CAMBRIA

February 26, 2002

MAR 0 1 2002

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

Re: **Fourth Quarter 2001 Monitoring Report**
Shell-branded Service Station
610 Market Street
Oakland, California
Incident #99895750
Cambria Project #244-0594-002

Dear Mr. Chan:

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. The site is located on Market Street between Sixth and Seventh Streets in Oakland, California (Figures 1 and 2).

REMEDIATION SUMMARY

Mobile Dual-Phase Vacuum Extraction Treatment (DVE): From March to October 2000, Cambria coordinated mobile DVE from wells MW-2 and MW-3. Mobile 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. DVE was discontinued in October 2000 due to low groundwater-extraction volumes. The estimated mass of total petroleum hydrocarbons as gasoline (TPHg) and methyl tertiary butyl ether (MTBE) removed by groundwater extraction during DVE events is summarized in Table 1, and the estimated mass removed by vapor extraction is summarized in Table 2.

Oakland, CA
San Ramon, CA
Sonoma, CA

Cambria Environmental Technology, Inc.

1144 65th Street
Suite B
Oakland, CA 94608
Tel (510) 420-0700
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DVE and Soil Vapor Extraction (SVE) Pilot Test: On March 22, 2001, Cambria performed a short-term (1 day) DVE test on well MW-3 and a short-term (1 day) SVE test on tank backfill well T-1. The tests were conducted using an internal combustion engine for vapor abatement, as opposed to the carbon treatment system used during mobile DVE. The estimated mass of TPHg and MTBE removed by groundwater extraction during the DVE test on well MW-3 is summarized in Table 1. The estimated mass of TPHg and MTBE removal removed by vapor extraction during the DVE pilot test on well MW-3 and the SVE pilot test on well T-1 is summarized in Table 2.

SVE Pilot Test: Between October 8 and 12, 2001, Cambria conducted a long-term (5 day) SVE pilot test on tank backfill well T-1. The cumulative mass removal of TPHg and MTBE during the SVE pilot test was approximately 14.7 pounds and 32.8 pounds, respectively. The estimated mass removed by vapor extraction at the site is summarized on Table 2.

Mobile Groundwater Extraction (GWE): As recommended in the August 29, 2001 *Site Conceptual Model and Pilot Test Report*, Cambria began coordinating weekly GWE from well MW-3 using a vacuum truck in August 2001. Well MW-2 was added to the weekly GWE schedule at the site beginning in January 2002, as recommended in our December 19, 2001 *Soil Vapor Extraction Pilot Test Report and Investigation Work Plan*. The recommendation to extract from well MW-2 was approved in a January 2, 2002 Alameda County Health Care Services Agency (ACHCSA) letter. Cumulative groundwater purge volume by GWE and previous DVE and estimated mass removal data are presented in Table 1. Figure 3 shows MTBE concentrations and mass removal estimates over time for well MW-3. The mass removal estimates shown on Figure 3 include liquid-phase and vapor-phase MTBE mass removed by GWE and by previous DVE. The cumulative estimated mass of TPHg and MTBE removed to date at the site, including that removed by GWE, DVE and SVE, is 52.84 pounds and 76.52 pounds, respectively.

FOURTH QUARTER 2001 ACTIVITIES

Groundwater Monitoring: Blaine Tech Services, Inc. (Blaine) of San Jose, California gauged and sampled the site wells, calculated groundwater elevations, and compiled the 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.

Investigation Work Plan: Cambria submitted a *Soil Vapor Extraction Pilot Test Report and Investigation Work Plan* on December 19, 2001. The work plan proposes additional onsite and offsite assessment to further define the MTBE plume extent.

ANTICIPATED FIRST QUARTER 2002 ACTIVITIES

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

Agency Response and Investigation Status: As stated above, Cambria submitted a December 19, 2001 *Soil Vapor Extraction Pilot Test Report and Investigation Work Plan.* In a January 2, 2002 ACHCSA letter, the scope of work described in the work plan was approved and additional written response was requested. On February 7, 2002, Cambria submitted an *Agency Response* to the January 2, 2002 letter. Cambria will proceed to obtain the necessary permits and schedule the fieldwork during the first quarter 2002.

Mobile GWE: Weekly GWE is scheduled to continue through first quarter 2002. Continued GWE will be based on extracted groundwater volumes and concentration trends.

Monthly Vapor Sampling: As described in our December 19, 2001 *Soil Vapor Extraction Pilot Test Report and Investigation Work Plan*, Cambria will proceed with monthly field measurements in the tank backfill wells using a photo-ionization detector.

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

Stephan A. Bork
for: Jacquelyn L. Jones
Project Geologist

Stephan A. Bork, C.E.G., C.HG.
Associate Hydrogeologist

REGISTERED GEOLOGIST
STEPHAN A. BORK
No. EG 2058
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

Figures: 1 - Vicinity/Area Well Survey Map
2 - Groundwater Elevation Contour Map
3 - MTBE and Mass Removal – Well MW-3

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

Attachment: A - Blaine Groundwater Monitoring Report and Field Notes

cc: Karen Petryna, Equiva Services LLC, P.O. Box 7869, Burbank, California 91510-7869
Virginia R. Rawson, Tr., 1860 Tice Creek Drive #1353, Walnut Creek, CA 94595
Ronald L. & Cathy L. Labatt, PO Box 462, Kamiah, ID 83536

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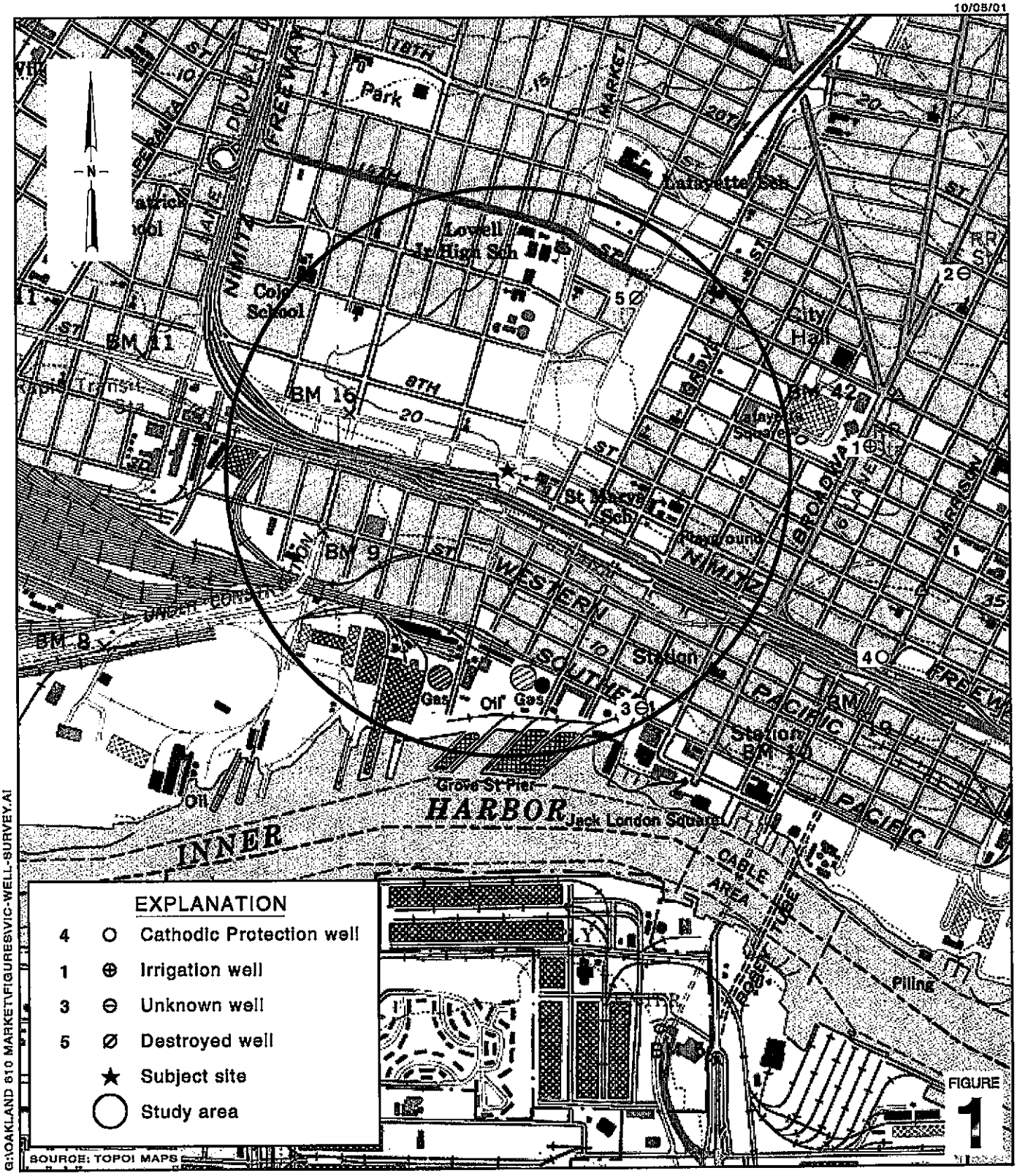
10/05/01



