April 1, 2008

# GROUNDWATER MONITORING REPORT
# 1st Quarter, 2008

3635 13th Avenue
Oakland, California

AEI Project No. 270852

Prepared For

Mr. John Williamson
3906 Laguna Avenue
Oakland, CA 94602

Prepared By

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

AEI

AEI CONSULTANTS
ENVIRONMENTAL & ENGINEERING SERVICES
2500 Camino Diablo, Walnut Creek, CA 94597
tel 800-801-3224
fax 925-944-2895
www.aeiconsultants.com

April 1, 2008

Mr. John Williamson
3906 Laguna Avenue
Oakland, CA 94602

**Subject:** **Groundwater Monitoring Report**
**1st Quarter, 2008**
3635 13th Avenue
Oakland, California
AEI Project No. 270852
ACHCSA Case No. RO0000159

Dear Mr. Williamson:

AEI Consultants (AEI) has prepared this report on your behalf to document the required ongoing groundwater investigation at the above referenced property (Figure 1: Site Location Map). The investigation is being performed at the requirement of the Alameda County Health Care Services Agency (ACHCSA). The purpose of the groundwater monitoring and sampling activities is to further evaluate groundwater impact caused by the release of petroleum hydrocarbons that occurred from the former underground storage tank (UST) and fuel dispensing system on the property. This report documents the monitoring and sampling event performed during the 1st Quarter 2008, which occurred on January 9, 2008.

## I Background

The subject property (hereinafter referred to as the "site" or "property") is located in a residential area of the City of Oakland, on the west corner of 13th Avenue and Excelsior Street. The site is approximately 4,000 square feet in size and is currently vacant and unimproved. The site is surrounded by fencing. The site was previously developed with a gasoline service station.

In December 1992, three underground storage tanks (USTs), one 250-gallon waste oil UST, one 500-gallon gasoline UST, and one 1,000-gallon gasoline UST were removed by Aqua Science Engineers, Inc. of San Ramon. Refer to Figure 2 for the former locations of the USTs. Soil samples collected beneath the former waste oil UST revealed concentrations of 8,200 mg/kg Total Oil and Grease (TOG), 290 mg/kg Total Petroleum Hydrocarbons (TPH) as gasoline (TPH-g), and 225 mg/kg total lead. Soil samples collected from beneath the 1,000-gallon gasoline UST indicated maximum concentrations of 27 mg/kg TPH-g and 5.5 mg/kg benzene. Only minor concentrations of TPH as

gasoline and benzene, toluene, ethylbenzene, and total xylenes (BTEX) were found in samples collected beneath the 500-gallon gasoline UST [(1)].

In September 1993, AEI removed and disposed of approximately 360 cubic yards of contaminated soil from near the former waste oil UST. Sidewall samples collected from this excavation indicated that only minor contaminant concentrations remained in the soil. Following this project, the former 250-gallon waste oil UST was concluded to not pose a significant threat to the groundwater [(2)].

Three monitoring wells (MW-1 through MW-3) were installed in March 1994 [(3)]. Soil samples analyzed during the well installations contained only minor concentration of petroleum hydrocarbons. The wells were monitored on a quarterly basis from November 1994 to August 1995, when the ACHCSA approved a change in monitoring frequency to a biannual schedule. Historical water elevations and groundwater sample analytical data is presented in Table 1.

On November 16, 1995, AEI advanced a soil boring at each end of the former dispenser island to depths of 4.5 feet below ground surface (bgs) on the west end, and 10 feet bgs on the east. Soil samples were collected beneath the former dispensers at the request of the ACHCSA. Analysis of soil samples collected from the two borings indicated that concentrations of TPH-g and BTEX were below laboratory detection limits [(4)].

At the request of the ACHCSA, AEI prepared a workplan outlining a scope of work to further define the extent of impacted soil and groundwater beneath the site [(5)]. This investigation was performed between August 1997 and January 1998. Nine soil borings (SB1 through SB9) were advanced on the property and down-gradient of the former gasoline USTs [(6)]. The investigation revealed significant concentrations of contaminants in soil and groundwater and that the release had spread off-site in a southerly direction.

An additional workplan was prepared, outlining the installation of two additional groundwater monitoring wells [(7)]. However, due to the City of Oakland's requirement for liability insurance provided by the property owner for the wells, off-site monitoring wells could not be installed. A letter addendum to the workplan was prepared and approved to investigate the offsite extent of the release with temporary soil borings [(8)]. Soil and groundwater samples were collected from six additional soil borings (SB-10 to SB-15) between August and October 2003, the results of which were presented in the *Soil and Groundwater Investigation Report*, dated October 30, 2003. Locations of the former USTs, soil borings, and wells are shown on Figure 2.

At the request of the ACHCSA, AEI prepared a *Remedial Investigation and Interim Correct Action Plan,* dated July 19, 2004, outlining a scope of work for additional site investigation and interim corrective action. An additional seven soil borings and two to three monitoring wells were proposed in the workplan to further investigate source area contamination. The workplan was approved by the ACHCSA in a letter dated, July 10, 2006, with the suggestion of the placement of one additional boring. AEI submitted the

document *Workplan Revisions*, dated September 6, 2006, which addressed technical comments in the ACHCSA's July 10, 2006 letter. The workplan revisions were approved by the ACHCSA in letters dated October 2 and October 6, 2006.

On April 20 and April 23, 2007, AEI advanced eight (8) additional soil borings at the property to depths ranging from 25 feet bgs to 35 feet bgs. The soil boring locations were approved by ACHCSA and chosen to further assess the current magnitude and extent of the petroleum impact. On September 7, 2007, AEI advanced three soil borings (MW-4, MW-5, and MW-6) at the property, and converted the borings into groundwater monitoring wells. Refer to the February 12, 2008 report titled *Site Investigation Report and Pilot Test Workplan* for detailed results and ***prolonged*** pilot testing for the site.

## II Summary of Activities

AEI measured depth to groundwater in the six monitoring wells (MW-1 to MW-6) on January 9, 2008. The depth from the top of the well casings was measured with an electric water level indicator prior to sampling. The wells were purged with a submersible pump. Temperature, pH, specific conductivity, and oxidation-reduction potential (ORP) were measured during the purging of the wells. Turbidity was visually noted. The wells were purged of at least 3 well volumes and allowed to recharge prior to sample collection. Once water levels recharged to at least 90% of their original levels, a water sample was collected from each well.

Water samples were collected with new, disposable bailers into 40-ml volatile organic analysis (VOA) vials and 1-liter amber bottles and capped so that no headspace or air bubbles were visible within the sample containers. Samples were delivered on ice under chain of custody protocol to McCampbell Analytical, Inc. of Pittsburgh, California (Department of Health Services Certification #1644).

The three groundwater samples were submitted for chemical analysis for the following:

- Total Petroleum Hydrocarbons (TPH) as gasoline (TPH-g) by EPA method 8015Cm
- TPH as diesel (TPH-d) by EPA method 8015C
- Benzene, toluene, ethyl benzene, and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA method 8021
- Fuel additives, including t-butyl alcohol (TBA), 1,2-Dichloroethane (1,2-DCA), DiIsopropyl ether (DIPE), and MTBE by EPA method 8260B.

## III Field Results

No sheen or free product was encountered during monitoring activities. Groundwater elevation for the current monitoring episode ranged from 188.27 to 192.04 feet above Mean Sea Level (MSL). The groundwater elevation was 9.29 feet higher on average than the previous monitoring event. Based on these water level measurements, groundwater

was calculated to flow in a south-southeasterly direction, with a gradient of 0.03 ft/ft to the southeast. This groundwater flow direction and gradient are consistent with previous groundwater sampling episodes.

Groundwater elevation data is 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.

## IV Groundwater Quality

TPH-g, TPH-d, MTBE and BTEX concentrations increased in MW-2 to 38,000 µg/L, 48,000 µg/L, 63 µg/L, 3,000 µg/L, 380 µg/L, 1,200 µg/L, and 1,900 µg/L, respectively. TPH-g, TPH-d, MTBE and BTEX were detected in MW-4 at concentrations of 17,000 µg/L, 2,600 µg/L, 220 µg/L, 1,300 µg/L, 120 µg/L, 580 µg/L, and 790 µg/L, respectively. TPH-g, TPH-d, MTBE and BTEX were detected in MW-5 at concentrations of 7,400 µg/L, 580 µg/L, 140 µg/L, 2,000 µg/L, 5.6 µg/L, 93 µg/L, and 29 µg/L, respectively. TPH-g, TPH-d, MTBE and BTEX were detected in MW-6 at concentrations of 8,400 µg/L, 1,300 µg/L, 160 µg/L, 790 µg/L, 17 µg/L, 210 µg/L, and 51 µg/L, respectively.

TPH-g, TPH-d, MTBE and BTEX concentrations in MW-1 and MW-3 were not detected at or above the laboratory detection limits.

TBA concentration in MW-2 decreased from 150 µg/L to 64 µg/L, since the previously reported event and was detected at concentrations of 79 µg/L, 1,000 µg/L and 87 µg/L in MW-4, MW-5 and MW-6, respectively. 1,2-DCA and DIPE were detected in MW-5 at concentrations of 54 µg/L and 5.6 µg/L, respectively. No other fuel additives were detected at or above the laboratory detection limits.

A summary of groundwater quality data is presented in Tables 1 and 2. Laboratory results and chain of custody documents are included in Appendix B.

