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**By loprojectop at 10:22 am, Mar 22, 2006**

March 21, 2006

Mr. Jerry Wickham  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

**Subject: Quarterly Groundwater Monitoring Report  
1<sup>st</sup> Quarter, 2006  
245 8<sup>th</sup> Street  
Oakland, California 94607  
AEI Project No. 111783  
ACHCSA Case No. RO0000202 / State ID 263**

Dear Mr. Wickham:

Enclosed is one electronic copy of the 1<sup>st</sup> Quarter, 2006 Quarterly Groundwater Monitoring Report for the subject facility.

If you have any questions or comments, please don't hesitate to contact me or Peter McIntyre at (925) 283-6000.

Sincerely,  
**AEI Consultants**

A handwritten signature in blue ink, appearing to read 'Ricky Bradford', written over a light blue horizontal line.

Ricky Bradford  
Senior Staff Engineer

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March 21, 2006

**GROUNDWATER MONITORING REPORT**  
**1<sup>st</sup> Quarter, 2006**

245 8th Street  
Oakland, California 94607

AEI Project No. 111783  
ACHCSA Case No. RO0000202 / State ID 263

Prepared For

Mr. Vic Lum  
Vic's Automotive  
245 8th Street  
Oakland, CA 94607

Prepared By

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

March 21, 2006

Mr. Vic Lum  
Vic's Automotive  
245 8th Street  
Oakland, CA 94607

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**Subject: Quarterly Groundwater Monitoring Report  
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245 8th Street  
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AEI Project No. 111783  
ACHCSA Case No. RO0000202 / State ID 263

Dear Mr. Lum:

AEI Consultants (AEI) has prepared this report on behalf of Mr. Vic Lum of Vic's Automotive to document the ongoing groundwater investigation at the above referenced site (Figure 1: Site Location Map). This work was initiated by the property owner in accordance with the requirements of the Alameda County Health Care Services Agency (ACHCSA). The purpose of this investigation is to monitor groundwater quality associated with the release of petroleum hydrocarbons from the former underground storage tank system. This report presents the findings of the 1<sup>st</sup> quarter, 2006 groundwater monitoring episode conducted on February 9, 2006.

### **Site Description and Background**

The subject property (hereafter referred to as the "site" or "property") is located in a mixed commercial and residential area of Oakland. The site is a lot on the south corner of Alice Street and 8<sup>th</sup> Street, and is currently developed with a gasoline station and auto repair facility. Refer to Figure 2 for a depiction of the site.

Between June 1993 and August 1994, AEI removed a total of seven (7) underground storage tanks (USTs) from the property. The tanks consisted of four (4) 1,000-gallon and two (2) 6,000-gallon gasoline tanks and one (1) 250-gallon waste oil tank. The former locations of the tanks are shown on Figure 2. Impacted soil was removed from beneath the former tank area. Groundwater was encountered beneath the former 6,000-gallon tanks. Light non-aqueous phase liquid (LNAPL) was observed on the water table beneath the southern tank. The excavated soil was transported to an appropriate disposal facility and the excavation was backfilled with clean fill material. A new tank system was installed just west of the dispenser island.

Two groundwater monitoring wells (MW-1 and MW-2) were installed in July 1995. The first two episodes of monitoring revealed total petroleum hydrocarbons as gasoline (TPH-g) and Benzene up to 210,000 µg/L and 720 µg/L, respectively, in MW-2. Free phase gasoline product (LNAPL), was

discovered in MW-1, which ranged from 1.20 to 4.39 feet thick between December 1995 and March 1996.

Three soil borings (SB-1 through SB-3) were advanced in August 1996. Groundwater samples collected from each of the borings contained TPH-g and Benzene ranging from 120,000 to 140,000 µg/L, and from 12,000 to 19,000 µg/L, respectively. Methyl tertiary-butyl ether (MTBE) was also present in all three samples, up to 27,000 µg/L. Although free phase product was not observed in the field, qualitative laboratory observations indicated immiscible sheen. Manual bailing and pumping of NAPL from MW-1, and monitoring of MW-2 occurred intermittently through 1997.

Two additional groundwater monitoring wells (MW-3 and MW-4) were installed in May 2001. Refer to Tables 1 and 2 for data collected from these wells. A free phase product recovery pump was installed in MW-1 in June 2001. Fourteen (14) additional soil borings were performed on and offsite in 2003, from which soil, groundwater, and soil vapor samples were collected to further characterize the extent of the release.

On January 11, 19, and 20, 2005, AEI installed a total of six (6) additional wells, three (3) extraction/monitoring wells on the subject site and three (3) extraction/monitoring wells at 708 Alice Street. The locations of the six (6) additional wells (labeled MW-5 through MW-7 and MW-10 through MW-12) are shown on Figure 2.

On July 11, 2004, a 5-day high vacuum dual phase extraction event was performed at the site using wells MW-1 through MW-3 and MW-10 through MW-12. The results are presented in AEI's *High Vacuum Dual Phase Extraction Event Report* (February 2006).

### **Summary of Monitoring Activities**

AEI measured depth to groundwater in wells MW-1 through MW-7 and MW-10 through MW-12 on February 9, 2006. The well locations are shown in Figure 2. The depth from the top of the well casings was measured with an electric water level indicator prior to sampling. An oil-water interface meter was used to measure thickness of free phase product observed in MW-1, MW-6 and MW-7. The seven (7) wells with no free product (MW-2 through MW-5 and MW-10 through MW-12) were purged of at least three well volumes of water with a submersible purge pump and sampled using disposable Teflon bailers. Temperature, turbidity, pH, specific conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) were measured during the purging of the wells. The turbidity was visually noted. Once temperature, pH, specific conductivity stabilized after three consecutive readings and following the recovery of water levels to at least 90%, a water sample was collected.

Groundwater samples were collected with new disposable bailers and poured into 40-millileter (mL) volatile organic analysis (VOA) vials. The vials were capped so that no head space nor air

bubbles were present within the sample containers. The samples were preserved on ice and transported under proper chain of custody protocol to McCampbell Analytical, Inc. of Pacheco, California (Department of Health Services Certification #1644).

The seven (7) groundwater samples were submitted for chemical analysis for TPH-g by EPA method 8015C, Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX) and MTBE by EPA method 8021B.

## **Field Results**

Light non-aqueous phase liquid (LNAPL) was encountered in wells MW-1, MW-6 and MW-7 at thicknesses of 0.02 feet, 0.71 feet and 0.07 feet, respectively. No measurable thickness of free product was encountered in the remaining wells. However, sheen of free product was noted in MW-2.

Groundwater elevations for this monitoring event ranged from 18.25 (MW-11) to 19.60 (MW-3) feet above mean sea level (amsl). Please note that the groundwater elevations were calculated using the new survey data provided in the previous groundwater monitoring report. The current groundwater elevations were an average of 2.17 feet higher than the previous monitoring event (November 9, 2005). The groundwater flow direction at the time of measurement is to the south-southwest with a calculated hydraulic gradient of 0.010 ft/ft.

Groundwater elevation data are summarized in Table 1. A summary of the average groundwater elevations and flow directions are presented in Table 2. Water table contours, groundwater flow direction, and hydraulic gradient for this monitoring event are depicted on Figure 4. Refer to Appendix A for the monitoring well field sampling forms.

## **Groundwater Quality**

For this monitoring event, the highest concentrations of petroleum hydrocarbons were detected in MW-2, MW-11, and MW-12. TPH-g, Benzene, Toluene, Ethylbenzene, Xylenes, and MTBE were detected in these wells at concentrations up to 210,000 µg/L, 40,000 µg/L, 39,000 µg/L, 3,8000 µg/L, 20,000 µg/L, and 34,000 µg/L, respectively. Lower but elevated concentrations of TPH-g were detected in MW-5 (110,000 µg/L) and MW-10 (100,000 µg/L). Low to non-detectable concentrations of petroleum hydrocarbons were detected in MW-3 and MW-4. A summary of groundwater sample analytical data is presented in Table 3 and in Figure 3. Laboratory analytical reports and chain of custody documents are included in Appendix B.

