



May 20, 2003

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

Subject: **Quarterly Groundwater Monitoring Report**  
807 75<sup>th</sup> Street  
Oakland, CA 94621  
AEI Project No. 3190

Alameda County  
MAY 28 2003  
Environmental Health

Dear Mr. Chan:

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

Please call Peter McIntyre or myself at (925) 283-6000 if you have any questions.

Sincerely,

Brandi K. Reese  
Staff Geologist

May 19, 2003

Alameda County  
MAY 28 2003  
Environmental Health

**GROUNDWATER MONITORING REPORT  
13<sup>th</sup> Episode, 2003**

807 75th Avenue  
Oakland, California

Project No. 3190

Prepared For

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

Prepared By

**AEI Consultants**  
2500 Camino Diablo Blvd., Suite 200  
Walnut Creek, CA 94597  
(925) 283-6000

**AEI**



May 19, 2003

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

**Subject: Quarterly Groundwater Monitoring Report  
13<sup>th</sup> Episode, 2003  
807 75th Avenue  
Oakland, California  
Project No. 3190**

Dear Kanady:

AEI Consultants (AEI) has prepared this report to document the results of the twelfth 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 previous locations of underground storage tanks (USTs) at the site. This report presents the findings of the twelfth sampling episode of groundwater monitoring and sampling conducted on April 14, 2003.

### Site Description and Background

The site is located in an industrial area of the City of Oakland, on the northern corner of the intersection of 75<sup>th</sup> Avenue and Snell Street, just east of San Leandro Street. The property is approximately 10,000 square feet in size and currently developed with two buildings, occupied by Omega.

On September 15, 1996, AEI removed three gasoline USTs from the subject property. The tanks consisted of one 8,000-gallon UST, one 1,000-gallon UST, and one 500-gallon UST. The former locations of the tanks are shown in Figure 2. A total of five soil samples and one groundwater sample collected during the tank removal activities revealed that a release had occurred from the tank system. Total petroleum hydrocarbons as gasoline (TPH-g), benzene, and methyl tertiary butyl ether (MTBE) were detected up to 4,300 mg/kg, 13 mg/kg, and 25 mg/kg, respectively in soil samples. The excavation was not backfilled. Soil removed from the excavation was stockpiled on the northern portion of the property. In 1999 soil samples collected from the stockpiled soil contained non-detectable to minor concentrations of TPH-g. Mr. Barney Chan of the ACHCSA approved the stockpiled soil for reuse in the excavation.

In October 1997, soil and groundwater samples were collected from six soil borings (BH-1 through BH-6). In June 1999, four groundwater monitoring wells (MW-1 through MW-4) were also installed by AEI.

Under the direction of ACHCSA, additional soil was removed from the excavation in March 2000. The excavation was extended to 29 by 48 feet in size and 8 feet deep at the east end of the excavation and 11.5 at the west end. During the excavation activities, an additional 500 gallon UST was discovered at the eastern end of the excavation. This tank was removed under the direction of Oakland Fire Services Agency (OFSA). A total of six additional soil samples were collected from the sidewalls and bottom of the excavation.

The resulting excavation was then backfilled with pea gravel to bridge the water table, with the remainder of the excavation being filled with the previously aerated soil and later with imported fill. The newly excavated soil was stockpiled on the northern portion of the property. A total of 7,400 gallons of hydrocarbon impacted groundwater were pumped from the excavation, treated on-site, and discharged under an East Bay Municipal Utility District permit to the sanitary sewer system.

Monitoring well locations are shown on Figure 2. Historical water table elevation data are presented in Table 1. Historical groundwater sample analytical data are presented in Table 2.

### **Summary of Activities**

AEI conducted a quarterly groundwater monitoring investigation on four monitoring wells (MW-1, MW-2, MW-3 and MW-4) and the one temporary extraction well (TW-5) on January 10, 2003. Well locations are shown in Figure 2. First, the depths to groundwater (from the top of the well casings) for each well were measured with an electric water level indicator. The wells were then purged using a battery powered submersible pump. Approximately three well volumes were removed from each well. Temperature, pH, specific conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) were measured and the turbidity was visually noted during the purging of the wells.

Once the groundwater parameters stabilized, and following recovery of water levels, water samples were collected from each well. Sample water was poured from polyethylene bailers into 40-milliliter (ml) VOA vials and 1-liter amber bottles, which were subsequently capped so neither head space or air bubbles were visible within the vials. Samples were shipped on ice under proper chain of custody protocol to McCampbell Analytical, Inc. of Pacheco, California (Department of Health Services Certification #1644).

Groundwater samples from the five wells were analyzed for TPH-g (EPA Method 8015C), TPH as diesel (TPH-d) (EPA method 8015C), benzene, toluene, ethyl benzene, xylenes (BTEX), and MTBE (EPA Method 8021B).

## Field Results

Both hydrocarbon odor and sheen were observed in well MW-1. Hydrocarbon odor was also detected in MW-3 and TW-5. Groundwater levels for this sampling episode ranged from -0.74 to 0.97 feet above mean sea level (amsl). These elevations are an average of 0.69 feet higher than the previous episode. Groundwater flow direction was estimated to be to the east-northeast with a hydraulic gradient of 0.016 ft/ft. The hydraulic gradient is greater than the previous episode of 0.006 ft/ft. The temporary extraction well, TW-5, is not included in calculating the groundwater direction flow or the hydraulic gradient due to variation in well construction.

