AEI CONSULTANTS
Environmental & Civil Engineering Services

3210 Old Tunnel Road, Suite B, Lafayette, CA 94549-4157
Phone: (925) 283-6000 Fax: (925) 283-6121

RO508

June 21, 2002

Mr. Barney Chan
Alameda Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

JUN 26 2002

Subject: **Groundwater Investigation**
807 75th Street
Oakland, CA 94621
AEI Project No. 3190

Dear Mr. Chan:

Enclosed is the most recent quarterly monitoring report for the above referenced site.

AEI anticipates working with the property owner to develop a Remedial Investigation / Feasibility Study over the next several months.

Please call me at (925) 283-6000 if you have any questions. My office will keep you apprised of any proposed scope of work for the property.

Sincerely,

Peter McIntyre
Project Manager, Geologist

June 21, 2002

GROUNDWATER MONITORING AND SAMPLING REPORT

807 75TH Avenue
Oakland, California

Project No. 3190

Prepared For

Omega Termite Control
807 75th Avenue
Oakland, CA 95621

Prepared By

AEI Consultants
3210 Old Tunnel Road, Suite B
Lafayette, CA 94549
(925) 283-6000

AEI

AEI CONSULTANTS
3210 Old Tunnel Road, Suite B, Lafayette, CA 94549-4157
Phone: (925) 283-6000 Fax: (925) 283-6121

June 19, 2002

Mr. Allan Kanady
Omega Termite Control
807 75th Avenue
Oakland, CA 95621

RE: Quarterly Groundwater Monitoring and Sampling Report
Tenth Sampling Episode-May 2002
807 75th Avenue
Oakland, California
Project No. 3190

Dear Mr. Kanady:

AEI Consultants (AEI) has prepared this report to document the results of the tenth episode of groundwater monitoring and sampling at the above referenced site (Figure 1: Site Location Map). This groundwater investigation has been performed in accordance with the requirements of the Alameda County Health Care Services Agency (ACHCSA). The purpose of this activity is to monitor groundwater quality in the vicinity of the previous locations of the underground storage tanks at the site. This report presents the findings of the tenth sampling episode of groundwater monitoring and sampling conducted on May 17, 2002.

Site Description and Background

The property is located on the northern corner of Snell Street and 75th Avenue in the City of Oakland. The site currently supports the operation of Omega Termite Control (Figure 1: Site Location Map).

On September 15, 1996, three gasoline underground storage tanks (USTs) were removed from the property by AEI. The tanks consisted of one 500-gallon, one 1,000-gallon and one 8,000-gallon tank. The former locations of the USTs are shown in Figure 2.

Soil samples were collected from beneath the 500-gallon and 1,000-gallon gasoline tanks and from the three sidewalls of the 8,000-gallon tank excavation. Concentrations of total petroleum hydrocarbons as gasoline (TPH-g) were present in the soil beneath the 500-gallon UST at concentrations of 4,300 mg/kg. Minor concentrations (41 mg/kg) of TPH-g were present beneath the 1,000-gallon tank. The three sidewall samples collected from the 8,000-gallon tank excavation indicated concentrations of TPH-g above 100 mg/kg were present in the western and northwestern samples.

Groundwater was encountered during the excavation of the 8,000-gallon tank. A groundwater grab sample collected from the excavation indicated significant concentrations of petroleum hydrocarbon contaminants (Ref. # 1).

AEI issued a workplan, dated January 10, 1997, to the Alameda County Health Care Services Agency (ACHCSA). The workplan defined the extent and magnitude of petroleum hydrocarbon contamination in the vicinity of the former tanks. Six soil borings were advanced on January 31, 1997. This investigation indicated that groundwater was impacted with up to 27,000 µg/L of TPH-g and 5,000 µg/L of benzene. Significant concentrations of TPH-g were also detected in the soil up to ten feet bgs from the excavation (Ref. # 2).

In response to a request by the ACHCSA for further investigation at the site, AEI submitted a workplan to the ACHCSA on May 21, 1999 for the installation and subsequent sampling of four groundwater monitoring wells at the site (Ref. # 3). This workplan was approved by Barney Chan of the ACHCSA and the four wells were installed in June, 1999 (Ref. # 4).

On March 16, 2000, the former UST excavation was expanded to remove soil contaminated with gasoline. Prior to removal of the soil, the water that was in the excavation was pumped into a Baker tank and stored on-site. The excavation was expanded in all directions. The contaminated soil was stockpiled on the north portion of the property and covered with Visqueen®. During the over-excavation activities, a 500-gallon UST was discovered on the east corner of the excavation. The tank was removed, and additional contaminated soil was removed from the area of the former tank.

As requested by the ACHCSA, AEI installed a 10-foot length of 4-inch ID PVC pipe in the area of the former UST to act as a temporary extraction well (TW-5).

Summary of Activities

AEI conducted a quarterly groundwater monitoring investigation on the four monitoring wells (MW-1 through MW-4) and the one temporary extraction well (TW-5) on May 17, 2002. Well locations are shown in Figure 2. First, the depths to groundwater (from the top of the well casings) were measured with an electric water level indicator. In addition, well TW-5 was checked with an oil/water interface probe. The wells were then purged using a battery powered submersible pump. Approximately three well volumes were removed from each well. During the purging of the wells, the following properties—temperature, pH, specific conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP)—were measured.