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Shell-branded Service Station
610 Market Street
Oakland, California
Incident #98995750

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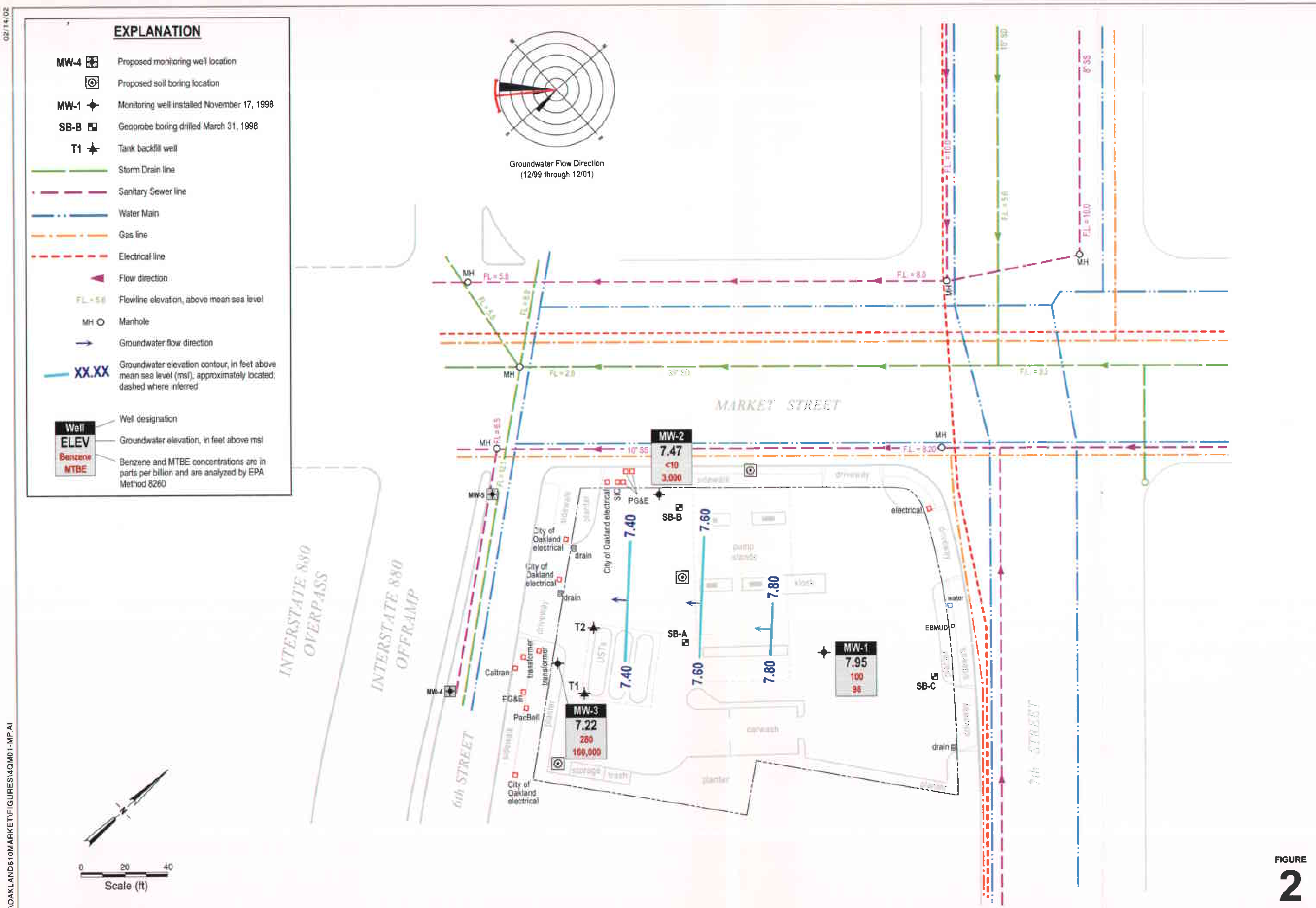
Vicinity / Area Well Survey Map
1/2 Mile Radius


EXPLANATION
MW-4 Proposed monitoring well location
Proposed soil boring location
MW-1 Monitoring well installed November 17, 1998
SB-B Geoprobe boring drilled March 31, 1998
T1 Tank backfill well
Storm Drain line
Sanitary Sewer line
Water Main
Gas line
Electrical line
Flow direction
FL = 5.6 Flowline elevation, above mean sea level
MH Manhole
Groundwater flow direction
XX.XX Groundwater elevation contour, in feet above mean sea level (msl), approximately located; dashed where inferred
Well
ELEV
Benzene
MTBE
Well designation
Groundwater elevation, in feet above msl
Benzene and MTBE concentrations are in parts per billion and are analyzed by EPA Method 8260
Groundwater Flow Direction
(12/99 through 12/01)
MARKET STREET
INTERSTATE 880 OVERPASS
INTERSTATE 880 OFFRAMP
6th STREET
7th STREET
MW-2
7.47
<10
3,000
MW-1
7.95
100
98
MW-3
7.22
280
160,000
7.40
7.60
7.80
MW-4
MW-5
SB-A
SB-B
SB-C
T1
T2
PG&E
SIC
City of Oakland electrical
drain
Caltran
transformer
FG&E
PacBell
EBMUD
electrical
water
USTs
pump stands
kiosk
carwash
planter
storage
trash
sidewalk
driveway
MH
FL = 5.6
FL = 8.0
FL = 8.20
FL = 2.8
FL = 10.0
10" SS
30" SD
Scale (ft)
0
20
40

