



Alameda County

OCT 17 2002

October 14, 2002

Environmental Health

94607

**QUARTERLY GROUNDWATER MONITORING REPORT
SEPTEMBER 2002 GROUNDWATER SAMPLING**

at

Lim Family Property

250 8th Street

Oakland, California 94607

Submitted by:

AQUA SCIENCE ENGINEERS, INC.

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1.0 INTRODUCTION

This report outlines the methods and findings of Aqua Science Engineers, Inc. (ASE)'s quarterly groundwater monitoring at the Lim family property located at 250 8th Street in Oakland, California (*Figures 1 and 2*).

2.0 GROUNDWATER FLOW DIRECTION AND GRADIENT

On September 17, 2002, ASE measured the depth to water in each site well using an electric water level sounder. The surface of the groundwater was also checked for the presence of free-floating hydrocarbons or sheen. Monitoring well MW-3 contained 1.24-feet of free-floating hydrocarbons this quarter. Groundwater elevation data is presented in Table One.

A groundwater elevation (potentiometric surface) contour map is shown as Figure 2. The groundwater flow direction at the site is generally to the southwest with a gradient of 0.004 feet/foot during this quarterly sampling period. This groundwater flow direction and gradient are consistent with previous findings.

3.0 MONITORING WELL SAMPLING

On September 17, 2002, ASE collected groundwater samples from monitoring wells MW-1, MW-2, and MW-4 through MW-7 for analysis. Monitoring well MW-3 was not sampled due to the presence of free-floating hydrocarbons at the time of sampling. Prior to sampling, the wells were purged of three well casing volumes of groundwater using dedicated polyethylene bailers. The pH, temperature, and conductivity of the purge water was monitored during evacuation, and samples were not collected until these parameters stabilized. Samples were collected from each well using dedicated polyethylene bailers. The groundwater samples to be analyzed for volatile compounds were decanted from the bailers into 40-ml volatile organic analysis (VOA) vials, preserved with hydrochloric acid, sealed without headspace and labeled. The samples to be analyzed for extractable range hydrocarbons were contained in 1-liter amber glass bottles. All samples were stored on ice for transport to Kiff Analytical, LLC, (KIFF) of Davis, California under appropriate chain of custody documentation. Well sampling purge water was contained in a sealed and labeled 55-gallon steel drum for temporary storage until off-site disposal can be arranged. See Appendix A for a copy of the well sampling field logs.

4.0 ANALYTICAL RESULTS FOR GROUNDWATER

All groundwater samples were analyzed by KIFF for total petroleum hydrocarbons as diesel (TPH-D) by modified EPA Method 3510/8015M, total petroleum hydrocarbons as gasoline (TPH-G), benzene, toluene, ethyl benzene, total xylenes (collectively known as BTEX), lead scavengers, and methyl tertiary butyl ether (MTBE) by EPA Method 8260B. The groundwater samples collected from monitoring wells MW-2 and MW-4 through MW-7 were also analyzed for oil and grease (O&G) by EPA Method 1664. The analytical results are tabulated in Tables Two and Three, and copies of the certified analytical report and chain of custody form are included in Appendix B.

5.0 CONCLUSIONS

Monitoring well MW-3 contained 1.24-feet of free-floating hydrocarbons this quarter. Overall, the hydrocarbon concentrations are consistent with previous analytical results and remain elevated in downgradient monitoring wells MW-2, MW-3, MW-4 and MW-7. The BTEX concentrations in groundwater samples collected from monitoring wells MW-2, MW-4, and MW-7 exceeded Risk Based Screening Levels (RBSLs) for those compounds as presented in the "Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region dated December 2001.

6.0 RECOMMENDATIONS

ASE has prepared and submitted a corrective action plan (CAP) dated August 26, 2002 to the Alameda County Health Care Services Agency (ACHCSA) and is awaiting approval of ASE's selection of remediation technology for the site. In the meantime, ASE recommends continued groundwater monitoring on a quarterly basis. The next groundwater sampling is scheduled for December 2002. ASE will also begin periodic product bailing from monitoring well MW-3 during the next quarter.

7.0 REPORT LIMITATIONS

The results presented in this report represent conditions at the time of the groundwater sampling, at the specific locations where the samples were collected, and for the specific parameters analyzed by the laboratory. It does not fully characterize the site for contamination resulting from unknown sources, or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an independent CAL-EPA certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the chemical analysis data.

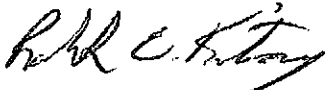
Aqua Science Engineers appreciates the opportunity to assist The Lim Family with their environmental needs. Should you have any questions or comments, please feel free to call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.