Following recharge, water samples were collected from each well. For the samples, water was poured from bailers into 40 ml VOA vials and 1-Liter amber bottles which were subsequently capped so that neither headspace nor air bubbles were visible within the sample containers. Samples were shipped on ice under proper chain of custody protocol to McCampbell Analytical, Inc. of Pacheco, California (State Certification #1644).

Groundwater samples from the five wells were analyzed for TPH-g (EPA Method 5030/8015), TPH-d (EPA method 3550/8015), benzene, toluene, ethyl benzene, xylenes (BTEX), methyl tertiary butyl ether (MTBE) (EPA Method 8020/602), and for MTBE by EPA method 8260B.

Field Results

Hydrocarbon odor and sheen were observed in wells MW-2 and TW-5. Groundwater levels for the May 17th sampling episode ranged from –0.14 to -0.31 feet above mean sea level (msl). These elevations are an average of –0.13 feet lower than the previous episode. Groundwater flow direction was found to be to the southwest direction with a hydraulic gradient of 0.003 ft/ft. These measurements differed slightly from the previous episode (southeast flow direction with a hydraulic gradient of 0.005ft/ft.).

Groundwater elevation data are summarized in Table 1. The groundwater elevation contours and the groundwater flow direction are shown in Figure 3. Refer to Appendix A for the Groundwater Monitoring Well Field Sampling Forms.

Groundwater Quality

Concentrations of TPH-g and BTEX were consistent with previous analytical results. However, an increase in TPH-g and benzene was noted in MW-1. Heavier range hydrocarbons (TPH-d) were significantly higher in well TW-5 (41,000 µg/l) than the other four wells (ranging from 190 µg/l to 920 µg/l). MTBE was detected by EPA method 8260 in MW-2, MW-3, and MW-4, ranging from 2.0 µg/l to 8.1 µg/l.

Both anaerobic conditions (indicated by very low dissolved oxygen concentrations) and slightly reducing conditions (indicated by negative values of Redox) remained in the groundwater system.

A summary of groundwater quality data is presented in Table 2. Laboratory results and chain of custody documents are included in Appendix B.

Conclusions

Hydrocarbon concentrations in the four monitoring wells (MW-1 through MW-4) appeared relatively stable since monitoring was initiated. Although decreasing trends can be seen in the data prior to the recent episode, a rebound of TPH-g and BTEX concentrations was observed in wells MW-1 and MW-3 in particular.

The concentrations of TPH-d in wells MW-1 through MW-4 were relatively low compared to the concentration of TPH-d present over the last two years in TW-5. Although the cause of the significant spike of hydrocarbon concentration in this well cannot be explained by the data, the comparatively low concentrations detected in the other wells indicates that the release from the former waste-oil tank may have been relatively minor and confined to a small area.

The low dissolved oxygen concentrations (generally less than 0.50 mg/l in May 2002) indicate a variety of possibilities: a) that degradation is taking place slowly because of the slow rate of oxygen transfer to the groundwater because of the asphalt/concrete cover, b) that there is a slow rate of removal of CO_2 from the groundwater or c) that aerobic hydrocarbon degradation may have previously occurred in the groundwater system. Regardless of which scenario (or combination thereof) currently exists, the low dissolved oxygen concentrations are indicative of an oxygen-deprived system with a limited rate of oxygen influx.

Groundwater monitoring and sampling of the five wells will continue, with the next episode scheduled for August 2002. Based on the low concentrations of MTBE, further analyses by EPA method 8260 is not recommended at this time, although it should be utilized prior to requesting case closure. Analyses for TPH-d and Total Oil & Grease will be performed on all samples during the next episode.

References

1. Underground Storage Tank Removal Final Report, prepared by AEI – October 10, 1996
2. Phase II Soil and Groundwater Investigation Report, prepared by AEI – March 17, 1997
3. Workplan, prepared by AEI – May 21, 1999
4. Soil Boring and Groundwater Monitoring Well Installation Report, prepared by AEI-September 16, 1999
5. Quarterly Groundwater Monitoring and Sampling Report, prepared by AEI-July 28, 2000.
6. Quarterly Groundwater Monitoring and Sampling Report, prepared by AEI-November 3, 2000.
7. Quarterly Groundwater Monitoring and Sampling Report, prepared by AEI-February 7, 2001.
8. Quarterly Groundwater Monitoring and Sampling Report, prepared by AEI-July 2, 2001.
9. Quarterly Groundwater Monitoring Report, prepared by AEI-February 20, 2002

Report Limitations and Signatures

This report presents a summary of work completed by AEI Consultants, including observations and descriptions of site conditions. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide required information, but it cannot be assumed that they are entirely representative of all areas not sampled. All conclusions and recommendations are based on these analyses, observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document.

These services were performed in accordance with generally accepted practices in the environmental engineering and construction field which existed at the time and location of the work.

Please contact Peter McIntyre or either of the undersigned with any questions regarding the findings outlined in this report.