## V Summary

Water levels rose an average of 8 feet between the 4th quarter 2007 and 1st quarter 2008. A decrease in petroleum hydrocarbons concentrations was observed over this time period in MW-5 and MW-6 however an increase occurred in MW-2 and MW-4. These water level and concentration variations are apparently seasonal and consistent with prior findings. Additional site characterization activities were conducted in 2007 and remedial action pilot testing proposed the *Site Investigation Report and Pilot Test Workplan*, dated February 12, 2008, for the site, which is currently under review by ACHCSA. In the meantime and as required by ACHCSA, quarterly monitoring has been scheduled to continue.

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## VI References

1. *Underground Storage Tank Removal Final Report*, January 20, 1993 – Aqua Science Engineers, Inc.
2. *Contaminated Soil Over-excavation Final Report*, November 18, 1999 – All Environmental, Inc.
3. *Soil Boring and Monitoring Well Installation Report*, December 14, 1994 – All Environmental, Inc.
4. *Phase II Limited Subsurface Investigation*, December 11, 1995 – All Environmental, Inc.
5. *Phase II Subsurface Investigation Workplan*, June 5, 1997 – All Environmental, Inc.
6. *Phase II Subsurface Investigation Report*, January 20, 1999 – All Environmental, Inc.
7. *Workplan*, December 3, 1999 – AEI Consultants
8. Letter to Amir Gholami of the ACHCSA, September 9, 2002 – AEI Consultants
9. *Soil and Groundwater Investigation Report*, October 30, 2003 – AEI Consultants
10. *Remedial Investigation and Corrective Action Plan*, July 19, 2004 – AEI Consultants
11. *Site Investigation Report and Pilot Test Workplan*, February 12, 2008-AEI Consultants

## VII Report Limitation

This report presents a summary of work completed by AEI Consultants. The completed work includes observations and descriptions of site conditions encountered. 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 the required information, but it cannot be assumed that they are representative of areas not sampled. All conclusions and/or recommendations are based on these analyses and 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.

If you have any questions regarding our investigation, please do not hesitate to contact any of the undersigned at (925)944-2899.

Sincerely,
**AEI Consultants**

Leah Goldberg
Staff Geologist

Adrian M. Angel
Project Geologist

Peter McIntyre, PG, REA
Senior Project Manager

REGISTERED GEOLOGIST
PETER J. MCINTYRE
No. 7702
STATE OF CALIFORNIA

***Figures***

*Figure 1: Site Location Map*
*Figure 2: Site Plan*
*Figure 3: Water Table Contours 1/9/08*
*Figure 4: Groundwater Sample Analytical Data 1/9/08*

***Tables***

*Table 1: Well Construction Details*
*Table 2: Groundwater Monitoring Data*
*Table 3: Fuel Additive Analyses*

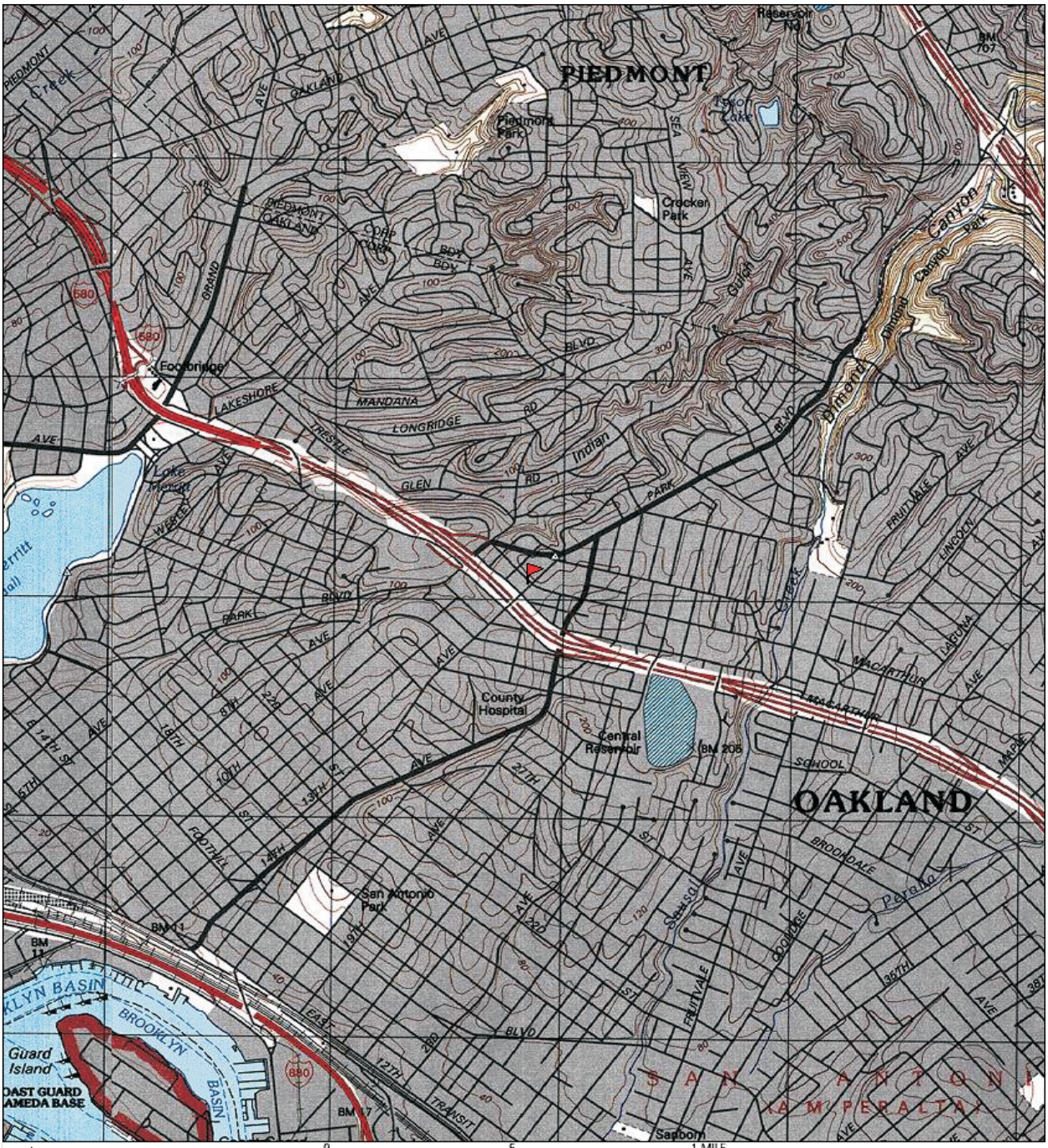
***Attachments***

*Appendix A: Groundwater Monitoring Well Field Sampling Forms*
*Appendix B: Laboratory Analyses With Chain of Custody Documentation*

Distribution: Mr. John Williamson
3906 Laguna Avenue, Oakland, CA 94602

Mr. Steven Plunkett, ACHCSA
1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502

# FIGURES




N

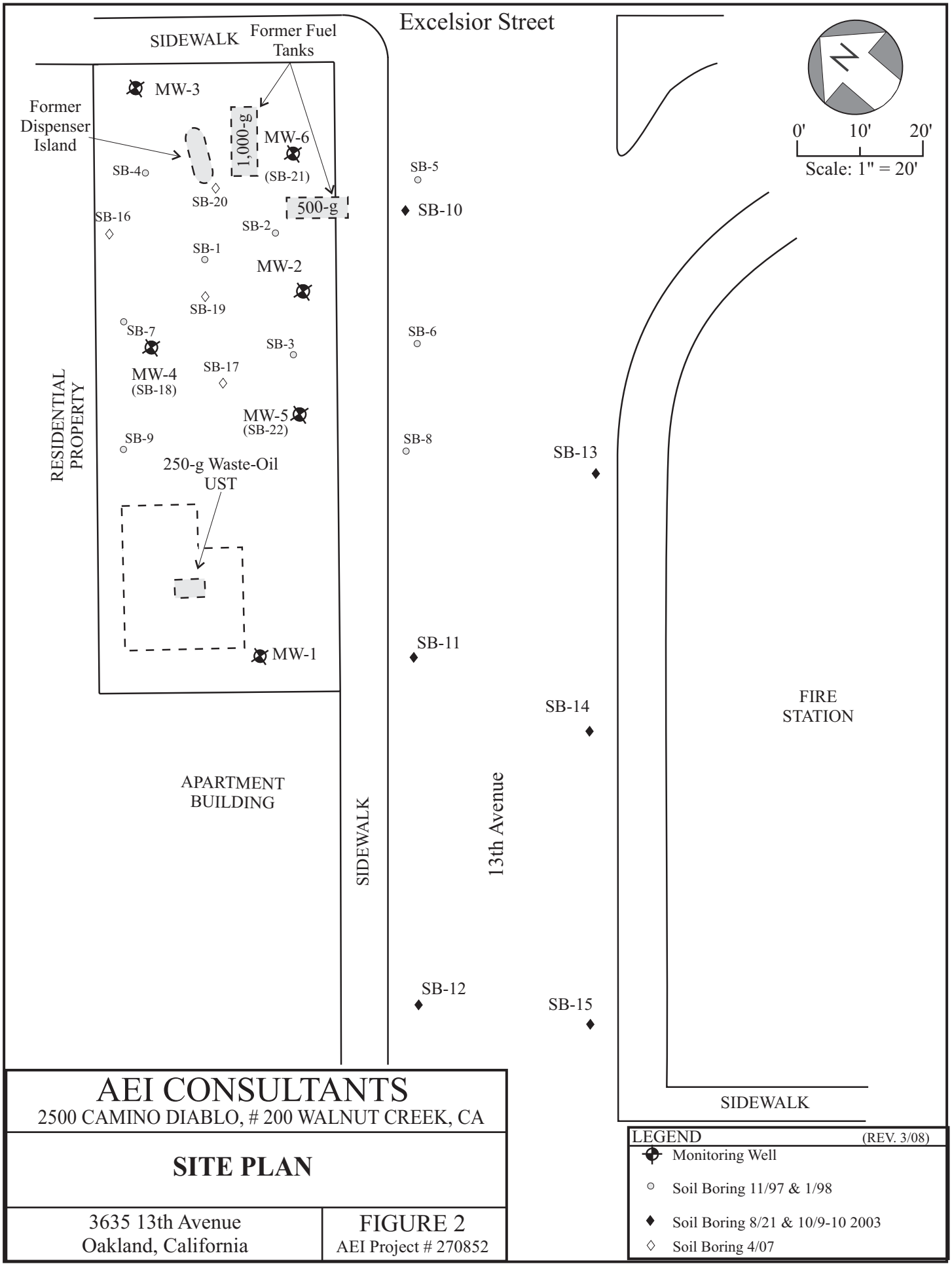
USGS TOPOGRAPHIC MAP
OAKLAND EAST, CA. QUADRANGLE
Created 1997