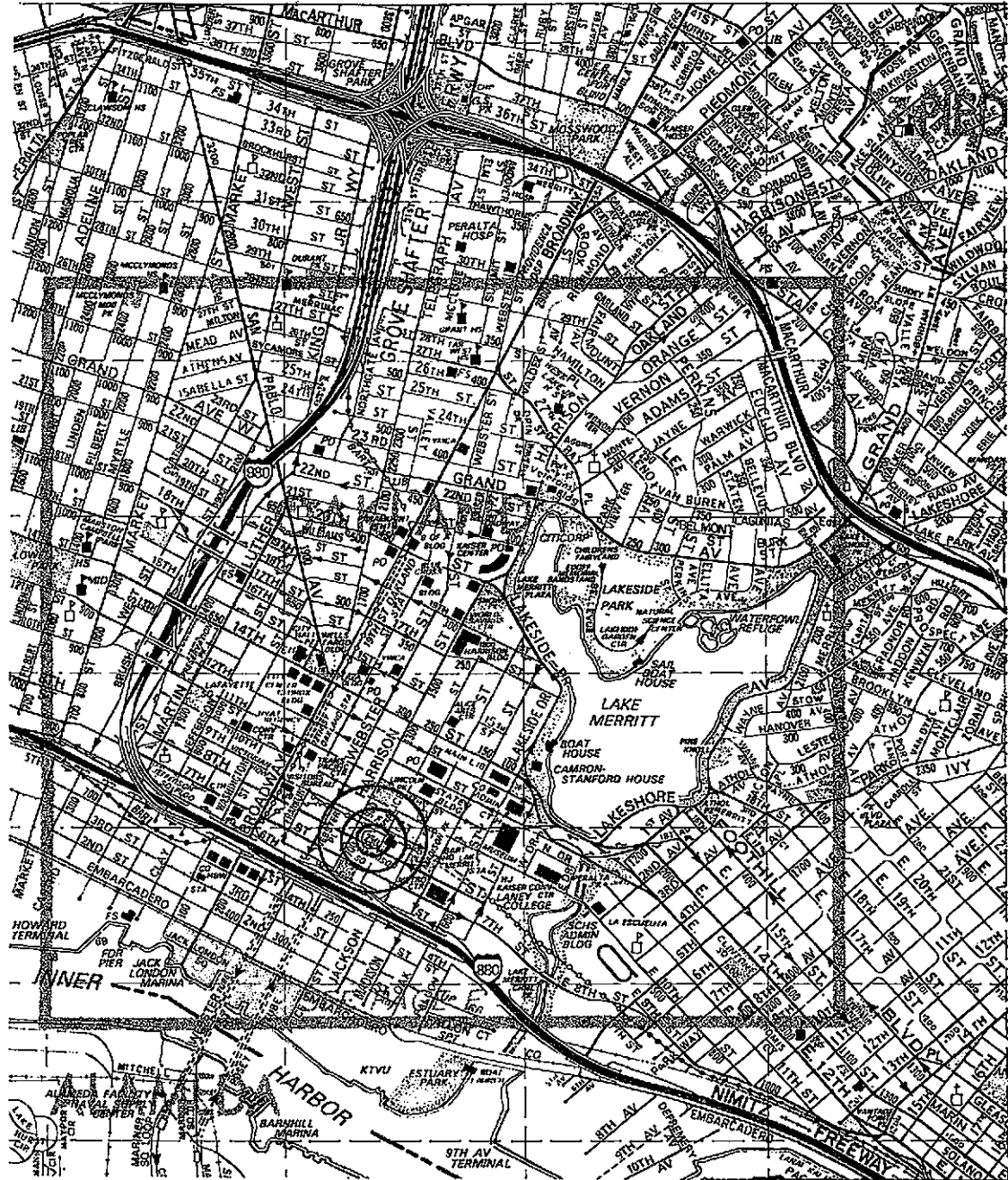
Erik H. Paddleford
Associate Geologist



Robert E. Kitay, R.G., R.E.A.
Senior Geologist



Attachments: Figures 1 and 2
Appendices A and B



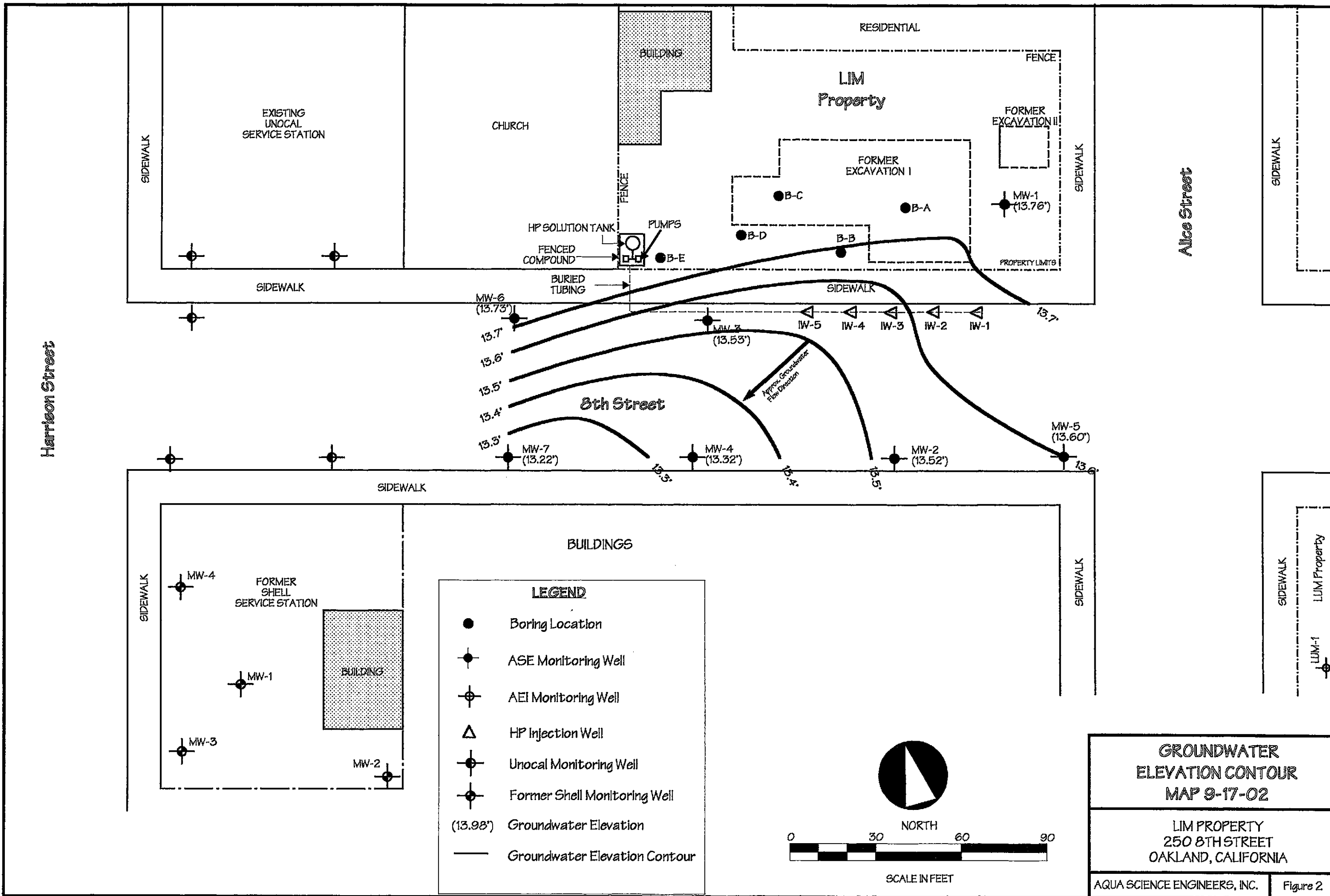
SITE LOCATION MAP

Lim Property
250 8th Street
Oakland, California

Aqua Science Engineers

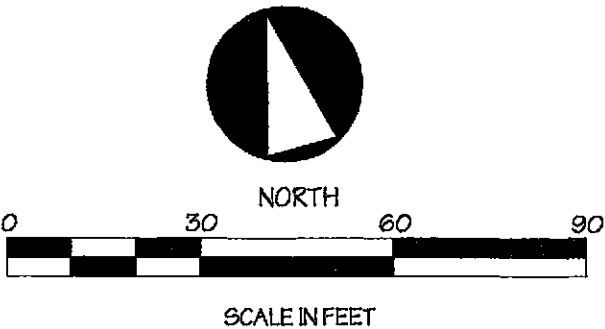
Figure 1

BASE: The Thomas Guide, Alameda and Contra Costa
Counties Street Guide & Directory, 1990



LEGEND

- Boring Location
- ⊙ ASE Monitoring Well
- ⊕ AEI Monitoring Well
- △ HP Injection Well
- ⊙ Unocal Monitoring Well
- ⊕ Former Shell Monitoring Well
- (13.98') Groundwater Elevation
- Groundwater Elevation Contour



**GROUNDWATER
ELEVATION CONTOUR
MAP 9-17-02**

LIM PROPERTY
250 8TH STREET
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. Figure 2

TABLE ONE
 Groundwater Elevation Data
 Lim Family Property
 250 8th Street
 Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)
MW-1	01/30/95	25.51	16.21		9.30
	04/12/95		15.71		9.80
	07/14/95		16.71		8.80
	10/17/95		17.72		7.79
	01/12/96		18.03		7.48
	07/25/96		16.82		8.69
	01/06/97		15.60		9.91
	07/08/97		17.31		8.20
	01/26/98		15.21		10.30
	07/23/98		15.38		10.13
	01/05/99		16.82		8.69
	07/13/99		15.89		9.62
	01/12/00		17.44		8.07
	04/24/00		16.37		9.14
	07/20/00		16.30		9.21
	10/24/00		17.25		8.26
	01/18/01		17.29		8.22
	04/05/01		15.88		9.63
	07/17/01	16.54		8.97	
	10/25/01	16.89		8.62	
01/21/02	14.92		10.59		
04/11/02	14.02		11.49		
06/11/02	29.72	15.33		14.39	
09/17/02		15.96		13.76	
MW-2	01/30/95	23.99	15.02		8.97
	04/12/95		14.75		9.24
	07/14/95		16.02		7.97
	10/17/95		16.94		7.05
	01/12/96		17.05		6.94
	07/25/96		16.02		7.97
	01/06/97		14.34		9.65
	07/08/97		16.52		7.47
	01/26/98		14.10		9.89
	07/23/98		14.70		9.29
	01/05/99		16.01		7.98
	07/13/99		15.40		8.59
	01/12/00		16.76		7.23
	04/24/00		15.67		8.32
	07/20/00		15.70		8.29
	10/24/00		16.56		7.43
	01/18/01		16.47		7.52
	04/05/01		15.88		8.11
	07/17/01	15.35		8.64	
	10/25/01	15.63		8.36	
01/21/02	13.55		10.44		
04/11/02	13.74		10.25		
06/11/02	28.19	14.06		14.13	
09/17/02		14.67		13.52	