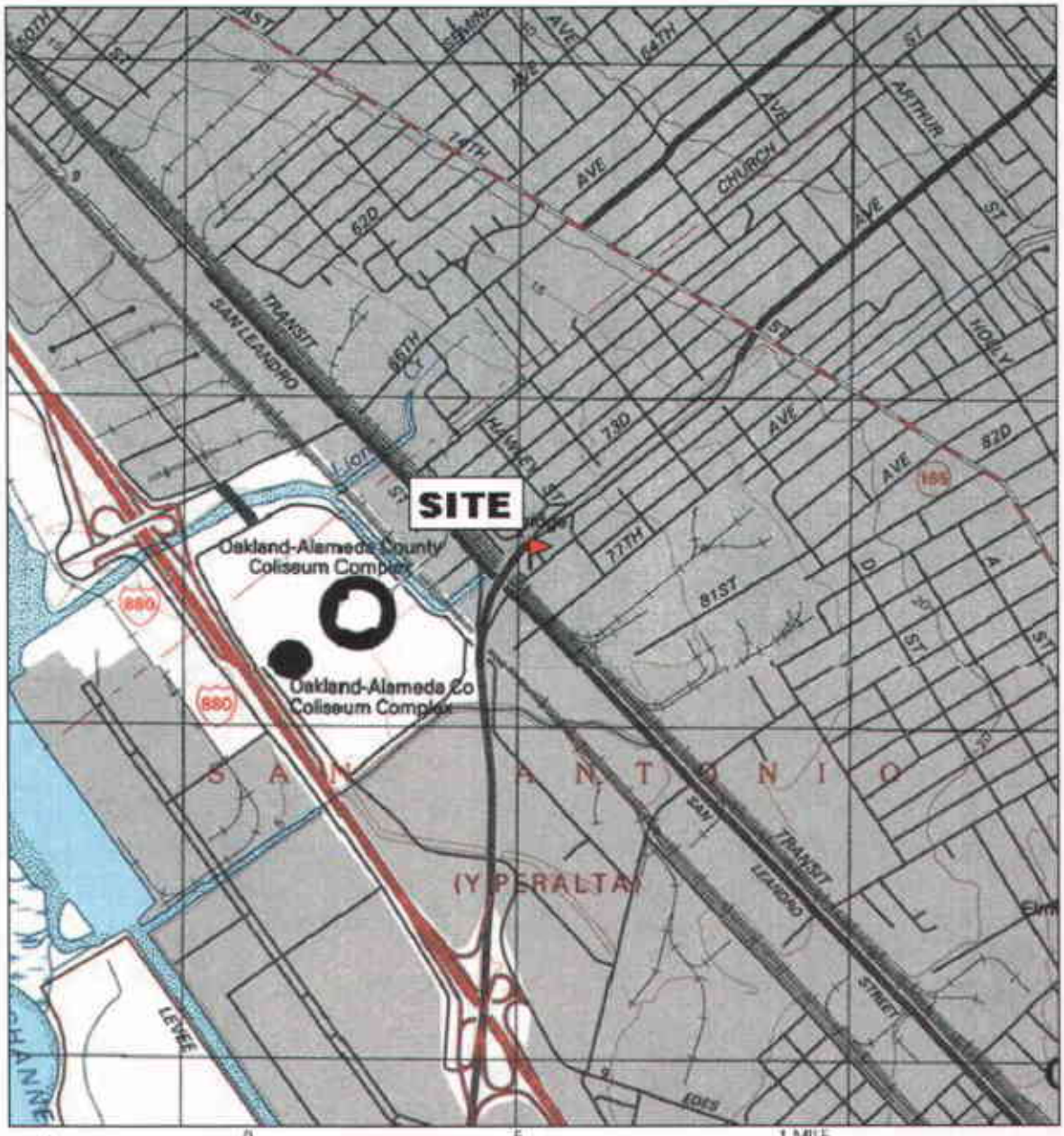
Sincerely,
AEI Consultants

Andrew Wyckoff, M.A.
Project Geologist

J. P. Derhake, PE
Principal

Figure 1	Site Location Map
Figure 2	Site Plan
Figure 3	Water Table Contour Map
Table 1	Groundwater Elevations
Table 2	Groundwater Sample Analytical Results
Appendix A	Groundwater Monitoring Well Field Sampling Forms
Appendix B	Laboratory Reports With Chain of Custody Documentation

cc: Mr. Barney Chan
ACHCSA
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502



