4,300	<10	27	21	75		7,100/5,900 ³
	01/06/03	6.79		166.71	0.00	--	5,900	<5.0	<5.0	<5.0	<5.0		31,000/35,000³
MW-3													
178.44	07/20/99	8.50	5.0-25.0	169.94	--	--	1,000	76	52	79	76		330
	09/28/99	8.31		170.13	0.00	--	1,860 ⁶	174	95.4	71.8	135		443/288 ³
	01/07/00	8.56		169.88	0.00	--	28,400 ⁶	2,450	3,090	1,560	3,910		1,940
	03/31/00	8.42		170.02	0.00	--	26,000 ⁶	1,300	2,900	2,600	3,500		2,800
	07/14/00	8.61		169.83	0.00	--	24,500 ⁶	1,850	2,630	2,750	3,900		548
	10/03/00	9.14		169.30	0.00	--	22,000 ⁶	1,910	2,020	2,400	2,680		965
	01/03/01	9.06		169.38	0.00	--	14,000 ⁶	1,600	1,100	2,300	1,400		3,300
	04/04/01	8.98		169.46	0.00	--	19,600 ⁶	1,150	1,470	2,100	1,820		1,050/450 ³
	07/17/01	7.46		170.98	0.00	--	26,000 ⁶	1,500	2,100	2,100	3,400		¹ ND/350 ³
178.13	10/03/01	9.81		168.32	0.00	--	22,000 ⁶	830	1,900	1,700	3,000		<1,000
	01/28/02	7.39		170.74	0.00	--	30,000 ¹²	880	2,600	1,800	4,300		3,200/210 ³
	04/25/02	7.86		170.27	0.00	--	18,000	500	2,000	1,300	3,800		500/260 ³
	07/18/02	8.83		169.30	0.00	--	37,000	1,800	3,800	2,200	8,000		<250/270 ³
	10/07/02	9.71		168.42	0.00	--	26,000	600	2,000	1,800	6,400		<120/<200 ³
	01/06/03	7.40		170.73	0.00	--	27,000	800	2,100	2,000	6,400		440/110³

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco 76 Service Station #1156
 4276 MacArthur Boulevard
 Oakland, California

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft. bgs)	GWE (msl)	Product							
					Thickness (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-4												
179.10	07/20/99	7.40	5.0-25.0	171.70	--	--	69	2.7	0.77	ND	7.1	100
	09/28/99	7.19		171.91	0.00	--	4,050 ⁶	1,250	72.0	51.3	133	416/459 ³
	01/07/00	8.98		170.12	0.00	--	7,010 ⁶	2,260	167	271	276	764
	03/31/00	7.26		171.84	0.00	--	5,500 ⁶	1,800	230	330	400	1,000
	07/14/00	7.67		171.43	0.00	--	7,940 ⁶	2,810	332	450	247	1,530
	10/03/00	8.12		170.98	0.00	--	11,400 ⁶	3,110	437	519	816	1,040
	01/03/01 ⁷	9.10		170.00	0.00	--	8,600 ⁶	2,500	340	480	960	850
	04/04/01	8.63		170.47	0.00	--	9,950 ⁶	2,380	126	416	725	1,140/819 ³
	07/17/01	6.49		172.61	0.00	--	10,000 ⁶	2,300	110	410	800	1,200/900 ³
178.96	10/03/01	7.01		171.95	0.00	--	7,800 ⁶	2,100	85	380	390	580/820 ³
	01/28/02	6.21		172.75	0.00	--	12,000 ¹²	2,100	130	350	670	1,100/500 ³
	04/25/02	5.49		173.47	0.00	--	3,300	1,300	42	270	250	680/600 ³
	07/18/02	8.28		170.68	0.00	--	4,800	1,300	71	290	220	530/760 ³
	10/07/02	7.49		171.47	0.00	--	5,100	1,400	110	330	380	650/540 ³
	01/06/03	6.36		172.60	0.00	--	5,600	1,100	57	260	320	370/520 ³
MW-5												
169.18	10/03/01 ¹⁰	2.81	--	166.37	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	1,800/2,100 ³
	01/28/02	1.88		167.30	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	650/550 ³
	04/25/02	1.99		167.19	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	2,200/2,400 ³
	07/18/02	2.49		166.69	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	530/690 ³
	10/07/02	2.80		166.38	0.00	--	140	<0.50	<0.50	<0.50	<0.50	300/330 ³
	01/06/03	1.86		167.32	0.00	<50	120 ¹³	<0.50	<0.50	<0.50	<0.50	410/350 ³