TABLE ONE
Groundwater Elevation Data
Lim Family Property
250 8th Street
Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)	
MW-3	01/12/00	24.25	16.68	0.01	7.58*	
	04/24/00		15.58	0.15	8.79*	
	07/20/00		16.01	0.41	8.57*	
	10/24/00		16.95	0.21	7.47*	
	01/18/01		16.63	0.21	7.79*	
	04/05/01		15.16	0.23	9.27*	
	07/17/01		15.92	0.39	8.64*	
	10/25/01		16.26	0.38	8.29*	
	01/21/02		14.08	0.16	10.30*	
	04/11/02		14.59	0.54	10.09*	
	06/11/02		28.58	15.16	0.90	14.14*
	09/17/02			16.04	1.24	13.53*
	10/01/02			16.14	1.23	13.42*
	MW-4		01/12/00	23.71	17.24	
		04/24/00	16.18			7.53
07/20/00		16.18			7.53	
10/24/00		17.03			6.68	
01/18/01		16.87			6.84	
04/05/01		15.28			8.43	
07/17/01		15.92			7.79	
10/25/01		16.23			7.48	
01/21/01		14.14			9.57	
04/11/02		14.43			9.28	
06/11/02		28.61	14.72			13.89
09/17/02			15.29			13.32
MW-5		06/11/02	28.40	14.23		14.17
	09/17/02	14.80			13.60	
MW-6	06/11/02	29.20	14.95		14.25	
	09/17/02		15.47		13.73	
MW-7	06/11/02	28.95	15.19		13.76	
	09/17/02		15.73		13.22	
IW-1	07/13/99	24.05	14.75		9.30	
	06/11/02	28.33				
IW-2	07/13/99	24.21	15.10		9.11	
	06/11/02	28.50				
IW-3	07/13/99	23.93	15.00		8.93	
	06/11/02	28.14				
IW-4	07/13/99	23.83	Unknown		Unknown	
	06/11/02	28.24				

TABLE ONE
 Groundwater Elevation Data
 Lim Family Property
 250 8th Street
 Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)
W-5	07/13/99	24.00	15.50	1.00	9.55*
	07/23/99		15.52	1.05	9.32*
	08/03/99		15.58	0.64	8.93*
	08/17/99		15.62	0.86	9.07*
	08/27/99		15.92	0.77	8.70*
	09/10/99		15.82	0.56	8.63*
	09/24/99		15.57	0.26	8.64*
	10/08/99		15.56	0.23	8.62*
	11/02/99		15.59	0.22	8.59*
	11/19/99		15.64	0.07	8.42*
	12/16/99		16.12	0.64	8.39*
	01/12/00		16.54	0.28	7.68*
	06/11/02		28.32		

Notes:

* = Adjusted for the presence of free-floating oil by the equation: Top of Casing Elevation - Depth to Water + (0.8 x Floating Hydrocarbon Thickness) = Groundwater Elevation (Adjusted).

Top of casing elevations resurveyed by Mid Coast Engineers on 6/27/02 and 7/11/02.

TABLE TWO
 Summary of Chemical Analysis of Groundwater Samples
 Petroleum Hydrocarbon Concentrations
 All results are in parts per billion

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<u>MW-1</u>							
01/30/95	740	200	3	5	1	4	--
04/12/95	400	500	<0.5	<0.5	3	<2	--
07/14/95	520	400	1	<0.5	2	3	--
10/17/95	400	200	0.5	1	3	<2	--
01/12/96	120	890	<0.5	<0.5	<0.5	<1.0	<2.0
07/08/96	320	300	0.52	2.7	1.2	2.3	<5.0
01/06/97	110	75	<0.5	0.68	<0.5	<0.5	<5.0
07/08/97	380	290	<0.5	1.5	1.4	1.9	<5.0
01/26/98	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
07/23/98	190	<50	0.54	2.8	2	1.8	<5.0
01/05/99	200	<50	1.8	1.6	3.3	<0.5	<5.0
07/13/99	340	<50	<0.5	<0.5	2.6	<0.5	<5.0
01/12/00	300	1,000	22	36	5.5	24	<5.0
04/24/00	360	280*	<0.5	<0.5	<0.5	2.1	<5.0
07/20/00	290	150*	1.8	<0.5	<0.5	<0.5	<5.0
10/24/00	170**	280*	<0.5	<0.5	<0.5	<0.5	<5.0
01/18/01	170**	150*	<0.5	<0.5	<0.5	2.1	<5.0
04/05/01	350**	190*	<0.5	<0.5	<0.5	<0.5	<5.0
07/17/01	310	570	<0.5	<0.5	<0.5	<0.5	<5.0
10/25/01	250	260	<0.5	<0.5	<0.5	<0.5	<5.0
01/22/02	200	250	<0.5	<0.5	<0.5	<0.5	<5.0
04/11/02	260	300	<0.5	<0.5	<0.5	<0.5	<5.0
06/11/02	270	330	<0.5	<0.5	<0.5	<0.5	<5.0
09/17/02	320	1,700	<0.5	<0.5	<0.5	<0.5	<5.0

TABLE TWO
 Summary of Chemical Analysis of Groundwater Samples
 Petroleum Hydrocarbon Concentrations
 All results are in parts per billion

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<u>MW-2</u>							
01/30/95	88,000	800	19,000	18,000	2,400	10,000	--
04/12/95	110,000	990	21,000	28,000	2,800	14,000	--
07/14/95	120,000	5,000	20,000	25,000	3,200	15,000	--
10/17/95	190,000	4,000	15,000	26,000	4,900	23,000	--
01/12/96	32,000	2,600	10,000	8,000	1,100	4,800	< 2
07/08/96	110,000	2,500	20,000	18,000	2,500	12,000	< 500
01/06/97	230,000	37,000	11,000	19,000	4,300	20,000	< 1,200
07/08/97	91,000	35,000	16,000	20,000	2,700	13,000	< 1,000
01/26/98	50,000	11,000	12,000	12,000	1,600	6,700	< 250
07/23/98	50,000	8,100#	11,000	8,300	1,800	7,000	1,100
01/05/99	50,000	7,600#	12,000	12,000	2,300	9,600	1,300
07/13/99	73,000	8,500	11,000	13,000	2,200	9,800	< 500
01/12/00	63,000	11,000	10,000	12,000	1,800	7,800	< 500
04/24/00	76,000	23,000*	7,100	14,000	2,000	9,400	< 500
07/20/00	68,000	5,300#	11,000	14,000	2,300	11,000	< 1,000
10/24/00	48,000	6,400*	11,000	9,400	1,500	7,300	< 500
01/18/01	37,000	4,600*	6,900	5,600	1,200	5,300	< 500
04/05/01	59,000	4,600*	7,100	9,800	1,600	7,600	< 500
07/17/01	90,000	< 10,000	9,200	14,000	2,700	11,000	< 50
10/25/01	79,000	< 3,800	9,200	14,000	2,400	11,000	< 50
01/22/02	76,000	< 2,300	7,000	13,000	2,200	9,600	< 50
04/11/02	76,000	< 1,500	7,800	11,000	2,900	12,000	< 50
06/11/02	72,000	< 2,500	7,300	9,600	2,500	12,000	< 50
09/17/02	52,000	< 3,000	5,000	5,400	2,100	9,100	< 20

TABLE TWO
 Summary of Chemical Analysis of Groundwater Samples
 Petroleum Hydrocarbon Concentrations
 All results are in parts per billion