## **Summary**

This report presents the findings of the 1<sup>st</sup> Quarter, 2006 groundwater monitoring event performed at the subject site. Apparent free product thickness has decreased in well MW-1 by

over 90% since the dual phase extraction event. However, LNAPL thickness has increased in well MW-6. Free product thickness has increased in MW-7, but decreased during this monitoring episode. This indicates that dual phase extraction has likely induced migration of petroleum hydrocarbons towards the extraction wells. This may also indicate that a significant phase shift from adsorbed to free and/or dissolved phases has occurred. The results of this monitoring event and previous investigation show that significant mass of free product and dissolved phase hydrocarbons exist on and offsite. The following tasks are planned for the next quarter:

- Continue quarterly groundwater monitoring, with the next event scheduled for late April to early May 2006.
- Implementation of dual phase extraction technology is pending and will proceed following comment and general approval by the ACHCSA. Permitting and equipment procurement will begin and a project start-up schedule will be prepared shortly thereafter.

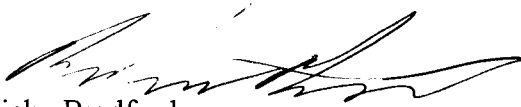
### **Report Limitations and Signatures**


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.

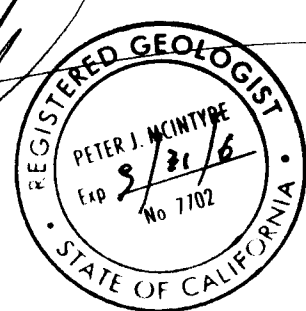
These services were performed in accordance with generally accepted practices in the environmental engineering and construction field that existed at the time and location of the work. If you have any questions or need any additional information, please contact either of the undersigned at (925) 283-6000.

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. If you have any questions or need any additional information, please contact either of the undersigned at (925) 283-6000.

Sincerely,  
**AEI Consultants**

  
Ricky Bradford  
Senior Staff Engineer

  
Peter McIntyre, PG  
Project Manager



**Figures**

- Figure 1 Site Location Map
- Figure 2 Site Plan
- Figure 3 Hydrocarbon Concentrations (2/9/06)
- Figure 4 Groundwater Elevation Contours (2/9/06)

**Tables**

- Table 1 Groundwater Elevation Data
- Table 2 Groundwater Flow Summary
- Table 3 Groundwater Sample Analytical Data

**Appendix A** Monitoring Well Field Sampling Forms

**Appendix B** Laboratory Reports With Chain of Custody Documentation

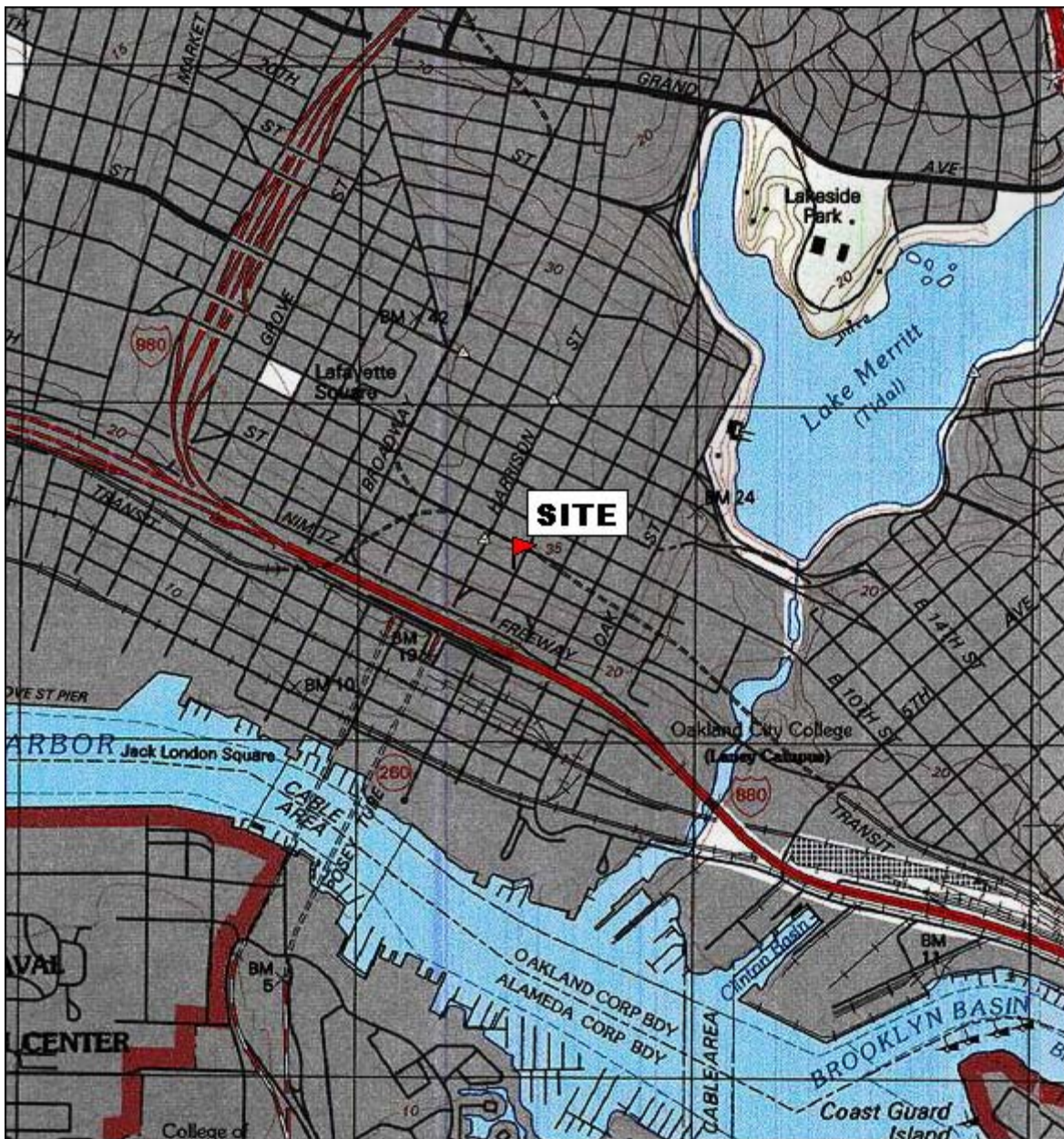
**Report Distribution**

Mr. Victor Lum, 245 8<sup>th</sup> Street, Oakland, CA 94607

Mr. Jerry Wickham, ACHCSA, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502

## **FIGURES**





TN  $\star$  MN  
15 1/2°

0 5 1 MILE  
0 1000 FEET 0 500 1000 METERS

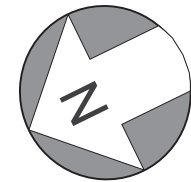
Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)