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

TPH-g decreased in concentration only in well MW-3 from 1,100 µg/L to 690 µg/L. TW-5 remains highest in heavier range hydrocarbons (TPH-d) and showed an increase in concentration from 1,300 µg/L to 2,300 µg/L. TPH-d concentrations decreased only in wells MW-2 and MW-3. MTBE has not been detected above laboratory reporting limits in any of the wells sampled since the beginning of this investigation. Benzene concentrations remain at a seasonal relative low as seen in Figure 4.

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

## Conclusions

Concentrations of TPH-g and BTEX have shown seasonal fluctuations in all wells as groundwater levels rise and fall. This variance can be seen on Figure 4.

During the last monitoring episode, concentrations of TPH-d in wells MW-1, MW-2, MW-3 and MW-4 were significantly lower than the concentrations of TPH-d present over the last two years in TW-5.

AEI submitted a site characterization workplan dated January 27, 2003, which addresses the agency's technical comments, and works toward an effective remedial action plan for the subject property.

Groundwater monitoring and sampling of the five wells will continue, with the next episode scheduled for July 2003.

## 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 and Sampling Report, prepared by AEI-February 20, 2002.
10. Quarterly Groundwater Monitoring and Sampling Report, prepared by AEI-June 21, 2002.
11. Quarterly Groundwater Monitoring and Sampling Report, prepared by AEI-October 14, 2002.
12. Quarterly Groundwater Monitoring and Sampling Report, prepared by AEI-January 31, 2003.

## *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 that existed at the time and location of the work.

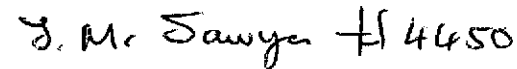
Please contact Peter McIntyre or myself with any questions regarding the findings outlined in this report.

Sincerely,  
**AEI Consultants**



Brandi Kiel Reese  
Staff Geologist

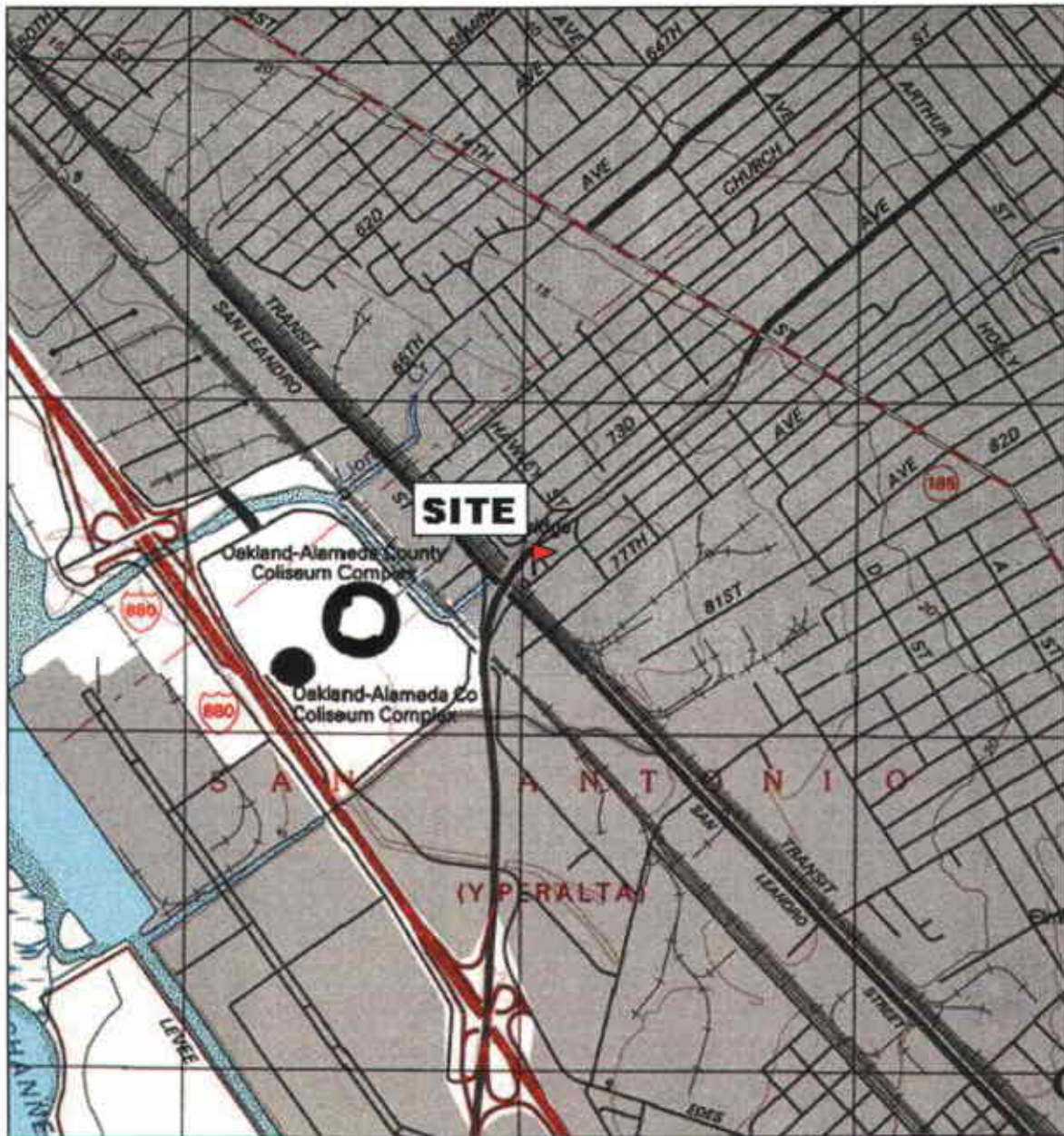
Technical Review By:



