

Environmental Health Services  
Environmental Protection  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

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By Alameda County Environmental Health at 5:20 pm, Dec 19, 2012

SUBJECT: Perjury Statement

To Whom It May Concern:

I declare, under penalty of perjury, that the information and/or recommendations contained in the requested attached reports in your letter dated August 8, 2011 are true and correct to the best of my knowledge.

Signed:



JANE A. ALLEN



# AEI Consultants

## Environmental & Engineering Services

October 30, 2012

### Performance Monitoring and Third Quarter 2012 Groundwater Monitoring Report

**Property Identification:**

325 Martin Luther King Jr. Way  
Oakland, California

AEI Project No. 277915  
ACEH Site: RO0002930

**Prepared for:**

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# TABLE OF CONTENTS

<b>1.0 INTRODUCTION .....</b>	<b>1</b>
<b>2.0 SITE DESCRIPTION AND HISTORY .....</b>	<b>1</b>
2.1 Tank Closure .....	1
2.2 2005 AEI Investigation .....	1
2.3 2005 Terra Firma Investigation .....	2
2.4 2006 Ceres Investigation .....	2
2.5 2006 LRM Consulting Workplan .....	2
2.6 2007 AEI Investigation .....	2
2.7 Chemical Oxidation Pilot Test .....	3
2.8 Initial Hydrogen Peroxide Infusion .....	3
2.9 Post Infusion Monitoring .....	4
2.10 Installation of Infusion Wells IW-4 and IW-5 .....	4
2.11 Second Hydrogen Peroxide Infusion .....	5
<b>3.0 THIRD QUARTER 2012 GROUNDWATER MONITORING EVENT .....</b>	<b>5</b>
3.1 Summary of Groundwater Sampling Activities .....	5
3.2 Analytical Results .....	6
3.2.1 July 27, 2012 .....	6
3.2.2 August 27, 2012 .....	6
3.2.3 September 21, 2012 .....	6
<b>4.0 SUMMARY .....</b>	<b>7</b>
<b>5.0 RECOMMENDATIONS .....</b>	<b>7</b>
<b>7.0 REPORT LIMITATIONS AND SIGNATURES .....</b>	<b>7</b>

## FIGURES

<i>FIGURE 1</i>	<i>SITE LOCATION MAP</i>
<i>FIGURE 2</i>	<i>SITE PLAN</i>
<i>FIGURE 3</i>	<i>DETAILED SITE PLAN</i>
<i>FIGURE 4</i>	<i>GROUNDWATER ANALYTICAL DATA</i>
<i>FIGURE 5</i>	<i>GROUNDWATER GRADIENT</i>
<i>FIGURE 6</i>	<i>TPH-G ISOCONCENTRATION MAP – 9/27/12</i>
<i>FIGURE 7</i>	<i>DO CONCENTRATION MAP – 9/21/12</i>

## **TABLES**

<i>TABLE 1</i>	<i>WELL CONSTRUCTION DETAILS</i>
<i>TABLE 2</i>	<i>GROUNDWATER ELEVATION DATA</i>
<i>TABLE 3</i>	<i>GROUNDWATER ANALYTICAL DATA – TPH + MBTEX</i>
<i>TABLE 4</i>	<i>GROUNDWATER ANALYTICAL DATA – FUEL ADDITIVES</i>

## **APPENDICES**

<i>APPENDIX A</i>	<i>MONITORING WELL FIELD SAMPLING FORMS</i>
<i>APPENDIX B</i>	<i>LABORATORY ANALYTICAL AND CHAIN OF CUSTODY DOCUMENTATION</i>



## 1.0 INTRODUCTION

AEI Consultants (AEI) has prepared this report to document the performance of the hydrogen peroxide infusion program and the Third Quarter 2012 groundwater monitoring event at the above referenced site (Figure 1, Site Location Map). The infusion program and groundwater monitoring is being performed in accordance with the requirements of the Alameda County Environmental Health (ACEH).

## 2.0 SITE DESCRIPTION AND HISTORY

The subject property is located on the northwestern corner of the intersection of Martin Luther King Jr. Way and 4<sup>th</sup> Street in a mixed commercial and industrial area of Oakland. The property measures approximately 100 feet along Martin Luther King and approximately 150 feet along 4<sup>th</sup> Street with the property building covering essentially 100% of the site. The building is currently vacant, but was previously occupied by Pucci Enterprises as warehouse space and cold storage freezers.