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco 76 Service Station #1156
4276 MacArthur Boulevard
Oakland, California

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft. bgs)	GWE (msl)	Product							
					Thickness (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-6												
169.04	10/03/01 ¹⁰	2.87	--	166.17	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	200/270 ³
	01/28/02	1.82		167.22	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
	04/25/02	2.01		167.03	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
	07/18/02	2.44		166.60	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5/<2.0 ³
	10/07/02	2.72		166.32	0.00	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5/<2.0 ³
	01/06/03	1.90		167.14	0.00	--	<50	0.62	1.2	1.2	3.5	<2.0/<2.0³
MW-7												
171.64	10/03/01 ¹⁰	7.62	--	164.02	0.00	--	10,000 ⁹	210	<50	<50	800	35,000/40,000 ³
	01/28/02	7.21		164.43	0.00	--	<1,000	<10	<10	<10	<10	42,000/38,000 ³
	04/25/02	7.25		164.39	0.00	--	<5,000	660	<50	<50	<50	42,000/45,000 ³
	07/18/02	8.12		163.52	0.00	--	<5,000	130	<50	<50	<50	51,000/53,000 ³
	10/07/02	7.71		163.93	0.00	--	18,000	<50	<50	<50	<50	33,000/38,000 ³
	01/06/03	7.63		164.01	0.00	<50	410	0.61	1.0	0.89	2.9	3,900/3,100³
Trip Blank												
TB-LB	07/20/99	--	--	--	--	--	--	--	--	--	--	--
	09/28/99	--		--	--	--	ND	ND	ND	ND	ND	ND
	01/07/00	--		--	--	--	ND	ND	ND	ND	ND	ND
	03/31/00	--		--	--	--	ND	ND	ND	ND	ND	ND
	07/14/00	--		--	--	--	ND	ND	ND	ND	ND	ND
	10/03/00	--		--	--	--	ND	ND	ND	ND	ND	ND
	01/03/01	--		--	--	--	ND	ND	ND	ND	ND	ND
	04/04/01	--		--	--	--	ND	ND	ND	ND	ND	ND
	07/17/01	--		--	--	--	ND	ND	ND	ND	ND	ND
	10/03/01	--		--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco 76 Service Station #1156
 4276 MacArthur Boulevard
 Oakland, California

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft. bgs)	GWE (msl)	Product								
					Thickness (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	
TB-LB	10/05/01	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
(cont)	01/28/02	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.5
	04/25/02	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.5
	07/18/02	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.5
QA	10/07/02	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.5
	01/06/03	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco 76 Service Station #1156
 4276 MacArthur Boulevard
 Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to September 28, 1999, were compiled from reports prepared by Environmental Resolutions, Inc.

TOC = Top of Casing	TPH-D = Total Petroleum Hydrocarbons as Diesel	(ppb) = Parts per billion
(ft.) = Feet	TPH-G = Total Petroleum Hydrocarbons as Gasoline	ND = Not Detected
DTW = Depth to Water	B = Benzene	-- = Not Measured/Not Analyzed
S.I. = Screen Interval	T = Toluene	QA =Quality Assurance/Trip Blank
(ft. bgs) = Feet Below Ground Surface	E = Ethylbenzene	
GWE = Groundwater Elevation	X = Xylenes	
(msl) = Mean sea level	MTBE = Methyl tertiary butyl ether	

* TOC elevations were resurveyed in September 2001, by Morrow Surveying. TOC elevations are based on City of Oakland Benchmark No. 3967, (Elevation = 174.40 feet, msl).