# SITE LOCATION MAP

3635 13th Avenue
Oakland, California 94610

**FIGURE 1**
Job No: 270852

AEI




# AEI CONSULTANTS

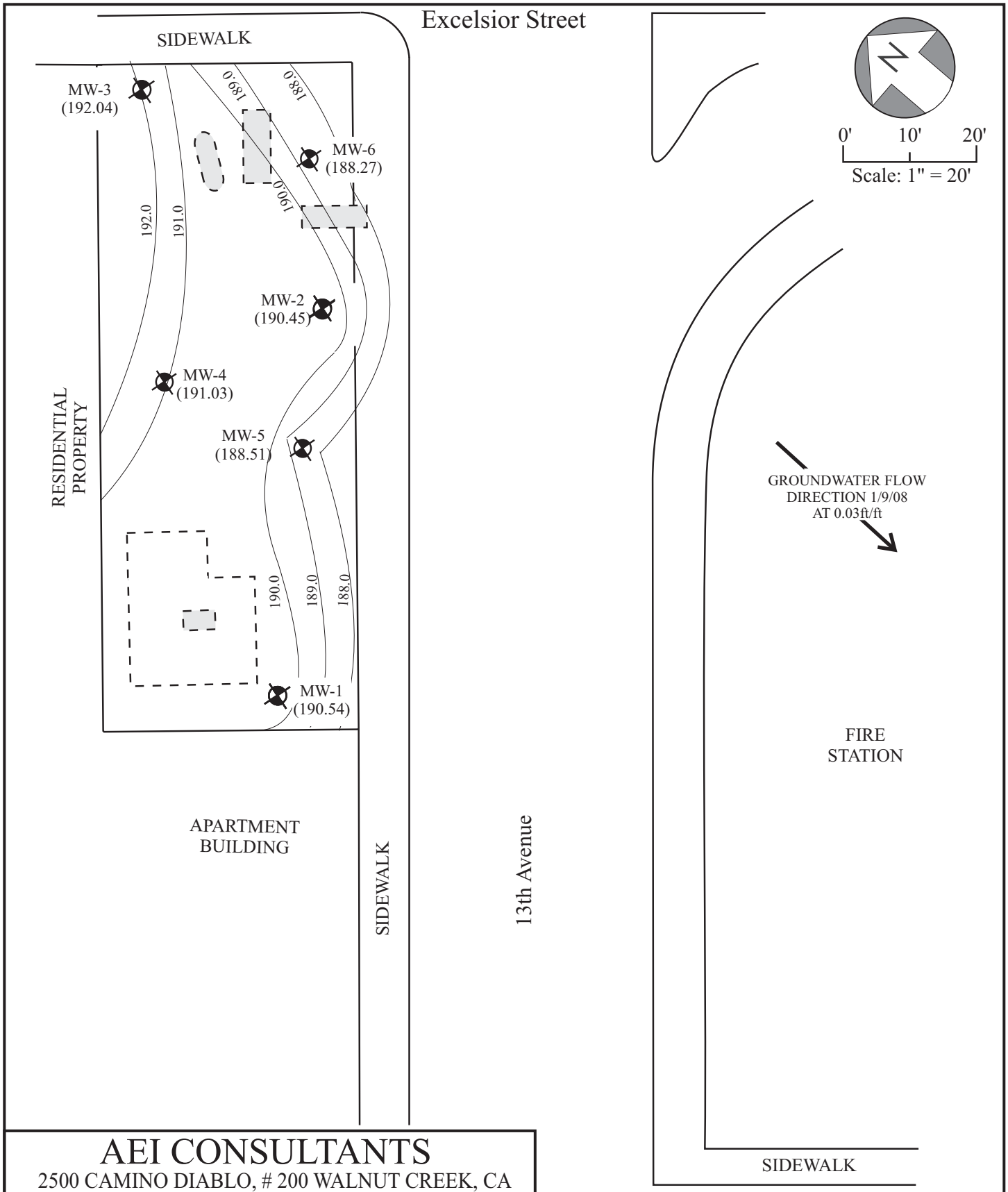
2500 CAMINO DIABLO, # 200 WALNUT CREEK, CA

## SITE PLAN

| | |
|---|---|
| 3635 13th Avenue<br>Oakland, California | FIGURE 2<br>AEI Project # 270852 |

LEGEND (REV. 3/08)

- Monitoring Well
- Soil Boring 11/97 & 1/98
- Soil Boring 8/21 & 10/9-10 2003
- Soil Boring 4/07

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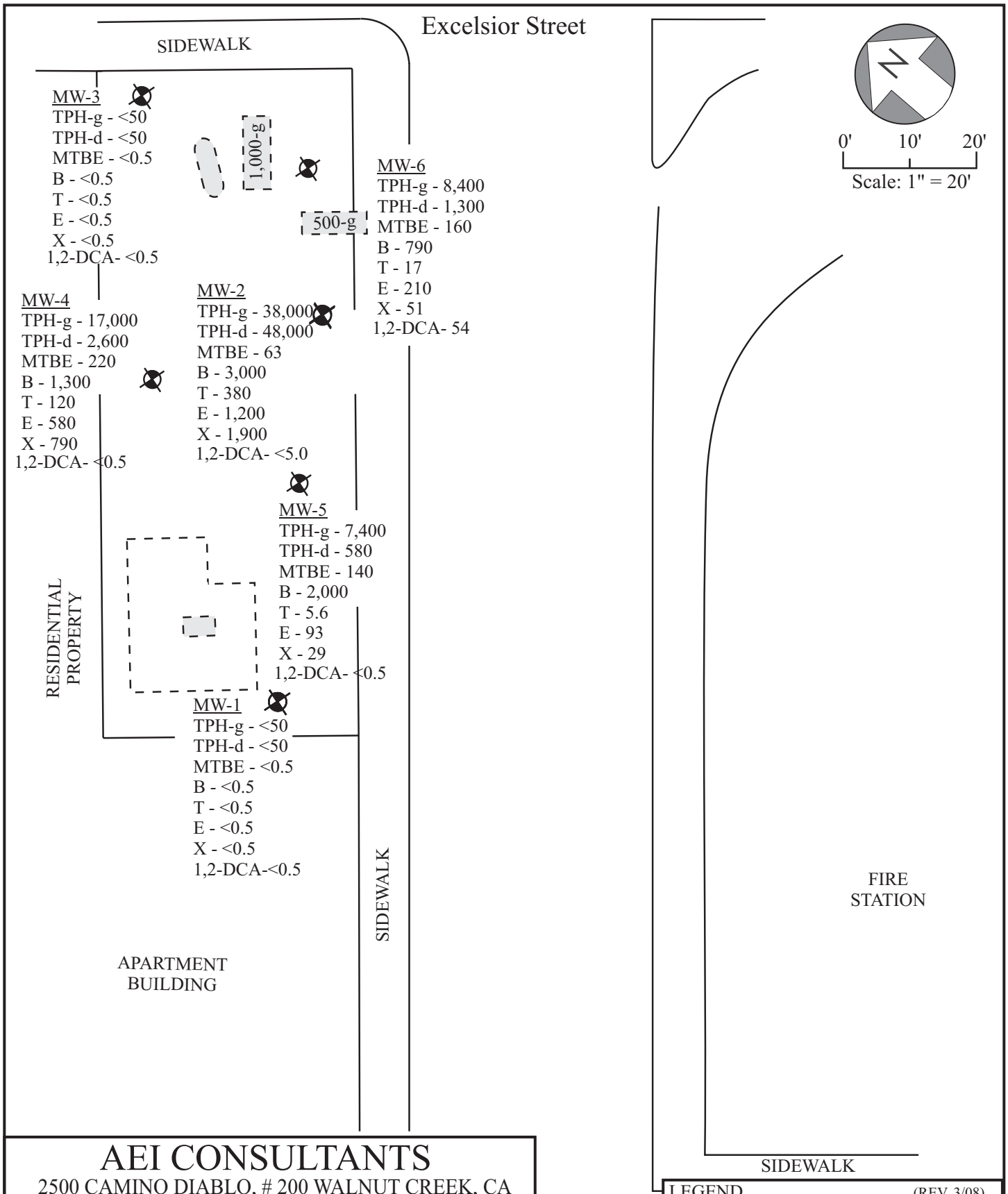
## WATER TABLE CONTOURS 1/9/08

| 3635 13th Avenue<br>Oakland, California | FIGURE 3<br>AEI Project # 270852 |
|---|---|