02/14/02

G:\OAKLAND610MARKET\FIGURES\4Q01-MP.AI

FIGURE
2

Groundwater Elevation Contour Map

December 12, 2001

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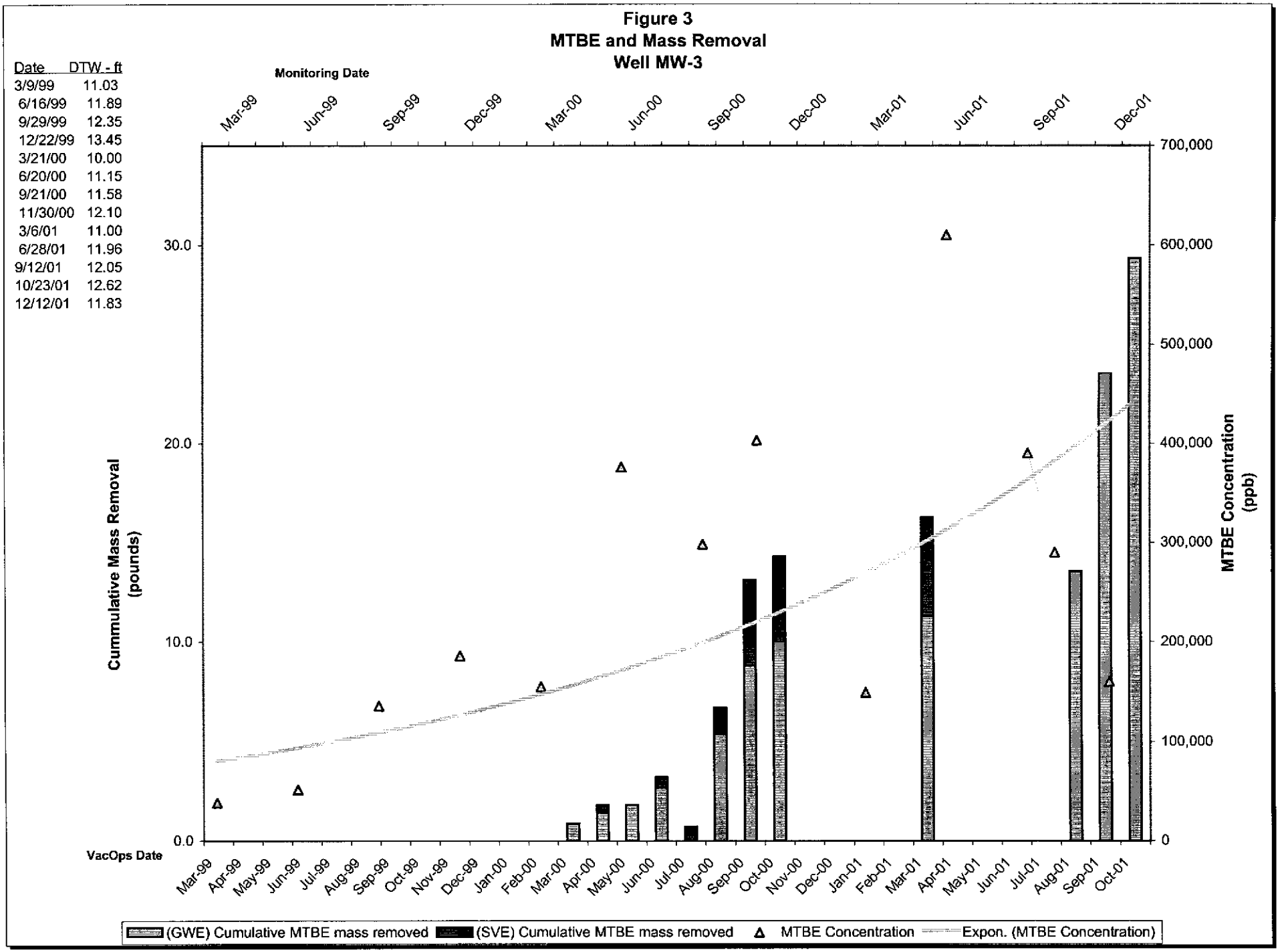
Shell-branded Service Station

610 Market Street
Oakland, California
Incident #98995750

Figure 3
MTBE and Mass Removal
Well MW-3

Date	DTW - ft
3/9/99	11.03
6/16/99	11.89
9/29/99	12.35
12/22/99	13.45
3/21/00	10.00
6/20/00	11.15
9/21/00	11.58
11/30/00	12.10
3/6/01	11.00
6/28/01	11.96
9/12/01	12.05
10/23/01	12.62
12/12/01	11.83



610 Market Street, Oakland

Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995750, 610 Market Street, Oakland, California

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	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)	Notes:
					TPPH			**Benzene**			**MTBE**			
03/15/00	MW-2	0	0	03/21/00	<5,000	0.00000	0.00000	94.7	0.00000	0.00000	13,900	0.00000	0.00000	
03/22/00	MW-2	100	100	03/21/00	<5,000	0.00209	0.00209	94.7	0.00008	0.00008	13,900	0.01160	0.01160	
03/27/00	MW-2	75	175	03/21/00	<5,000	0.00156	0.00365	94.7	0.00006	0.00014	13,900	0.00870	0.02030	
04/03/00	MW-2	100	275	03/21/00	<5,000	0.00209	0.00574	94.7	0.00008	0.00022	13,900	0.01160	0.03190	
04/17/00	MW-2	200	475	03/21/00	<5,000	0.00417	0.00991	94.7	0.00016	0.00038	13,900	0.02320	0.05509	
04/24/00	MW-2	125	600	03/21/00	<5,000	0.00261	0.01252	94.7	0.00010	0.00047	13,900	0.01450	0.06959	
05/01/00	MW-2	50	650	03/21/00	<5,000	0.00104	0.01356	94.7	0.00004	0.00051	13,900	0.00580	0.07539	
05/15/00	MW-2	75	725	03/21/00	<5,000	0.00156	0.01512	94.7	0.00006	0.00057	13,900	0.00870	0.08409	
05/22/00	MW-2	100	825	03/21/00	<5,000	0.00209	0.01721	94.7	0.00008	0.00065	13,900	0.01160	0.09569	
05/29/00	MW-2	75	900	03/21/00	<5,000	0.00156	0.01877	94.7	0.00006	0.00071	13,900	0.00870	0.10439	
06/05/00	MW-2	617	1,517	03/21/00	<5,000	0.01287	0.03165	94.7	0.00049	0.00120	13,900	0.07156	0.17595	
08/17/00	MW-2	665	2,182	06/20/00	101	0.00056	0.03221	5.95	0.00003	0.00123	7,670	0.04256	0.21851	
09/13/00	MW-2	429	2,611	06/20/00	101	0.00036	0.03257	5.95	0.00002	0.00125	7,670	0.02746	0.24597	
10/27/00*	MW-2	75	2,686	06/20/00	101	0.00006	0.03263	5.95	0.00000	0.00126	7,670	0.00480	0.25077	
01/16/02*	MW-2	230	2,916	12/12/01	**<1,000**	0.00096	0.03359	**<10**	0.00001	0.00127	**3,000**	0.00576	0.25653	
01/23/02	MW-2	535	3,451	12/12/01	**<1,000**	0.00223	0.03582	**<10**	0.00002	0.00129	**3,000**	0.01339	0.26992	
01/30/02	MW-2	300	3,751	12/12/01	**<1,000**	0.00125	0.03707	**<10**	0.00001	0.00130	**3,000**	0.00751	0.27743	
03/15/00	MW-3	500	500	03/21/00	<25,000	0.01043	0.01043	466	0.00194	0.00194	**155,000**	0.64669	0.64669	
03/22/00	MW-3	100	600	03/21/00	<25,000	0.00782	0.01825	466	0.00039	0.00233	**155,000**	0.12934	0.77603	
03/27/00	MW-3	75	675	03/21/00	<25,000	0.01043	0.02868	466	0.00029	0.00262	**155,000**	0.09700	0.87303	
04/03/00	MW-3	100	775	03/21/00	<25,000	0.02086	0.04954	466	0.00039	0.00301	**155,000**	0.12934	1.00237	
04/17/00	MW-3	200	975	03/21/00	<25,000	0.01304	0.06258	466	0.00078	0.00379	**155,000**	0.25868	1.26104	
04/24/00	MW-3	125	1,100	03/21/00	<25,000	0.01043	0.07301	466	0.00049	0.00428	**155,000**	0.16167	1.42271	
05/01/00	MW-3	100	1,200	03/21/00	<25,000	0.00782	0.08084	466	0.00039	0.00467	**155,000**	0.12934	1.55205	
05/15/00	MW-3	75	1,275	03/21/00	<25,000	0.00522	0.08605	466	0.00029	0.00496	**155,000**	0.09700	1.64905	
05/22/00	MW-3	50	1,325	03/21/00	<25,000	0.00782	0.09387	466	0.00019	0.00515	**155,000**	0.06467	1.71372	
05/29/00	MW-3	75	1,400	03/21/00	<25,000	0.07041	0.16428	466	0.00029	0.00544	**155,000**	0.09700	1.81073	

Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995750, 610 Market Street, Oakland, California

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	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)	Notes:
					TPPH			**Benzene**			**MTBE**			
06/05/00	MW-3	675	2,075	03/21/00	<25,000	0.03744	0.20172	466	0.00262	0.00807	**155,000**	0.87303	2.68375	
08/17/00	MW-3	554	2,629	06/20/00	16,200	0.07489	0.27661	1,140	0.00527	0.01334	579,000	2.67659	5.36034	
09/13/00	MW-3	716	3,345	06/20/00	16,200	0.09679	0.37340	1,140	0.00681	0.02015	579,000	3.45927	8.81961	
10/27/00*	MW-3	250	3,595	06/20/00	16,200	0.03379	0.40720	1,140	0.00238	0.02253	579,000	1.20785	10.02745	
03/22/01	MW-3	383	3,978	03/22/01	<20,000	0.03196	0.43915	<200	0.00032	0.02285	**390,000**	1.24640	11.27385	a
08/22/01	MW-3	90	4,068	06/28/01	<50,000	0.01877	0.42597	1,200	0.00090	0.02343	**610,000**	0.45811	10.48556	
08/28/01	MW-3	600	4,668	06/28/01	<50,000	0.12517	0.55114	1,200	0.00601	0.02944	**610,000**	3.05403	13.53959	
09/05/01	MW-3	750	5,418	06/28/01	<50,000	0.15646	0.70759	1,200	0.00751	0.03695	**610,000**	3.81754	17.35714	
09/18/01	MW-3	1,900	7,318	09/12/01	**<20,000**	0.15854	0.86614	**430**	0.00682	0.04376	**390,000**	6.18317	23.54031	
10/10/01	MW-3	500	7,818	09/12/01	**<20,000**	0.04172	0.90786	**430**	0.00179	0.04556	**390,000**	1.62715	25.16745	
10/16/01	MW-3	200	8,018	09/12/01	**<20,000**	0.01669	0.92455	**430**	0.00072	0.04628	**390,000**	0.65086	25.81831	
10/26/01	MW-3	1,300	9,318	10/23/01	**11,000**	0.11932	1.04387	**350**	0.00380	0.05007	**290,000**	3.14582	28.96414	
10/31/01	MW-3	150	9,468	10/23/01	**11,000**	0.01377	1.05764	**350**	0.00044	0.05051	**290,000**	0.36298	29.32712	
11/07/01	MW-3	280	9,748	10/23/01	**11,000**	0.02570	1.08334	**350**	0.00082	0.05133	**290,000**	0.67756	30.00468	
11/17/01	MW-3	100	9,848	10/23/01	**11,000**	0.00918	1.09252	**350**	0.00029	0.05162	**290,000**	0.24199	30.24666	
11/21/01	MW-3	400	10,248	10/23/01	**11,000**	0.03672	1.12923	**350**	0.00117	0.05279	**290,000**	0.96795	31.21461	
12/01/01	MW-3	300	10,548	10/23/01	**11,000**	0.02754	1.15677	**350**	0.00088	0.05366	**290,000**	0.72596	31.94057	
12/05/01	MW-3	350	10,898	10/23/01	**11,000**	0.03213	1.18889	**350**	0.00102	0.05469	**290,000**	0.84695	32.78752	
12/12/01	MW-3	500	11,398	12/12/01	**<20,000**	0.04172	1.23062	**280**	0.00117	0.05586	**160,000**	0.66755	33.45507	
12/19/01	MW-3	450	11,848	12/12/01	**<20,000**	0.03755	1.26817	**280**	0.00105	0.05691	**160,000**	0.60079	34.05586	
01/09/02	MW-3	190	12,038	12/12/01	**<20,000**	0.01585	1.28402	**280**	0.00044	0.05735	**160,000**	0.25367	34.30953	
01/16/02*	MW-3	450	12,488	12/12/01	**<20,000**	0.03755	1.32157	**280**	0.00105	0.05840	**160,000**	0.60079	34.91033	
01/23/02	MW-3	300	12,788	12/12/01	**<20,000**	0.02503	1.34660	**280**	0.00070	0.05910	**160,000**	0.40053	35.31085	
01/30/02	MW-3	278	13,066	12/12/01	**<20,000**	0.02320	1.36980	**280**	0.00065	0.05975	**160,000**	0.37116	35.68201	
Total Gallons Extracted:			**16,817**		**Total Pounds Removed:**		**1.43883**			**0.06137**			**37.20584**	
					Total Gallons Removed:		**0.23587**			**0.00841**			**6.00094**	

Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995750, 610 Market Street, Oakland, California

					TPPH			Benzene			MTBE			
Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	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)	Notes:

Abbreviations & Notes:

TPPH = Total purgeable hydrocarbons as gasoline
MtBE = Methyl tert-butyl ether
ppb = Parts per billion
lb = Pound
gal = Gallon
* = Groundwater volume pumped estimated; data not available
a = Dual-phase Vacuum Extraction (DVE) Pilot test using a RSI V3 Internal Combustion Engine with Bioslurp Tank on well MW-3 on March 22, 2001.
Details of mass removal estimates reported in Cambria's August 29, 2001 *Site Conceptual Model and Pilot Test Report*, Table 2.
Mass removed based on the formula: volume extracted (gal) x Concentration (µg/L) x ($g/10^6 \mu g$) 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 and benzene analyzed by EPA Method 8015/8020
Data in bold font analyzed by EPA Method 8260, all others analyzed by EPA Method 8020
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 Onyx Industrial; water disposed of at a Martinez refinery

Table 2: Vapor Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995750, 610 Market Street, Oakland, California