** GWE has been corrected due to the presence of free product; correction factor: [(TOC - DTW) + (Product Thickness x 0.77)].

- 1 Detection limit raised. Refer to analytical reports.
- 2 Laboratory report indicates unidentified hydrocarbons C9-C24.
- 3 MTBE by EPA Method 8260.
- 4 Laboratory analyzed sample past EPA recommended holding time.
- 5 Total Recoverable Petroleum Oil was ND.
- 6 Laboratory report indicates gasoline C6-C12.
- 7 This sample was originally analyzed within holding time. Re-analysis for confirmation or dilution was performed past the recommended holding time.
- 8 Laboratory report indicates unidentified hydrocarbons <C16.
- 9 Laboratory report indicates weathered gasoline C6-C12.
- 10 Well development performed.
- 11 Laboratory report indicates unidentified hydrocarbons C10-C28.
- 12 Laboratory report indicates gasoline C6-C10.
- 13 Laboratory report indicates hydrocarbon pattern is present in the requested fuel quantitation range but it does not resemble the pattern of the requested fuel.

Table 2
Groundwater Analytical Results
 Tosco 76 Service Station #1156
 4276 MacArthur Boulevard
 Oakland, California

WELL ID	DATE	ETHANOL (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	1,2-DCA (ppb)	EDB (ppb)	HVOCs (ppb)	SVOCs (ppb)
MW-1	07/20/99	--	--	11,000 ³	--	--	--	--	--	ND ¹	ND ²
	09/28/99	--	ND ⁶	333	ND ⁶	ND ⁶	ND ⁶	--	--	ND ⁴	ND ⁵
	01/07/00	--	--	--	--	--	--	--	--	ND ^{7,8}	ND ⁹
	03/31/00	--	--	--	--	--	--	--	--	-- ¹¹	ND ¹⁰
	07/14/00	--	--	--	--	--	--	--	--	ND ¹²	ND ¹³
	10/03/00	--	--	--	--	--	--	--	--	ND ¹⁵	ND ¹⁴
	01/03/01	--	--	--	--	--	--	--	--	ND ¹⁵	ND ¹⁶
	04/04/01	ND ⁶	ND ⁶	481	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ¹⁷	ND ¹⁸
	07/17/01	ND ⁶	ND ⁶	230	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ²⁰	ND ¹⁹
	01/28/02	--	--	440	--	--	--	--	--	--	--
	04/25/02	--	--	670	--	--	--	--	--	--	--
	07/18/02	<2,500	<100	620	<10	<10	<10	<10	<10	<10	--
	10/07/02	<50,000	<10,000	760	<200	<200	<200	<200	<200	<200	--
01/06/03 ²¹	<100,000	<20,000	790	<400	<400	<400	<400	<400	<400	--	
MW-2	09/28/99	--	ND ⁶	6,150	ND ⁶	ND ⁶	ND ⁶	--	--	--	--
	04/04/01	ND ⁶	ND ⁶	37,800	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	--	--
	07/17/01	ND ⁶	ND ⁶	56,000	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	--	--
	10/03/01	--	--	18,000	--	--	--	--	--	--	--
	01/28/02	--	--	10,000	--	--	--	--	--	--	--
	04/25/02	--	--	8,100	--	--	--	--	--	--	--
	07/18/02	<25,000	<1,000	8,800	<100	<100	<100	<100	<100	--	--
	10/07/02	<100,000	<20,000	5,900	<400	<400	<400	<400	<400	--	--
	01/06/03	<250,000	<50,000	35,000	1,000	1,000	1,000	1,000	1,000	--	--
MW-3	09/28/99	--	ND ⁶	288	ND ⁶	ND ⁶	8.80	--	--	--	--
	04/04/01	ND ⁶	ND ⁶	450	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	--	--
	07/17/01	ND ⁶	ND ⁶	350	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	--	--

Table 2
Groundwater Analytical Results
Tosco 76 Service Station #1156
4276 MacArthur Boulevard
Oakland, California