Lorraine M. Sawyer, RG

- Figure 1 Site Location Map
- Figure 2 Site Plan
- Figure 3 Water Table Contour Map
- Figure 4 Concentrations Graph
  
- 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



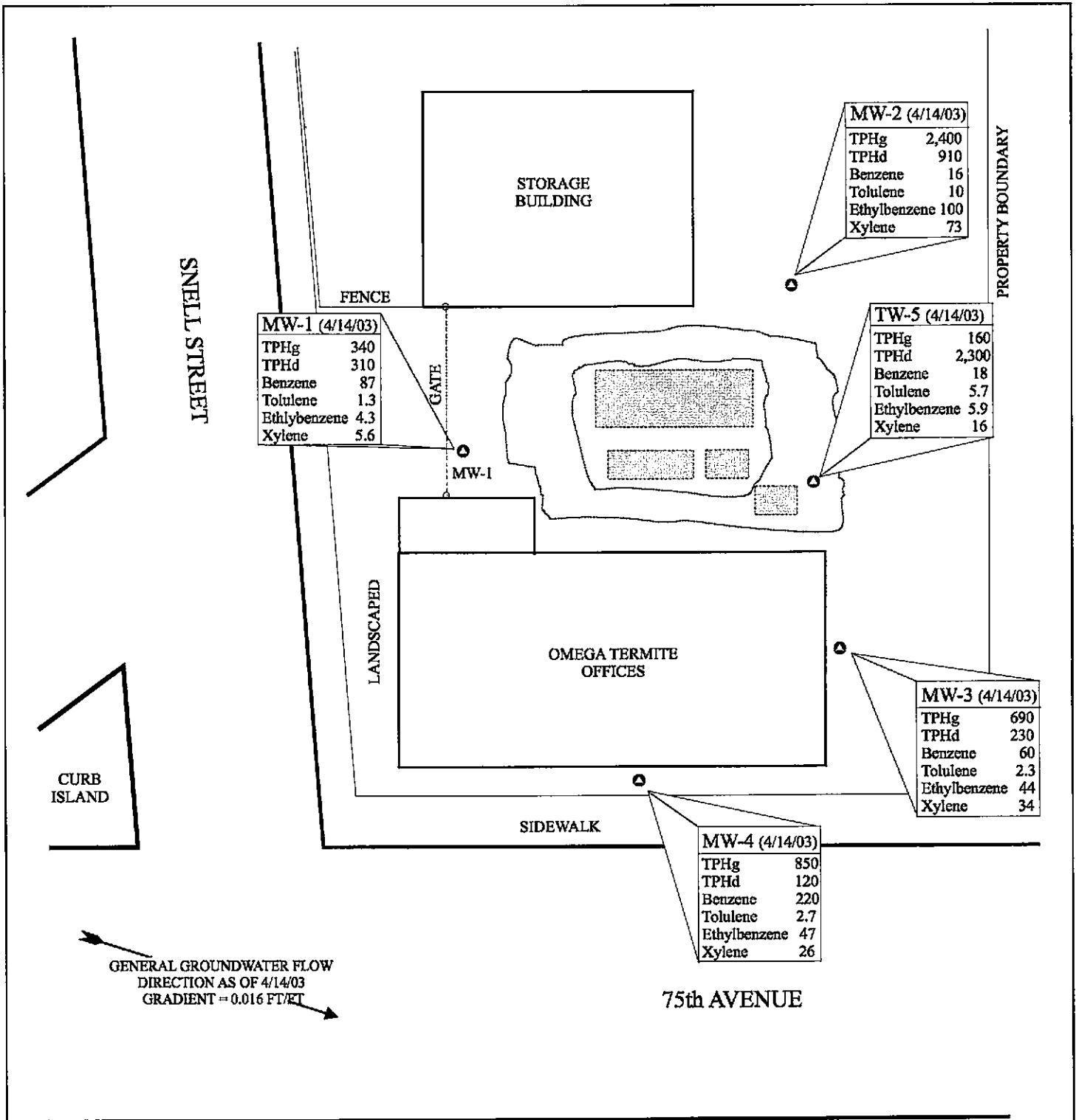
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<b>AEI CONSULTANTS</b> 2500 CAMINO DIABLO, STE 200, WALNUT CREEK, CA	
<b>SITE LOCATION MAP</b>	
807 75 <sup>th</sup> AVENUE OAKLAND, CALIFORNIA	<b>FIGURE 1</b> PROJECT No. 5896





**LEGEND**



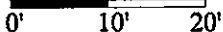
○ MONITORING WELL LOCATIONS WITH CONCENTRATIONS IN  $\mu\text{g/L}$