**AEI CONSULTANTS**  
2500 CAMINO DIABLO BLVD, STE 100, WALNUT CREEK

**SITE LOCATION MAP**

245 8<sup>th</sup> STREET  
OAKLAND, CALIFORNIA

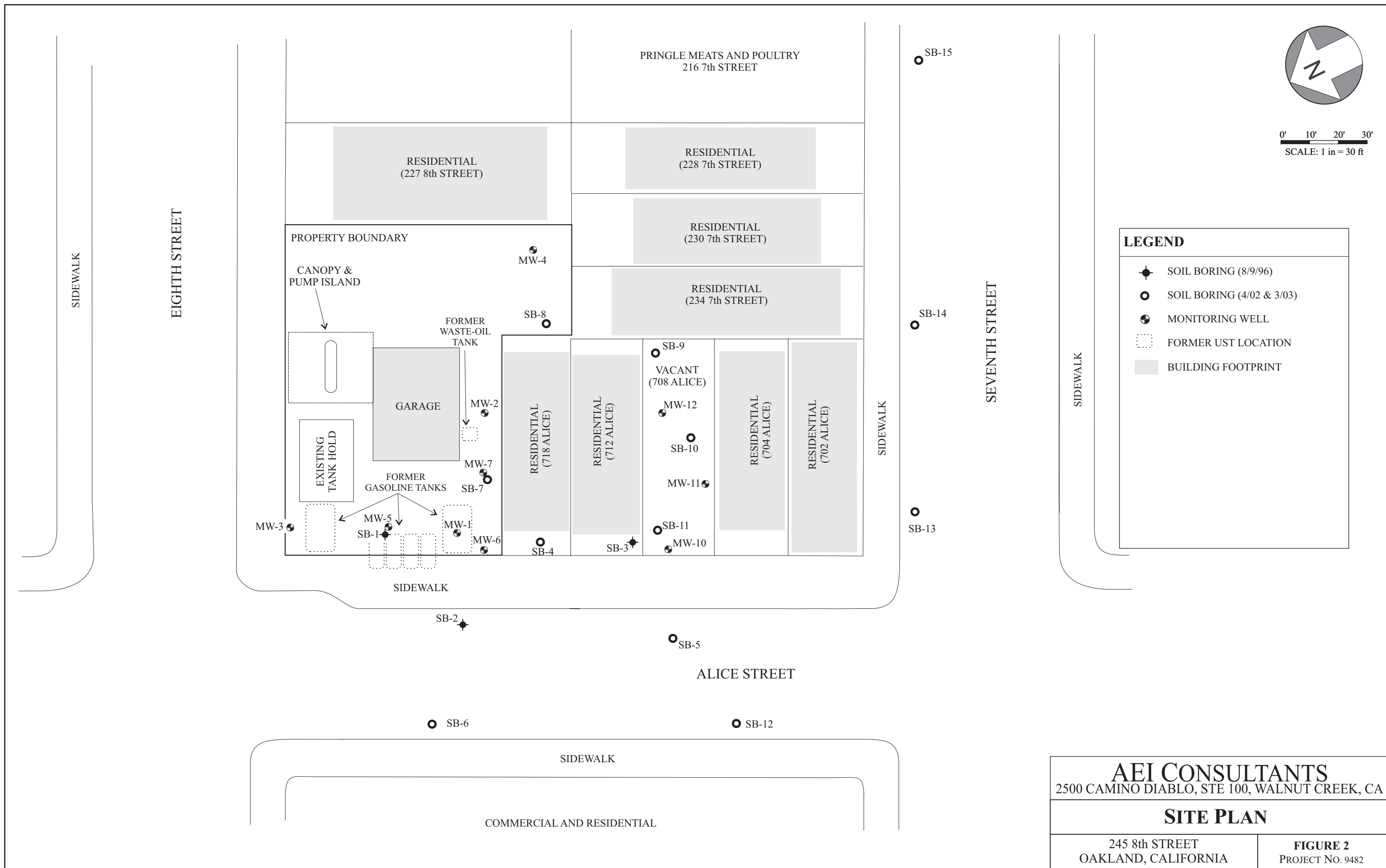
**FIGURE 1**  
PROJECT No. 9482



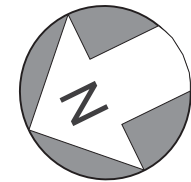
0' 10' 20' 30'  
SCALE: 1 in = 30 ft

**LEGEND**

- SOIL BORING (8/9/96)
- SOIL BORING (4/02 & 3/03)
- MONITORING WELL
- FORMER UST LOCATION
- BUILDING FOOTPRINT



<b>AEI CONSULTANTS</b> 2500 CAMINO DIABLO, STE 100, WALNUT CREEK, CA	
<b>SITE PLAN</b>	
245 8th STREET OAKLAND, CALIFORNIA	<b>FIGURE 2</b> PROJECT NO. 9482



0' 10' 20' 30'  
SCALE: 1 in = 30 ft

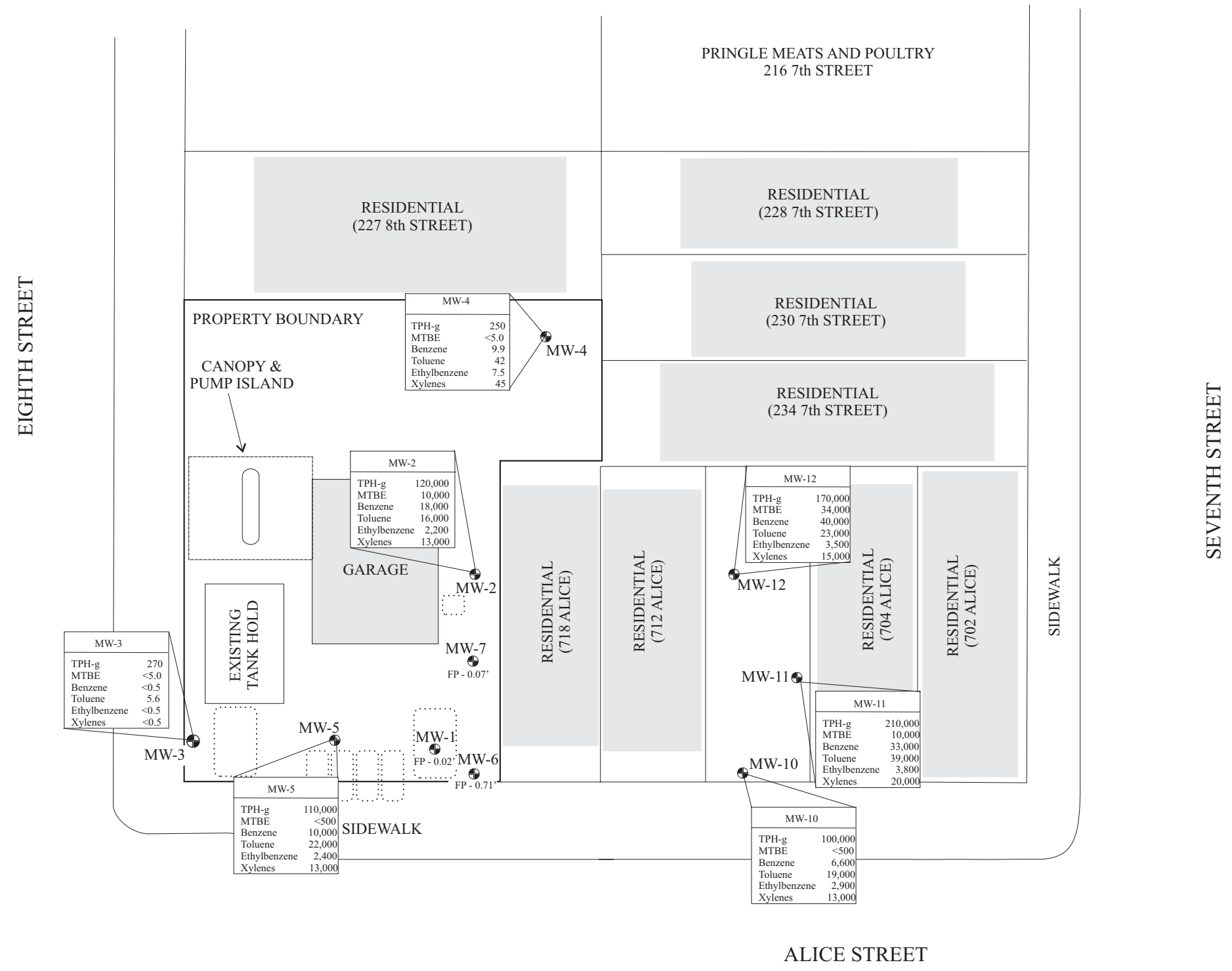
**LEGEND**

- MONITORING WELL
- FORMER UST LOCATION
- BUILDING FOOTPRINT

MW-10	
TPH-g	88,000
MTBE	<1,500
Benzene	6,900
Toluene	20,000
Ethylbenzene	2,300
Xylenes	9,900

Analytical results (ug/L)

TPH-g = Total Petroleum Hydrocarbons as gasoline  
MTBE = Methyl tertiary-Butyl Ether  
FP - 0.17' = Free Product - thickness (feet)



MW-3	
TPH-g	270
MTBE	<5.0
Benzene	<0.5
Toluene	5.6
Ethylbenzene	<0.5
Xylenes	<0.5

MW-5	
TPH-g	110,000
MTBE	<500
Benzene	10,000
Toluene	22,000
Ethylbenzene	2,400
Xylenes	13,000

MW-4	
TPH-g	250
MTBE	<5.0
Benzene	9.9
Toluene	42
Ethylbenzene	7.5
Xylenes	45

MW-2	
TPH-g	120,000
MTBE	10,000
Benzene	18,000
Toluene	16,000
Ethylbenzene	2,200
Xylenes	13,000

MW-1	
FP - 0.02'	

MW-6	
FP - 0.71'	

MW-12	
TPH-g	170,000
MTBE	34,000
Benzene	40,000
Toluene	23,000
Ethylbenzene	3,500
Xylenes	15,000

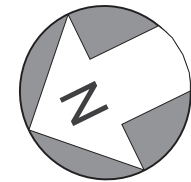
MW-11	
TPH-g	210,000
MTBE	10,000
Benzene	33,000
Toluene	39,000
Ethylbenzene	3,800
Xylenes	20,000

MW-10	
TPH-g	100,000
MTBE	<500
Benzene	6,600
Toluene	19,000
Ethylbenzene	2,900
Xylenes	13,000