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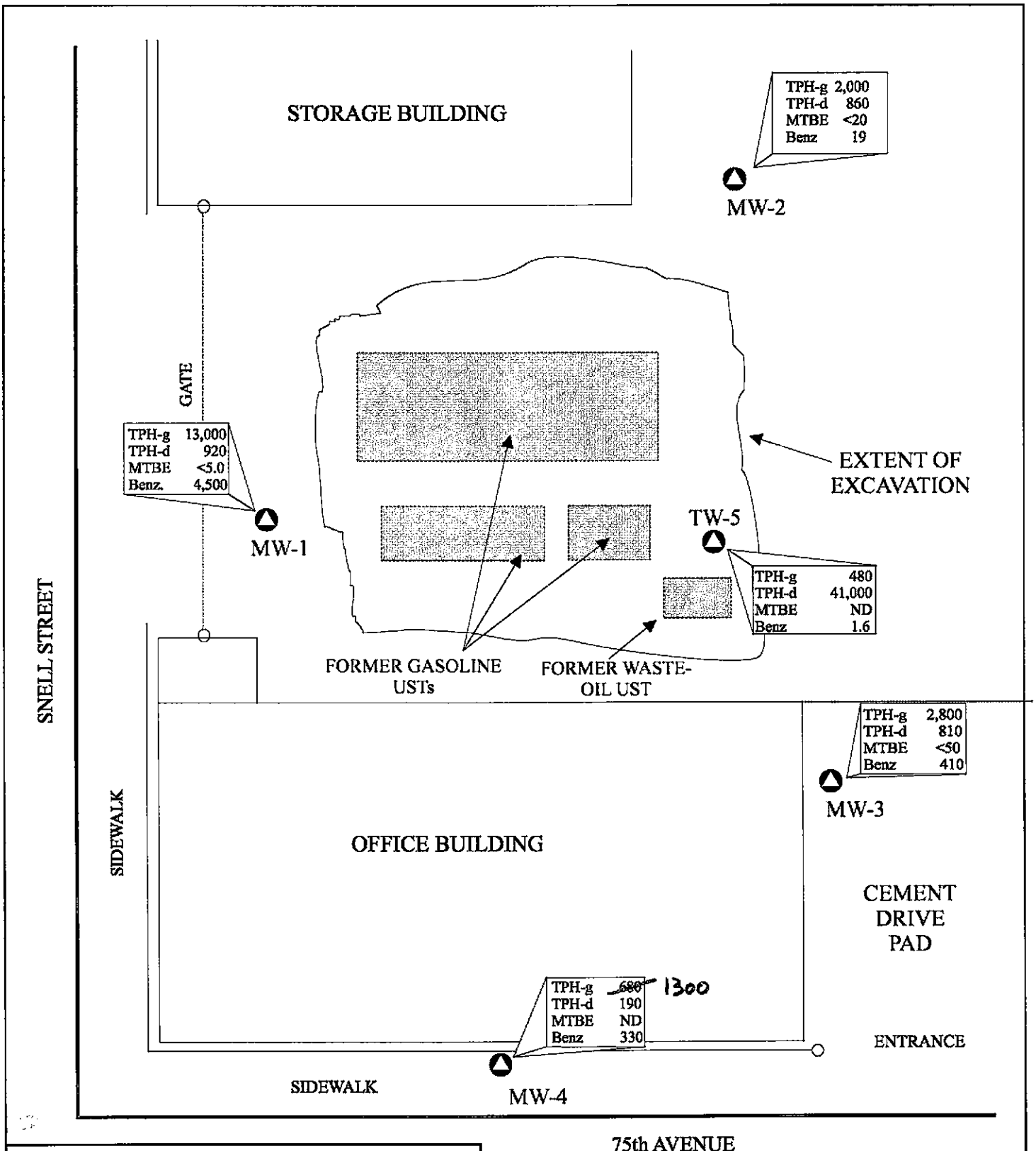
AEI CONSULTANTS 3210 OLD TUNNEL RD. STE B. LAFAYETTE, CA	
SITE LOCATION MAP	
807 75th AVENUE OAKLAND, CALIFORNIA	**FIGURE 1** PROJECT NO. 3190



LEGEND

MW-3 Monitoring Well Numbers & Locations

TPHg = Total Petroleum Hydrocarbons as gasoline
TPHd = Total Petroleum Hydrocarbons as diesel
MTBE = Methyl tertiary butyl ether
Benz = Benzene
Groundwater results expressed in µg/L.