TPHg - Total Petroleum Hydrocarbons as gasoline

TPHd - Total Petroleum Hydrocarbons as diesel

Well TW-5 is listed as TR-5 in lab data

SCALE: 1 in = 20 ft

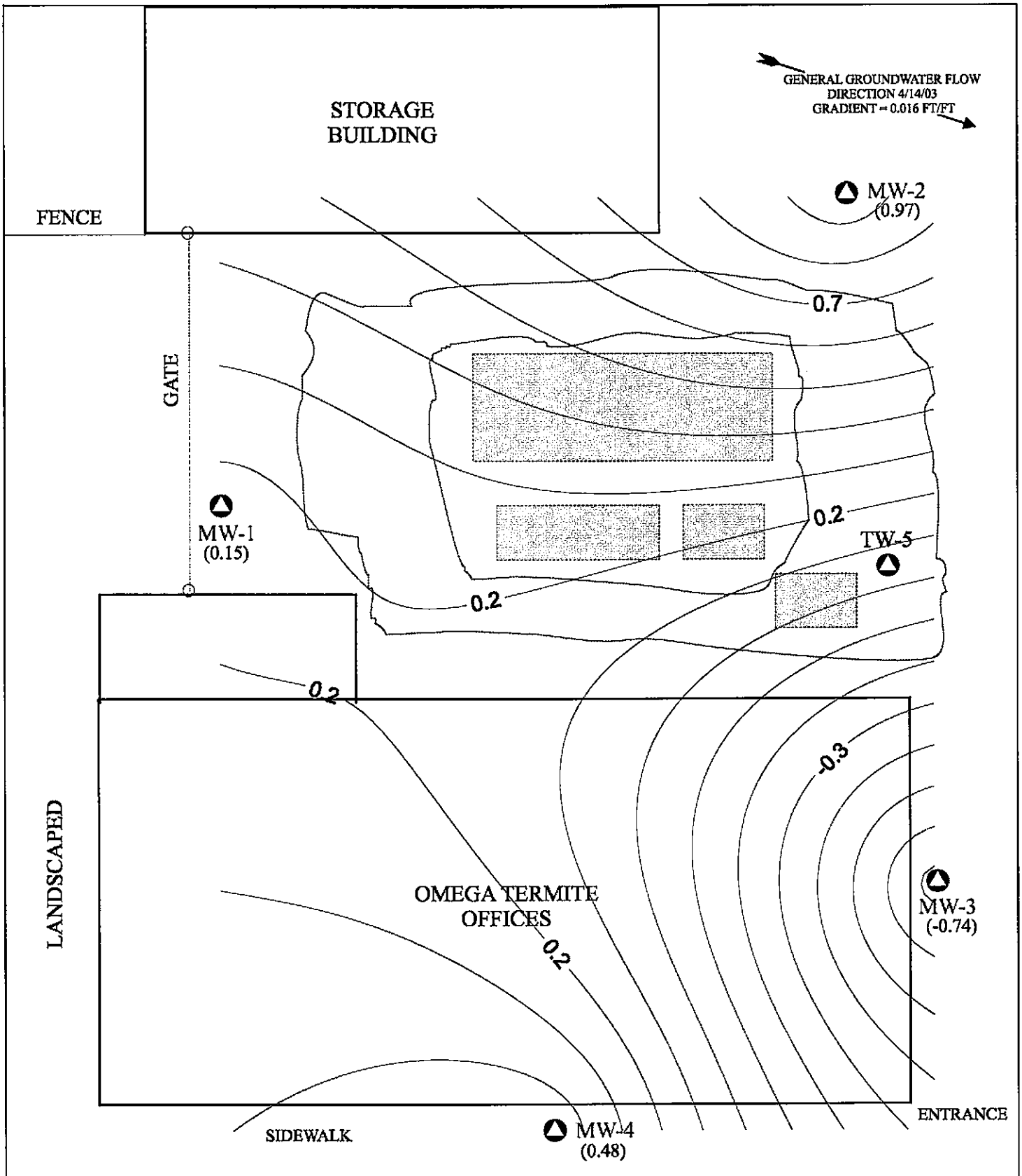


**AEI CONSULTANTS**  
2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK, CA

**HYDROCARBON CONCENTRATIONS**

807 75th AVENUE  
OAKLAND, CALIFORNIA

**FIGURE 2**  
AEI PROJECT No. 5896



Groundwater contours measured in feet above mean sea level (msl)  
 Countour Interval = 0.016 (feet)  
 Drawn in Surfer V. 7.0  
 Well TW-5 not used in calculating groundwater contours