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<u>MW-3</u>							
01/12/00	140,000	13,000*	22,000	19,000	2,400	11,000	<500
04/24/00	240,000	700,000*	33,000/ 35,000	52,000/ 87,000	5,700/ 18,000	28,000/ 84,000	<5,000
07/20/00	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
10/24/00	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
01/18/01	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
04/05/01	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
07/17/01	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
10/25/01	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
01/22/02	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
04/11/02	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
06/11/02	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
09/17/02	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
<u>MW-4</u>							
01/12/00	99,000	7,900*	16,000	20,000	2,100	12,000	<2,500
04/24/00	54,000	44,000*	3,400/ 4,500	13,000/ 20,000	1,800/ 2,800	8,800/ 14,000	<1,300
07/20/00	8,000	3,500	9,200/ 11,000	20,000/ 22,000	2,500/ 3,400	12,000/ 13,000	<1,000
10/24/00	98,000	8,000*	21,000	29,000	2,700	15,000	<1,000
01/18/01	91,000	12,000	17,000/ 15,000	21,000/ 21,000	2,500/ 2,800	13,000/ 11,000	<1,000 <5,000
04/05/01	88,000	7,500*	6,900/ 3,200	18,000/ 9,000	2,500/ 1,300	12,000/ 6,400	<1,000 <500
07/17/01	95,000	<3,000	8,000	16,000	2,900	11,000	49
10/25/01	89,000	<2,200	9,300	18,000	2,400	12,000	66
01/22/02	80,000	<2,300	4,600	15,000	2,500	11,000	<50
04/11/02	90,000	<900	6,600	18,000	2,800	12,000	55
06/25/02	110,000	<3,000	10,000	20,000	2,900	13,000	<100
09/17/02	110,000	<3,000	9,600	21,000	2,800	13,000	<100
<u>MW-5</u>							
06/11/02	<50	<50	<0.5	<0.5	<0.5	<0.5	28
09/17/02	<50	110	<0.5	<0.5	<0.5	<0.5	4.8
<u>MW-6</u>							
06/11/02	<50	<50	<0.5	<0.5	<0.5	<0.5	1.2
09/17/02	<50	<50	<0.5	<0.5	<0.5	<0.5	1.0

TABLE TWO
 Summary of Chemical Analysis of Groundwater Samples
 Petroleum Hydrocarbon Concentrations
 All results are in parts per billion

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<u>MW-7</u>							
06/25/02	38,000	< 2,000	890	5,100	1,200	5,200	< 20
09/17/02	26,000	< 2,000	590	3,600	880	4,000	< 20
RBSL	500	640	46	130	290	13	1,800

Notes:

* = Hydrocarbons reported are in the early diesel range, and do not match the laboratory standard.

** = Hydrocarbons reported do not match the laboratory gasoline standard.

= Estimated concentration reported due to overlapping fuel patterns.

/ = Results separated by a slash represent results from two different laboratory methods (8020/8260).

Non-detectable concentrations noted by the less than sign (<) followed by the detection limit.

Most recent data in bold.

RBSL is the California Regional Water Quality Control Board, San Francisco Bay Region Risk-Based Screening Level for Groundwater where groundwater is not a current or potential source of drinking water.

TABLE THREE
Groundwater Analytical Results
Oil & Grease and Volatile Organic Compounds
 All results are in parts per billion

Date Sampled & Compound Analyzed	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
<u>7/8/1997</u>							
Hydrocarbon Oil and Grease	-	< 1,000	-	-	-	-	-
Tetrachloroethane (PCE)	0.9	< 0.5	-	-	-	-	-
Other VOCs	< 0.5 - < 3	< 0.5 - < 3	-	-	-	-	-
<u>1/26/1998</u>							
Hydrocarbon Oil and Grease	-	< 1,000	-	-	-	-	-
Trichloroethene	0.7	< 5.0	-	-	-	-	-
Tetrachloroethene	10	< 5.0	-	-	-	-	-
1,2-Dichloroethane	< 0.5	11	-	-	-	-	-
Other VOCs	< 0.5 - < 50	< 0.5 - < 50	-	-	-	-	-
<u>7/23/1998</u>							
Hydrocarbon Oil and Grease	-	< 1,000	-	-	-	-	-
Tetrachloroethene	4	4.6	-	-	-	-	-
1,2-Dichloroethane	< 2	9.9	-	-	-	-	-
Other VOCs	< 2 - < 10	< 0.5 - < 5.0	-	-	-	-	-
<u>1/5/1999</u>							
Hydrocarbon Oil and Grease	-	< 1,000	-	-	-	-	-
Tetrachloroethene	5.1	< 50	-	-	-	-	-
Trichloroethene	0.52	< 50	-	-	-	-	-
1,1,2,2-Tetrachloroethane	0.58	< 50	-	-	-	-	-
Chloroform	8.2	< 50	-	-	-	-	-
Other VOCs	< 0.5 - < 5	< 50 - < 500	-	-	-	-	-
<u>7/13/1999</u>							
Hydrocarbon Oil and Grease	-	< 1,000	-	-	-	-	-
Tetrachloroethene	1.5	0.68	-	-	-	-	-
Chloroform	4.6	< 50	-	-	-	-	-
1,2-Dichloroethane	< 0.50	7.7	-	-	-	-	-
Other VOCs	< 0.5 - < 5	< 0.5 - < 500	-	-	-	-	-
<u>1/12/2000</u>							
Hydrocarbon Oil and Grease	-	< 1,000	< 1,000	< 1,000	-	-	-
Tetrachloroethene	0.8	< 1.0	< 100	< 50	-	-	-
Chloroform	3.2	< 1.0	< 100	< 50	-	-	-
1,2-Dichloroethane	< 0.50	8.8	120	140	-	-	-
Acetone	-	-	25,000	6,400	-	-	-
Naphthalene	-	-	550	540	-	-	-
Isopropylbenzene	-	-	120	89	-	-	-
Other VOCs	< 0.5 - < 5.0	< 1.0 - < 4.0	< 100 - < 10,000	< 50 - < 5,000	-	-	-

TABLE THREE
Groundwater Analytical Results
Oil & Grease and Volatile Organic Compounds
 All results are in parts per billion

Date Sampled & Compound Analyzed	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
<u>4/24/2000</u>							
Hydrocarbon Oil and Grease	-	<1,000	4,100	<1,000	-	-	-
1,2-Dichloroethane	<0.5	5.9	<1,000	<250	-	-	-
Naphthalene	-	-	3,800	590	-	-	-
Isopropylbenzene	-	-	1,200	<250	-	-	-
Other VOCs	<0.5 - <5.0	<5.0 - <20	:1,000 - <100,000	<250 - <25,000	-	-	-
<u>7/20/2000</u>							
Hydrocarbon Oil and Grease	-	<1,000		<1,000	-	-	-
Tetrachloroethene	0.59	<5.0	FREE	<200	-	-	-
Chloroform	2.1	<5.0	PRODUCT	<200	-	-	-
1,2-Dichloroethane	<0.5	6.7	---	<200	-	-	-
Acetone	-	-	NOT	<20,000	-	-	-
Naphthalene	-	-	SAMPLED	730	-	-	-
Other VOCs	<0.5 - <20	<5.0 - <20		<250 - <20,000	-	-	-
<u>10/24/2000</u>							
Hydrocarbon Oil and Grease	-	<1,000	FREE		-	-	-
Tetrachloroethene	<0.5	<5.0	PRODUCT	<1,000	-	-	-
Chloroform	1.0	<5.0	---	<250	-	-	-
Other VOCs	<0.5 - <20	<5.0 - <20	NOT	<250	-	-	-
<u>1/18/2001</u>							
Hydrocarbon Oil and Grease	-	2,100	FREE		-	-	-
Tetrachloroethene	1.3	<5.0	PRODUCT	1,300	-	-	-
Chloroform	6.4	<5.0	---	<250	-	-	-
Other VOCs	<0.5 - <20	<5.0 - <20	NOT	<250	-	-	-
<u>4/5/2001</u>							
Hydrocarbon Oil and Grease	-	<1.0	FREE	1,100.0	-	-	-
Tetrachloroethene	<0.5	1.1	PRODUCT	<50	-	-	-
1,2 dichloroethane	<0.5	4.6	---	<50	-	-	-
Trichloroethene	<0.5	0.58	NOT	<50	-	-	-
Naphthalene	-	-	---	320	-	-	-
Other VOCs	<0.5 - <2.0	<5.0 - <20	SAMPLED	<50 - <5,000	-	-	-
<u>7/17/2001</u>							
Hydrocarbon Oil and Grease	-	<500	FREE	<500	-	-	-
Tetrachloroethene	-	-	PRODUCT	-	-	-	-
1,2 dichloroethane	<0.5	<50	---	69.0	-	-	-
Trichloroethene	-	-	NOT	-	-	-	-
Naphthalene	-	-	---	-	-	-	-
Other VOCs	-	-	SAMPLED	-	-	-	-