**AEI CONSULTANTS**  
2500 CAMINO DIABLO, STE 100, WALNUT CREEK, CA

**HYDROCARBON CONCENTRATIONS (2/9/06)**

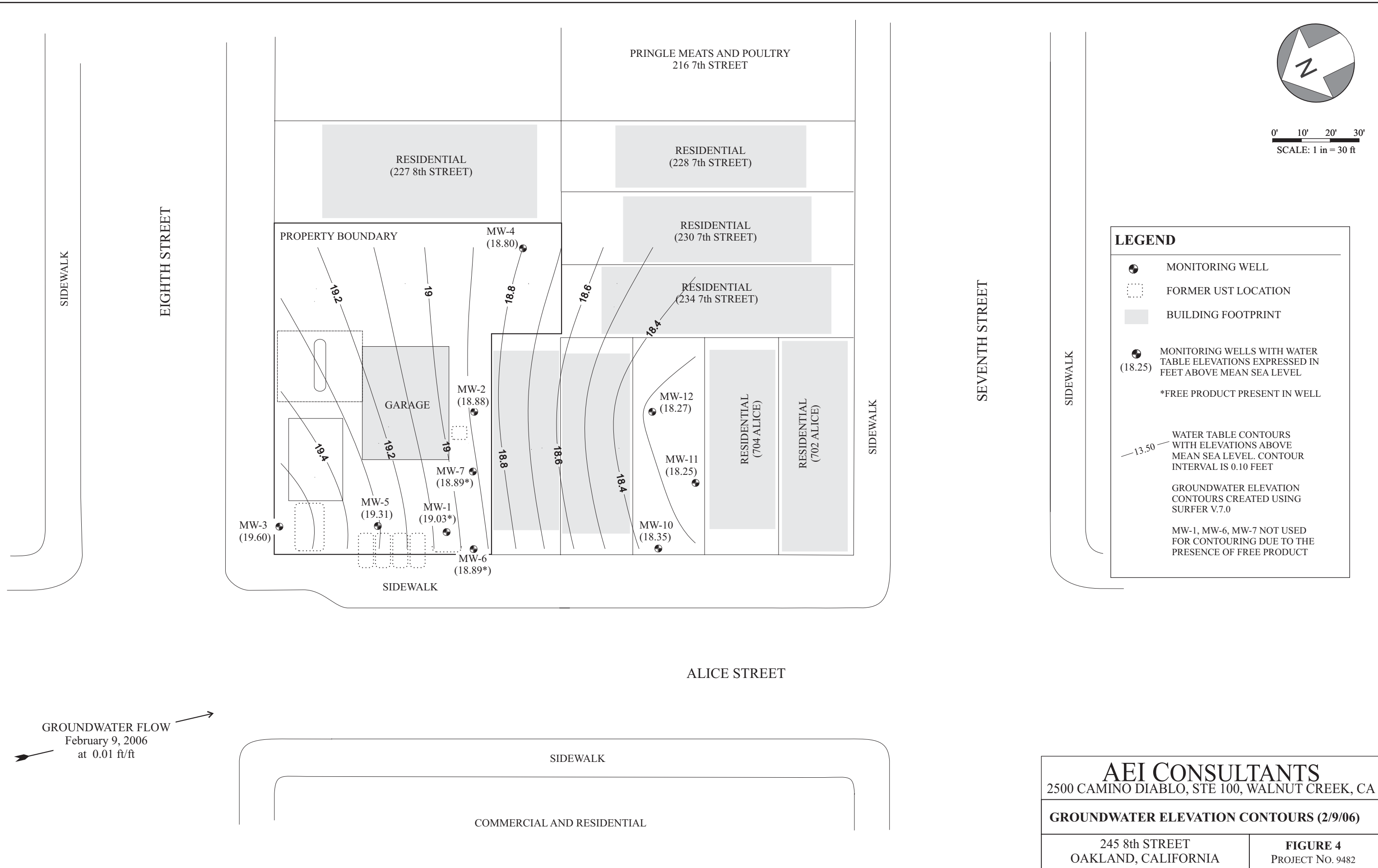
245 8th STREET OAKLAND, CALIFORNIA	<b>FIGURE 3</b> PROJECT NO. 9482
---------------------------------------	-------------------------------------



0' 10' 20' 30'  
SCALE: 1 in = 30 ft

### LEGEND

- MONITORING WELL
- FORMER UST LOCATION
- BUILDING FOOTPRINT
- MONITORING WELLS WITH WATER TABLE ELEVATIONS EXPRESSED IN FEET ABOVE MEAN SEA LEVEL  
(18.25)
- \*FREE PRODUCT PRESENT IN WELL
- WATER TABLE CONTOURS WITH ELEVATIONS ABOVE MEAN SEA LEVEL. CONTOUR INTERVAL IS 0.10 FEET
- GROUNDWATER ELEVATION CONTOURS CREATED USING SURFER V.7.0
- MW-1, MW-6, MW-7 NOT USED FOR CONTOURING DUE TO THE PRESENCE OF FREE PRODUCT



**AEI CONSULTANTS**  
2500 CAMINO DIABLO, STE 100, WALNUT CREEK, CA

**GROUNDWATER ELEVATION CONTOURS (2/9/06)**

245 8th STREET OAKLAND, CALIFORNIA	<b>FIGURE 4</b> PROJECT NO. 9482
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## **TABLES**

**Table 1: Groundwater Elevation Data  
Vic's Automotive, 245 8th Ave, Oakland, CA**

Well ID (screen interval)	Date Collected	TOC Well <sup>1,2</sup> Elevation (ft amsl)	Depth to Water (ft)	Groundwater <sup>3</sup> Elevation (ft amsl)	Depth to LNAPL (ft)	Apparent LNAPL Thickness (ft)
<b>MW-1</b> (8-28)	6/29/2001	27.73	16.52	11.21	14.89	1.63
	10/10/2001	27.73	15.45	12.28	15.37	0.08
	1/9/2002	27.73	12.61	15.12	-	<0.01
	4/24/2002	27.73	13.35	14.38	-	<0.01
	7/24/2002	27.73	14.19	13.54	-	<0.01
	11/5/2002	27.73	14.85	12.88	-	<0.01
	2/4/2003	27.73	14.91	12.82	-	<0.01
	5/2/2003	27.73	14.43	13.30	-	0.08
	8/4/2003	27.73	15.24	12.49	15.01	0.23
	11/3/2003	27.73	16.94	10.79	15.67	1.27
	2/9/2004	27.73	14.61	13.12	14.43	0.18
	5/10/2004	27.73	Inaccessible	-	-	-
	8/9/2004	27.73	15.24	12.49	15.03	0.21
	11/9/2004	27.73	15.95	11.78	15.71	0.24
	2/3/2005	32.55	13.75	18.80	13.58	0.17
	5/9/2005	32.55	13.93	18.62	13.81	0.12
	8/5/2005	32.55	15.40	17.15	15.39	0.01
	11/9/2005	32.55	15.76	16.79	15.75	0.01
	<b>2/9/2006</b>	<b>32.55</b>	<b>13.52</b>	<b>19.03</b>	<b>13.50</b>	<b>0.02</b>
	<b>MW-2</b> (8-28)	6/29/2001	28.16	16.14	12.02	-
10/10/2001		28.16	16.43	11.73	-	-
1/9/2002		28.16	13.50	14.66	-	-
4/24/2002		28.16	14.40	13.76	-	-
7/24/2002		28.16	14.91	13.25	-	-
11/5/2002		28.16	16.96	11.20	-	-
2/4/2003		28.16	15.42	12.74	-	-
5/2/2003		28.16	15.24	12.92	-	-
8/4/2003		28.16	15.98	12.18	-	-
11/3/2003		28.16	16.60	11.56	-	Sheen
2/9/2004		28.16	15.22	12.94	-	Sheen
5/10/2004		28.16	15.34	12.82	-	Sheen
8/9/2004		28.16	15.92	12.24	-	Sheen
11/9/2004		28.16	16.51	11.65	-	Sheen
2/3/2005		33.24	14.44	18.80	-	Sheen
5/9/2005		33.24	14.67	18.57	-	Sheen
8/5/2005		33.24	16.27	16.97	-	Sheen
11/9/2005	33.24	16.53	16.71	-	Sheen	
<b>2/9/2006</b>	<b>33.24</b>	<b>14.36</b>	<b>18.88</b>	-	<b>Sheen</b>	
<b>MW-3</b> (10-25)	6/29/2001	29.21	16.60	12.61	-	-
	10/10/2001	29.21	16.92	12.29	-	-
	1/9/2002	29.21	14.20	15.01	-	-
	4/24/2002	29.21	15.07	14.14	-	-
	7/24/2002	29.21	16.40	12.81	-	-
	11/5/2002	29.21	16.47	12.74	-	-
	2/4/2003	29.21	16.92	12.29	-	-
	5/2/2003	29.21	15.45	13.76	-	-
	8/4/2003	29.21	16.46	12.75	-	-
	11/3/2003	29.21	17.15	12.06	-	-
	2/9/2004	29.21	15.78	13.43	-	-
	5/10/2004	29.21	15.77	13.44	-	-
	8/9/2004	29.21	16.45	12.76	-	-
	11/9/2004	29.21	17.26	11.95	-	-
	2/3/2005	34.25	15.92	18.33	-	-
	5/9/2005	34.25	15.03	19.22	-	-
	8/5/2005	34.25	16.59	17.66	-	-
	11/9/2005	34.25	16.82	17.43	-	-
	<b>2/9/2006</b>	<b>34.25</b>	<b>14.65</b>	<b>19.60</b>	-	-