0' 5' 10'  
 SCALE: 1 IN = 10 FT

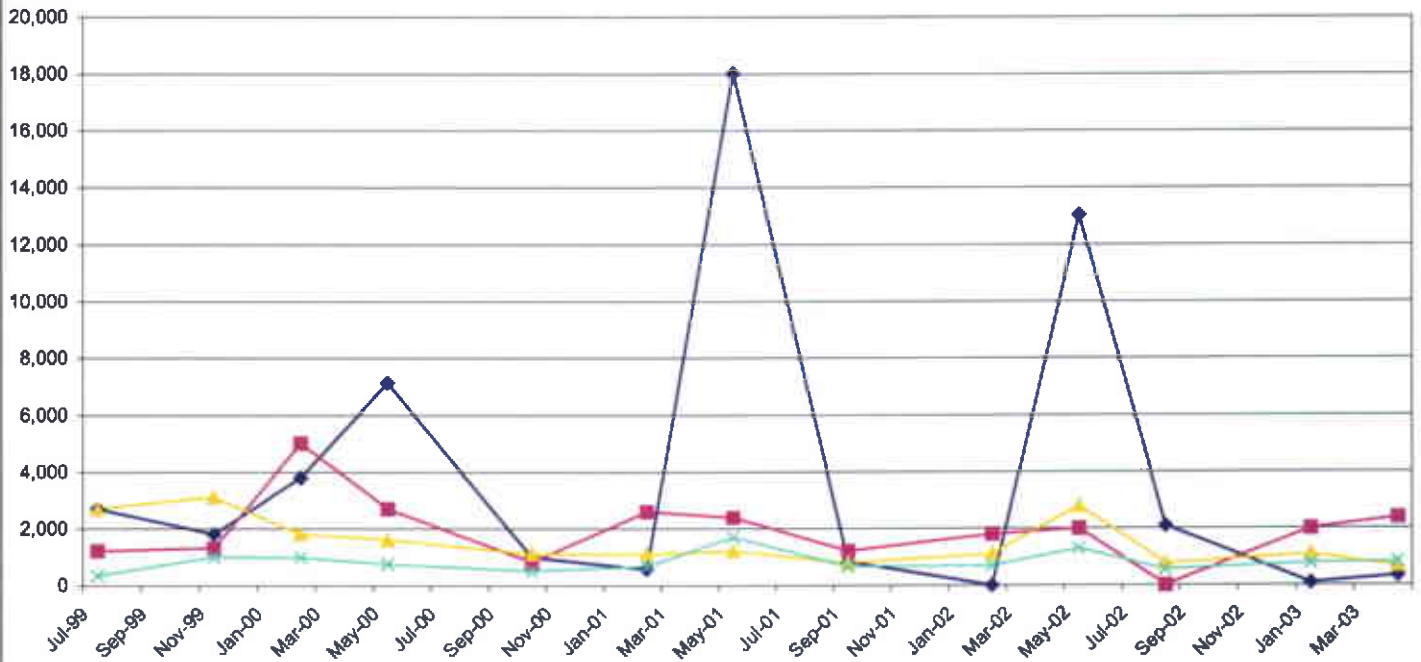
**AEI CONSULTANTS**  
 2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK, CA

**WATER TABLE CONTOURS**

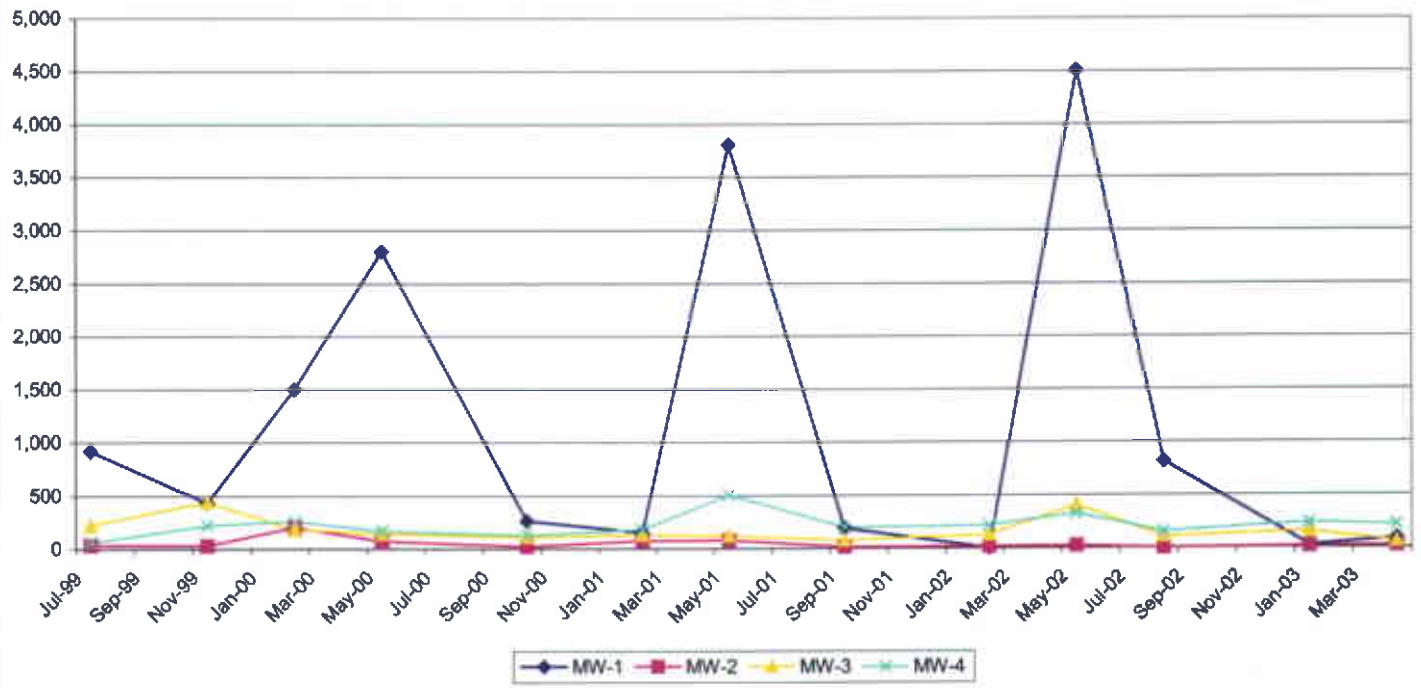
807 75th AVENUE  
 OAKLAND, CALIFORNIA

**FIGURE 3**  
 AEI Project # 3190

TPH-g CONCENTRATIONS (in µg/L)