TABLE THREE
Groundwater Analytical Results
Oil & Grease and Volatile Organic Compounds
 All results are in parts per billion

Date Sampled & Compound Analyzed	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
<u>10/25/2001</u>							
Hydrocarbon Oil and Grease	-	< 5,000	FREE	< 5,000	-	-	-
1,2 dichloroethane	-	< 50	PRODUCT	72	-	-	-
1,2 dibromoethane	-	< 50	NOT	< 50	-	-	-
Other VOCs	-	-	SAMPLED	---	-	-	-
<u>1/22/2002</u>							
Hydrocarbon Oil and Grease	-	< 5,000	FREE	< 5,000	-	-	-
1,2 dichloroethane	-	< 50	PRODUCT	< 50	-	-	-
1,2 dibromoethane	-	< 50	NOT	< 50	-	-	-
Other VOCs	-	-	SAMPLED	---	-	-	-
<u>6/11/2002</u>							
Oil and Grease	-	1,100	FREE	-	< 1,000	< 1,000	-
1,2 dichloroethane	-	< 50	PRODUCT	-	< 0.5	< 0.5	-
1,2 dibromoethane	-	< 50	NOT	-	< 0.5	< 0.5	-
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>6/25/2002</u>							
Oil and Grease	-	-	FREE	1,400	-	-	< 1,000
1,2 dichloroethane	-	-	PRODUCT	< 100	-	-	< 20
1,2 dibromoethane	-	-	NOT	< 100	-	-	< 20
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>9/17/2002</u>							
Oil and Grease	-	< 1,000	FREE	< 1,000	< 1,000	< 1,000	< 1,000
1,2 dichloroethane	-	< 20	PRODUCT	< 100	< 0.50	< 0.50	< 20
1,2 dibromoethane	-	< 20	NOT	< 100	< 0.50	< 0.50	< 20
Other VOCs	-	-	SAMPLED	-	-	-	-

APPENDIX A

Well Sampling Field Log



WELL SAMPLING FIELD LOG

Project Name and Address: Lim
 Job #: 2808 Date of sampling: 9/17/02
 Well Name: MW-1 Sampled by: EP
 Total depth of well (feet): 26.78 Well diameter (inches): 2
 Depth to water before sampling (feet): 15.96
 Thickness of floating product if any: -
 Depth of well casing in water (feet): 10.82
 Number of gallons per well casing volume (gallons): 1.73
 Number of well casing volumes to be removed: 5.19 3
 Req'd volume of groundwater to be purged before sampling (gallons): 5.19
 Equipment used to purge the well: bailer
 Time Evacuation Began: 1030 Time Evacuation Finished: 1050
 Approximate volume of groundwater purged: 5
 Did the well go dry?: no After how many gallons: -
 Time samples were collected: 1100
 Depth to water at time of sampling: -
 Percent recovery at time of sampling: -
 Samples collected with: bailer
 Sample color: clear / brown-grey Odor: slight
 Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>72.3</u>	<u>6.21</u>	<u>782</u>
<u>2</u>	<u>71.4</u>	<u>6.18</u>	<u>773</u>
<u>3</u>	<u>71.1</u>	<u>6.15</u>	<u>771</u>

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-1</u>	<u>5</u>	<u>40 ml VOA</u>	<u>X</u>	<u>X</u>	



WELL SAMPLING FIELD LOG

Project Name and Address: Lim
 Job #: 2808 Date of sampling: 9/17/02
 Well Name: MW-2 Sampled by: EP
 Total depth of well (feet): 26.78 Well diameter (inches): 2
 Depth to water before sampling (feet): 14.67
 Thickness of floating product if any: -
 Depth of well casing in water (feet): 12.11
 Number of gallons per well casing volume (gallons): 1.9
 Number of well casing volumes to be removed: 3
 Req'd volume of groundwater to be purged before sampling (gallons): 5.8
 Equipment used to purge the well: bailer
 Time Evacuation Began: 910 Time Evacuation Finished: 930
 Approximate volume of groundwater purged: 6
 Did the well go dry?: NO After how many gallons: -
 Time samples were collected: 935
 Depth to water at time of sampling: -
 Percent recovery at time of sampling: -
 Samples collected with: bailer
 Sample color: clear/gray Odor: moderate
 Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>68.5</u>	<u>6.13</u>	<u>864</u>
<u>2</u>	<u>67.8</u>	<u>6.35</u>	<u>852</u>
<u>3</u>	<u>67.6</u>	<u>6.38</u>	<u>848</u>

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-2</u>	<u>5</u>	<u>40 ml V&A</u>	<u>X</u>	<u>X</u>	
	<u>1</u>	<u>1 liter amber</u>		<u>X</u>	



WELL SAMPLING FIELD LOG

Project Name and Address: Lim
 Job #: 2808 Date of sampling: 9/17/02
 Well Name: MW-3 Sampled by: EP
 Total depth of well (feet): _____ Well diameter (inches): 2
 Depth to water before sampling (feet): 17.80 16.04
 Thickness of floating product if any: 1.24
 Depth of well casing in water (feet): _____
 Number of gallons per well casing volume (gallons): _____
 Number of well casing volumes to be removed: _____
 Req'd volume of groundwater to be purged before sampling (gallons): _____
 Equipment used to purge the well: _____
 Time Evacuation Began: _____ Time Evacuation Finished: _____
 Approximate volume of groundwater purged: _____
 Did the well go dry?: Yes After how many gallons: _____
 Time samples were collected: _____
 Depth to water at time of sampling: _____
 Percent recovery at time of sampling: _____
 Samples collected with: _____
 Sample color: _____ Odor: _____
 Description of sediment in sample: _____

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

SAMPLED

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____



WELL SAMPLING FIELD LOG

Project Name and Address: Lim
 Job #: 2808 Date of sampling: 9/17/02
 Well Name: MW-4 Sampled by: EP
 Total depth of well (feet): 21.80 Well diameter (inches): 2
 Depth to water before sampling (feet): 15.29
 Thickness of floating product if any: -
 Depth of well casing in water (feet): 6.51
 Number of gallons per well casing volume (gallons): 1.04
 Number of well casing volumes to be removed: 3
 Req'd volume of groundwater to be purged before sampling (gallons): 3
 Equipment used to purge the well: bailer
 Time Evacuation Began: 835 Time Evacuation Finished: 845
 Approximate volume of groundwater purged: 3
 Did the well go dry?: no After how many gallons: -
 Time samples were collected: 855
 Depth to water at time of sampling: -
 Percent recovery at time of sampling: -
 Samples collected with: bailer
 Sample color: clear/brown/gray Odor: moderate
 Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>68.5</u>	<u>6.37</u>	<u>795</u>
<u>2</u>	<u>68.5</u>	<u>6.43</u>	<u>794</u>
<u>3</u>	<u>68.5</u>	<u>6.46</u>	<u>792</u>