**Table 1: Groundwater Elevation Data  
Vic's Automotive, 245 8th Ave, Oakland, CA**

Well ID (screen interval)	Date Collected	TOC Well <sup>1,2</sup> Elevation (ft amsl)	Depth to Water (ft)	Groundwater <sup>3</sup> Elevation (ft amsl)	Depth to LNAPL (ft)	Apparent LNAPL Thickness (ft)
<b>MW-4</b> (10-25)	6/29/2001	29.38	17.71	11.67	-	-
	10/10/2001	29.38	18.00	11.38	-	-
	1/9/2002	29.38	15.02	14.36	-	-
	4/24/2002	29.38	15.74	13.64	-	-
	7/24/2002	29.38	16.69	12.69	-	-
	11/5/2002	29.38	17.64	11.74	-	-
	2/4/2003	29.38	16.02	13.36	-	-
	5/2/2003	29.38	16.72	12.66	-	-
	8/4/2003	29.38	17.51	11.87	-	-
	11/3/2003	29.38	18.09	11.29	-	-
	2/9/2004	29.38	16.67	12.71	-	-
	5/10/2004	29.38	16.89	12.49	-	-
	8/9/2004	29.38	17.44	11.94	-	-
	11/9/2004	29.38	17.89	11.49	-	-
	2/3/2005	34.42	14.98	19.44	-	-
	5/9/2005	34.42	16.20	18.22	-	-
8/5/2005	34.42	17.73	16.69	-	-	
11/9/2005	34.42	17.91	16.51	-	-	
<b>2/9/2006</b>	<b>34.42</b>	<b>15.62</b>	<b>18.80</b>	-	-	
<b>MW-5</b> (12-22)	2/3/2005	33.33	14.23	19.10	-	-
	5/9/2005	33.33	14.33	19.00	-	-
	8/5/2005	33.33	15.89	17.44	-	-
	11/9/2005	33.33	16.18	17.15	-	-
	<b>2/9/2006</b>	<b>33.33</b>	<b>14.02</b>	<b>19.31</b>	-	-
<b>MW-6</b> (12-22)	2/3/2005	32.82	13.99	18.83	-	Sheen
	5/9/2005	32.82	13.61	19.21	-	Sheen
	8/5/2005	32.82	15.50	17.32	15.13	0.37
	11/9/2005	32.82	15.87	16.95	15.50	0.37
	<b>2/9/2006</b>	<b>32.82</b>	<b>13.93</b>	<b>18.89</b>	<b>13.22</b>	<b>0.71</b>
<b>MW-7</b> (12-22)	2/3/2005	33.07	14.17	18.90	-	Sheen
	5/9/2005	33.07	14.47	18.60	14.44	0.03
	8/5/2005	33.07	16.07	17.00	16.02	0.05
	11/9/2005	33.07	16.47	16.60	16.35	0.12
	<b>2/9/2006</b>	<b>33.07</b>	<b>14.18</b>	<b>18.89</b>	<b>14.11</b>	<b>0.07</b>
<b>MW-10</b> (12-22)	2/3/2005	31.17	12.65	18.52	-	-
	5/9/2005	31.17	13.09	18.08	-	-
	8/5/2005	31.17	14.68	16.49	-	-
	11/9/2005	31.17	14.94	16.23	-	-
	<b>2/9/2006</b>	<b>31.17</b>	<b>12.82</b>	<b>18.35</b>	-	-
<b>MW-11</b> (12-22)	2/3/2005	31.78	13.39	18.39	-	Sheen
	5/9/2005	31.78	13.89	17.89	-	Sheen
	8/5/2005	31.78	15.47	16.31	-	Sheen
	11/9/2005	31.78	15.73	16.05	-	Sheen
	<b>2/9/2006</b>	<b>31.78</b>	<b>13.53</b>	<b>18.25</b>	-	<b>Sheen</b>
<b>MW-12</b> (12-22)	2/3/2005	32.05	13.70	18.35	-	Sheen
	5/9/2005	32.05	14.17	17.88	-	Sheen
	8/5/2005	32.05	15.69	16.36	-	Sheen
	11/9/2005	32.05	15.93	16.12	-	Sheen
	<b>2/9/2006</b>	<b>32.05</b>	<b>13.78</b>	<b>18.27</b>	-	<b>Sheen</b>

1) Monitoring well top of casing (TOC) elevations were resurveyed by Morrow Surveying on January 10, 2006 and February 7, 2006

2) Groundwater elevations for the February 3, 2005 and subsequent monitoring episodes use the new well survey data

3) When LNAPL is present at >0.10 ft, the groundwater elevations are assumed to be affected by the LNAPL

All well elevations are measured from the top of the casing (TOC)

- = not applicable

LNAPL = light non-aqueous phase liquid (floating free product)

ft amsl = feet above mean sea level

**Table 2: Groundwater Flow Summary  
Vic's Automotive, 245 8th Ave, Oakland, CA**

<b>Episode #</b>	<b>Date</b>	<b>Average Groundwater Elevation<sup>1</sup> (ft amsl)</b>	<b>Change from Previous Episode (ft)</b>	<b>Flow direction (gradient)</b>
1	6/29/2001	12.10	-	SSE (0.0074)
2	10/10/2001	11.80	-0.30	SSE (0.0071)
3	1/9/2002	14.68	2.88	SE (0.0054)
4	4/24/2002	13.85	-0.83	SSW (0.005)
5	7/24/2002	12.92	-0.93	NE (0.021)
6	11/5/2002	11.89	-1.02	SW (0.019)
7	2/4/2003	12.80	0.90	NNW (0.01)
8	5/2/2003	13.11	0.32	SSE (0.01)
9	8/4/2003	12.27	-0.85	SSE(0.007)
10	11/3/2003	11.64	-0.63	SSE (0.006)
11	2/9/2004	13.03	1.39	SSE (0.006)
12	5/10/2004	12.92	-0.11	SSE (0.008)
13	8/9/2004	12.31	-0.60	SSE (0.006)
14	11/9/2004	11.70	-0.62	SSE (0.004)
15	2/3/2005	18.75	-	W (0.007)
16	5/9/2005	18.53	-0.22	S (0.010)
17	8/5/2005	16.94	-1.59	S (0.010)
18	11/9/2005	16.65	-0.28	S (0.010)
<b>19</b>	<b>2/9/2006</b>	<b>18.83</b>	<b>2.17</b>	<b>SSW (0.010)</b>

1) MW-2 to MW-4 only used for episodes 1 through 14; all wells used for episodes 15 and later