BENZENE CONCENTRATIONS (in µg/L)



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 2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK, CA

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**CONCENTRATIONS OVER TIME**

807 75th AVENUE OAKLAND, CALIFORNIA	<b>FIGURE 4</b> AEI Project # 3190
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**Table 1**  
**Groundwater Elevations**

Well ID	Date	Well Elevation (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
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
	08/20/02	5.00	5.39	-0.39
	01/10/03	5.00	4.11	0.89
	<b>04/14/03</b>	<b>5.00</b>	<b>4.85</b>	<b>0.15</b>
	MW-2	07/30/99	5.95	6.64
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	-0.58
02/06/02		5.95	5.72	0.23
05/17/02		5.95	6.17	-0.22
08/20/02		5.95	NS	NS
01/10/03		5.95	5.12	0.83
<b>04/14/03</b>		<b>5.95</b>	<b>4.98</b>	<b>0.97</b>
MW-3		07/30/99	4.66	5.35
	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
	08/20/02	4.66	4.97	-0.31
	01/10/03	4.66	3.59	1.07
	<b>04/14/03</b>	<b>4.66</b>	<b>5.40</b>	<b>-0.74</b>
	MW-4	07/30/99	4.59	5.45
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
08/20/02		4.59	5.02	-0.43
01/10/03		4.59	3.78	0.81
<b>04/14/03</b>		<b>4.59</b>	<b>4.11</b>	<b>0.48</b>
TW-5		09/19/01	ns	6.59
	05/17/02	ns	6.56	na
	08/20/02	ns	6.62	na
	01/10/03	ns	4.66	na
	<b>04/14/03</b>	<b>ns</b>	<b>5.30</b>	<b>na</b>

Depth to water measured from the top of well casing  
ft amsl = feet above mean sea level

ns - TW-5 Not surveyed  
na - not available

Episode	Date	Average Water Table Elevation (ft amsl)	Water Table Elevation Change (ft)	Hydraulic Gradient/ Flow Direction (ft/ft)
1	07/30/99	-0.77	-	-
2	11/09/99	-0.59	-0.18	0.0056 / SW
3	02/23/00	2.24	-2.83	0.008 / S
4	05/26/00	-0.42	2.66	0.003 / SW
5	10/10/00	-0.65	0.22	0.0036 / S
6	02/07/01	-0.10	-0.54	0.008 / S
7	05/25/01	-0.19	0.09	0.006 / S
8	09/19/01	-0.52	0.33	0.004 / S
9	02/06/02	0.05	-0.56	0.005 / SE
10	05/17/02	-0.24	0.29	0.003 / SW
11	08/20/02	-0.38	0.13	0.002 / S
12	01/10/03	0.90	-1.28	0.006 / E-NE
13	<b>04/14/03</b>	<b>0.22</b>	<b>0.69</b>	<b>0.016 / E-NE</b>