LEGEND (REV. 3/08)

- Monitoring Well, with water table elevation in ft above msl (1/9/08)
- Water table contours in ft above msl Interval = 0.5 ft




# AEI CONSULTANTS

2500 CAMINO DIABLO, # 200 WALNUT CREEK, CA

## GROUNDWATER SAMPLE ANALYTICAL DATA 1/9/08

3635 13th Avenue
Oakland, California

FIGURE 4
AEI Project # 270852

LEGEND (REV. 3/08)

TPH-g= Total Petroleum Hydrocarbon as gasoline
TPH-d = TPH as diesel
MTBE - Methyl tert-butyl ether
B- Benzene
T - Toluene
E - Ethylbenzene
X- Xylenes
Monitoring well
All data in micrograms/Liter (µg/L)

# TABLES

**Table 1**
**3635 13th Avenue, Oakland, CA**
**Monitoring Well Construction Details**

| Well ID | Date Drilled | Top of Casing Elevation (ft amsl) | Well Depth (ft) | Slotted Casing (ft) | Slot Size (in) | Sand Interval (ft) | Sand Size | Bentonite Interval (ft) | Grout Interval (ft) |
|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 03/24/94 | 197.28 | 25 | 12 - 25 | 0.020 | 11 - 25 | # 2/12 | 10 - 11 | 0.5 - 10 |
| MW-2 | 03/24/94 | 198.93 | 36 | 16 - 36 | 0.020 | 15 - 36 | # 2/12 | 14 - 15 | 0.5 - 14 |
| MW-3 | 03/24/94 | 201.46 | 36.5 | 15.5 - 36 | 0.020 | 14 - 36.5 | # 2/12 | 13.5 - 14.5 | 0.5 - 13.5 |
| MW-4 | 09/07/07 | 200.23 | 22 | 17 - 22 | 0.010 | 16 - 22 | # 2/12 | 15 - 16 | 0.5 - 15 |
| MW-5 | 09/07/07 | 198.52 | 22 | 17 - 22 | 0.010 | 16 - 22 | # 2/12 | 15 - 16 | 0.5 - 15 |
| MW-6 | 09/07/07 | 200.20 | 22 | 17 - 22 | 0.010 | 16 - 22 | # 2/12 | 15 - 16 | 0.5 - 15 |

Notes:
ft amsl = feet above mean sea level

**Table 2**
**Groundwater Monitoring Data**

| Well ID | Date | Well Elevation | Depth to Water | Water Table Elevation | TPH-g (ug/L) EPA 8015M | TPH-d (ug/L) EPA 8015M | TOG (ug/L) EPA 5520 | MTBE (ug/L) EPA 8020 / 8021 | Benzene (ug/L) EPA 8020 / 8021 | Toluene (ug/L) EPA 8020 / 8021 | E-benzene (ug/L) EPA 8020 / 8021 | Xylenes (ug/L) EPA 8020 / 8021 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MW - 1** | 11/22/1994 | 194.75 | 10.92 | 183.83 | 210 | <50 | <0.5 | - | <0.5 | <0.5 | <0.5 | 2.3 |
| | 2/23/1995 | 194.75 | 10.58 | 184.17 | 140 | <50 | 1.2 | - | <0.5 | <0.5 | 0.6 | 1.5 |
| | 5/24/1995 | 194.75 | 10.94 | 183.81 | <50 | <50 | <0.5 | - | <0.5 | <0.5 | <0.5 | <0.5 |
| | 8/18/1995 | 194.75 | 14.52 | 180.23 | 2800 | <50 | <0.5 | - | 25 | 6.2 | 22 | 30 |
| | 2/7/1996 | 194.75 | 4.43 | 190.32 | <50 | <50 | <0.5 | - | <0.5 | <0.5 | <0.5 | <0.5 |
| | 9/6/1996 | 194.75 | 13.60 | 181.15 | <50 | <50 | <5.0 | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 |
| | 6/19/1997 | 194.75 | 13.07 | 181.68 | 630 | 400 | <5.0 | 15 | 25 | 9.7 | 100 | 14 |
| | 1/24/2002 | 194.75 | 9.53 | 185.22 | 60 | <50 | - | <5.0 | 3.3 | 2.8 | 2.0 | 6.0 |
| | 7/15/2003 | 194.75 | 12.85 | 181.90 | 87 | <50 | - | <5.0 | 15 | 4.9 | 3.3 | 9.2 |
| | 10/10/2003 | 194.75 | 14.58 | 180.17 | 81 | 110 | - | <5.0 | <0.5 | 0.62 | 0.57 | 0.5 |
| | 4/6/2004 | 194.75 | 10.92 | 183.83 | <50 | <50 | - | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 |
| | 7/9/2004 | 194.75 | 14.34 | 180.41 | 130 | 80 | - | <35 | <0.5 | <0.5 | 2.8 | 0.78 |
| | 10/8/2004 | 194.75 | 15.30 | 179.45 | 260 | 120 | - | 24 | 3.0 | 2.9 | 8.3 | 10 |
| | 4/2/2007 | 194.75 | 12.19 | 182.56 | <50 | <50 | - | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 |
| | 7/2/2007 | 194.75 | 13.28 | 181.47 | 150 | 79 | - | <25 | <0.5 | 1.0 | <0.5 | <0.5 |
| | 10/3/2007 | 194.75 | 17.05 | 177.70 | <50 | <50 | | 5.8 | <0.5 | <0.5 | <0.5 | <0.5 |
| | **1/9/2008** | **197.28** | **6.74** | **190.54** | **<50** | **<50** | **-** | **<5.0** | **<0.5** | **<0.5** | **<0.5** | **<0.5** |
| **MW - 2** | 11/22/1994 | 196.44 | 12.54 | 183.90 | 11,000 | <50 | <0.5 | - | 35 | 21 | 7 | 50 |
| | 2/23/1995 | 196.44 | 12.35 | 184.09 | 4,000 | <50 | 2 | - | <0.5 | <0.5 | 3 | 6 |
| | 5/24/1995 | 196.44 | 12.11 | 184.33 | 8,600 | <50 | <0.5 | - | 95 | 37 | 37 | 70 |
| | 8/18/1995 | 196.44 | 16.25 | 180.19 | 7,200 | <50 | <0.5 | - | 43 | 21 | 21 | 71 |
| | 2/7/1996 | 196.44 | 9.34 | 187.10 | 11,000 | <50 | 1 | - | 17 | 9 | 9 | 25 |
| | 9/6/1996 | 196.44 | 15.22 | 181.22 | 15,000 | 1,900 | <5.0 | ND | 4,300 | 920 | 460 | 1,600 |
| | 6/19/1997 | 196.44 | 13.33 | 183.11 | 26,000 | 2,900 | <5.0 | <200 | 5,300 | 1,500 | 910 | 3,200 |
| | 1/24/2002 | 196.44 | 9.72 | 186.72 | 34,000 | 5,300 | - | <200 | 3,100 | 1,100 | 1,100 | 2,900 |
| | 7/15/2003 | 196.44 | 12.42 | 184.02 | 18,000 | 6,600 | - | <1000 | 2,300 | 310 | 690 | 1,600 |
| | 10/10/2003 | 196.44 | 13.79 | 182.65 | 19,000 | 1,800 | - | <500 | 2,700 | 460 | 850 | 1,800 |
| | 4/6/2004 | 196.44 | 10.55 | 185.89 | 6,900 | 1,300 | - | <200 | 1,100 | 100 | 380 | 780 |
| | 7/9/2004 | 196.44 | 13.78 | 182.66 | 17,000 | 4,400 | - | <450 | 2,800 | 240 | 710 | 1,300 |
| | 10/8/2004 | 196.44 | 14.78 | 181.66 | 6,900 | 890 | - | <150 | 1,500 | 240 | 340 | 670 |
| | 4/2/2007 | 196.44 | 11.32 | 185.12 | 21,000 | 4,300 | - | <450 | 2,000 | 300 | 1,000 | 1,700 |
| | 7/2/2007 | 196.44 | 13.18 | 183.26 | 5,100 | 750 | - | <180 | 260 | 21 | 320 | 370 |
| | 10/3/2007 | 196.44 | 16.71 | 179.73 | 8,600 | 1,500 | | <300 | 1,700 | 140 | 520 | 790 |
| | **1/9/2008** | **198.93** | **8.48** | **190.45** | **38,000** | **48,000** | | **<400** | **3,000** | **380** | **1,200** | **1,900** |
| **MW -3** | 11/22/1994 | 198.93 | 11.53 | 187.40 | 200 | <50 | 3 | - | <0.5 | <0.5 | <0.5 | 2 |
| | 2/23/1995 | 198.93 | 11.89 | 187.04 | 1500 | <50 | 0.9 | - | 6.6 | 6.4 | 4.2 | 13 |
| | 5/24/1995 | 198.93 | 12.71 | 186.22 | 710 | <50 | <0.5 | - | 2.5 | 3.2 | 3.1 | 16 |
| | 8/18/1995 | 198.93 | 16.14 | 182.79 | 310 | <50 | <0.5 | - | 3.1 | 2.1 | 2.2 | 11 |
| | 2/7/1996 | 198.93 | 6.22 | 192.71 | 400 | <50 | 2.2 | - | 1.4 | 2.5 | 2.2 | 7 |
| | 9/6/1996 | 198.93 | 13.51 | 185.42 | <50 | <50 | <5.0 | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 |
| | 6/19/1997 | 198.93 | 12.46 | 186.47 | <50 | <50 | <5.0 | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 |
| | 1/24/2002 | 198.93 | 10.08 | 188.85 | 58 | <50 | - | <5.0 | 4 | 2.7 | 2.3 | 6.7 |
| | 7/15/2003 | 198.93 | 12.45 | 186.48 | <50 | <50 | - | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 |
| | 10/10/2003 | 198.93 | 14.00 | 184.93 | 350 | 75 | - | <5.0 | 14 | 16 | 23 | 60 |
| | 4/6/2004 | 198.93 | 10.78 | 188.15 | <50 | <50 | - | <5.0 | <0.5 | 1.7 | <0.5 | 1.7 |
| | 7/9/2004 | 198.93 | 14.14 | 184.79 | 260 | <50 | - | <5.0 | 12 | 13 | 14 | 36 |
| | 10/8/2004 | 198.93 | 14.99 | 183.94 | 450 | 76 | - | <5.0 | 21 | 22 | 30 | 86 |
| | 4/2/2007 | 198.93 | 11.87 | 187.06 | <50 | <50 | - | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 |
| | 7/2/2007 | 198.93 | 14.45 | 184.48 | <50 | <50 | - | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 |
| | 10/3/2007 | 198.93 | 17.10 | 181.83 | <50 | <50 | - | <5.0 | <0.5 | <0.5 | <0.5 | <0.5 |
| | **1/9/2008** | **201.46** | **9.42** | **192.04** | **<50** | **<50** | **-** | **<5.0** | **<0.5** | **<0.5** | **<0.5** | **<0.5** |
| **MW-4** | 10/3/2007 | 200.23 | 17.21 | 183.02 | 11,000 | 2,000 | - | <1,500 | 1,100 | 87 | <17 | 1,300 |
| | **1/9/2008** | **200.23** | **9.20** | **191.03** | **17,000** | **2,600** | **-** | **<900** | **1,300** | **120** | **580** | **790** |
| **MW-5** | 10/3/2007 | 198.52 | 17.44 | 181.08 | 8,800 | 680 | - | <250 | 2,800 | 74 | 100 | 190 |
| | **1/9/2008** | **198.52** | **10.01** | **188.51** | **7,400** | **580** | **-** | **<350** | **2,000** | **5.6** | **93** | **29** |
| **MW-6** | 10/3/2007 | 200.20 | 18.46 | 181.74 | 11,000 | 1,400 | - | <1,200 | 1,400 | 64 | 74 | 320 |
| | **1/9/2008** | **200.20** | **11.93** | **188.27** | **8,400** | **1,300** | **-** | **<400** | **790** | **17** | **210** | **51** |