WELL ID	DATE	ETHANOL (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	1,2-DCA (ppb)	EDB (ppb)	HVOCs (ppb)	SVOCs (ppb)
MW-3	01/28/02	--	--	210	--	--	--	--	--	--	--
(cont)	04/25/02	--	--	260	--	--	--	--	--	--	--
	07/18/02	<1,200	<50	270	<5.0	<5.0	<5.0	<5.0	<5.0	--	--
	10/07/02	<50,000	<10,000	<200	<200	<200	<200	<200	<200	--	--
	01/06/03	23,000	<4,000	110	<80	<80	<80	<80	<80	--	--
MW-4	09/28/99	--	ND ⁶	459	ND ⁶	ND ⁶	ND ⁶	--	--	--	--
	04/04/01	ND ⁶	ND ⁶	819	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	--	--
	07/17/01	ND ⁶	ND ⁶	900	ND ⁶	ND ⁶	ND ⁶	ND ⁶	ND ⁶	--	--
	10/03/01	--	--	820	--	--	--	--	--	--	--
	01/28/02	--	--	500	--	--	--	--	--	--	--
	04/25/02	--	--	600	--	--	--	--	--	--	--
	07/18/02	<2,500	<100	760	<10	<10	<10	49	<10	--	--
	10/07/02	<50,000	<10,000	540	<200	<200	<200	<200	<200	--	--
	01/06/03	<5,000	<1,000	520	<20	<20	<20	<20	<20	--	--
MW-5	10/03/01	--	--	2,100	--	--	--	--	--	--	--
	01/28/02	--	--	550	--	--	--	--	--	--	--
	04/25/02	--	--	2,400	--	--	--	--	--	--	--
	07/18/02	<500	<20	690	<2.0	<2.0	<2.0	<2.0	<2.0	--	--
	10/07/02	<500	<100	330	<2.0	<2.0	<2.0	<2.0	<2.0	--	--
	01/06/03	<500	<100	350	<2.0	<2.0	<2.0	<2.0	<2.0	--	--
MW-6	10/03/01	--	--	270	--	--	--	--	--	--	--
	07/18/02	<500	<20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--	--
	10/07/02	<500	<100	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--	--
	01/06/03	<500	<100	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--	--

Table 2
Groundwater Analytical Results
 Tosco 76 Service Station #1156
 4276 MacArthur Boulevard
 Oakland, California

WELL ID	DATE	ETHANOL (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	1,2-DCA (ppb)	EDB (ppb)	HVOCs (ppb)	SVOCs (ppb)
MW-7	10/03/01	--	--	40,000	--	--	--	--	--	--	--
	01/28/02	--	--	38,000	--	--	--	--	--	--	--
	04/25/02	--	--	45,000	--	--	--	--	--	--	--
	07/18/02	<5,000	33,000	53,000	<20	<20	<20	<20	<20	--	--
	10/07/02	<100,000	26,000	38,000	<400	<400	<400	<400	<400	--	--
	01/06/03	<50,000	<10,000	3,100	<200	<200	<200	<200	<200	--	--

Table 2
Groundwater Analytical Results - Oxygenate Compounds
Tosco (Circle K) Unit #01156
1263 Franklin Boulevard
Yuba City, California

EXPLANATIONS:

TBA = Tertiary butyl alcohol
MTBE = Methyl tertiary butyl ether
DIPE = Di-isopropyl ether
ETBE = Ethyl tertiary butyl ether
TAME = Tertiary amyl methyl ether
EDB = 1,2-Dibromoethane
1,2-DCA = 1,2-Dichlorethane
(ppb) = Parts per billion
ND = Not Detected
-- = Not Analyzed

ANALYTICAL METHOD:

EPA Method 8260 for Oxygenate Compounds

- ¹ Groundwater laboratory analytical provided by Secor International, Inc.
² Detection limit raised. Refer to analytical reports.
³ Laboratory report indicates sample was analyzed outside of the EPA recommended holding time.