TW-5 not included in calculations

**Table 2**  
**Groundwater Sample Analytical Results**

Sample ID	Sample Collection Date	TPH-g µg/L	TPH-d µg/L	TOG mg/L	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L
MW-1	07/30/99	2,700	-	-	ND<10	920	5.5	18	130
	11/09/99	1,800	-	-	ND<20	430	1.5	26	60
	02/23/00	3,800	-	-	ND<10	1,500	56	78	35
	05/26/00	7,100	-	-	ND<10	2,800	70	220	81
	10/10/00	980	-	-	ND<5.0	260	2.9	10	11
	02/07/01	570	-	-	ND<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	-	-	ND<5.0	190	4.0	4.6	5.3
	02/06/02	-	-	-	-	-	-	-	-
	05/17/02	13,000	920	-	ND<50/<5.0*	4,500	29	50	58
	08/20/02	2,100	740	ND<5.0	ND<15	820	4.5	6.4	9.6
	01/10/03	95	260	ND<5.0	ND<5.0	23	0.66	3.9	6.5
	04/14/03	340	310	-	ND<5.0	87	1.3	4.3	5.6
	MW-2	07/30/99	1,200	-	-	ND<10	29	2.5	51
11/09/99		1,300	-	-	ND<30	26	1.1	55	32
02/23/00		5,000	-	-	ND<10	200	18	390	440
05/26/00		2,700	-	-	ND<10	69	13	83	68
10/10/00		810	-	-	ND<10	17	4.7	42	46
02/07/01		2,600	-	-	ND<10	70	15	80	100
05/25/01		2,400	-	-	ND<5.0	75	16	85	100
09/19/01		1,200	-	-	ND<5.0	10	9	46	55
02/06/02		1,800	-	-	ND<50	14	11	58	59
05/17/02		2,000	860	-	ND<20/8.1*	19	1	1	88
08/20/02		NS	NS	NS	NS	NS	NS	NS	NS
01/10/03		2,000	910	ND<5.0	ND<50	11	11	96	100
04/14/03		2,400	800	-	ND<10	16	10	100	73
MW-3		07/30/99	2,700	-	-	ND<10	220	15	130
	11/09/99	3,100	-	-	15	440	9	150	96
	02/23/00	1,800	-	-	ND<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	810	-	ND<50/2.0*	410	23	160	210
	08/20/02	780	270	ND<5.0	ND<10	110	2.8	63	41
	01/10/03	1,100	510	ND<5.0	ND<20	160	3.4	98	84
	04/14/03	690	230	-	ND<5.0	60	2.3	44	34
	MW-4	07/30/99	340	-	-	ND<10	57	2.2	8.5
11/09/99		1,000	-	-	ND<10	220	<0.5	17	7.1
02/23/00		980	-	-	ND<5.0	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	190	-	ND<5.0/3.3*	330	5.6	61	51
08/20/02		580	120	ND<5.0	ND<5.0	160	1.7	34	13
01/10/03		800	85	ND<5.0	ND<20	240	2.5	46	28
04/14/03		850	120	-	ND<10	220	2.7	47	26
TW-5		10/10/00	5,800	2,900	ND<250	ND<50	650	60	190
	02/07/01	720	650	450	ND<5.0	6.0	4.5	3.2	4.5
	05/25/01	370	420	ND	ND<5.0	13.0	4.1	1.6	1.3
	09/19/01	15,000	2,700,000	1,100,000	530	29	2.7	14	240
	02/06/02	280	55,000	18,000	ND<5.0	2.3	0.74	ND<0.5	0.70
	05/17/02	480	41,000	-	ND<5.0/<5.0*	1.6	1.1	1	ND<0.5
	08/20/02	240	21,000	ND<5.0	ND<5.0	8.0	1.2	1	0.54
	01/10/03	ND<50	1,300	ND<5.0	ND<5.0	5.4	0.58	ND<0.5	1.10
	4/14/2003	160	2,300	-	ND<5.0	18	5.7	5.9	16

µg/L = micrograms per liter (parts per billion)

- = not sampled

ND = not detected

\*MTBE concentrations by analytical method 8260B

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

TOG = total oil & grease

Well TW-5 is listed as TR-5 in lab data (4/14/03)

Please see Appendix B: Laboratory Analytical Data for further detailed lab information including reporting limits and dilution factors

**APPENDIX A**

**WELL FIELD SAMPLING FORMS**

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-1**

Project Name:	Omega Termite	Date of Sampling:	4/14/2003
Job Number:	3190	Name of Sampler:	AN
Project Address:	807 75th Avenue Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	5.00		
Depth of Well	20.00		
Depth to Water (from top of casing)	4.85		
Water Elevation (feet above msl)	0.15		
Well Volumes Purged	3		
Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	7.3		
Actual Volume Purged (gallons)	7.5		
Appearance of Purge Water	sheen visible, slightly turbid		
Free Product Present?	No	Thickness (ft):	

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				2 - 40ml VOAs, 1 L Amber			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity ( $\mu$ sec/cm)	DO (mg/L)	ORP (meV)	Comments
	1	16.45	7.17	979	2.6	-21	
	3	16.5	7	1010	0.39	-39.6	
	5	16.73	6.94	1012	0.37	-46.5	
	7.5	16.98	6.9	1000	0.21	-60.7	

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

Hydrocarbon odor present

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-2**

Project Name:	Omega Termite	Date of Sampling:	4/14/2003
Job Number:	3190	Name of Sampler:	AN
Project Address:	807 75th Avenue Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		▼
Elevation of Top of Casing (feet above msl)	5.95		
Depth of Well	20.00		
Depth to Water (from top of casing)	4.98		
Water Elevation (feet above msl)	0.97		
Well Volumes Purged	3		
Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	7.2		
Actual Volume Purged (gallons)	7.5		
Appearance of Purge Water	slightly turbid		
Free Product Present?	No	Thickness (ft):	

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				2 - 40ml VOAs, 1 L Amber			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µ sec/cm)	DO (mg/L)	ORP (meV)	Comments
	1	17.76	6.83	1168	0.84	-32.8	
	3	18.38	6.86	1237	2.02	-61	
	5	17.98	6.81	1209	0.52	-63.3	gray at 5 gallons
	7.5	17.95	6.8	1236	0.33	-67.9	

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

Strong hydrocarbon odor



**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-3**

Project Name:	Omega Termite	Date of Sampling:	4/14/2003
Job Number:	3190	Name of Sampler:	AN
Project Address:	807 75th Avenue Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	▼		
Elevation of Top of Casing (feet above msl)	4.66		
Depth of Well	20.00		
Depth to Water (from top of casing)	5.40		
Water Elevation (feet above msl)	-0.74		
Well Volumes Purged	3		
Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	7.0		
Actual Volume Purged (gallons)	7.0		
Appearance of Purge Water	clear		
Free Product Present?	No	Thickness (ft):	

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				2 - 40ml VOAs, 1 L Amber			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
	1	16.33	6.9	1655	2.61	153.5	
	3	16.57	6.75	1658	2.59	150.6	
	5	17.05	6.77	1666	1.51	285.7	
	7	17.03	6.75	1686	0.35	250.6	