Well Elevation in feet above mean sea level (msl)
Depth to water in feet below the tops of the well casings
TPH-g - Total petroleum hydrocarbons (TPH) as gasoline
ND = non detect (detection limit not known)
*Monitoring Well elevation for MW-1 through MW-3 was resurveyed on 11/7/08

TOG - Total oil and grease
MTBE - Methyl tertiary butyl ether
E-benzene: Ethyl-benzene
TPH-d - TPH as diesel

mg/L - milligrams per liter
ug/L - micrograms per liter
- = sample not analyzed by this method

**Table 3**
**Fuel Additive Analyses**

| Well ID | Date | TAME (ug/L) | TBA (ug/L) | EDB (ug/L) | 1,2-DCA (ug/L) | DIPE (ug/L) | Ethanol (ug/L) | ETBE (ug/L) | Methanol (ug/L) | MTBE (ug/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | EPA method 8260 | | | | | | | | |
| **MW - 1** | 4/6/2004 | <0.5 | <5.0 | <0.5 | <0.5 | <0.5 | <50 | <0.5 | <500 | <0.5 |
| | 7/9/2004 | - | - | - | - | - | - | - | - | - |
| | 10/8/2004 | - | - | - | - | - | - | - | - | - |
| | 4/2/2007 | <0.5 | <5.0 | <0.5 | <0.5 | <0.5 | <50 | <0.5 | <500 | <0.5 |
| | 7/2/2007 | <0.5 | <5.0 | <0.5 | <0.5 | <0.5 | <50 | <0.5 | <500 | 23 |
| | 10/3/2007 | <0.5 | <5.0 | <0.5 | <0.5 | <0.5 | <50 | <0.5 | <500 | 7.4 |
| | **1/9/2008** | - | **<2.0** | - | **<0.5** | **<0.5** | - | - | - | **<0.5** |
| **MW - 2** | 4/6/2004 | <5.0 | 110 | <5.0 | <5.0 | <5.0 | <500 | <5.0 | <5000 | 87 |
| | 7/9/2004 | - | 98 | - | - | - | - | - | - | 120 |
| | 10/8/2004 | - | 230 | - | - | - | - | - | - | 84 |
| | 4/2/2007 | <5.0 | 100 | <5.0 | <5.0 | <5.0 | <500 | <5.0 | <5000 | 81 |
| | 7/2/2007 | <5.0 | 150 | <5.0 | <5.0 | <5.0 | <500 | <5.0 | <5000 | 88 |
| | 10/3/2007 | <5.0 | <50 | <5.0 | <5.0 | <5.0 | <500 | <5.0 | <5000 | 77 |
| | **1/9/2008** | - | **64** | - | **<5.0** | **<5.0** | - | - | - | **63** |
| **MW-3** | 4/6/2004 | <0.5 | <5.0 | <0.5 | <0.5 | <0.5 | <50 | <0.5 | <500 | <0.5 |
| | 7/9/2004 | - | - | - | - | - | - | - | - | - |
| | 10/8/2004 | - | - | - | - | - | - | - | - | - |
| | 4/2/2007 | <0.5 | <5.0 | <0.5 | <0.5 | <0.5 | <50 | <0.5 | <500 | <0.5 |
| | 7/2/2007 | <0.5 | <5.0 | <0.5 | <0.5 | <0.5 | <50 | <0.5 | <500 | <0.5 |
| | 10/3/2007 | <0.5 | <5.0 | <0.5 | <0.5 | <0.5 | <50 | <0.5 | <500 | <0.5 |
| | **1/9/2008** | - | **<2.0** | - | **<0.5** | **<0.5** | - | - | - | **<0.5** |
| **MW-4** | 10/3/2007 | <2.5 | <25 | <2.5 | 6.4 | <2.5 | <250 | <2.5 | <2500 | 230 |
| | **1/9/2008** | - | **79** | - | **<0.5** | **<0.5** | - | - | - | **220** |
| **MW-5** | 10/3/2007 | <5.0 | 1,300 | <5.0 | 66 | 5.9 | <500 | <5.0 | <5000 | 150 |
| | **1/9/2008** | - | **1,000** | - | **54** | **5.6** | - | - | - | **140** |
| **MW-6** | 10/3/2007 | <5.0 | <50 | <5.0 | 6.6 | <5.0 | <500 | <5.0 | <5000 | 210 |
| | **1/9/2008** | - | **87** | - | **<0.5** | **<0.5** | - | - | - | **160** |

TAME: tert amyle methyl ether
TBA: t-butyl alcohol
EDB: 1,2-Dibromoethane
1,2-DCA: 1,2-Dichloroethane
DIPE: DiIsopropyl ether
ETBE: Ethyl tert-butyl ether
MTBE: Methyl tert-butyl ether
ug/L: Micrograms per liter
- = sample not analyzed by this method

# APPENDIX A

## Groundwater Monitoring Well
## Field Sampling Forms

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-1**

| | | | |
|---|---|---|---|
| Project Name: | Williamson | Date of Sampling: | 1/9/2008 |
| Job Number: | 270852 | Name of Sampler: | A Nieto |
| Project Address: | 3635 13th Avenue, Oakland | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | OK | | |
| Elevation of Top of Casing (feet above msl) | 194.75 | | |
| Depth of Well | 23.50 | | |
| Depth to Water (from top of casing) | 6.74 | | |
| Water Elevation (feet above msl) | 188.01 | | |
| 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) | **8.0** | | |
| Actual Volume Purged (gallons) | 8.0 | | |
| Appearance of Purge Water | Clearing fast | | |
| Free Product Present? | no | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size: 3 VOAs & 1-liter

| Time | Vol Removed (gal) | Temperature (deg C) | pH | Conductivity (µS/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| | 1 | 18.50 | 6.87 | 2,835 | 2.34 | 68.4 | Clear |
| | 2 | 18.41 | 6.86 | 2,818 | 2.25 | 67.3 | Clear |
| | 3 | 18.39 | 6.86 | 2,789 | 2.21 | 66.6 | Clear |
| | 4 | 18.40 | 6.86 | 2,748 | 2.20 | 66.3 | Clear |
| | 6 | 18.41 | 6.86 | 2,742 | 2.17 | 66.5 | Clear |
| | 8 | 18.43 | 6.86 | 2,735 | 2.15 | 66.9 | Clear |