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-4</u>	<u>5</u>	<u>40ml VOA</u>	<u>x</u>	<u>x</u>	
	<u>1</u>	<u>1 liter Amber</u>		<u>x</u>	



WELL SAMPLING FIELD LOG

Project Name and Address: Lim
 Job #: 2808 Date of sampling: 9/17/02
 Well Name: MW-5 Sampled by: EP
 Total depth of well (feet): 27.58 Well diameter (inches): 2
 Depth to water before sampling (feet): 14.80
 Thickness of floating product if any: -
 Depth of well casing in water (feet): 14.78
 Number of gallons per well casing volume (gallons): 2.36
 Number of well casing volumes to be removed: 3
 Req'd volume of groundwater to be purged before sampling (gallons): 7
 Equipment used to purge the well: bailer
 Time Evacuation Began: 9:50 Time Evacuation Finished: 10:15
 Approximate volume of groundwater purged: 7
 Did the well go dry?: NO After how many gallons: -
 Time samples were collected: 10:20
 Depth to water at time of sampling: -
 Percent recovery at time of sampling: -
 Samples collected with: bailer
 Sample color: clear/brown Odor: nae
 Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>71.9</u>	<u>5.92</u>	<u>760</u>
<u>2</u>	<u>68.7</u>	<u>5.99</u>	<u>757</u>
<u>3</u>	<u>68.3</u>	<u>6.02</u>	<u>752</u>

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-5</u>	<u>5</u>	<u>40 ml VOA</u>	<u>x</u>	<u>x</u>	
		<u>1 liter amber</u>		<u>x</u>	



WELL SAMPLING FIELD LOG

Project Name and Address: Lim
 Job #: 2808 Date of sampling: 9/17/02
 Well Name: MW-6 Sampled by: EP
 Total depth of well (feet): 29.48 Well diameter (inches): 2
 Depth to water before sampling (feet): 15.47
 Thickness of floating product if any: -
 Depth of well casing in water (feet): 14.01
 Number of gallons per well casing volume (gallons): 2.24
 Number of well casing volumes to be removed: 6.72 3
 Req'd volume of groundwater to be purged before sampling (gallons): 6.72
 Equipment used to purge the well: bailer
 Time Evacuation Began: 7:20 Time Evacuation Finished: 7:35
 Approximate volume of groundwater purged: 6.5
 Did the well go dry?: NO After how many gallons: -
 Time samples were collected: 7:45
 Depth to water at time of sampling: -
 Percent recovery at time of sampling: -
 Samples collected with: bailer
 Sample color: brown/clear Odor: none
 Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>65.3</u>	<u>6.37</u>	<u>476</u>
<u>2</u>	<u>66.0</u>	<u>6.28</u>	<u>484</u>
<u>3</u>	<u>66.3</u>	<u>6.22</u>	<u>494</u>

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-6</u>	<u>5</u>	<u>40ml vial</u>	<u>x</u>	<u>x</u>	
	<u>1</u>	<u>1 liter amber</u>		<u>x</u>	



WELL SAMPLING FIELD LOG

Project Name and Address: Lim
 Job #: 2808 Date of sampling: 9/17/02
 Well Name: MW-7 Sampled by: EP
 Total depth of well (feet): 29.42 Well diameter (inches): 2
 Depth to water before sampling (feet): 15.73
 Thickness of floating product if any: -
 Depth of well casing in water (feet): 13.69
 Number of gallons per well casing volume (gallons): 2.19
 Number of well casing volumes to be removed: 3
 Req'd volume of groundwater to be purged before sampling (gallons): 6.57
 Equipment used to purge the well: bailer
 Time Evacuation Began: 8:00 Time Evacuation Finished: 8:15
 Approximate volume of groundwater purged: 6.5
 Did the well go dry?: no After how many gallons: -
 Time samples were collected: 8:25
 Depth to water at time of sampling: -
 Percent recovery at time of sampling: -
 Samples collected with: bailer
 Sample color: clear/brown Odor: slight
 Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>64.8</u>	<u>6.43</u>	<u>600</u>
<u>2</u>	<u>65.2</u>	<u>6.38</u>	<u>579</u>
<u>3</u>	<u>65.2</u>	<u>6.35</u>	<u>571</u>

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-7</u>	<u>5</u>	<u>40 ml VOA</u>	<u>x</u>	<u>x</u>	
	<u>1</u>	<u>1 liter Amber</u>		<u>x</u>	

APPENDIX B

Certified Analytical Report
and
Chain of Custody Documentation



Report Number : 28718

Date : 10/8/2002

Eric Paddleford
Aqua Science Engineers, Inc.
208 West El Pintado Rd.
Danville, CA 94526

Subject : 6 Water Samples
Project Name : Lim Property
Project Number : 2808

Dear Mr. Paddleford,

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 : 28718

Date : 10/8/2002

Subject : 6 Water Samples
Project Name : Lim Property
Project Number : 2808

Case Narrative

The Method Reporting Limit for TPH as Diesel is increased due to interference from Gasoline-Range Hydrocarbons for samples MW-2, MW-4 and MW-7.

Approved By:  _____
Joel Kiff

2795 2nd St, Suite 300 Davis, CA 95616 916-297-4800



Report Number : 28718

Date : 10/8/2002

Project Name : **Lim Property**

Project Number : **2808**

Sample : **MW-1**

Matrix : Water

Lab Number : 28718-01

Sample Date :9/17/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	9/22/2002
TPH as Gasoline	320	50	ug/L	EPA 8260B	9/22/2002
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	9/22/2002
4-Bromofluorobenzene (Surr)	107		% Recovery	EPA 8260B	9/22/2002
TPH as Diesel	1700	50	ug/L	M EPA 8015	10/5/2002

Approved By:  Joel Kiff

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



Report Number : 28718

Date : 10/8/2002

Project Name : **Lim Property**

Project Number : **2808**

Sample : **MW-2**

Matrix : Water

Lab Number : 28718-02

Sample Date :9/17/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	5000	20	ug/L	EPA 8260B	9/29/2002
Toluene	5400	20	ug/L	EPA 8260B	9/29/2002
Ethylbenzene	2100	20	ug/L	EPA 8260B	9/29/2002
Total Xylenes	9100	20	ug/L	EPA 8260B	9/29/2002
Methyl-t-butyl ether (MTBE)	< 20	20	ug/L	EPA 8260B	9/29/2002
TPH as Gasoline	52000	2000	ug/L	EPA 8260B	9/29/2002
1,2-Dichloroethane	< 20	20	ug/L	EPA 8260B	9/29/2002
1,2-Dibromoethane	< 20	20	ug/L	EPA 8260B	9/29/2002
Toluene - d8 (Surr)	97.0		% Recovery	EPA 8260B	9/29/2002
4-Bromofluorobenzene (Surr)	109		% Recovery	EPA 8260B	9/29/2002
Dibromofluoromethane (Surr)	109		% Recovery	EPA 8260B	9/29/2002
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	9/29/2002
TPH as Diesel	< 3000	3000	ug/L	M EPA 8015	10/5/2002

Approved By:  Joel Kiff

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



Report Number : 28718

Date : 10/8/2002

Project Name : **Lim Property**

Project Number : **2808**

Sample : **MW-4**

Matrix : Water

Lab Number : 28718-03

Sample Date :9/17/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	9600	100	ug/L	EPA 8260B	9/28/2002
Toluene	21000	100	ug/L	EPA 8260B	9/28/2002
Ethylbenzene	2800	100	ug/L	EPA 8260B	9/28/2002
Total Xylenes	13000	100	ug/L	EPA 8260B	9/28/2002
Methyl-t-butyl ether (MTBE)	< 100	100	ug/L	EPA 8260B	9/28/2002
TPH as Gasoline	110000	10000	ug/L	EPA 8260B	9/28/2002
1,2-Dichloroethane	< 100	100	ug/L	EPA 8260B	9/28/2002
1,2-Dibromoethane	< 100	100	ug/L	EPA 8260B	9/28/2002
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	9/28/2002
4-Bromofluorobenzene (Surr)	94.8		% Recovery	EPA 8260B	9/28/2002
Dibromofluoromethane (Surr)	95.3		% Recovery	EPA 8260B	9/28/2002
1,2-Dichloroethane-d4 (Surr)	98.2		% Recovery	EPA 8260B	9/28/2002
TPH as Diesel	< 3000	3000	ug/L	M EPA 8015	10/5/2002