A Phase I Environmental Site Assessment (ESA) of the property dated November 1, 1993 identified a 10,000-gallon former gasoline UST abandoned in place below the northeast corner of the building. The gasoline UST was used to provide fuel for the Pucci Enterprises truck fleet.

### 2.1 Tank Closure

On October 20, 1993, the tank was abandoned in place by pumping remaining sludge out of the tank, steam cleaning the tank, and filling the tank with concrete slurry. At the time of the UST closure, it was believed that the tank could not be removed because of its proximity to the footing of the 671 4<sup>th</sup> Street building. The available records contain no documentation of sampling around the tank at the time of the tank closure. After tank closure, the eastern portion of the building (325 Martin Luther King) was constructed.

### 2.2 2005 AEI Investigation

In May 2005, AEI performed a Phase II Subsurface Investigation. Soil borings SB-1 and SB-3 encountered refusal at a depth of 4 feet bgs, at the top of the concrete filled UST. Soil borings SB-2 and SB-4 were advanced into the groundwater. Total Petroleum Hydrocarbons as gasoline (TPH-g), as diesel (TPH-d), and benzene were reported in groundwater from boring SB-2 at concentrations up to 780 micrograms per liter ( $\mu\text{g/L}$ ), 420  $\mu\text{g/L}$ , and 53  $\mu\text{g/L}$ , respectively.

### **2.3 2005 Terra Firma Investigation**

In September 2005, Terra Firma collected groundwater samples from four (4) soil borings (labeled 50901-1 to 50901-4). Analysis of the groundwater samples reported the highest concentrations of hydrocarbons in soil boring 50901-3 to the south of the UST, where TPH-g, TPH-d, and benzene were reported at concentrations of 20,000 µg/L, 3600 µg/L, and 990 µg/L, respectively.

### **2.4 2006 Ceres Investigation**

In June 2006, Ceres Associates (Ceres) advanced five soil borings (SB5 through SB9). The highest concentrations of hydrocarbons in the soil were reported in boring SB-7 (located southeast of the UST) where TPH-g, TPH-d, and benzene were reported in sample SB-7-10 at concentrations of 20,000 mg/kg, 3,300 mg/kg, 200 mg/kg, respectively. Analysis of groundwater samples from SB7 reported TPH-g, TPH-d, and benzene at concentrations of 110,000 µg/l, 110,000 µg/l, and 3,300 µg/l, respectively. Concentrations of TPH-g in the other soil borings ranged from ND <50 µg/l (SB5-GW) to 610 µg/l (SB8-GW).

### **2.5 2006 LRM Consulting Workplan**

LRM Consulting prepared release notification documentation and a workplan for the ACEH in August 2006. The workplan included additional file and data base research into possible additional source locations (dispenser, piping, offsite releases, etc) and installing three (3) 2-inch diameter monitoring wells a screened interval of 5 to 20 feet bgs.

### **2.6 2007 AEI Investigation**

Following ACEH comments relating to the work plan and previous investigations, AEI was retained to prepare a comprehensive workplan. The *Site Characterization Workplan*, dated March 31, 2007, outlined the scope of work for installation of 12 additional soil borings and three groundwater monitoring wells to further characterize the release.

In May of 2007, AEI performed a soil and groundwater investigation which included the drilling of additional twelve (12) soil borings at the property. Significant concentrations of TPH-g, TPH-d, and benzene in the soil were reported only in monitoring well MW-3 (MW-3-10), located down gradient of abandoned UST, at concentrations of 1,500 mg/kg, 240 mg/kg, and 6.0 mg/kg, respectively. Low concentrations (<210 µg/l) of TPH were reported down gradient of the abandoned UST in soil boring SB-10, SB-12, SB-13, SB-16, SB-17, SB-18, and SB-19.