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

Water started slightly brown with no hc odors

NOTE: all wells under moderate air pressure

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-2**

| | | | |
|---|---|---|---|
| Project Name: | Williamson | Date of Sampling: | 1/9/2008 |
| Job Number: | 270852 | Name of Sampler: | A Nieto |
| Project Address: | 3635 13th Avenue, Oakland | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | OK | | |
| Elevation of Top of Casing (feet above msl) | 196.44 | | |
| Depth of Well | 36.00 | | |
| Depth to Water (from top of casing) | 8.48 | | |
| Water Elevation (feet above msl) | 187.96 | | |
| 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) | **13.2** | | |
| Actual Volume Purged (gallons) | 14.0 | | |
| Appearance of Purge Water | Clear by 1 gallon | | |
| Free Product Present? | no | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size: 3 VOAs & 1-liter

| Time | Vol Removed (gal) | Temperature (deg C) | pH | Conductivity (µS/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| | 1 | 20.13 | 6.81 | 2,314 | 0.34 | -84.6 | clear |
| | 2 | 20.27 | 6.81 | 2,302 | 0.32 | -87.9 | clear |
| | 3 | 20.51 | 6.81 | 2,296 | 0.30 | -100.5 | clear |
| | 6 | 20.45 | 6.81 | 2,289 | 0.31 | -104.2 | clear |
| | 9 | 20.65 | 6.79 | 2,350 | 0.31 | -124.7 | clear |
| | 12 | 20.58 | 6.76 | 2,421 | 0.31 | -116.1 | clear |
| | 14 | 20.47 | 6.82 | 2,329 | 0.31 | -100.0 | clear |

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

Dark with Strong petroleum hydrocarbon odor. Clears at 2 gallons

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-3**

| | | | |
|---|---|---|---|
| Project Name: | Williamson | Date of Sampling: | 1/9/2008 |
| Job Number: | 270852 | Name of Sampler: | A Nieto |
| Project Address: | 3635 13th Avenue, Oakland | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | OK | | |
| Elevation of Top of Casing (feet above msl) | 198.93 | | |
| Depth of Well | 35.50 | | |
| Depth to Water (from top of casing) | 9.42 | | |
| Water Elevation (feet above msl) | 189.51 | | |
| 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) | **12.5** | | |
| Actual Volume Purged (gallons) | 13.0 | | |
| Appearance of Purge Water | Clear at 1 gallon | | |
| Free Product Present? | no | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size: 3 VOAs & 1-liter

| Time | Vol Removed (gal) | Temperature (deg C) | pH | Conductivity (µS/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| | 1 | 19.20 | 7.44 | 1,426 | 2.22 | 61.1 | clear |
| | 2 | 19.47 | 7.55 | 1,411 | 1.93 | 48.0 | clear |
| | 3 | 19.68 | 7.54 | 1,408 | 1.78 | 37.2 | clear |
| | 5 | 19.66 | 7.54 | 1,402 | 1.58 | 25.2 | clear |
| | 7 | 19.92 | 7.52 | 1,389 | 1.43 | 22.1 | clear |
| | 9 | 19.90 | 7.49 | 1,424 | 2.59 | 27.1 | clear |
| | 11 | 19.87 | 7.48 | 1,420 | 2.52 | 28.4 | clear |
| | 13 | 19.81 | 7.48 | 1,423 | 2.77 | 30.1 | clear |

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

Brown with no petroleum hydrocarbon odors. Clears at 1.5 gallons

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-4**

| | | | |
|---|---|---|---|
| Project Name: | Williamson | Date of Sampling: | 1/9/2008 |
| Job Number: | 270852 | Name of Sampler: | A Nieto |
| Project Address: | 3635 13th Avenue, Oakland | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | OK | | |
| Elevation of Top of Casing (feet above msl) | 198.93 | | |
| Depth of Well | 22.00 | | |
| Depth to Water (from top of casing) | 9.20 | | |
| Water Elevation (feet above msl) | 189.73 | | |
| 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) | **6.1** | | |
| Actual Volume Purged (gallons) | 7.0 | | |
| Appearance of Purge Water | Clear | | |
| Free Product Present? | no | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size: 3 VOAs & 1-liter

| Time | Vol Removed (gal) | Temperature (deg C) | pH | Conductivity (µS/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| | 1 | 18.94 | 6.99 | 2,778 | 1.17 | -64.2 | |
| | 2 | 19.17 | 6.94 | 2,655 | 0.41 | -79.9 | |
| | 3 | 19.12 | 6.95 | 2,635 | 0.36 | -84.0 | |
| | 4 | 19.06 | 6.95 | 2,630 | 0.36 | -85.7 | |
| | 5 | 19.24 | 6.92 | 2,781 | 0.33 | -64.2 | |
| | 6 | 19.26 | 6.93 | 2,803 | 0.33 | -61.7 | |
| | 7 | 19.24 | 6.94 | 2,825 | 0.39 | -60.8 | |

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

Clear with slight petroleum hydrocarbon odors.

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-5**

| | | | |
|---|---|---|---|
| Project Name: | Williamson | Date of Sampling: | 1/9/2008 |
| Job Number: | 270852 | Name of Sampler: | A Nieto |
| Project Address: | 3635 13th Avenue, Oakland | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | OK | | |
| Elevation of Top of Casing (feet above msl) | 198.93 | | |
| Depth of Well | 22.00 | | |
| Depth to Water (from top of casing) | 10.01 | | |
| Water Elevation (feet above msl) | 188.92 | | |
| 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) | **5.7** | | |
| Actual Volume Purged (gallons) | 6.0 | | |
| Appearance of Purge Water | clears quickly | | |
| Free Product Present? | no | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size: 3 VOAs & 1-liter

| Time | Vol Removed (gal) | Temperature (deg C) | pH | Conductivity (µS/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| | 1 | 19.84 | 6.50 | 3,360 | 1.18 | 7.2 | |
| | 2 | 19.97 | 6.53 | 3,335 | 0.47 | 10.5 | |
| | 3 | 19.82 | 6.55 | 3,327 | 0.38 | 10.3 | |
| | 4 | 20.04 | 6.51 | 3,449 | 0.36 | 6.2 | |
| | 5 | 20.14 | 6.50 | 3,436 | 0.38 | 2.1 | |
| | 6 | 20.12 | 6.51 | 3,442 | 0.38 | 0.8 | |
| | | | | | | | |

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

Almost clear with strong hydrocarbon odors

Note: well observed to be under air pressure

**AEI CONSULTANTS**

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-6**

| | | | |
|---|---|---|---|
| Project Name: | Williamson | Date of Sampling: | 1/9/2008 |
| Job Number: | 270852 | Name of Sampler: | A Nieto |
| Project Address: | 3635 13th Avenue, Oakland | | |

## MONITORING WELL DATA

| | | | |
|---|---|---|---|
| Well Casing Diameter (2"/4"/6") | 2 | | |
| Wellhead Condition | OK | | |
| Elevation of Top of Casing (feet above msl) | 198.93 | | |
| Depth of Well | 22.00 | | |
| Depth to Water (from top of casing) | 11.93 | | |
| Water Elevation (feet above msl) | 187.00 | | |
| 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) | **4.8** | | |
| Actual Volume Purged (gallons) | 2.0 | | |
| Appearance of Purge Water | Clear | | |
| Free Product Present? | no | Thickness (ft): | |

## GROUNDWATER SAMPLES

Number of Samples/Container Size: 3 VOAs & 1-liter

| Time | Vol Removed (gal) | Temperature (deg C) | pH | Conductivity (µS/cm) | DO (mg/L) | ORP (meV) | Comments |
|---|---|---|---|---|---|---|---|
| | 1 | 20.14 | 6.79 | 2,595 | 0.77 | -19.4 | |
| | 2 | 20.48 | 6.79 | 2,621 | 0.34 | -23.9 | |
| | 32 | 20.39 | 6.83 | 2,622 | 0.35 | -25.3 | |
| | 4 | 20.44 | 6.80 | 2,699 | 0.32 | -24.0 | |
| | 5 | 20.53 | 6.77 | 2,737 | 0.31 | -21.4 | |
| | | | | | | | |
| | | | | | | | |

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

Clear with strong petroleum hydrocarbon odors.

# APPENDIX B

## Laboratory Analytical Reports
## With
## Chain of Custody Documentation

**McCampbell Analytical, Inc.**
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

| | | |
|---|---|---|
| AEI Consultants<br>2500 Camino Diablo, Ste. #200<br>Walnut Creek, CA 94597 | Client Project ID: Williamson | Date Sampled: 01/09/08 |
| | | Date Received: 01/10/08 |
| | Client Contact: Adrian Angel | Date Reported: 01/15/08 |
| | Client P.O.: | Date Completed: 01/15/08 |

**WorkOrder: 0801281**

January 15, 2008

Dear Adrian:

Enclosed within are:

1) The results of the **6** analyzed samples from your project: **Williamson,**
2) A QC report for the above samples,
3) A copy of the chain of custody, and
4) An invoice 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 or concerns, please feel free to give me a call. Thank you for choosing

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

0801281

## McCAMPBELL ANALYTICAL INC.

110 2nd 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? ☐ Yes ☐ No Email PDF Report: YES

Report To: Adrian Angel Bill To: Same

Company: AEI Consultants
2500 Camino Diablo, Suite 200
Walnut Creek, CA 94597 E-Mail: aangel@aeiconsultants.com
Tel: (925) 944-2899, extension 132 Fax: (925) 944-2895
Project #: Project Name: Williamson
Project Location:
Sampler Signature: Adrian Angel

| SAMPLE ID (Field Point Name) | LOCATION | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX Water | Soil | Air | Sludge | Other | METHOD PRESERVED Ice | HCl | $HNO_3$ | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | | ~~1/8/08~~ 1/9/08 | 3:24 | 5 | VOA | X | | | | | X | X | | |
| MW-2 | | | 4:00 | | | X | | | | | X | X | | |
| MW-3 | | | 3:15 | | | X | | | | | X | X | | |
| MW-4 | | | ~~3:40~~ | | | X | | | | | X | X | | |
| MW-5 | | | 3:33 | | | X | | | | | X | X | | |
| MW-6 | | | 3:50 | | | X | | | | | X | X | | |