Date	Well ID	Interval Hours of Operation (hours)	System Flow Rate (CFM)	Hydrocarbon Concentrations (Concentrations in ppmv) TPHg	Benzene	MTBE	TPHg Removal Rate (#/hour)	TPHg Cumulative TPHg Removed (#)	Benzene Removal Rate (#/hour)	Benzene Cumulative Benzene Removed (#)	MTBE Removal Rate (#/hour)	MTBE Cumulative MTBE Removed (#)	Notes:
							TPHg		**Benzene**		**MTBE**		
03/15/00	MW-2	0	0	NA	NA	NA	0.000	0.000	0.000	0.000	0.000	0.000	
04/17/00	MW-2	1.25	0.86	15.9	0.340	519	0.000	0.000	0.000	0.000	0.006	0.008	
06/05/00	MW-2	4.00	9.8	1,910	62.7	363	0.250	1.001	0.007	0.030	0.049	0.202	
07/07/00	MW-2	4.00	13.7	473	<3.1	42	0.087	1.348	0.000	0.031	0.008	0.234	
08/17/00	MW-2	4.00	17	1,799	61	149	0.409	2.983	0.013	0.081	0.035	0.372	
09/13/00	MW-2	1.20	38	3,300	<15.7	631	1.676	4.995	0.004	0.085	0.328	0.766	
10/27/00	MW-2	1.75	5.8	16.8	0.229	9.29	0.001	4.997	0.000	0.085	0.001	0.767	
03/15/00	MW-3	0.22	0.87	3,400	50	410	0.040	0.009	0.001	0.000	0.005	0.001	
03/15/00	MW-3	2.75	0.74	3,700	47	410	0.037	0.109	0.000	0.001	0.004	0.012	
04/17/00	MW-3	1.25	7.8	246	8.05	2,850	0.026	0.141	0.001	0.002	0.304	0.393	
06/05/00	MW-3	4.00	5	2,130	23.0	529	0.142	0.711	0.001	0.008	0.036	0.537	
07/07/00	MW-3	4.00	0.8	<2,833	57	3,861	0.015	0.771	0.001	0.010	0.042	0.706	
08/17/00	MW-3	4.00	2.8	22,833	346	4,222	0.855	4.190	0.012	0.057	0.162	1.353	
09/13/00	MW-3	3.75	34	15,200	<31.4	1,670	6.909	30.097	0.006	0.081	0.777	4.266	
10/27/00	MW-3	1.50	6.4	11.7	0.215	9.27	0.001	30.098	0.000	0.081	0.001	4.267	
03/22/01	MW-3	1.667	3.0	2,800	10	2,100	0.112	30.286	0.000	0.082	0.086	4.411	a
03/22/01	MW-3	1.250	12.9	3,000	10	2,600	0.517	30.932	0.002	0.084	0.459	4.984	a
03/22/01	T-1	2.420	3	6,300	42	4,400	0.253	0.611	0.002	0.004	0.181	0.437	a
03/22/01	T-1	0.250	10	5,000	39	8,700	0.668	0.779	0.005	0.005	1.190	0.734	a
10/08/01	T-1	2.000	2	1,100	11	340	0.029	0.837	0.000	0.005	0.009	0.753	b
10/08/01	T-1	2.800	2	15,000	140	2,600	0.401	1.960	0.003	0.015	0.071	0.952	b
10/09/01	T-1	12.800	66.6	900	90	2,300	0.801	12.217	0.073	0.945	2.095	27.772	b
10/10/01	T-1	2.900	48.4	550	55	2,200	0.356	13.248	0.032	1.039	1.457	31.996	b

Table 2: Vapor Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995750, 610 Market Street, Oakland, California

Date	Well ID	Interval Hours of Operation (hours)	System Flow Rate (CFM)	Hydrocarbon Concentrations (Concentrations in ppmv) TPHg	Benzene	MTBE	TPHg Removal Rate (#/hour)	TPHg Cumulative TPHg Removed (#)	Benzene Removal Rate (#/hour)	Benzene Cumulative Benzene Removed (#)	MTBE Removal Rate (#/hour)	MTBE Cumulative MTBE Removed (#)	Notes:
							TPHg		**Benzene**		**MTBE**		
10/11/01	T-1	2.900	49.7	630	63	82	0.419	14.462	0.038	1.149	0.056	32.158	b
10/12/01	T-1	2.700	42.4	510	51	610	0.289	15.243	0.026	1.220	0.354	33.113	b
10/12/01	T-1	2.700	44.8	140	14	270	0.084	15.469	0.008	1.240	0.165	33.560	b
Total Pounds Removed:							**TPHg =**	**51.398**	**Benzene =**	**1.409**	**MTBE =**	**39.311**	

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/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

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

a = Dual-phase Vacuum Extraction (DVE) Pilot test using a RSI V3 Internal Combustion Engine with Bioslurp Tank on wells MW-3 and T-1 on March 22, 2001; details of mass removal estimates reported in Cambria's August 29, 2001 *Site Conceptual Model and Pilot Test Report*, Table 3.

b = 5-day SVE test on well T-1; details of mass removal estimates reported in Cambria's *Soil Vapor Extraction Pilot Test Report and Investigation Work Plan*, Table 1.

Table 1: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995750, 610 Market Street, Oakland, California

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	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)	Notes:
					TPPH			**Benzene**			**MTBE**			
03/15/00	MW-2	0	0	03/21/00	<5,000	0.00000	0.00000	94.7	0.00000	0.00000	13,900	0.00000	0.00000	
03/22/00	MW-2	100	100	03/21/00	<5,000	0.00209	0.00209	94.7	0.00008	0.00008	13,900	0.01160	0.01160	
03/27/00	MW-2	75	175	03/21/00	<5,000	0.00156	0.00365	94.7	0.00006	0.00014	13,900	0.00870	0.02030	
04/03/00	MW-2	100	275	03/21/00	<5,000	0.00209	0.00574	94.7	0.00008	0.00022	13,900	0.01160	0.03190	
04/17/00	MW-2	200	475	03/21/00	<5,000	0.00417	0.00991	94.7	0.00016	0.00038	13,900	0.02320	0.05509	
04/24/00	MW-2	125	600	03/21/00	<5,000	0.00261	0.01252	94.7	0.00010	0.00047	13,900	0.01450	0.06959	
05/01/00	MW-2	50	650	03/21/00	<5,000	0.00104	0.01356	94.7	0.00004	0.00051	13,900	0.00580	0.07539	
05/15/00	MW-2	75	725	03/21/00	<5,000	0.00156	0.01512	94.7	0.00006	0.00057	13,900	0.00870	0.08409	
05/22/00	MW-2	100	825	03/21/00	<5,000	0.00209	0.01721	94.7	0.00008	0.00065	13,900	0.01160	0.09569	
05/29/00	MW-2	75	900	03/21/00	<5,000	0.00156	0.01877	94.7	0.00006	0.00071	13,900	0.00870	0.10439	
06/05/00	MW-2	617	1,517	03/21/00	<5,000	0.01287	0.03165	94.7	0.00049	0.00120	13,900	0.07156	0.17595	
08/17/00	MW-2	665	2,182	06/20/00	101	0.00056	0.03221	5.95	0.00003	0.00123	7,670	0.04256	0.21851	
09/13/00	MW-2	429	2,611	06/20/00	101	0.00036	0.03257	5.95	0.00002	0.00125	7,670	0.02746	0.24597	
10/27/00*	MW-2	75	2,686	06/20/00	101	0.00006	0.03263	5.95	0.00000	0.00126	7,670	0.00480	0.25077	
01/16/02*	MW-2	230	2,916	12/12/01	**<1,000**	0.00096	0.03359	**<10**	0.00001	0.00127	**3,000**	0.00576	0.25653	
01/23/02	MW-2	535	3,451	12/12/01	**<1,000**	0.00223	0.03582	**<10**	0.00002	0.00129	**3,000**	0.01339	0.26992	
01/30/02	MW-2	300	3,751	12/12/01	**<1,000**	0.00125	0.03707	**<10**	0.00001	0.00130	**3,000**	0.00751	0.27743	
03/15/00	MW-3	500	500	03/21/00	<25,000	0.01043	0.01043	466	0.00194	0.00194	**155,000**	0.64669	0.64669	
03/22/00	MW-3	100	600	03/21/00	<25,000	0.00782	0.01825	466	0.00039	0.00233	**155,000**	0.12934	0.77603	
03/27/00	MW-3	75	675	03/21/00	<25,000	0.01043	0.02868	466	0.00029	0.00262	**155,000**	0.09700	0.87303	
04/03/00	MW-3	100	775	03/21/00	<25,000	0.02086	0.04954	466	0.00039	0.00301	**155,000**	0.12934	1.00237	
04/17/00	MW-3	200	975	03/21/00	<25,000	0.01304	0.06258	466	0.00078	0.00379	**155,000**	0.25868	1.26104	
04/24/00	MW-3	125	1,100	03/21/00	<25,000	0.01043	0.07301	466	0.00049	0.00428	**155,000**	0.16167	1.42271	
05/01/00	MW-3	100	1,200	03/21/00	<25,000	0.00782	0.08084	466	0.00039	0.00467	**155,000**	0.12934	1.55205	
05/15/00	MW-3	75	1,275	03/21/00	<25,000	0.00522	0.08605	466	0.00029	0.00496	**155,000**	0.09700	1.64905	