0 10

SCALE: 1 IN = 10 FT

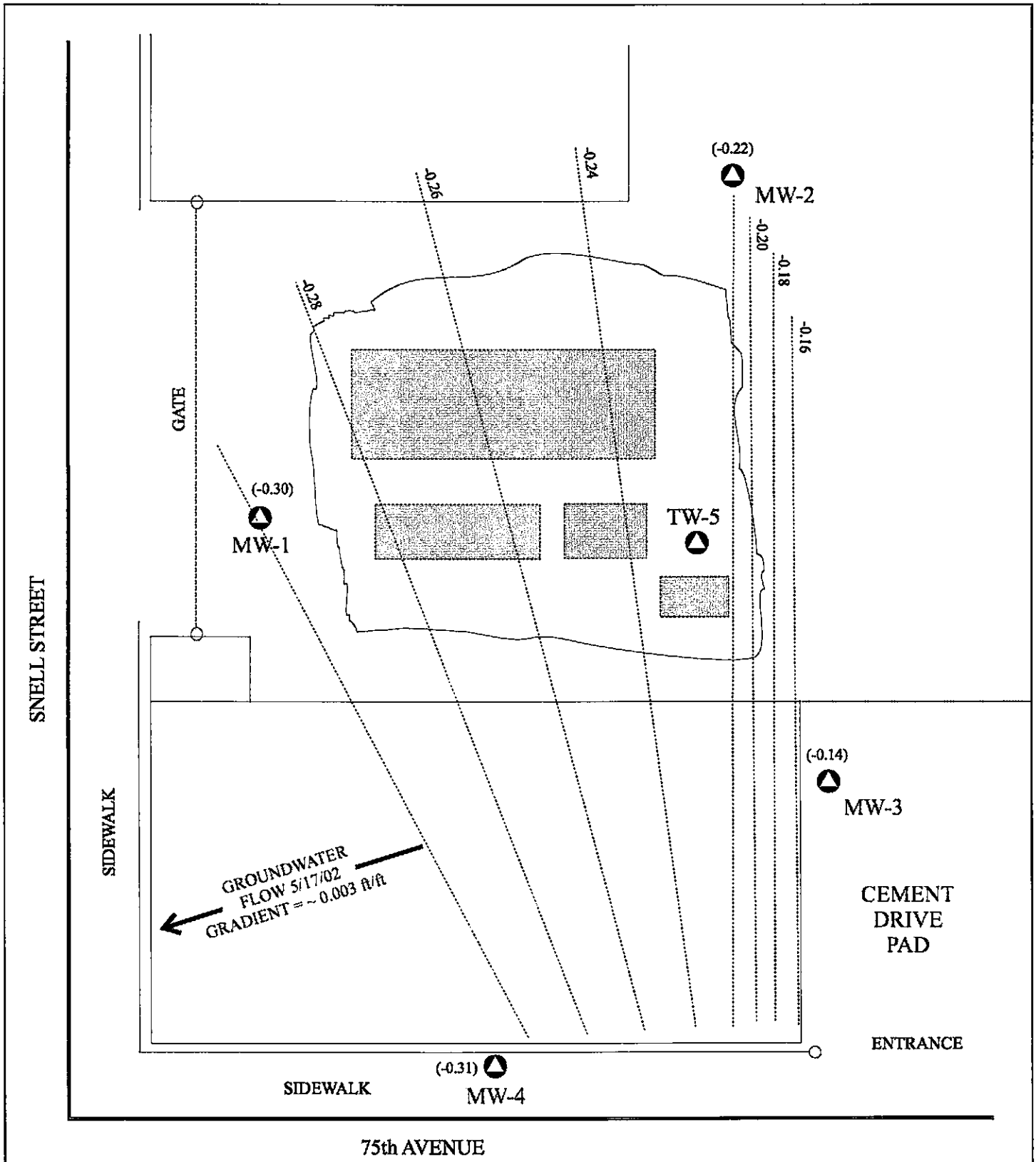
AEI CONSULTANTS

3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA

HYDROCARBON CONCENTRATIONS 05/17/02

807 75th AVENUE
OAKLAND, CALIFORNIA

FIGURE 2



LEGEND

N

0 10

SCALE: 1 IN = 10 FT

-22

Groundwater contours measured in feet above mean sea level (msl)

AEI CONSULTANTS

3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA

WATER TABLE CONTOURS
05/17/02

807 75th AVENUE
OAKLAND, CALIFORNIA

FIGURE 3

Table 1:
Groundwater Elevations

Well ID	Date	Well Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft msl)
MW-1	07/30/99	5.00	5.82	-0.82
	11/09/99	5.00	5.70	-0.70
	02/23/00	5.00	2.84	2.16
	05/26/00	5.00	5.50	-0.50
	10/10/00	5.00	5.70	-0.70
	02/07/01	5.00	5.25	-0.25
	05/25/01	5.00	5.25	-0.25
	09/19/01	5.00	5.51	-0.51
	02/06/02	NS	NS	NS
	05/17/02	**5.00**	**5.30**	**-0.30**
MW-2	07/30/99	5.95	6.64	-0.69
	11/09/99	5.95	6.42	-0.47
	02/23/00	5.95	3.31	2.64
	05/26/00	5.95	6.34	-0.39
	10/10/00	5.95	6.52	-0.57
	02/07/01	5.95	5.90	0.05
	05/25/01	5.95	6.08	-0.13
	09/19/01	5.95	6.53	-0.38
	02/06/02	5.95	5.72	0.23
	05/17/02	**5.95**	**6.17**	**-0.22**
MW-3	07/30/99	4.66	5.35	-0.69
	11/09/99	4.66	5.11	-0.45
	02/23/00	4.66	2.37	2.29
	05/26/00	4.66	4.98	-0.32
	10/10/00	4.66	5.24	-0.58
	02/07/01	4.66	4.73	-0.07
	05/25/01	4.66	4.73	-0.07
	09/19/01	4.66	5.07	-0.41
	02/06/02	4.66	4.69	-0.03
	05/17/02	**4.66**	**4.80**	**-0.14**
MW-4	07/30/99	4.59	5.45	-0.86
	11/09/99	4.59	5.31	-0.72
	02/23/00	4.59	2.72	1.87
	05/26/00	4.59	5.07	-0.48
	10/10/00	4.59	5.32	-0.73
	02/07/01	4.59	4.73	-0.14
	05/25/01	4.59	4.90	-0.31
	09/19/01	4.59	5.16	-0.57
	02/06/02	4.59	4.65	-0.06
	05/17/02	**4.59**	**4.90**	**-0.31**

Notes:

Well elevations measured from top of casing not from ground surface.