Data from these investigations shows that the dissolved hydrocarbon plume is limited to the eastern most portion of 325 Martin Luther King Jr. Way, immediately down gradient of the abandoned in place UST. On August 10, 2007, AEI installed three (3) groundwater monitoring wells (MW-1 thru MW-3) down gradient of the abandoned in place UST. Significant concentrations of TPH-g, TPH-d and benzene were reported only in well MW-3 at concentrations of 24,000 µg/l, 1,200 µg/l, and 2,600 µg/l, respectively.

Site maps showing the locations of soil borings advanced and monitoring wells installed by AEI and well construction details are contained in AEI's *Soil and Groundwater Investigation Report*, dated September 21, 2007.

## 2.7 Chemical Oxidation Pilot Test

A *Corrective Action Pilot Test Workplan*, dated April 7, 2008, was prepared for the ACEH. The workplan proposed five injection points around monitoring well MW-3 using a RegenOx™ solution. The workplan was approved by the ACEH in a letter dated May 13, 2008. On July 17 and 18, 2008, 720 lbs. of RegenOx™ was injected in five locations (IP-1 through IP-5) at spacing approximately five feet away from well MW-3.

Following the pilot test, groundwater samples collected from well MW-3 on August 4, 2008 reported an increase in TPH-g from pre-pilot concentration from 20,000 µg/L to 110,000 µg/L. Follow up sampling on August 20, 2008 reported TPH-g at a concentration of 120,000 µg/L. This increase was the result of release of hydrocarbons adsorbed to clay, silt and sand grains in the smear zone (between 9 - 11 feet bgs).

This significant increase in TPH-g concentration indicated that the residual source area around the abandoned in place UST is significantly greater than had been anticipated and that several rounds of injection would be required to remediate the site. Based on the relative high cost of multiple direct push infusions using RegenOx™, installation of permanent injection points and alternate remedial approaches were evaluated. AEI determined that H<sub>2</sub>O<sub>2</sub> infusion through permanently installed wells was a lower cost approach to remediation. A *Hydrogen Peroxide Infusion Pilot Test Workplan*, dated August 12, 2009, was completed for the site and approved in a letter from the ACEH dated August 21, 2009.

## 2.8 Initial Hydrogen Peroxide Infusion

In December of 2009, a 2,400 gallon poly tank was placed on the site and manifolded to wells IW-1, IW-2 and IW-3. Between December 29, 2009, and January 29, 2010, 8,000 gallons of 0.5% H<sub>2</sub>O<sub>2</sub> was infused primarily into injection wells IW-2 and IW-3.

On February 8 and 24, 2010 following the infusion of 8,000 gallons of 0.5% H<sub>2</sub>O<sub>2</sub> solution, wells MW-3, IW-2, and IW-3 were sampled to determine the effects of the H<sub>2</sub>O<sub>2</sub> infusion. TPH-g in MW-3 decreased from 59,000 µg/L on October 30, 2009 to 16,000 µg/L on February 24, 2010. TPH-g in IW-2 decreased from 15,000 µg/L on October 30, 2009 to 3,500 µg/L on February 24, 2010. IW-3 decreased from 77,000 µg/L on November 23, 2009 to 36,000 µg/L on February 24, 2010.

Between March 16, 2010 and May 12, 2010, an additional 9,400 gallons of 0.5% H<sub>2</sub>O<sub>2</sub> were infused into wells IW-2 and IW-3. Between May 24, 2010 and June 29, 2010, 4,900 gallons of 1.25% H<sub>2</sub>O<sub>2</sub> were infused primarily into well IW-3.

Progress monitoring sampling was performed on May 24, July 19, and August 5, 2010. The results of the progress sampling through July 19, 2010 is summarized in Table 3 and in the *Hydrogen Peroxide Infusion Report* dated July 30, 2010. Results from the August 5, 2010

sampling event reported TPH-g in wells MW-3, and IW-1 at concentrations of 350 µg/L and 4,300 µg/L, respectively.

The third quarter 2010 monitoring event on September 9, 2010 reported TPH-g in wells MW-3, and IW-1 at concentrations of 1,200 µg/L and 22,000 µg/L, respectively.

Following the Third Quarter 2010 semi-annual monitoring event on September 9, 2010 hydrogen peroxide infusion into well IW-3 was resumed. Between September 21, 2010 and December 29, 2010 an additional 18,000 gallons of 0.5 % hydrogen peroxide was infused in well IW-3.