Analysis Request: BTEX & TPH as Gas (602/8020 + 8015)/MTBE; TPH - Diesel (8015) with silica gel cleanup; Total Petroleum Oil & Grease (5520 E&F/B&F); Total Petroleum Hydrocarbons (418.1); HVOCs EPA 8260 (8010 list); BTEX ONLY (EPA 602 / 8020); Pesticides EPA 608 / 8080; PCBs EPA 608 / 8080; VOCs EPA 624 / 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); RCI

Other: 8TBA 1,2 DCA, DIPE MTBE

Comments: OFF Hold 1.10.08

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| | 1/9/08 | 6:20 | |
| Relinquished By: | Date: | Time: | Received By: |
| Relinquished By: | Date: | Time: | Received By: |

ICE/t° 5.2 ✓
GOOD CONDITION ____
HEAD SPACE ABSENT ____
DECHLORINATED IN LAB ____

| PRESERVATION APPROPRIATE CONTAINERS | VOAS | O&G | METALS | OTHER |
|---|---|---|---|---|
| | | | | |

PERSERVED IN LAB ____

**McCampbell Analytical, Inc.**
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 0801281** **ClientID: AEL**

☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty

**Report to:**
Adrian Angel
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
Email: aangel@aeiconsultants.com
TEL: (408) 559-7600 FAX: (925) 283-6121
ProjectNo: Williamson
PO:

**Bill to:**
Denise Mockel
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
dmockel@aeiconsultants.com

**Requested TAT:** 5 days

***Date Received:*** **01/10/2008**
***Date Printed:*** **01/10/2008**

| Sample ID | ClientSampID | Matrix | Collection Date | Hold | Requested Tests (See legend below) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 0801281-001 | MW-1 | Water | 1/9/2008 3:24:00 | ☐ | C | A | B | | | | | | | | | |
| 0801281-002 | MW-2 | Water | 1/9/2008 4:00:00 | ☐ | C | A | B | | | | | | | | | |
| 0801281-003 | MW-3 | Water | 1/9/2008 3:15:00 | ☐ | C | A | B | | | | | | | | | |
| 0801281-004 | MW-4 | Water | 1/9/2008 3:40:00 | ☐ | C | A | B | | | | | | | | | |
| 0801281-005 | MW-5 | Water | 1/9/2008 3:33:00 | ☐ | C | A | B | | | | | | | | | |
| 0801281-006 | MW-6 | Water | 1/9/2008 3:50:00 | ☐ | C | A | B | | | | | | | | | |

**Test Legend:**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5-OXYS+PBSCV_W | 2 | G-MBTEX_W | 3 | TPH(D)_W | 4 | | 5 | |
| 6 | | 7 | | 8 | | 9 | | 10 | |
| 11 | | 12 | | | | | | | |

**Prepared by: Ana 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.

**McCampbell Analytical, Inc.**
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

# Sample Receipt Checklist

Client Name: **AEI Consultants**
Date and Time Received: **1/10/2008 7:47:18 PM**

Project Name: **Williamson**
Checklist completed and reviewed by: Ana Venegas

WorkOrder N°: **0801281** Matrix Water
Carrier: Client Drop-In

## Chain of Custody (COC) Information

| | | |
|---|---|---|
| Chain of custody present? | Yes ☑ | No ☐ |
| Chain of custody signed when relinquished and received? | Yes ☑ | No ☐ |
| Chain of custody agrees with sample labels? | Yes ☑ | No ☐ |
| Sample IDs noted by Client on COC? | Yes ☑ | No ☐ |
| Date and Time of collection noted by Client on COC? | Yes ☑ | No ☐ |
| Sampler's name noted on COC? | Yes ☑ | No ☐ |

## Sample Receipt Information

| | | | |
|---|---|---|---|
| Custody seals intact on shipping container/cooler? | Yes ☐ | No ☐ | NA ☑ |
| Shipping container/cooler in good condition? | Yes ☑ | No ☐ | |
| Samples in proper containers/bottles? | Yes ☑ | No ☐ | |
| Sample containers intact? | Yes ☑ | No ☐ | |
| Sufficient sample volume for indicated test? | Yes ☑ | No ☐ | |

## Sample Preservation and Hold Time (HT) Information

| | | | |
|---|---|---|---|
| All samples received within holding time? | Yes ☑ | No ☐ | |
| Container/Temp Blank temperature | Cooler Temp: 5.2°C | | NA ☐ |
| Water - VOA vials have zero headspace / no bubbles? | Yes ☑ | No ☐ | No VOA vials submitted ☐ |
| Sample labels checked for correct preservation? | Yes ☑ | No ☐ | |
| TTLC Metal - pH acceptable upon receipt (pH<2)? | Yes ☐ | No ☐ | NA ☑ |

Client contacted: Date contacted: Contacted by:

Comments:

**McCampbell Analytical, Inc.**
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

| | | |
|---|---|---|
| AEI Consultants | Client Project ID: Williamson | Date Sampled: 01/09/08 |
| 2500 Camino Diablo, Ste. #200 | | Date Received: 01/10/08 |
| Walnut Creek, CA 94597 | Client Contact: Adrian Angel | Date Extracted: 01/11/08-01/12/08 |
| | Client P.O.: | Date Analyzed 01/11/08-01/12/08 |

**Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS***

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0801281

| Lab ID | 0801281-001C | 0801281-002C | 0801281-003C | 0801281-004C | Reporting Limit for DF =1 | |
|---|---|---|---|---|---|---|
| Client ID | MW-1 | MW-2 | MW-3 | MW-4 | | |
| Matrix | W | W | W | W | | |
| DF | 1 | 10 | 1 | 10 | S | W |
| **Compound** | **Concentration** | | | | ug/kg | µg/L |
| t-Butyl alcohol (TBA) | ND | 64 | ND | 79 | NA | 2.0 |
| 1,2-Dichloroethane (1,2-DCA) | ND | ND<5.0 | ND | ND<5.0 | NA | 0.5 |
| Diisopropyl ether (DIPE) | ND | ND<5.0 | ND | ND<5.0 | NA | 0.5 |
| Methyl-t-butyl ether (MTBE) | ND | 63 | ND | 220 | NA | 0.5 |
| **Surrogate Recoveries (%)** | | | | | | |
| %SS1: | 107 | 110 | 108 | 105 | | |
| **Comments** | | h | | | | |

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

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

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| | | |
|---|---|---|
| AEI Consultants | Client Project ID: Williamson | Date Sampled: 01/09/08 |
| 2500 Camino Diablo, Ste. #200 | | Date Received: 01/10/08 |
| Walnut Creek, CA 94597 | Client Contact: Adrian Angel | Date Extracted: 01/11/08-01/12/08 |
| | Client P.O.: | Date Analyzed 01/11/08-01/12/08 |

**Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS***

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0801281

| | | | | | | |
|---|---|---|---|---|---|---|
| Lab ID | 0801281-005C | 0801281-006C | | | Reporting Limit for DF =1 | |
| Client ID | MW-5 | MW-6 | | | | |
| Matrix | W | W | | | | |
| DF | 10 | 10 | | | S | W |
| **Compound** | **Concentration** | | | | ug/kg | µg/L |
| t-Butyl alcohol (TBA) | 1000 | 87 | | | NA | 2.0 |
| 1,2-Dichloroethane (1,2-DCA) | 54 | ND<5.0 | | | NA | 0.5 |
| Diisopropyl ether (DIPE) | 5.6 | ND<5.0 | | | NA | 0.5 |
| Methyl-t-butyl ether (MTBE) | 140 | 160 | | | NA | 0.5 |
| **Surrogate Recoveries (%)** | | | | | | |
| %SS1: | 106 | 104 | | | | |
| **Comments** | | | | | | |

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

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

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| | | |
|---|---|---|
| AEI Consultants | Client Project ID: Williamson | Date Sampled: 01/09/08 |
| 2500 Camino Diablo, Ste. #200 | | Date Received: 01/10/08 |
| Walnut Creek, CA 94597 | Client Contact: Adrian Angel | Date Extracted: 01/11/08-01/15/08 |
| | Client P.O.: | Date Analyzed 01/11/08-01/15/08 |

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

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0801281

| Lab ID | Client ID | Matrix | TPH(g) | MTBE | Benzene | Toluene | Ethylbenzene | Xylenes | DF | % SS |
|---|---|---|---|---|---|---|---|---|---|---|
| 001A | MW-1 | W | ND | ND | ND | ND | ND | ND | 1 | 99 |
| 002A | MW-2 | W | 38,000,a,h | ND<400 | 3000 | 380 | 1200 | 1900 | 50 | 94 |
| 003A | MW-3 | W | ND | ND | ND | ND | ND | ND | 1 | 98 |
| 004A | MW-4 | W | 17,000,a | ND<900 | 1300 | 120 | 580 | 790 | 10 | 102 |
| 005A | MW-5 | W | 7400,a | ND<350 | 2000 | 5.6 | 93 | 29 | 1 | 111 |
| 006A | MW-6 | W | 8400,a | ND<400 | 790 | 17 | 210 | 51 | 1 | 118 |
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|---|---|---|---|---|---|---|---|---|---|
| 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 | 1 | µg/L |
| | S | 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 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 / 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; p) see attached narrative.