ft msl = feet above mean sea level

Table 2:
Groundwater Sample Analytical Results

Sample ID	Sample Collection Date	TPH as gasoline µg/L	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	TPH as diesel µg/L	TPH as motor oil µg/L
MW-1	07/30/99	2,700	<10	920	5.5	18	130	-	-
	11/09/99	1,800	<20	430	1.5	26	60	-	-
	02/23/00	3,800	<10	1,500	56	78	35	-	-
	05/26/00	7,100	<10	2,800	70	220	81	-	-
	10/10/00	980	<5.0	260	2.9	10	11	-	-
	02/07/01	570	<5.0	150	1.8	4.9	9.3	-	-
	05/25/01	18,000	ND<100	3,800	350	550	620	-	-
	09/19/01	840	<5.0	190	4.0	4.6	5.3	-	-
	02/06/02	NS	NS	NS	NS	NS	NS	-	-
	05/17/02	**13,000**	**<50/<5.0***	**4,500**	**29**	**50**	**58**	**920**	-
MW-2	07/30/99	1,200	<10	29	2.5	51	100	-	-
	11/09/99	1,300	<30	26	1.1	55	32	-	-
	02/23/00	5,000	<10	200	18	390	440	-	-
	05/26/00	2,700	<10	69	13	83	68	-	-
	10/10/00	810	<10	17	4.7	42	46	-	-
	02/07/01	2,600	<10	70	15	80	100	-	-
	05/25/01	2,400	ND	75	16	85	100	-	-
	09/19/01	1,200	<5.0	10	9	46	55	-	-
	02/06/02	1,800	ND<50	14	11	58	59	-	-
	05/17/02	**2,000**	**<20/8.1***	**19**	**1**	**1**	**88**	**860**	-
MW-3	07/30/99	2,700	<10	220	15	130	230	-	-
	11/09/99	3,100	15	440	9	150	96	-	-
	02/23/00	1,800	<15	180	11	82	79	-	-
	05/26/00	1,600	6.4	140	10	69	63	-	-
	10/10/00	1,100	ND<10	110	4.4	63	51	-	-
	02/07/01	1,100	ND<10	130	5.1	68	65	-	-
	05/25/01	1,200	ND<6.0	120	5.4	69	64	-	-
	09/19/01	800	<5.0	78	3.5	52	37	-	-
	02/06/02	1,100	ND<10	130	4.7	77	71	-	-
	05/17/02	**2,800**	**<50/2.0***	**410**	**23**	**160**	**210**	**810**	-
MW-4	07/30/99	340	<10	57	2.2	8.5	6.8	-	-
	11/09/99	1,000	<10	220	ND	17	7.1	-	-
	02/23/00	980	ND	260	7	33	27	-	-
	05/26/00	760	5.7	170	4.8	22	13	-	-
	10/10/00	520	ND<10	130	2.3	22	10	-	-
	02/07/01	680	ND<8.0	180	3.7	29	21	-	-
	05/25/01	1,700	ND<10	510	9.6	44	46	-	-
	09/19/01	680	ND<10	200	2.6	33	12	-	-
	02/06/02	710	ND<15	220	2.8	40	21	-	-
	05/17/02	**1,300**	**ND/3.3***	**330**	**5.6**	**61**	**51**	**190**	-
TW-5	10/10/00	5,800	ND<50	650	60	190	230	2,900	<250
	02/07/01	720	ND	6.0	4.5	3.2	4.5	650	450
	05/25/01	370	ND	13.0	4.1	1.6	1.3	420	ND
	09/19/01	15,000	530	29	2.7	14	240	2,700,000	1,100,000 ← FP
	02/06/02	280	<5.0	2.3	0.74	<0.5	0.70	55,000	18,000
	05/17/02	**480**	**ND/ND***	**1.6**	**1.1**	**1**	**ND**	**41,000**	-
MDL		50	5.0	0.5	0.5	0.5	0.5	50	250

MDL = Method Detection Limit
µg/L = micrograms per liter (ppb)
mg/L = milligrams per liter (ppm)
NS = Not Sampled

EPA
* 8260

APPENDIX A

WELL FIELD SAMPLING FORMS

AEI CONSULTANTS - GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-1

Project Name: Omega	Date of Sampling: 5/17/02
Job Number: 3190	Name of Sampler: OA
Project Address: 807 75th Ave, Oakland	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	Cement / Good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing (feet amsl)	5.00
Depth of Well (feet bgs)	20.00
Depth to Water (feet toc)	5.30
Water Elevation (feet amsl)	-.30
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	7.1
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	7.5
Appearance of Purge Water	Slightly turbid; No hydrocarbon odor

GROUNDWATER SAMPLES

Number of Samples/Container Size	3 VOAs & 1 Liter Amber Bottle

Time	Vol Remvd (gal)	Temp (deg C)	PH	Cond (µS)	Dissolved Oxygen (DO) mg/L	Redox (mV)	Comments
10:30	1	16.70	6.80	1456	.18	-48.1	
10:32	3	16.72	6.64	1411	.07	-62.2	
10:34	5	17.13	6.58	1363	.41	-72.9	
10:36	7	17.51	6.57	1295	.17	-76.7	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

TD – Total Depth of Well
DTW – Depth To Water
amsl – Above Mean Sea Level
bgs – Below Ground Surface
toc – Top of Casing

AEI CONSULTANTS – GROUNDWATER MONITORING WELL FIELD SAMPLING FORM	
Monitoring Well Number: MW-2	
Project Name: Omega	Date of Sampling: 5/17/02
Job Number: 3190	Name of Sampler: OA
Project Address: 807 75th Ave, Oakland	
MONITORING WELL DATA	
Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	Cement / Good
Well Cap & Lock – OK/Replace	OK
Elevation of Top of Casing (feet amsl)	5.95
Depth of Well (feet bgs)	20.00
Depth to Water (feet toc)	6.17
Water Elevation (feet amsl)	-0.22
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	6.64
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	7.0
Appearance of Purge Water	Clear; Strong hydrocarbon odor
GROUNDWATER SAMPLES	
Number of Samples/Container Size	3 VOAs & 1 Liter Amber Bottle

Time	Vol Remvd (gal)	Temp (deg C)	PH	Cond (µS)	Dissolved Oxygen (DO) mg/L	Redox (mV)	Comments
10:22	1	18.20	6.65	1184	0.52	-80.2	
10:24	3	18.15	6.63	1167	0.17	-81.5	
10:26	5	17.87	6.62	1184	0.08	-81.8	
10:28	7	17.86	6.60	1114	0.05	-80.9	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

TD - Total Depth of Well
DTW - Depth To Water
amsl – Above Mean Sea Level
bgs – Below Ground Surface
toc – Top of Casing