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

January 14, 2002

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

Fourth Quarter 2001 Groundwater Monitoring at
Shell-branded Service Station
610 Market Street
Oakland, CA

Monitoring performed on October 23 and
December 12, 2001

Groundwater Monitoring Report **011212-CW-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 Shell Martinez Manufacturing Complex.

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/mrb

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

cc: Anni Kreml
Cambria Environmental
1144 65th St. Suite C
Oakland, CA 94608-2411

WELL CONCENTRATIONS
Shell-branded Service Station
610 Market Street
Oakland, CA
WIC #204-5508-5702

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
MW-1	12/17/1998	2,200	20	<10	110	420	<50	NA	21.70	13.71	7.99
MW-1	03/09/1999	4,320	25.8	<10.0	338	474	<100	NA	21.70	13.03	8.67
MW-1	06/16/1999	6,150	107	84.0	615	1,050	<250	NA	21.70	13.82	7.88
MW-1	09/29/1999	3,440	97.3	58.7	433	578	89.1	NA	21.70	14.45	7.25
MW-1	12/22/1999	1,370	34.5	4.38	196	49.1	29.3	NA	21.70	15.39	6.31
MW-1	03/21/2000	2,550	10.3	3.36	164	312	65.6	NA	21.70	11.94	9.76
MW-1	06/20/2000	4,770	64.3	18.6	387	732	51.3	NA	21.70	13.15	8.55
MW-1	09/21/2000	7,490	350	229	690	1,490	160	NA	21.70	13.65	8.05
MW-1	11/30/2000	5,410	420	168	494	1,170	167	NA	21.70	14.20	7.50
MW-1	03/06/2001	965	25.7	9.14	13.3	9.12	<25.0	NA	21.70	12.99	8.71
MW-1	06/28/2001	5,900	190	71	360	910	NA	110	21.70	13.98	7.72
MW-1	09/12/2001	7,400	240	110	460	1,300	NA	130	21.70	14.15	7.55
MW-1	**12/12/2001**	**1,700**	**100**	**30**	**120**	**300**	**NA**	**98**	**21.70**	**13.75**	**7.95**
MW-2	12/17/1998	<5,000	<50	<50	<50	<50	11,000	NA	19.61	12.07	7.54
MW-2	03/09/1999	<250	5.20	<2.50	<2.50	<2.50	9,870	NA	19.61	11.46	8.15
MW-2	06/16/1999	<50.0	0.569	<0.500	<0.500	<0.500	3,440	NA	19.61	12.26	7.35
MW-2	09/29/1999	58.6	2.51	0.978	<0.500	<0.500	3,930	NA	19.61	12.51	7.10
MW-2	12/22/1999	<2,000	50.4	<20.0	<20.0	<20.0	15,000	NA	19.61	13.40	6.21
MW-2	03/21/2000	<5,000	94.7	<50.0	<50.0	<50.0	13,900	NA	19.61	10.36	9.25
MW-2	06/20/2000	101	5.95	<0.500	<0.500	0.552	7,670	NA	19.61	11.12	8.49
MW-2	09/21/2000	<2,000	<20.0	<20.0	<20.0	<20.0	4,460	NA	19.61	11.95	7.66
MW-2	11/30/2000	81.1	4.46	0.924	0.841	3.23	3,450	NA	19.61	12.48	7.13
MW-2	03/06/2001	<500	183	<5.00	<5.00	<5.00	14,000	NA	19.61	11.10	8.51
MW-2	06/28/2001	<1,000	<10	<10	<10	<10	NA	4,200	19.61	12.40	7.21
MW-2	09/12/2001	<2,000	120	<20	<20	<20	NA	17,000	19.61	12.45	7.16

WELL CONCENTRATIONS
Shell-branded Service Station
610 Market Street
Oakland, CA
WIC #204-5508-5702

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)
MW-2	**12/12/2001**	**<1,000**	**<10**	**<10**	**<10**	**<10**	**NA**	**3,000**	**19.61**	**12.14**	**7.47**
MW-3	12/17/1998	30,000	890	110	2,100	4,300	42,000	43,000	19.05	11.65	7.40
MW-3	03/09/1999	22,700	536	<200	1,030	1,510	35,400	38,500	19.05	11.03	8.02
MW-3	06/16/1999	19,300	625	129	805	1,210	42,400	51,600	19.05	11.89	7.16
MW-3	09/29/1999	20,200	727	155	1,000	1,180	84,100	136,000a	19.05	12.35	6.70
MW-3	12/22/1999	44,500	767	64.4	1,810	2,090	191,000	186,000a	19.05	13.45	5.60
MW-3	03/21/2000	<25,000	466	<250	727	2,280	126,000	155,000	19.05	10.00	9.05
MW-3	06/20/2000	16,200	1,140	98.8	1,140	1,410	579,000	376,000a	19.05	11.15	7.90
MW-3	09/21/2000	<50,000	712	<500	520	795	293,000	298,000	19.05	11.58	7.47
MW-3	11/30/2000	18,000	1,050	124	1,120	2,010	543,000a	403,000a	19.05	12.10	6.95
MW-3	03/06/2001	19,900	1,290	115	1,450	1,760	706,000	149,000	19.05	11.00	8.05
MW-3	06/28/2001	<50,000	1,200	<250	1,100	1,300	NA	610,000	19.05	11.96	7.09
MW-3	09/12/2001	<20,000	430	<200	230	480	NA	390,000	19.05	12.05	7.00
MW-3	**10/23/2001**	**11,000**	**350**	**<100**	**210**	**440**	**NA**	**290,000**	**19.05**	**12.62**	**6.43**
MW-3	**12/12/2001**	**<20,000**	**280**	**<200**	**<200**	**<200**	**NA**	**160,000**	**19.05**	**11.83**	**7.22**

WELL CONCENTRATIONS
Shell-branded Service Station
610 Market Street
Oakland, CA
WIC #204-5508-5702

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)

Abbreviations:
TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to June 28, 2001, analyzed by EPA Method 8015.
BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to June 28, 2001, analyzed by EPA Method 8020.
MTBE = Methyl-tertiary-butyl ether
TOC = Top of Casing Elevation
GW = Groundwater
ug/L = parts per billion
msl = Mean sea level
ft = Feet
<n = Below detection limit
NA = Not applicable

Notes:
Wells MW-1, MW-2, and MW-3 surveyed December 9, 1998, by Virgil Chavez Land Surveying of Vallejo, California.
a = Sample was analyzed outside the EPA recommended holding time.