## **2.9 Post Infusion Monitoring**

The regularly scheduled First Quarter 2011 semiannual monitoring event was performed on March 24, 2011. No TPH-g or BTEX was reported in wells MW-1, MW-2, IW-1, or IW-2 at or below standard laboratory reporting limits.

TPH-g was reported in wells MW-3 and IW-3 at concentrations of 140 µg/L and 390 µg/L respectively.

The second semiannual monitoring event was performed on August 9, 2011. No TPH-g or BTEX was reported in wells MW-1, MW-2, IW-1, or IW-2 at or below standard laboratory reporting limits.

TPH-g and benzene concentrations in well MW-3 increased from concentrations of 590 µg/L and 38 µg/L, respectively on August 9, 2011 to 4,900 µg/L and 1,400 µg/L, respectively on December 14, 2011. The concentration of TPH-d increased from 200 µg/L to 1,000 µg/L.

TPH-g concentration in well IW-3 increased from 9,600 µg/L on August 9, 2011 to 36,000 µg/L and on December 14, 2011. Benzene concentration in well IW-2 increased from 2,400 µg/L on August 9, 2011 to 4,600 µg/L and on December 14, 2011.

## **2.10 Installation of Infusion Wells IW-4 and IW-5**

On November 29, 2011, AEI installed two addition infusion wells (IW-4 and IW-5) on the northeast side of the abandoned in place UST. The locations of the wells are shown on Figure 2. Well completion details are summarized on Table 1.

During the December 14, 2011 groundwater monitoring event TPH-g and benzene concentrations in IW-4 were reported at concentrations of 95,000 µg/L and 13,000 µg/L, respectively. TPH-g and benzene concentrations in IW-5 were reported at concentrations of 250 µg/L and 11 µg/L, respectively.

AEI recommended additional H<sub>2</sub>O<sup>2</sup> infusion following the recent installation of additional up gradient infusion wells (IW-4, IW-5).



## **2.11 Second Hydrogen Peroxide Infusion**

Infusion into well IW-4 was initiated on January 12, 2012. In January 2012, a 2400 gallon poly tank was placed on the site and manifolded directly to wells IW-3, IW-4, and IW-5. Between January 2012, and May 2012, approximately 12,000 gallons of 1% H<sub>2</sub>O<sub>2</sub> was infused into the wells, primarily into injection well IW-4. After the first week of infusion, only Well IW-4 was directly manifolded to the tank and casings of wells IW-1, IW-2, IW-3, and IW-5 were filled with H<sub>2</sub>O<sub>2</sub> during the weekly system checks. Average infusion is estimated to have been 0.1 gallon per minute.

## **3.0 THIRD QUARTER 2012 GROUNDWATER MONITORING EVENT**

### **3.1 Summary of Groundwater Sampling Activities**

On July 27, August 27, and October 24, 2012 groundwater monitoring wells MW-3, IW-3 and IW-4 were gauged and sampled, as part of performance monitoring of the hydrogen peroxide infusion program.

On September 21, 2012, a full monitoring event was performed which included all groundwater monitoring wells (MW-1 through MW-3 and infusion wells IW-1 through IW-5) at the site.

For each event, prior to purging and sampling the wells, the well caps were removed from each well. After allowing a minimum of 15 minutes for the water level in each well to reach equilibrium with atmospheric pressure, the depth to water in each well was measured with an electronic meter to a precision of  $\pm 0.01$  feet. Each well was then purged with a peristaltic pump with the bottom of the drop tube placed at approximately 10 feet bgs under a low flow protocol. Each well was purged until the groundwater parameters of temperature, pH, conductivity, dissolved oxygen (DO), oxygen reduction potential (ORP) and visual clarity stabilized.

Dissolved oxygen (DO) in wells MW-3 through IW-5 was reported at concentrations ranging from 4.97 mg/L (MW-3) to 6.37 mg/L (MW-5). DO concentrations in down gradient wells MW-1 and MW-2 were reported at concentrations of 1.64 mg/L and 2.97 mg/L, respectively. Historical DO measurements in IW-1, the most up gradient well on the site indicate that the DO in groundwater entering the site has a concentration that ranges from 1.0 to 2.0 mg/L.