AEI CONSULTANTS – GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-3

Project Name: Omega	Date of Sampling: 5/17/02
Job Number: 3190	Name of Sampler: OA
Project Address: 807 75th Ave., Oakland	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	Cement / Good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing (feet amsl)	4.66
Depth of Well (feet bgs)	20.00
Depth to Water (feet toc)	4.80
Water Elevation (feet amsl)	-0.14
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	7.30
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	8.0
Appearance of Purge Water	Clear; No hydrocarbon odor

GROUNDWATER SAMPLES

Number of Samples/Container Size	3 VOAs & 1 Liter Amber Bottle

Time	Vol Remvd (gal)	Temp (deg C)	PH	Cond (µS)	Dissolved Oxygen (DO) mg/L	Redox (mV)	Comments
10:45	1	17.45	6.64	1703	0.13	-29.0	
10:47	3	17.24	6.58	1704	0.21	-21.5	
10:49	5	17.21	6.55	1708	0.08	-28.2	
10:51	7.5	17.33	6.54	1685	0.08	-44.6	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

TD - Total Depth of Well
DTW - Depth To Water
amsl – Above Mean Sea Level
bgs – Below Ground Surface
toc – Top of Casing

AEI CONSULTANTS – GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-4

Project Name: Omega	Date of Sampling: 5/17/02
Job Number: 3190	Name of Sampler: OA
Project Address: 807 75th Ave., Oakland	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	Cement / Good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing (feet amsl)	4.59
Depth of Well (feet bgs)	20.00
Depth to Water (feet toc)	4.90
Water Elevation (feet amsl)	-0.31
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	7.25
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	8.0
Appearance of Purge Water	Clear; No hydrocarbon odor

GROUNDWATER SAMPLES

Number of Samples/Container Size	3 VOAs & 1 Liter Amber Bottle

Time	Vol Remvd (gal)	Temp (deg C)	PH	Cond (µS)	Dissolved Oxygen (DO) mg/L	Redox (mV)	Comments
11:00	1	17.90	6.59	1629	0.82	192.3	
11:02	3	17.85	6.55	1654	0.66	264.7	
11:04	5	17.78	6.53	1652	0.06	150.9	
11:06	7.5	17.83	6.50	1657	0.04	47.3	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

TD - Total Depth of Well
DTW - Depth To Water
amsl – Above Mean Sea Level
bgs – Below Ground Surface
toc – Top of Casing

AEI CONSULTANTS – GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: TW-5

Project Name: Omega	Date of Sampling: 5/17/02
Job Number: 3190	Name of Sampler: OA
Project Address: 807 75th Ave., Oakland	

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	4"
Seal at Grade -- Type and Condition	
Well Cap & Lock -- OK/Replace	
Elevation of Top of Casing (feet amsl)	NA
Depth of Well (feet bgs)	10
Depth to Water (feet toc)	6.56
Water Elevation (feet amsl)	
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	
4" casing: (TD - DTW)(0.65)(3)	6.70
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	10
Appearance of Purge Water	Clear; Slight hydrocarbon odor; No sheen

GROUNDWATER SAMPLES

Number of Samples/Container Size	3 VOAs & 1 Liter Amber Bottle

Time	Vol Remvd (gal)	Temp (deg C)	PH	Cond (µS)	Dissolved Oxygen (DO) mg/L	Redox (mV)	Comments
11:12	2	18.14	6.78	926	0.06	-105.5	
11:14	4	18.17	6.67	889	0.03	-102.2	
11:16	6	18.18	6.66	878	0.04	-101.2	
11:18	8	18.20	6.65	869	0.03	-100.9	
11:20	10	18.21	6.65	866	0.02	-100.8	

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

TD - Total Depth of Well
DTW - Depth To Water
amsl – Above Mean Sea Level
bgs – Below Ground Surface
toc – Top of Casing

APPENDIX B

LABORATORY ANALYTICAL AND CHAIN OF CUSTODY DOCUMENTATION

McCampbell Analytical Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

All Environmental, Inc. 3210 Old Tunnel Rd., Ste. B Lafayette, CA 94549-4157	Client Project ID: Omega #3190	Date Sampled: 05/17/02
		Date Received: 05/17/02
	Client Contact: Orion Alcalay	Date Reported: 05/24/02
	Client P.O.:	Date Completed: 05/24/02

May 24, 2002

Dear Orion:

Enclosed are:

1). the results of **5** samples from your **Omega #3190 project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

McCampbell Analytical Inc.

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http://www.mccampbell.com E-mail: main@mccampbell.com

All Environmental, Inc.	Client Project ID: Omega #3190	Date Sampled: 05/17/02
3210 Old Tunnel Rd., Ste. B		Date Received: 05/17/02
Lafayette, CA 94549-4157	Client Contact: Orion Alcalay	Date Extracted: 05/22/02-05/23/02
	Client P.O.:	Date Analyzed: 05/22/02-05/23/02

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0205263

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	13,000,a	ND<50	4500	29	50	58	10	143
002A	MW-2	W	2000,a	ND<20	19	6.6	73	88	2	136
003A	MW-3	W	2800,a	ND<50	410	23	160	210	10	116
004A	MW-4	W	1300,a	ND	330	5.6	61	51	1	140
005A	TW-5	W	480,g,h	ND	1.6	1.1	0.75	ND	1	116
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	50	5.0	0.5	0.5	0.5	0.5	ug/L	
		S	1.0	0.05	0.005	0.005	0.005	0.005	mg/Kg	

*water and vapor samples are reported in ug/L, soil and sludge samples in mg/kg, wipe samples in ug/wipe, and TCLP extracts in ug/L.