- = not applicable

ft amsl = feet above mean sea level



**Table 3: Groundwater Sample Analytical Data  
Vic's Automotive, 245 8th Ave, Oakland, CA**

Well/Sample ID	Date Collected	Apparent LNAPL Thickness (ft)	TPH-g	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			µg/L <i>EPA Method 8015Cm</i>	µg/L	µg/L	µg/L	µg/L	µg/L
<b>MW-1</b>	6/29/2001	1.63	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	10/10/2001	0.08	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	1/9/2002	<0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	4/24/2002	<0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	7/24/2002	~0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	11/5/2002	~0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	2/4/2003	~0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	5/2/2003	0.08	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	8/4/2003	0.23	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	11/3/2003	1.27	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	2/9/2004	0.18	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	5/10/2004	Inaccessible	-	-	-	-	-	-
	8/9/2004	0.21	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	11/9/2004	0.24	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	2/3/2005	0.17	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	5/9/2005	0.12	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	8/5/2005	0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	11/9/2005	0.01	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	2/9/2006	<b>0.02</b>	<b>ns/fp</b>	<b>ns/fp</b>	<b>ns/fp</b>	<b>ns/fp</b>	<b>ns/fp</b>	<b>ns/fp</b>
	<b>MW-2</b>	6/29/2001	0.0	69,000	4100/4400*	7,200	6,100	1,500
10/10/2001		0.0	87,000	14,000	22,000	12,000	2,700	9,100
1/9/2002		0.0	130,000	11,000	30,000	19,000	3,800	14,000
4/24/2002		Sheen	210,000	32,000	38,000	23,000	4,600	19,000
7/24/2002		Sheen	170,000	36,000	48,000	12,000	3,700	8,600
11/5/2002		Sheen	190,000	36,000	45,000	25,000	4,600	16,000
2/4/2003		Sheen	150,000	27,000	51,000	24,000	4,200	14,000
5/2/2003		Sheen	150,000	35,000	39,000	11,000	3,800	9,900
8/4/2003		Sheen	120,000	29,000	32,000	5,000	3,200	7,200
11/3/2003		Sheen	120,000	24,000	33,000	4,300	3,200	5,400
2/9/2004		Sheen	130,000	19,000	27,000	7,700	3,100	7,600
5/10/2004		Sheen	67,000	13,000	20,000	3,000	2,300	4,100
8/9/2004		Sheen	100,000	22,000	27,000	7,100	2,800	6,600
11/9/2004		Sheen	100,000	23,000	27,000	6,100	3,000	5,600
2/3/2005		Sheen	84,000	11,000	23,000	5,000	3,000	5,500
5/9/2005		Sheen	74,000	14,000	21,000	4,200	2,300	3,300
7/27/2005		Sheen	9,500	910	1,400	1,000	180	960
8/5/2005		Sheen	74,000	4,000	8,800	11,000	1,300	7,600
11/9/2005		Sheen	120,000	16,000	21,000	14,000	2,300	13,000
2/9/2006		<b>Sheen</b>	<b>120,000</b>	<b>10,000</b>	<b>18,000</b>	<b>16,000</b>	<b>2,200</b>	<b>13,000</b>
<b>MW-3</b>	6/29/2001	0.00	550	<5.0	<0.5	3.1	3.2	1.2
	10/10/2001	0.00	470	<5.0	0.77	5.3	3.3	5.9
	1/9/2002	0.00	1,000	<5.0	0.90	7.6	7.8	25
	4/24/2002	0.00	1,500	<5.0	0.64	7.2	12	14
	7/24/2002	0.00	1,200	<5.0	10	17.0	11	25
	11/5/2002	0.00	1,800	<25	33	43.0	18	31
	2/4/2003	0.00	450	<5.0	<0.5	5.0	<0.5	0.77
	5/2/2003	0.00	340	<5.0	7.3	10.0	2.5	7.3
	8/4/2003	0.00	170	<5.0	5.8	5.9	1.5	4.9
	11/3/2003	0.00	54	<5.0	<0.5	<0.5	<0.5	<0.5
	2/9/2004	0.00	190	<5.0	<0.5	3.6	<0.5	<0.5
	5/10/2004	0.00	280	<5.0	<0.5	3.4	<0.5	<0.5
	8/9/2004	0.00	290	<5.0	<0.5	3.8	<0.5	<0.5
	11/9/2004	0.00	220	<5.0	<0.5	4.0	<0.5	<0.5
	2/3/2005	0.00	160	<5.0	13	30	3.0	21
	5/9/2005	0.00	200	<5.0	<0.5	3.9	<0.5	<0.5
	8/5/2005	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	11/9/2005	0.00	130	<5.0	<0.5	2.3	<0.5	<0.5
2/9/2006	<b>0.00</b>	<b>270</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>5.6</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	

**Table 3: Groundwater Sample Analytical Data  
Vic's Automotive, 245 8th Ave, Oakland, CA**

Well/Sample ID	Date Collected	Apparent LNAPL Thickness (ft)	TPH-g	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
			µg/L <i>EPA Method 8015Cm</i>	µg/L	µg/L	µg/L <i>EPA Method 8021B</i>	µg/L	µg/L
<b>MW-4</b>	6/29/2001	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	10/10/2001	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	1/9/2002	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	4/24/2002	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	7/24/2002	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	11/5/2002	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	2/4/2003	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	5/2/2003	0.00	500	10	68	71	18	65
	8/4/2003	0.00	270	<5.0	30	29	9.2	32
	11/3/2003	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	2/9/2004	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	5/10/2004	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	8/9/2004	0.00	130	<5.0	14	13	5.3	17
	11/9/2004	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5
	2/3/2005	0.00	370	<5.0	<0.5	4.1	<0.5	0.64
	5/9/2005	0.00	840	<5.0	50	180	21	110
	7/27/2005	0.00	<50	<5.0	<0.5	<0.5	<0.5	<0.5
8/5/2005	0.00	310	<5.0	7.5	57	10	53	
11/9/2005	0.00	290	<5.0	12	61	8.8	49	
<b>2/9/2006</b>	<b>0.00</b>	<b>250</b>	<b>&lt;5.0</b>	<b>9.9</b>	<b>42</b>	<b>7.5</b>	<b>45</b>	
<b>MW-5</b>	2/3/2005	0.0	78,000	<1,000	7,600	13,000	2,200	9,600
	5/9/2005	0.0	60,000	<900	6,100	9,900	1,600	6,600
	7/27/2005	nm	120,000	1,100	10,000	19,000	2,100	13,000
	8/5/2005	0.0	59,000	<500	4,100	10,000	1,200	6,600
	11/9/2005	0.0	44,000	<500	3,300	7,400	1,100	4,900
	<b>2/9/2006</b>	<b>0.0</b>	<b>110,000</b>	<b>&lt;500</b>	<b>10,000</b>	<b>22,000</b>	<b>2,400</b>	<b>13,000</b>
<b>MW-6</b>	2/3/2005	Sheen	130,000	<1,000	2,400	33,000	2,400	15,000
	5/9/2005	Sheen	170,000	<4,000	11,000	43,000	3,100	16,000
	8/5/2005	0.37	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	11/9/2005	0.37	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	<b>2/9/2006</b>	<b>0.71</b>	<b>ns/fp</b>	<b>ns/fp</b>	<b>ns/fp</b>	<b>ns/fp</b>	<b>ns/fp</b>	<b>ns/fp</b>
<b>MW-7</b>	2/3/2005	Sheen	220,000	18,000	45,000	44,000	3,500	18,000
	5/9/2005	0.03	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	8/5/2005	0.05	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	11/9/2005	0.12	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp	ns/fp
	<b>2/9/2006</b>	<b>0.07</b>	<b>ns/fp</b>	<b>ns/fp</b>	<b>ns/fp</b>	<b>ns/fp</b>	<b>ns/fp</b>	<b>ns/fp</b>
<b>MW-10</b>	2/3/2005	0.00	36,000	<500	4,700	7,200	660	3,400
	5/9/2005	0.00	88,000	<1,500	6,900	20,000	2,300	9,900
	8/5/2005	0.00	88,000	<1,100	10,000	21,000	1,900	9,800
	11/9/2005	0.00	63,000	<1,100	5,400	13,000	1,900	7,900
	<b>2/9/2006</b>	<b>0.00</b>	<b>100,000</b>	<b>&lt;500</b>	<b>6,600</b>	<b>19,000</b>	<b>2,900</b>	<b>13,000</b>
<b>MW-11</b>	2/3/2005	Sheen	170,000	<3,000	23,000	35,000	3,100	16,000
	5/9/2005	Sheen	210,000	3,500	29,000	40,000	3,400	16,000
	7/27/2005	Sheen	220,000	2,500	26,000	37,000	3,200	18,000
	8/5/2005	Sheen	210,000	<2,500	35,000	42,000	3,300	16,000
	11/9/2005	Sheen	180,000	9,100	32,000	47,000	3,600	18,000
	<b>2/9/2006</b>	<b>Sheen</b>	<b>210,000</b>	<b>10,000</b>	<b>33,000</b>	<b>39,000</b>	<b>3,800</b>	<b>20,000</b>
<b>MW-12</b>	2/3/2005	Sheen	250,000	100,000	52,000	41,000	3,400	15,000
	5/9/2005	Sheen	210,000	91,000	44,000	28,000	3,300	13,000
	8/5/2005	Sheen	170,000	52,000	38,000	28,000	3,000	12,000
	11/9/2005	Sheen	180,000	52,000	39,000	25,000	2,900	12,000
	<b>2/9/2006</b>	<b>Sheen</b>	<b>170,000</b>	<b>34,000</b>	<b>40,000</b>	<b>23,000</b>	<b>3,500</b>	<b>15,000</b>