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

Slight hydrocarbon odor
dry at 3 gallons, quick recharge

**AEI CONSULTANTS**  
**GROUNDWATER MONITORING WELL FIELD SAMPLING FORM**

**Monitoring Well Number: MW-4**

Project Name:	Omega Termite	Date of Sampling:	4/14/2003
Job Number:	3190	Name of Sampler:	AN
Project Address:	807 75th Avenue Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		▼
Elevation of Top of Casing (feet above msl)	4.59		
Depth of Well	20.00		
Depth to Water (from top of casing)	4.11		
Water Elevation (feet above msl)	0.48		
Well Volumes Purged	3		
Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	7.6		
Actual Volume Purged (gallons)	8.0		
Appearance of Purge Water	clear		
Free Product Present?	No	Thickness (ft):	

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				2 - 40ml VOAs, 1 L Amber			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
	1	18.25	6.89	1758	2.6	353	
	3	17.44	6.79	1707	1.46	433.6	
	5	17.85	6.73	1710	0.54	447.2	
	7.5	17.96	6.72	1717	0.22	354.5	

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

No hydrocarbon odor

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: TW-5**

Project Name:	Omega Termite	Date of Sampling:	4/14/2003
Job Number:	3190	Name of Sampler:	AN
Project Address:	807 75th Avenue Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	not surveyed		
Depth of Well	10.00		
Depth to Water (from top of casing)	5.30		
Water Elevation (feet above msl)	na		
Well Volumes Purged	3		
Calculated Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	9.2		
Actual Volume Purged (gallons)	9.5		
Appearance of Purge Water	clear at 5 gallons		
Free Product Present?	No	Thickness (ft):	

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				2 - 40ml VOAs, 1 L Amber			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
	1	16.95	6.74	1164	1.78	192.6	
	3	17.12	6.82	1153	0.67	120.3	
	5	17.16	6.83	1151	0.46	93.1	
	7	17.18	6.83	1147	0.28	62.5	
	9	17.18	6.83	1150	0.22	43.8	

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

Strong hydrocarbon odor

**APPENDIX B**

**LABORATORY ANALYTICAL AND  
CHAIN OF CUSTODY DOCUMENTATION**



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
<http://www.mcccampbell.com> E-mail: [main@mcccampbell.com](mailto:main@mcccampbell.com)

All Environmental, Inc. 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #3190; Omega Termite	Date Sampled: 04/14/03
		Date Received: 04/14/03
	Client Contact: Brandi Kiel-Reese	Date Reported: 04/18/03
	Client P.O.:	Date Completed: 04/18/03

**WorkOrder: 0304211**

April 18, 2003

Dear Brandi:

Enclosed are:

- 1). the results of 5 analyzed samples from your #3190; Omega Termite 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. McC Campbell 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







**QC SUMMARY REPORT FOR SW8021B/8015Cm**

Matrix: W

WorkOrder: 0304211

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 6548		Spiked Sample ID: 0304206-004A				
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(btex) <sup>£</sup>	20.08	60	92	101	7.18	99.9	101	0.695	80	120
MTBE	122.9	10	NR	NR	NR	98.8	94.4	4.58	80	120
Benzene	ND	10	101	96.2	4.75	96.9	95.7	1.23	80	120
Toluene	1.874	10	103	105	1.55	100	99	1.30	80	120
Ethylbenzene	ND	10	103	99.1	3.90	101	99.3	1.51	80	120
Xylenes	ND	30	107	103	3.17	107	100	6.45	80	120
%SS:	--#	100	116	116	0	98.8	98.3	0.460	80	120

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.

% 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.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.





McC Campbell 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](mailto:main@mccampbell.com)

### QC SUMMARY REPORT FOR SW8015C

Matrix: W

WorkOrder: 0304211

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 6529		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	115	115	0.487	70	130
%SS:	N/A	100	N/A	N/A	N/A	109	106	3.15	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 and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% 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.



McC Campbell 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](mailto:main@mccampbell.com)

### QC SUMMARY REPORT FOR SW8015C

Matrix: W

WorkOrder: 0304211

EPA Method: SW8015C		Extraction: SW3510C		BatchID: 6554		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	92	92	0.0214	70	130
%SS:	N/A	100	N/A	N/A	N/A	90.2	90.2	0.00987	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 and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% 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.

**McC Campbell Analytical Inc.**

**CHAIN-OF-CUSTODY RECORD**



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

WorkOrder: 0304211

**Client:**

All Environmental, Inc.  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597

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

Date Received: 4/14/03  
 Date Printed: 4/14/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests					
					SW8015C	8021B/8015				
0304211-001	MW-1	Water	4/14/03 12:30:00 PM	<input type="checkbox"/>	B	A				
0304211-002	MW-2	Water	4/14/03	<input type="checkbox"/>	B	A				
0304211-003	MW-3	Water	4/14/03 11:15:00 AM	<input type="checkbox"/>	B	A				
0304211-004	MW-4	Water	4/14/03	<input type="checkbox"/>	B	A				
0304211-005	TR-5	Water	4/14/03 10:30:00 AM	<input type="checkbox"/>	B	A				

Prepared by: Maria Venegas

**Comments:**

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.