DF = dilution factor.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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http://www.mccampbell.com E-mail: main@mccampbell.com

All Environmental, Inc. 3210 Old Tunnel Rd., Ste. B Lafayette, CA 94549-4157	Client Project ID: Omega #3190	Date Sampled: 05/17/02
		Date Received: 05/17/02
	Client Contact: Orion Alcalay	Date Extracted: 05/17/02
	Client P.O.:	Date Analyzed: 05/18/02-05/22/02

Diesel Range (C10-23) Extractable Hydrocarbons as Diesel*

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0205263

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
001B	MW-1	W	920,d,b	1	96.1
002B	MW-2	W	860,d,b	1	94.7
003B	MW-3	W	810,d	1	94.8
004B	MW-4	W	190,d	1	95.3
005B	TW-5	W	41,000,a,h	100	85.7
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W		50		µg/L
	S		NA		NA

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/L

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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http://www.mccampbell.com E-mail: main@mccampbell.com

All Environmental, Inc.	Client Project ID: Omega #3190	Date Sampled: 05/17/02
3210 Old Tunnel Rd., Ste. B		Date Received: 05/17/02
Lafayette, CA 94549-4157	Client Contact: Orion Alcalay	Date Extracted: 05/17/02
	Client P.O.:	Date Analyzed: 05/20/02-05/22/02

Methyl tert-Butyl Ether*

Extraction method: SW5030B Analytical methods: SW8260B Work Order: 0205263

Lab ID	Client ID	Matrix	Methyl-t-butyl ether (MTBE)	DF	% SS
001C	MW-1	W	ND<5.0,j	10	82.6
002C	MW-2	W	8.1	1	102
003C	MW-3	W	ND<2.0,j	2.5	90.1
004C	MW-4	W	3.3	1	101
005C	TW-5	W	ND,h	1	104

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	0.5	µg/L
	S	NA	NA

* water samples are reported in ug/L, soil and sludge samples in ug/kg, wipe samples in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L

h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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QC REPORT

EPA 8015m + 8020

Date: 05/22/02 Extraction: EPA 5030 Matrix: Water

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 52202					Instrument	GC-12	
Surrogate1	ND	100.0	107.0	100.00	100	107	6.8
Xylenes	ND	32.0	33.0	30.00	107	110	3.1
Ethylbenzene	ND	11.0	11.0	10.00	110	110	0.0
Toluene	ND	10.0	11.0	10.00	100	110	9.5
Benzene	ND	10.0	11.0	10.00	100	110	9.5
MTBE	ND	10.0	11.0	10.00	100	110	9.5
TPH (gas)	ND	114.0	113.8	100.00	114	114	0.2

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 200$$

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QC SUMMARY REPORT FOR SW8015C

BatchID: 1924 Matrix: W WorkOrder: 0205263

EPA Method: SW8015C Extraction: SW3510C Ext. Date: 5/17/02 Spiked Sample ID: N/A

Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	N/A	7500	N/A	N/A	N/A	103	108	5.2	70	130
%SS1	N/A	2500	N/A	N/A	N/A	96.6	102	5.4	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike, or analyte concentration in sample exceeds spike amount.

% Recovery = 100 * (MS-Sample)/(Amount Spiked); RPD = 100 * (MS - MSD)/(MS + MSD) * 2.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

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QC REPORT

VOCs (EPA 8240/8260)

Date: 05/20/02 **Extraction:** EPA 5030 **Matrix:** Water

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 52002					Instrument	GC-4	
Surrogate	ND	98.0	96.0	100.00	98	96	2.1
Methyl tert-Butyl Ether	ND	10.0	10.0	10.00	100	100	0.0

$$\%\,\text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{} \cdot 100$$

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

Report To: Orion Alcalay Bill To:
Company: All Environmental
3210 Old Tunnel Road, Suite B
Lafayette, CA 94549-4157
Tele: (925) 283-6000 Fax: (925) 283-6121
Project #: 3190 Project Name: Omega
Project Location: 803 75th Ave Oakland
Sampler Signature:

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED Ice	HCl	HNO_3	Other
mw-1		5/17/02		4		X					X	X		
mw-2		↓		↓		↓					↓	↓		
mw-3														
mw-4														
mw-5														

Analysis Request

BTEX & TPH as Gas (602/8020 + 8015)/ MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 (8260) MTBE	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
X	X							20								
↓	↓							↓								

Relinquished By:	Date:	Time:	Received By:
	5/17/02	1:04	5/17/02
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Remarks:

VOAS | O&G | METALS | OTHER
PRESERVATION APPROPRIATE ✓
CONTAINERS ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT

LIVR

McCampbell Analytical Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0205263

Client:
All Environmental, Inc.
3210 Old Tunnel Rd., Ste. B
Lafayette, CA 94549-4157

TEL: (925) 283-6000
FAX: (925) 283-6121
ProjectNo: #3190; Omega
PO:

17-May-02

Sample ID	ClientSampID	Matrix	Collection Date	Bottle	Requested Tests						
					SW8015C	8021B/8015	SW8260B				
205263-001	MW-1	Water	5/17/02		B	A	C				
205263-002	MW-2	Water	5/17/02		B	A	C				
205263-003	MW-3	Water	5/17/02		B	A	C				
205263-004	MW-4	Water	5/17/02		B	A	C				
205263-005	TW-5	Water	5/17/02		B	A	C				

Comments:

	Date/Time		Date/Time
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other