µg/L = micrograms per liter (ppb)

ns/fp = not sampled / free product

TPH-g = total petroleum hydrocarbons as gasoline

MTBE = methyl tertiary-butyl ether

\* samples re-analyzed by EPA Method 8260 (expressed as EPA 8020 / EPA 8260)

Please refer to Appendix B: Lab Analytical and Chain of Custody Documentation for detailed analytical reports including dilution factors

**APPENDIX A**

**MONITORING WELL FIELD SAMPLING FORMS**

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

**Monitoring Well Number: MW-1**

Project Name:	Vic's Automotive	Date of Sampling:	2/9/2006
Job Number:	9482	Name of Sampler:	Adrian Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	32.55		
Depth of Well	28.00		
Depth to Water (from top of casing)	13.52		
Depth to Free Product (from top of casing)	13.50		
Water Elevation (feet above msl)	19.03		
Well Volumes Purged	N/A		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	N/A		
Actual Volume Purged (gallons)	N/A		
Appearance of Purge Water	N/A		
Free Product Present?	Yes	Thickness (ft):	0.02

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				Not sampled due to presence of free product.			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μS/cm)	DO (mg/L)	ORP (meV)	Comments

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

Well was neither purged nor sampled due to the presence of free product.

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

**Monitoring Well Number: MW-2**

Project Name:	Vic's Automotive	Date of Sampling:	2/9/2006
Job Number:	9482	Name of Sampler:	Adrian Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	33.24		
Depth of Well	28.00		
Depth to Water (from top of casing)	14.36		
Water Elevation (feet above msl)	18.88		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	<b>26.6</b>		
Actual Volume Purged (gallons)	6.0		
Appearance of Purge Water	Black, cleared after 2 gallons purged.		
Free Product Present?	No	Thickness (ft):	Sheen

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μS/cm)	DO (mg/L)	ORP (meV)	Comments
	2	18.17	6.56	853	1.30	-127.6	
	4	18.11	6.56	606	0.90	-131.1	
	6	18.32	6.53	575	0.70	-131.8	

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

Purge water was black with strong hydrocarbon odor. Purge water cleared after 2 gallons of water was purged.
A sheen was observed during well purging.

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

**Monitoring Well Number: MW-3**

Project Name:	Vic's Automotive	Date of Sampling:	2/9/2006
Job Number:	9482	Name of Sampler:	Adrian Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	34.25		
Depth of Well	25.00		
Depth to Water (from top of casing)	14.65		
Water Elevation (feet above msl)	19.60		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	<b>20.2</b>		
Actual Volume Purged (gallons)	21		
Appearance of Purge Water	Brown, cleared after 1.5 gallon purged.		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
	3	19.33	6.31	228	0.97	155.4	
	6	19.38	6.31	228	0.77	128.9	
	9	19.49	6.33	232	0.56	55.3	
	12	19.52	6.33	232	0.52	32.1	
	15	19.55	6.33	235	0.48	12.3	
	18	19.60	6.35	236	0.40	-6.1	
	21	19.61	6.35	236	0.39	-8.4	

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

Purge water was brown with no noted hydrocarbon odor. Purge water cleared after 1.5 gallon of water was purged.

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

**Monitoring Well Number: MW-4**

Project Name:	Vic's Automotive	Date of Sampling:	2/9/2006
Job Number:	9482	Name of Sampler:	Adrian Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	34.42		
Depth of Well	25.00		
Depth to Water (from top of casing)	15.62		
Water Elevation (feet above msl)	18.80		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	<b>18.2</b>		
Actual Volume Purged (gallons)	20.0		
Appearance of Purge Water	Light-brown, cleared quickly.		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
	3	18.30	6.30	274	0.99	76.1	
	6	18.30	6.28	275	0.87	78.2	
	9	18.32	6.27	282	0.79	83.1	
	12	18.37	6.25	292	0.75	89.8	
	15	18.44	6.21	281	0.65	90.0	
	18	18.47	6.23	271	0.62	87.9	
	20	18.49	6.24	267	0.60	86.8	

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

Purge water was light-brown with no noted hydrocarbon odor and cleared quickly.

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

**Monitoring Well Number: MW-5**

Project Name:	Vic's Automotive	Date of Sampling:	2/9/2006
Job Number:	9482	Name of Sampler:	Adrian Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	33.33		
Depth of Well	22.00		
Depth to Water (from top of casing)	14.02		
Water Elevation (feet above msl)	19.31		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	<b>15.5</b>		
Actual Volume Purged (gallons)	18.0		
Appearance of Purge Water	Greenish, cleared after 2 gallons purged.		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
	3	18.77	6.46	396	0.71	-84.7	
	6	18.78	6.48	400	0.54	-94.2	
	9	18.82	6.50	401	0.46	-100.7	
	12	18.87	6.51	404	0.39	-105.5	
	15	18.96	6.48	399	0.30	-103.1	
	18	19.03	6.45	377	0.25	-98.7	

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

Purge water was initially dark grey with strong hydrocarbon odor.
Purge water cleared after 2 gallons of water was purged.



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

**Monitoring Well Number: MW-6**

Project Name:	Vic's Automotive	Date of Sampling:	2/9/2006
Job Number:	9482	Name of Sampler:	Adrian Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	32.82		
Depth of Well	22.00		
Depth to Water (from top of casing)	13.93		
Depth to Free Product (from top of casing)	13.22		
Water Elevation (feet above msl)	18.89		
Well Volumes Purged	N/A		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	N/A		
Actual Volume Purged (gallons)	N/A		
Appearance of Purge Water	N/A		
Free Product Present?	yes	Thickness (ft):	0.71

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μS/cm)	DO (mg/L)	ORP (meV)	Comments

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

Well was neither purged nor sampled due to the presence of free product.

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

**Monitoring Well Number: MW-7**

Project Name:	Vic's Automotive	Date of Sampling:	2/9/2006
Job Number:	9482	Name of Sampler:	Adrian Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	33.07		
Depth of Well	22.00		
Depth to Water (from top of casing)	14.18		
Depth to Free Product (from top of casing)	14.11		
Water Elevation (feet above msl)	18.89		
Well Volumes Purged	N/A		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	N/A		
Actual Volume Purged (gallons)	N/A		
Appearance of Purge Water	N/A		
Free Product Present?	Yes	Thickness (ft):	0.07

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				Not sampled due to presence of free product.			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μS/cm)	DO (mg/L)	ORP (meV)	Comments

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

Well was neither purged nor sampled due to the presence of free product.

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

**Monitoring Well Number: MW-10**

Project Name:	Vic's Automotive	Date of Sampling:	2/9/2006
Job Number:	9482	Name of Sampler:	Adrian Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	31.17		
Depth of Well	22.00		
Depth to Water (from top of casing)	12.82		
Water Elevation (feet above msl)	18.35		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	<b>17.9</b>		
Actual Volume Purged (gallons)	20.0		
Appearance of Purge Water	Gray, cleared after 2.5 gallons purged.		
Free Product Present?	No	Thickness (ft):	-

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
	4	18.76	6.60	295	0.94	-75.4	
	8	18.84	6.57	294	0.75	-79.3	
	12	18.90	6.42	285	0.61	-79.4	
	16	18.95	6.33	277	0.48	-79.7	
	20	18.98	6.30	277	0.42	-79.2	

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

Purge water was initially gray with strong hydrocarbon odor.
Purge water cleared after 2.5 gallons of water was purged.

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

**Monitoring Well Number: MW-11**

Project Name:	Vic's Automotive	Date of Sampling:	2/9/2006
Job Number:	9482	Name of Sampler:	Adrian Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	31.78		
Depth of Well	22.00		
Depth to Water (from top of casing)	13.53		
Water Elevation (feet above msl)	18.25		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	<b>16.5</b>		
Actual Volume Purged (gallons)	18.0		
Appearance of Purge Water	Cleared at 1.5 gallons purged.		
Free Product Present?	No	Thickness (ft):	Sheen

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μS/cm)	DO (mg/L)	ORP (meV)	Comments
	3	18.05	6.22	242	0.50	-72.9	
	6	18.06	6.25	248	0.38	-82.9	
	9	18.07	6.34	267	0.32	-91.7	
	12	18.12	6.42	265	0.26	-93.5	
	15	18.19	6.50	252	0.22	-90.4	
	18	18.21	6.53	245	0.20	-86.3	

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

Purge water was dark gray with strong hydrocarbon odor.