Approved By:  Joel Kiff

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



Report Number : 28718

Date : 10/8/2002

Project Name : **Lim Property**

Project Number : **2808**

Sample : **MW-5**

Matrix : Water

Lab Number : 28718-04

Sample Date :9/17/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Methyl-t-butyl ether (MTBE)	4.8	0.50	ug/L	EPA 8260B	9/22/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	9/22/2002
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	9/22/2002
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	9/22/2002
Dibromofluoromethane (Surr)	119		% Recovery	EPA 8260B	9/22/2002
1,2-Dichloroethane-d4 (Surr)	109		% Recovery	EPA 8260B	9/22/2002
TPH as Diesel	110	50	ug/L	M EPA 8015	10/5/2002

Approved By:  Joel Kiff

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



Report Number : 28718

Date : 10/8/2002

Project Name : **Lim Property**

Project Number : **2808**

Sample : **MW-6**

Matrix : Water

Lab Number : 28718-05

Sample Date :9/17/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Methyl-t-butyl ether (MTBE)	1.0	0.50	ug/L	EPA 8260B	9/22/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	9/22/2002
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	9/22/2002
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	9/22/2002
Dibromofluoromethane (Surr)	116		% Recovery	EPA 8260B	9/22/2002
1,2-Dichloroethane-d4 (Surr)	105		% Recovery	EPA 8260B	9/22/2002
TPH as Diesel	< 50	50	ug/L	M EPA 8015	10/5/2002

Approved By:  Joel Kiff

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



Report Number : 28718

Date : 10/8/2002

Project Name : **Lim Property**

Project Number : **2808**

Sample : **MW-7**

Matrix : Water

Lab Number : 28718-06

Sample Date : 9/17/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	590	20	ug/L	EPA 8260B	9/29/2002
Toluene	3600	20	ug/L	EPA 8260B	9/29/2002
Ethylbenzene	880	20	ug/L	EPA 8260B	9/29/2002
Total Xylenes	4000	20	ug/L	EPA 8260B	9/29/2002
Methyl-t-butyl ether (MTBE)	< 20	20	ug/L	EPA 8260B	9/29/2002
TPH as Gasoline	26000	2000	ug/L	EPA 8260B	9/29/2002
1,2-Dichloroethane	< 20	20	ug/L	EPA 8260B	9/29/2002
1,2-Dibromoethane	< 20	20	ug/L	EPA 8260B	9/29/2002
Toluene - d8 (Surr)	98.9		% Recovery	EPA 8260B	9/29/2002
4-Bromofluorobenzene (Surr)	110		% Recovery	EPA 8260B	9/29/2002
Dibromofluoromethane (Surr)	108		% Recovery	EPA 8260B	9/29/2002
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	9/29/2002
TPH as Diesel	< 2000	2000	ug/L	M EPA 8015	10/7/2002

Approved By:  Joel Kiff

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

Report Number : 28718

Date : 10/8/2002

QC Report : Method Blank Data

Project Name : **Lim Property**

Project Number : **2808**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel	< 50	50	ug/L	M EPA 8015	9/27/2002
Benzene	< 0.50	0.50	ug/L	EPA 8260B	9/28/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	9/28/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	9/28/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	9/28/2002
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	9/28/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	9/28/2002
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	9/28/2002
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	9/28/2002
Toluene - d8 (Surr)	97.9		%	EPA 8260B	9/28/2002
4-Bromofluorobenzene (Surr)	107		%	EPA 8260B	9/28/2002
Dibromofluoromethane (Surr)	104		%	EPA 8260B	9/28/2002
1,2-Dichloroethane-d4 (Surr)	105		%	EPA 8260B	9/28/2002
Benzene	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	9/22/2002
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	9/22/2002
Toluene - d8 (Surr)	103		%	EPA 8260B	9/22/2002
4-Bromofluorobenzene (Surr)	96.6		%	EPA 8260B	9/22/2002
Dibromofluoromethane (Surr)	98.5		%	EPA 8260B	9/22/2002
1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	9/22/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
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Approved By: Joel Kiff

Report Number : 28718

Date : 10/8/2002

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Lim Property**

Project Number : **2808**

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
TPH as Diesel	Blank	<50	1000	1000	1160	1270	ug/L	M EPA 8015	9/30/02	116	127	9.24	70-130	25
Benzene	28719-13	<0.50	20.0	20.0	19.4	20.1	ug/L	EPA 8260B	9/28/02	97.2	101	3.46	70-130	25
Toluene	28719-13	<0.50	20.0	20.0	18.8	19.5	ug/L	EPA 8260B	9/28/02	94.2	97.9	3.77	70-130	25
Tert-Butanol	28719-13	<5.0	99.9	99.8	108	108	ug/L	EPA 8260B	9/28/02	108	108	0.366	70-130	25
Methyl-t-Butyl Ether	28719-13	0.98	20.0	20.0	20.8	20.7	ug/L	EPA 8260B	9/28/02	99.5	99.1	0.408	70-130	25
Benzene	28682-01	<0.50	40.0	40.0	40.5	39.0	ug/L	EPA 8260B	9/22/02	101	97.5	3.82	70-130	25
Toluene	28682-01	<0.50	40.0	40.0	44.1	41.4	ug/L	EPA 8260B	9/22/02	110	104	6.31	70-130	25
Tert-Butanol	28682-01	<5.0	200	200	206	218	ug/L	EPA 8260B	9/22/02	103	109	5.71	70-130	25
Methyl-t-Butyl Ether	28682-01	<0.50	40.0	40.0	37.8	44.3	ug/L	EPA 8260B	9/22/02	94.4	111	15.9	70-130	25

Approved By:  Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 28718

Date : 10/8/2002

QC Report : Laboratory Control Sample (LCS)

Project Name : **Lim Property**

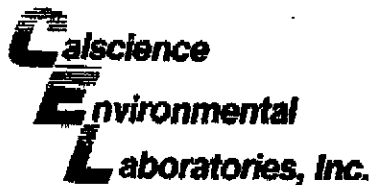
Project Number : **2808**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	9/28/02	97.6	70-130
Toluene	40.0	ug/L	EPA 8260B	9/28/02	95.5	70-130
Tert-Butanol	200	ug/L	EPA 8260B	9/28/02	104	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	9/28/02	96.9	70-130
Benzene	40.0	ug/L	EPA 8260B	9/22/02	98.3	70-130
Toluene	40.0	ug/L	EPA 8260B	9/22/02	110	70-130
Tert-Butanol	200	ug/L	EPA 8260B	9/22/02	106	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	9/22/02	113	70-130

KIFF ANALYTICAL, LLC

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

Approved By:  Joel Kiff



September 26, 2002

Joel Kiff
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-8593

Subject: Calscience Work Order No.: 02-09-0963
Client Reference: LIm Property


Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 9/20/2002 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

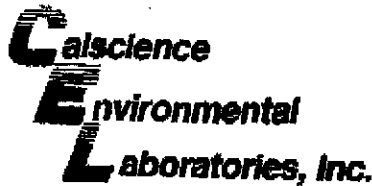
Sincerely,



Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager



Michael J. Crisostomo
Quality Assurance Manager



ANALYTICAL REPORT

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: 09/20/02
Work Order No: 02-09-0963
Preparation: N/A
Method: EPA 1664A