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

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| | | |
|---|---|---|
| AEI Consultants | Client Project ID: Williamson | Date Sampled: 01/09/08 |
| 2500 Camino Diablo, Ste. #200 | | Date Received: 01/10/08 |
| Walnut Creek, CA 94597 | Client Contact: Adrian Angel | Date Extracted: 01/10/08 |
| | Client P.O.: | Date Analyzed 01/10/08-01/11/08 |

**Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel***

Extraction method SW3510C Analytical methods SW8015C Work Order: 0801281

| Lab ID | Client ID | Matrix | TPH(d) | DF | % SS |
|---|---|---|---|---|---|
| 0801281-001B | MW-1 | W | ND | 1 | 111 |
| 0801281-002B | MW-2 | W | 48,000,d,h | 10 | 82 |
| 0801281-003B | MW-3 | W | ND | 1 | 103 |
| 0801281-004B | MW-4 | W | 2600,d | 1 | 108 |
| 0801281-005B | MW-5 | W | 580,d,b | 1 | 106 |
| 0801281-006B | MW-6 | W | 1300,d | 1 | 110 |
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|---|---|---|---|
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | W | 50 | µg/L |
| | S | NA | NA |

* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/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 ~1 vol. % sediment; k) kerosene/kerosene range/jet fuel range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

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# QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder 0801281

**EPA Method SW8015C** **Extraction SW3510C** **BatchID: 33081** **Spiked Sample ID: N/A**

| 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 | RPD | LCS/LCSD | RPD |
| TPH(d) | N/A | 1000 | N/A | N/A | N/A | 99.2 | 97.1 | 2.18 | N/A | N/A | 70 - 130 | 30 |
| %SS: | N/A | 2500 | N/A | N/A | N/A | 108 | 107 | 0.662 | N/A | N/A | 70 - 130 | 30 |

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

NONE

BATCH 33081 SUMMARY

| Sample ID | Date Sampled | Date Extracted | Date Analyzed | Sample ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 0801281-001B | 01/09/08 3:24 PM | 01/10/08 | 01/10/08 11:14 PM | 0801281-002B | 01/09/08 4:00 PM | 01/10/08 | 01/11/08 7:50 PM |
| 0801281-003B | 01/09/08 3:15 PM | 01/10/08 | 01/10/08 10:05 PM | 0801281-004B | 01/09/08 3:40 PM | 01/10/08 | 01/10/08 11:14 PM |
| 0801281-005B | 01/09/08 3:33 PM | 01/10/08 | 01/11/08 12:22 AM | 0801281-006B | 01/09/08 3:50 PM | 01/10/08 | 01/11/08 1:30 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.

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.

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# QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder 0801281

**EPA Method SW8021B/8015Cm** **Extraction SW5030B** **BatchID: 33095** **Spiked Sample ID: 0801223-001A**

| 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 | RPD | LCS/LCSD | RPD |
| TPH(btex)£ | ND | 60 | 102 | 101 | 1.04 | 108 | 106 | 0.986 | 70 - 130 | 30 | 70 - 130 | 30 |
| MTBE | ND | 10 | 84.2 | 76.4 | 9.73 | 107 | 108 | 1.07 | 70 - 130 | 30 | 70 - 130 | 30 |
| Benzene | ND | 10 | 90.1 | 90.2 | 0.112 | 98.1 | 99.3 | 1.22 | 70 - 130 | 30 | 70 - 130 | 30 |
| Toluene | ND | 10 | 101 | 107 | 5.77 | 98.2 | 98.9 | 0.658 | 70 - 130 | 30 | 70 - 130 | 30 |
| Ethylbenzene | ND | 10 | 99 | 108 | 8.95 | 104 | 105 | 1.42 | 70 - 130 | 30 | 70 - 130 | 30 |
| Xylenes | ND | 30 | 110 | 120 | 8.70 | 117 | 117 | 0 | 70 - 130 | 30 | 70 - 130 | 30 |
| %SS: | 101 | 10 | 94 | 95 | 1.34 | 89 | 89 | 0 | 70 - 130 | 30 | 70 - 130 | 30 |

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

NONE

BATCH 33095 SUMMARY

| Sample ID | Date Sampled | Date Extracted | Date Analyzed | Sample ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 0801281-001A | 01/09/08 3:24 PM | 01/11/08 | 01/11/08 9:54 PM | | | | |

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.

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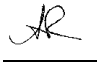
QA/QC Officer

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# QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder 0801281

| EPA Method SW8260B | Extraction SW5030B | BatchID: 33136 | Spiked Sample ID: 0801285-003B |
|---|---|---|---|

| 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 | RPD | LCS/LCSD | RPD |
| tert-Amyl methyl ether (TAME) | ND | 10 | 106 | 109 | 2.59 | 108 | 112 | 3.72 | 70 - 130 | 30 | 70 - 130 | 30 |
| t-Butyl alcohol (TBA) | ND | 50 | 82.9 | 85.9 | 3.63 | 89.2 | 89 | 0.222 | 70 - 130 | 30 | 70 - 130 | 30 |
| 1,2-Dibromoethane (EDB) | ND | 10 | 96.5 | 96.7 | 0.230 | 93.9 | 102 | 8.01 | 70 - 130 | 30 | 70 - 130 | 30 |
| 1,2-Dichloroethane (1,2-DCA) | ND | 10 | 108 | 111 | 2.34 | 129 | 127 | 1.33 | 70 - 130 | 30 | 70 - 130 | 30 |
| Diisopropyl ether (DIPE) | ND | 10 | 121 | 123 | 1.47 | 118 | 120 | 1.97 | 70 - 130 | 30 | 70 - 130 | 30 |
| Ethyl tert-butyl ether (ETBE) | ND | 10 | 109 | 112 | 2.28 | 113 | 115 | 1.89 | 70 - 130 | 30 | 70 - 130 | 30 |
| Methyl-t-butyl ether (MTBE) | ND | 10 | 109 | 113 | 3.02 | 126 | 124 | 1.77 | 70 - 130 | 30 | 70 - 130 | 30 |
| %SS1: | 105 | 10 | 103 | 103 | 0 | 111 | 104 | 5.65 | 70 - 130 | 30 | 70 - 130 | 30 |

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

NONE

BATCH 33136 SUMMARY

| Sample ID | Date Sampled | Date Extracted | Date Analyzed | Sample ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 0801281-001C | 01/09/08 3:24 PM | 01/11/08 | 01/11/08 3:22 PM | 0801281-002C | 01/09/08 4:00 PM | 01/12/08 | 01/12/08 3:48 AM |
| 0801281-003C | 01/09/08 3:15 PM | 01/12/08 | 01/12/08 4:33 AM | 0801281-004C | 01/09/08 3:40 PM | 01/12/08 | 01/12/08 5:18 AM |
| 0801281-005C | 01/09/08 3:33 PM | 01/12/08 | 01/12/08 6:03 AM | 0801281-006C | 01/09/08 3:50 PM | 01/12/08 | 01/12/08 6:48 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.

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.

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# QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder 0801281

**EPA Method SW8021B/8015Cm** **Extraction SW5030B** **BatchID: 33137** **Spiked Sample ID: 0801284-003A**

| 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 | RPD | LCS/LCSD | RPD |
| TPH(btex)£ | ND | 60 | 108 | 105 | 3.46 | 97.7 | 98.9 | 1.16 | 70 - 130 | 30 | 70 - 130 | 30 |
| MTBE | ND | 10 | 83.8 | 82.2 | 1.89 | 99 | 99.7 | 0.763 | 70 - 130 | 30 | 70 - 130 | 30 |
| Benzene | ND | 10 | 85 | 82.5 | 2.97 | 89.9 | 87.2 | 3.09 | 70 - 130 | 30 | 70 - 130 | 30 |
| Toluene | ND | 10 | 91.4 | 88.8 | 2.87 | 88.1 | 86 | 2.38 | 70 - 130 | 30 | 70 - 130 | 30 |
| Ethylbenzene | ND | 10 | 101 | 97 | 3.94 | 101 | 98.9 | 2.45 | 70 - 130 | 30 | 70 - 130 | 30 |
| Xylenes | ND | 30 | 110 | 107 | 3.08 | 96.7 | 96.3 | 0.345 | 70 - 130 | 30 | 70 - 130 | 30 |
| %SS: | 88 | 10 | 87 | 87 | 0 | 96 | 94 | 2.75 | 70 - 130 | 30 | 70 - 130 | 30 |

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

NONE

BATCH 33137 SUMMARY

| Sample ID | Date Sampled | Date Extracted | Date Analyzed | Sample ID | Date Sampled | Date Extracted | Date Analyzed |
|---|---|---|---|---|---|---|---|
| 0801281-002A | 01/09/08 4:00 PM | 01/11/08 | 01/11/08 10:24 PM | 0801281-003A | 01/09/08 3:15 PM | 01/11/08 | 01/11/08 10:54 PM |
| 0801281-004A | 01/09/08 3:40 PM | 01/14/08 | 01/14/08 10:16 PM | 0801281-005A | 01/09/08 3:33 PM | 01/12/08 | 01/12/08 1:25 AM |
| 0801281-005A | 01/09/08 3:33 PM | 01/14/08 | 01/14/08 11:47 PM | 0801281-006A | 01/09/08 3:50 PM | 01/12/08 | 01/12/08 1:55 AM |
| 0801281-006A | 01/09/08 3:50 PM | 01/15/08 | 01/15/08 12:17 AM | | | | |

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

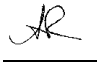
% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

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.

DHS ELAP Certification N° 1644


QA/QC Officer