KIFF ANALYTICAL LLC

Report Number : 23869
Date : 12/28/2001

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

Subject : 3 Water Samples
Project Name : 610 Market Street, Oakland
Project Number : 011212-OW-2
P.O. Number : 98995750

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,

Joel Kiff

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 23869
Date : 12/28/2001

Project Name : **610 Market Street, Oakland**
Project Number : **011212-OW-2**

Sample : **MW-1** Matrix : Water Lab Number : 23869-01
Sample Date :12/12/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**100**	0.50	ug/L	EPA 8260B	12/26/2001
Toluene	**30**	0.50	ug/L	EPA 8260B	12/26/2001
Ethylbenzene	**120**	0.50	ug/L	EPA 8260B	12/26/2001
Total Xylenes	**300**	2.5	ug/L	EPA 8260B	12/24/2001
Methyl-t-butyl ether (MTBE)	**98**	5.0	ug/L	EPA 8260B	12/26/2001
TPH as Gasoline	**1700**	50	ug/L	EPA 8260B	12/26/2001
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	12/26/2001
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	12/26/2001

Sample : **MW-2** Matrix : Water Lab Number : 23869-02
Sample Date :12/12/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 10**	10	ug/L	EPA 8260B	12/24/2001
Toluene	**< 10**	10	ug/L	EPA 8260B	12/24/2001
Ethylbenzene	**< 10**	10	ug/L	EPA 8260B	12/24/2001
Total Xylenes	**< 10**	10	ug/L	EPA 8260B	12/24/2001
Methyl-t-butyl ether (MTBE)	**3000**	100	ug/L	EPA 8260B	12/24/2001
TPH as Gasoline	**< 1000**	1000	ug/L	EPA 8260B	12/24/2001
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	12/24/2001
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	12/24/2001

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 23869
Date : 12/28/2001

Project Name : **610 Market Street, Oakland**
Project Number : **011212-OW-2**

Sample : **MW-3** Matrix : Water Lab Number : 23869-03
Sample Date :12/12/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**280**	200	ug/L	EPA 8260B	12/24/2001
Toluene	**< 200**	200	ug/L	EPA 8260B	12/24/2001
Ethylbenzene	**< 200**	200	ug/L	EPA 8260B	12/24/2001
Total Xylenes	**< 200**	200	ug/L	EPA 8260B	12/24/2001
Methyl-t-butyl ether (MTBE)	**160000**	5000	ug/L	EPA 8260B	12/26/2001
TPH as Gasoline	**< 20000**	20000	ug/L	EPA 8260B	12/24/2001
Toluene - d8 (Surr)	98.4		% Recovery	EPA 8260B	12/24/2001
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	12/24/2001

Approved By: Joel Kiff

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

Report Number : 23869

Date : 12/28/2001

QC Report : Method Blank Data

Project Name : **610 Market Street, Oakland**

Project Number : **011212-OW-2**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	12/23/2001
Toluene	< 0.50	0.50	ug/L	EPA 8260B	12/23/2001
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	12/23/2001
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	12/23/2001
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	12/23/2001
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	12/23/2001
Toluene - d8 (Surr)	99.5		%	EPA 8260B	12/23/2001
4-Bromofluorobenzene (Surr)	101		%	EPA 8260B	12/23/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 23869

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 12/28/2001

Project Name : **610 Market Street, Oakland**

Project Number : **011212-OW-2**

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	24041-01	<0.50	20.0	19.6	19.3	18.9	ug/L	EPA 8260B	12/23/200	96.4	96.3	0.104	70-130	25
Toluene	24041-01	<0.50	20.0	19.6	19.6	19.1	ug/L	EPA 8260B	12/23/200	98.1	97.6	0.460	70-130	25
Tert-Butanol	24041-01	<5.0	100	98.0	102	99.1	ug/L	EPA 8260B	12/23/200	102	101	0.886	70-130	25
Methyl-t-Butyl Ether	24041-01	1.9	20.0	19.6	19.8	19.1	ug/L	EPA 8260B	12/23/200	89.5	87.7	2.01	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 23869

Date : 12/28/2001

QC Report : Laboratory Control Sample (LCS)

Project Name : **610 Market Street, Oakland**

Project Number : **011212-OW-2**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	20.0	ug/L	EPA 8260B	12/22/200	95.9	70-130
Toluene	20.0	ug/L	EPA 8260B	12/22/200	97.6	70-130
Tert-Butanol	100	ug/L	EPA 8260B	12/22/200	98.0	70-130
Methyl-t-Butyl Ether	20.0	ug/L	EPA 8260B	12/22/200	89.6	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

LAB: NTL

EQUIVA Services LLC Chain Of Custody Record

Lab Identification (if necessary):

Address:

City, State, Zip:

Equiva Project Manager to be invoiced:

☑ SCIENCE & ENGINEERING ☐ TECHNICAL SERVICES ☐ CRMT HOUSTON

Karen Petryna

23869

INCIDENT NUMBER (S&E ONLY): 98995750

SAP or CRMT NUMBER (TS/CRMT):

DATE: 12-12-01

PAGE: 1 of 1

SAMPLING COMPANY:	LOG CODE:	SITE ADDRESS (Street and City):	GLOBAL ID NO.:
Blaine Tech Services	BTSS	610 Market Street, Oakland	T0600102121

ADDRESS:	EDF DELIVERABLE TO (Responsible Party or Designee):	PHONE NO.:	E-MAIL:	CONSULTANT PROJECT NO.:
1680 Rogers Avenue, San Jose, CA 95112	Anni Kreml	510-420-3335	akreml@cambria-env.com	BTS # 011212-AW-2

PROJECT CONTACT (Hardcopy or PDF Report to):	TELEPHONE:	FAX:	E-MAIL:	SAMPLER NAME(S) (Print):
Nick Sudano	408-573-0555	408-573-7771	nsudano@blainetech.com	CHRIS WAGNER

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: TEMPERATURE ON RECEIPT C°

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	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)	MTBE (8260B) Confirmation, See Note	FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes
	MW-1	12/12	1329	W	3	X	X	X									01
	MW-2	↓	1256	↓	↓	X	X	X									02
	MW-3	↓	1400	↓	↓	X	X	X									03

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
CHRIS WAGNER		12/13/01	1144
	Howard Burn KFF	12/13/01	11 44

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10/16/00 Revision

Q&D Graphics (714) 898-9702

KIFF ANALYTICAL LLC

Report Number : 23017
Date : 11/2/2001

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

Subject : 1 Water Sample
Project Name : 610 Market Street, Oakland
Project Number : 011023-C2
P.O. Number : 98995750