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

**Monitoring Well Number: MW-12**

Project Name:	Vic's Automotive	Date of Sampling:	2/9/2006
Job Number:	9482	Name of Sampler:	Adrian Nieto
Project Address:	245 8th Street, Oakland		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	32.05		
Depth of Well	22.00		
Depth to Water (from top of casing)	13.78		
Water Elevation (feet above msl)	18.27		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	<b>16.0</b>		
Actual Volume Purged (gallons)	18.0		
Appearance of Purge Water	Light-brown, cleared at 1 gallons.		
Free Product Present?	No	Thickness (ft):	Sheen

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μS/cm)	DO (mg/L)	ORP (meV)	Comments
	3	18.02	6.49	313	0.53	-63.8	
	6	18.03	6.41	322	0.35	-68.5	
	9	18.14	6.37	361	0.24	-71.5	
	12	18.19	6.34	380	0.19	-70.5	
	15	18.25	6.31	393	0.17	-69.8	
	18	18.30	6.31	408	0.18	-72.3	

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

Purge water was initially brown with strong hydrocarbon odor, and cleared quickly.

## **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  
Website: www.mcccampbell.com E-mail: main@mcccampbell.com

AEI Consultants 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #9482; Vic's Automotive	Date Sampled: 02/09/06
		Date Received: 02/09/06
	Client Contact: Robert Flory	Date Reported: 02/14/06
	Client P.O.:	Date Completed: 02/15/06

**WorkOrder: 0602156**

February 15, 2006

Dear Robert:

Enclosed are:

- 1). the results of **7** analyzed samples from your **#9482; Vic's Automotive 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.

Best regards,

Angela Rydelius, Lab Manager

0602156

**McCAMPBELL ANALYTICAL INC.**

110 2<sup>nd</sup> AVENUE SOUTH, #D7  
PACHECO, CA 94553-5560

Telephone: (925) 798-1620

Fax: (925) 798-1622

**CHAIN OF CUSTODY RECORD**

**TURN AROUND TIME**

RUSH  24 HR  48 HR  72 HR  5 DAY

EDF Required? Coelt (Normal)  No Write On (DW)  No

**Analysis Request**

**Other**

**Comments**

Report To: Robert Flory Bill To: AEI Consultants  
Company: AEI Consultants AEI Consultants  
2500 Camino Diablo, Suite 200  
E-Mail: rflory@aeiconsultants.com  
Tele: (925) 944-2899 ext. 122 Fax: (925) 944-2895  
Project #: 9482 Project Name: Vic's Automotive  
Project Location: 245 8<sup>th</sup> Street, Oakland, CA  
Sampler Signature: *Adrian Nieto*

BTEX & TPH as Gas (602/8020 + 8015)/NTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010 basic list by 8012B	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010) Total lead	RCI	TPH multi-range EPA 8015
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SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other	
MW-1		2-9-06		3	Vials	X					X	X			X
+ MW-2			9:00			X					X	X			X
+ MW-3			7:05			X					X	X			X
+ MW-4			8:25			X					X	X			X
+ MW-5			7:45			X					X	X			X
MW-6						X					X	X			X
MW-7						X					X	X			X
+ MW-10			10:50			X					X	X			X
+ MW-11			11:10			X					X	X			X
+ MW-12			11:25			X					X	X			X

PDF  
EDF *OK*

Not sample  
Not sample  
Not sample

Relinquished By: *Adrian Nieto* Date: 2-9-06 Time: 3:45 Received By: *[Signature]*  
Relinquished By: Date: Time: Received By:  
Relinquished By: Date: Time: Received By:

ICE/4°   
GOOD CONDITION   
HEAD SPACE ABSENT   
DECHLORINATED IN LAB   
PRESERVATION APPROPRIATE CONTAINERS   
PERSERVED IN LAB   
VOAS  O&G METALS OTHER



**McC Campbell Analytical, Inc.**



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

**CHAIN-OF-CUSTODY RECORD**

**WorkOrder: 0602156**

**ClientID: AEL**

**EDF: NO**

**Report to:**

Robert Flory  
 AEI Consultants  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597

TEL: (925) 283-6000  
 FAX: (925) 283-6121  
 ProjectNo: #9482; Vic's Automotive  
 PO:

**Bill to:**

Joanne Bryant  
 AEI Consultants  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597

**Requested TAT: 5 days**

*Date Received:* **02/09/2006**

*Date Printed:* **02/09/2006**

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)													
					1	2	3	4	5	6	7	8	9	10	11	12		
0602156-001	MW-2	Water	2/9/06 9:00:00 AM	<input type="checkbox"/>	A													
0602156-002	MW-3	Water	2/9/06 7:05:00 AM	<input type="checkbox"/>	A													
0602156-003	MW-4	Water	2/9/06 8:25:00 AM	<input type="checkbox"/>	A													
0602156-004	MW-5	Water	2/9/06 7:45:00 AM	<input type="checkbox"/>	A													
0602156-005	MW-10	Water	2/9/06 10:50:00 AM	<input type="checkbox"/>	A													
0602156-006	MW-11	Water	2/9/06 11:10:00 AM	<input type="checkbox"/>	A													
0602156-007	MW-12	Water	2/9/06 11:25:00 AM	<input type="checkbox"/>	A													

**Test Legend:**

1	G-MBTEX_W	2		3		4		5	
6		7		8		9		10	
11		12							

**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.



# McC Campbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
 Telephone : 925-798-1620 Fax : 925-798-1622  
 Website: www.mcccampbell.com E-mail: main@mcccampbell.com

AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #9482; Vic's Automotive	Date Sampled: 02/09/06
		Date Received: 02/09/06
	Client Contact: Robert Flory	Date Extracted: 02/09/06-02/10/06
	Client P.O.:	Date Analyzed: 02/09/06-02/10/06

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0602156

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-2	W	120,000,a,h	10,000	18,000	16,000	2200	13,000	100	97
002A	MW-3	W	270,m	ND	ND	5.6	ND	ND	1	96
003A	MW-4	W	250,a	ND	9.9	42	7.5	45	1	104
004A	MW-5	W	110,000,a	ND<500	10,000	22,000	2400	13,000	100	99
005A	MW-10	W	100,000,a	ND<500	6600	19,000	2900	13,000	100	95
006A	MW-11	W	210,000,a	10,000	33,000	39,000	3800	20,000	100	103
007A	MW-12	W	170,000,a	34,000	40,000	23,000	3500	15,000	100	86

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	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	NA	1	mg/Kg

\* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell 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 / mineral spirit?); 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 ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request.



QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0602156

EPA Method: SW8021B/8015Cm		Extraction: SW5030B			BatchID: 20247			Spiked Sample ID 0602151-010A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) <sup>f</sup>	ND	60	113	106	6.34	117	110	6.33	70 - 130	70 - 130
MTBE	ND	10	105	108	2.64	104	104	0	70 - 130	70 - 130
Benzene	ND	10	111	97.4	13.4	107	105	1.83	70 - 130	70 - 130
Toluene	ND	10	110	94	16.0	115	104	9.52	70 - 130	70 - 130
Ethylbenzene	ND	10	112	106	4.96	107	107	0	70 - 130	70 - 130
Xylenes	ND	30	113	110	2.99	110	110	0	70 - 130	70 - 130
%SS:	102	10	100	100	0	96	99	2.67	70 - 130	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

BATCH 20247 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0602156-001A	2/09/06 9:00 AM	2/09/06	2/09/06 11:23 PM	0602156-002A	2/09/06 7:05 AM	2/10/06	2/10/06 12:12 AM
0602156-003A	2/09/06 8:25 AM	2/10/06	2/10/06 2:10 AM	0602156-004A	2/09/06 7:45 AM	2/10/06	2/10/06 1:50 AM
0602156-005A	2/09/06 10:50 AM	2/10/06	2/10/06 2:20 AM	0602156-006A	2/09/06 11:10 AM	2/10/06	2/10/06 3:48 AM
0602156-007A	2/09/06 11:25 AM	2/10/06	2/10/06 4:17 AM				

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 / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

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

# cluttered chromatogram; sample peak coelutes with surrogate peak.

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