Project: Lim Property

Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-2	02-09-0963-1	09/17/02	Aqueous	N/A	09/23/02	20923HEML1

Parameter	Result	RL	DF	Qual	Units
Hexane Extractable Material	ND	1.0	1		mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-4	02-09-0963-2	09/17/02	Aqueous	N/A	09/23/02	20923HEML1

Parameter	Result	RL	DF	Qual	Units
Hexane Extractable Material	ND	1.0	1		mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-5	02-09-0963-3	09/17/02	Aqueous	N/A	09/23/02	20923HEML1

Parameter	Result	RL	DF	Qual	Units
Hexane Extractable Material	ND	1.0	1		mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-6	02-09-0963-4	09/17/02	Aqueous	N/A	09/23/02	20923HEML1

Parameter	Result	RL	DF	Qual	Units
Hexane Extractable Material	ND	1.0	1		mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-7	02-09-0963-5	09/17/02	Aqueous	N/A	09/23/02	20923HEML1

Parameter	Result	RL	DF	Qual	Units
Hexane Extractable Material	ND	1.0	1		mg/L

Method Blank	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
	099-05-19-222	N/A	Aqueous	N/A	09/23/02	20923HEML1

Parameter	Result	RL	DF	Qual	Units
Hexane Extractable Material	ND	1.0	1		mg/L

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers



Quality Control - Spike/Spike Duplicate

Kiff Analytical
 2795 2nd Street, Suite 300
 Davis, CA 95618-6593

Date Received: 09/20/02
 Work Order No: 02-09-0983
 Preparation: N/A
 Method: EPA 1664A

Project: Lim Property

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
02-09-0983-1	Aqueous	NA	N/A	09/23/02	20823NEM81

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Hexane Extractable Material	90	95	78-114	7	0-18	



Quality Control - Laboratory Control Sample

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: 09/20/02
Work Order No: 02-09-0963
Preparation: N/A
Method: EPA 1664A

Project: Lim Property

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
099-05-119-222	Aqueous	NA	09/23/02	NONE	20023HEML1

Parameter	Conc Added	Conc Recovered	%Rec	%Rec CL	Qualifiers
Hexane Extractable Material	40	36	88	78-114	

Calscience
Environmental
Laboratories, Inc. **GLOSSARY OF TERMS AND QUALIFIERS**

Work Order Number: 02-09-0963

<u>Qualifier</u>	<u>Definition</u>
ND	Not detected at indicated reporting limit.





2796 Second Street, Suite 300
 Davis, CA 95616
 Lab: 530.297.4800
 Fax: 530.297.4803

Cal Science Environmental
 7440 Lincoln Way
 Garden Grove, CA 92841
 714-894-5494

Lab No. 09163

Project Contact (Hardcopy or PDF to):
 Joel Kiff

EDF Report? Yes No

Chain-of-Custody Record and Analysis Request

Company/Address:
 Kiff Analytical, LLC

Recommended but not mandatory to complete this section:

Sampling Company Log Code:

Analysis Request

Phone No.:

FAX No.:

Global ID:

Project Number:
 2808

P.O. No.:
 28718

EDF Deliverable to (Email Address):

Project Name:
 Lim Property

E-mail address:
 inbox@kiffanalytical.com

Project Address:

Sampling Container Preservative Matrix

Sample Designation

Date Time

Glass Jar
 Poly Amber
 HCl HNO3 ICE NONE
 WATER SOIL

Oil & Grease 1604

Sample Designation	Sampling		Container		Preservative				Matrix		Oil & Grease 1604	Date due:	For Lab Use Only
	Date	Time	Poly	Amber	HCl	HNO3	ICE	NONE	WATER	SOIL			
MW-2	9/17/02	9:35		1			X	X	X		X	X	
MW-4	9/17/02	8:55		1			X	X	X		X	X	
MW-5	9/17/02	10:20		1			X	X	X		X	X	
MW-6	9/17/02	7:45		1			X	X	X		X	X	
MW-7	9/17/02	8:25		1			X	X	X		X	X	

Relinquished by:
Keith A. Frazier / KIFF ANALYTICAL

Date: 09/19/02
 Time: 1045

Received by:

Remarks: Return Shipped Coolers

Relinquished by:

Date: Time:

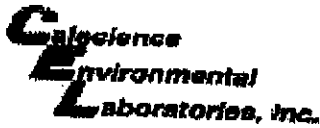
Received by:

Relinquished by:

Date: 09/20/02
 Time: 1030

Received by Laboratory:
[Signature]

Bill to:



WORK ORDER #: 02-09-0963

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: KIFF

DATE: 9/20/02

TEMPERATURE - SAMPLES RECEIVED BY:

CALSCIENCE COURIER:	LABORATORY (Other than Calscience Courier):
<input type="checkbox"/> Chilled, cooler with temperature blank provided.	<input checked="" type="checkbox"/> 2 °C Temperature blank.
<input type="checkbox"/> Chilled, cooler without temperature blank.	<input type="checkbox"/> °C IR thermometer.
<input type="checkbox"/> Chilled and placed in cooler with wet ice.	<input type="checkbox"/> Ambient temperature.
<input type="checkbox"/> Ambient and placed in cooler with wet ice.	
<input type="checkbox"/> Ambient temperature.	
<input type="checkbox"/> °C Temperature blank.	

Initial: NC

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: No (Not Intact): _____ Not Applicable (N/A): _____

Initial: NC

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with custody papers.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Correct containers for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper preservation noted on sample label(s).....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VOA vial(s) free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Initial: NC

COMMENTS:

Aqua Science Engineers, Inc.
 208 W. El Pintado Road
 Danville, CA 94526
 (925) 820-9391
 FAX (925) 837-4853

Chain of Custody 28718

PAGE 1 OF 1

SAMPLER (SIGNATURE)

E. Paddell

PROJECT NAME Lim Property

JOB NO. 2808

ADDRESS 250 8th street, Oakland, CA

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES
------------	------	------	--------	----------------

	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE <u>1664</u> oil (EPA 5520)	LIFT METALS (5) (EPA 6010+7000)	CAM17 METALS (EPA 6010+7000)	PCPs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	TPH-G/BTEX/5 OXY'S (EPA 8260)	TPH-G/BTEX/7 OXY'S / LEAD SCAVANGERS/ 1,2-DCP (EPA 8260)	Lead Scavengers	
✓ MW-1	9/17/02	1100	water	5	X	X	X	X	X	X	X	X	X	X	X	X	-01
✓ MW-2	↓	935	↓	6	X	X	X	X	X	X	X	X	X	X	X	X	-02
✓ MW-4	↓	855	↓	↓	X	X	X	X	X	X	X	X	X	X	X	X	-03
✓ MW-5	↓	1020	↓	↓	X	X	X	X	X	X	X	X	X	X	X	X	-04
✓ MW-6	↓	745	↓	↓	X	X	X	X	X	X	X	X	X	X	X	X	-05
✓ MW-7	↓	825	↓	↓	X	X	X	X	X	X	X	X	X	X	X	X	-06

RELINQUISHED BY:

E. Paddell
 (signature) (time)

RECEIVED BY:

 (signature) (time)

RELINQUISHED BY:

 (signature) (time)

RECEIVED BY LABORATORY:

John Cuttle / 0946
 (signature) (time)

COMMENTS:

1,2-DCP = 1,2-dichloropropane

E. Paddell

(printed name) (date)

 (printed name) (date)

 (printed name) (date)

J. CUTTLE / 091902

(printed name) (date)

TURN AROUND TIME

STANDARD 24hr 48hr 72hr

OTHER:

Company-

ASE

Company-

Company-

Company-

KIFF ANALYTICAL