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,

Joel Kiff

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 23017

Date : 11/2/2001

Project Name : **610 Market Street, Oakland**

Project Number : **011023-C2**

Sample : **MW-3** Matrix : Water Lab Number : 23017-01

Sample Date :10/23/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**350**	100	ug/L	EPA 8260B	10/29/2001
Toluene	**< 100**	100	ug/L	EPA 8260B	10/29/2001
Ethylbenzene	**210**	100	ug/L	EPA 8260B	10/29/2001
Total Xylenes	**440**	100	ug/L	EPA 8260B	10/29/2001
Methyl-t-butyl ether (MTBE)	**290000**	5000	ug/L	EPA 8260B	11/1/2001
TPH as Gasoline	**11000**	10000	ug/L	EPA 8260B	10/29/2001
Toluene - d8 (Surr)	98.9		% Recovery	EPA 8260B	10/29/2001
4-Bromofluorobenzene (Surr)	90.3		% Recovery	EPA 8260B	10/29/2001

Approved By: Joel Kiff

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

Report Number : 23017

Date : 11/2/2001

Project Name : **610 Market Street, Oakland**

Project Number : **011023-C2**

23017 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	10/28/2001
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	10/28/2001
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	10/28/2001
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	10/28/2001
Methyl-t-butyl ether (MTBE)	**< 5.0**	5.0	ug/L	EPA 8260B	10/28/2001
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	10/28/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	10/28/2001
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	10/28/2001

Approved By: Joel Kiff

Report Number : 23017

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 11/2/2001

Project Name : **610 Market Street, Oakland**

Project Number : **011023-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 Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Spike Recovery Data														
Benzene	23018-10	5.5	19.5	19.1	23.9	23.3	ug/L	EPA 8260B	10/27/2009	4.2	93.0	1.18	70-130	25
Toluene	23018-10	<0.50	19.5	19.1	18.7	17.9	ug/L	EPA 8260B	10/27/2009	5.6	93.8	1.90	70-130	25
Tert-Butanol	23018-10	<5.0	97.6	95.5	91.4	89.4	ug/L	EPA 8260B	10/27/2009	3.6	93.6	0.0748	70-130	25
Methyl-t-Butyl Ether	23018-10	<0.50	19.5	19.1	17.2	18.0	ug/L	EPA 8260B	10/27/2009	8.1	94.1	6.53	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 23017

Date : 11/2/2001

QC Report : Laboratory Control Sample (LCS)

Project Name : **610 Market Street, Oakland**

Project Number : **011023-C2**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	10/27/200	95.4	70-130
Toluene	40.0	ug/L	EPA 8260B	10/27/200	95.8	70-130
Tert-Butanol	200	ug/L	EPA 8260B	10/27/200	92.1	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	10/27/200	89.5	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

LAB: Kiff

EQUIVA Services LLC Chain Of Custody Record

Lab Identification (if necessary):

Address:

City, State, Zip:

Equiva Project Manager to be invoiced: 23017

Karen Petryna

☑ SCIENCE & ENGINEERING ☐ TECHNICAL SERVICES ☐ CRMT HOUSTON

INCIDENT NUMBER (S&E ONLY): 9 8 9 9 5 7 5 0

SAP or CRMT NUMBER (TS/CRMT):

DATE: 10-23-01

PAGE: 1 of 1

SAMPLING COMPANY:	LOG CODE:	SITE ADDRESS (Street and City):	GLOBAL ID NO.:
Blaine Tech Services	BTSS	610 Market Street, Oakland	T0600102121

ADDRESS:	EDF DELIVERABLE TO (Responsible Party or Designee):	PHONE NO.:	E-MAIL:	CONSULTANT PROJECT NO.:
1680 Rogers Avenue, San Jose, CA 95112	Anni Kremi	510-420-3335	akremi@cambria-env.com	BTS # 011023-C2

PROJECT CONTACT (Hardcopy or PDF Report to):	TELEPHONE:	FAX:	E-MAIL:	SAMPLER NAME(S) (Print):
Nick Sudano	408-573-0555	408-573-7771	nsudano@blainetech.com	Hank Castro

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: TEMPERATURE ON RECEIPT C°

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	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)		MTBE (8260B) Confirmation, See Note								FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes
	MW-3	10-23	1037	W	3	X	X	X																	01

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Hank Castro			
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
	Hank Bueno KFF	102401	1105

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10/16/00 Revision

O&Q Graphic (714) 895-9702

WELL GAUGING DATA

Project # 011212-CW-2 Date 12-12-01 Client Equiva

Site 60 Market St. 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					13.75	24.70		
MW-2	4	gauged w/stinger in well				12.14	19.79		
MW-3	4	gauged w/stinger in well				11.83	19.70		

EQUIVA WELL MONITORING DATA SHEET

BTS #: 011212-CO-2	Site: 610 Market St. Oakland
Sampler: Chris W.	Date: 12-12-01
Well I.D.: MW-1	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 24.70	Depth to Water: 13.75
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:_____

5.6 (Gals.) X	3	= 10.8 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	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1316	68.6	6.9	911.6	41	5.6	odor
1318	70.0	6.8	932.1	20	18.2	"
1320	70.2	6.8	980.0	9	20.8	"

Did well dewater? Yes (No) Gallons actually evacuated: 15

Sampling Time: 1329 Sampling Date: 12-12-01

Sample I.D.: MW-2 Laboratory: Sequoia Columbia Other (Kiff)

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

EQUIVA WELL MONITORING DATA SHEET

BTS #: 011212-00-2	Site: 610 Market St. Oakland
Sampler: Chris W.	Date: 12-12-01
Well I.D.: MW-2	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 19.79	Depth to Water: 12.14
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: _____

5 (Gals.) X	3	=	15 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	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1243	65.7	6.8	960	117	5	odor
1244	68.7	6.7	991	92	10	"
1245	69.6	6.7	977	50	15	"

Did well dewater? Yes (No) Gallons actually evacuated: 15

Sampling Time: 1256 Sampling Date: 12-12-01

Sample I.D.: MW-2 Laboratory: Sequoia Columbia Other (Kiff)

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

EQUIVA WELL MONITORING DATA SHEET

BTS #: 011212-00-2	Site: 610 Market St. Oakland
Sampler: Chris W.	Date: 12-12-01
Well I.D.: MW-3	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 19.76	Depth to Water: 11.83
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:_____

5.1 (Gals.) X 3 = 15.3 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	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1350	67.5	7.0	547.8	31	5.1	odor
1351	70.3	7.0	532.1	19	10.2	"
1352	70.9	7.1	540.2	2	15.3	"

Did well dewater? Yes (No) Gallons actually evacuated: 15.3

Sampling Time: 1400 Sampling Date: 12-12-01

Sample I.D.: MW-3 Laboratory: Sequoia Columbia Other (Kiff)

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

WELL GAUGING DATA

Project # ~~011023-C2~~ 011023-C2 Date 10-23-01 Client Equiva

Site 40 Market St. Oak.

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-3	4					12.62	19.70	TOC	

EQUIVA WELL MONITORING DATA SHEET

BTS #: 011025-C2	Site: 9895750
Sampler: Hank	Date: 10-25-01
Well I.D.: MW-3	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 19.70	Depth to Water: 12.62
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:_____

4.6 (Gals.) X 3 = 13.8 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	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1030	71.4	6.1	530	22	4.6	
1031	70.6	6.0	610	14	9.2	
1032	70.2	6.1	569	9	14	

Did well dewater? Yes (No) Gallons actually evacuated: 14

Sampling Time: 1037 Sampling Date: 10-25-01

Sample I.D.: MW-3 Laboratory: Sequoia Columbia Other Kiff

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