Each water sample was collected into hydrochloric acid (HCl) preserved one liter amber bottle and three (3) 40-milliliter (ml) volatile organic analysis vials (VOAs) using the peristaltic pump. All samples were labeled with at minimum, project number, sample number, time, date, and sampler's name.

The samples were entered on a chain-of-custody form and placed on water ice in a pre-cooled ice chest pending same day transportation under chain of custody protocols to McCampbell Analytical, Inc. of Pittsburg, California (Department of Health Services Certification # 1644). The samples were analyzed for TPH-g and MBTEX using methods SW8021B/8015Bm, for TPH-d by method SW8015B, and for fuel oxygenates and lead scavengers by method SW8260B.

## 3.2 Analytical Results

### 3.2.1 July 27, 2012

Groundwater samples from the abbreviated July 27, 2012 event (wells MW-3, IW-3, and IW-4) were analyzed for TPH-g and MBTEX.

No TPH-g, TPH-d, MBTEX were reported in the groundwater samples from wells MW-3 or IW-3 at standard laboratory reporting limits.

TPH-g and MBTEX concentrations in well IW-4 decreased to 270 µg/L, ND<5.0 µg/L, 2.0 µg/L, 4.3 µg/L, 1.5 µg/L, 3.4 µg/L, respectively.

### 3.2.2 August 27, 2012

Groundwater samples from the abbreviated August 27, 2012 event (wells MW-3, IW-3, and IW-4) were analyzed for TPH-g and MBTEX.

TPH-g and MBTEX concentrations in well MW-3 decreased to 51 µg/L, ND<5.0 µg/L, 2.4 µg/L, ND<0.5 µg/L, ND<0.5 µg/L, 4.9 µg/L, respectively. TPH-d was reported at ND<50.

TPH-g and MBTEX concentrations in well IW-3 increased to 1,100 µg/L, ND<45 µg/L, 100 µg/L, 160 µg/L, 5.1 µg/L, 150 µg/L, respectively. TPH-d was reported at 130 µg/L.

TPH-g and MBTEX concentrations in well IW-4 increased to 2,900 µg/L, ND<50 µg/L, 230 µg/L, 520 µg/L, 46 µg/L, 260 µg/L, respectively. TPH-d was reported at 280 µg/L.

### 3.2.3 September 21, 2012

No TPH-g, MBTEX, fuel additives were reported in wells MW-1, MW-2, MW-3, IW-1, or IW-5 at standard laboratory reporting limits.

TPH and MBTEX concentrations in well IW-2 increased to concentrations of 91 µg/L, ND<0.5 µg/L, 0.89 µg/L, ND<0.5 µg/L, ND<0.5 µg/L, and 7.5 µg/L.

TPH-g and MBTEX concentrations in well IW-3 increased to concentrations of 4,300 µg/L, ND<50 µg/L, 460 µg/L, 580 µg/L, 32 µg/L, 560 µg/L, respectively.

TPH-g and MBTEX concentrations in well IW-4 increased to concentrations of 4,500 µg/L, ND<50 µg/L, 350 µg/L, 820 µg/L, 64 µg/L, and 370 µg/L, respectively.

Analysis for TPH-d in water samples from wells MW-3 and wells IW-2 through IW-5 reported TPH-d at concentrations of ND<50 µg/L, ND<50 µg/L, 360 µg/L, 150 µg/L, and ND<50 µg/L, respectively.

The analytical results from the September 21, 2012 monitoring event and previous sampling events are summarized in Table 2, Groundwater Elevation Data and Table 3, Groundwater Analytical Data. Groundwater Monitoring Well Field Sampling Forms, which include water quality data and other parameters collected during well purging are attached as Appendix A.

#### 4.0 SUMMARY

TPH-g concentrations have rebounded in wells IW-4 and IW-3 to concentrations of 21,000 µg/L and 4,400 µg/L, respectively. The rebound in these wells suggests that residual soil contamination remains up gradient of the UST, likely just outside of the building underneath the northern sidewalk.

#### 5.0 RECOMMENDATIONS

AEI believes that the bulk of the source material up gradient of the abandoned UST has been removed and requests that the site be considered for closure under the current low risk closure guidelines.

AEI will continue monthly sampling of wells MW-3, IW-3, and IW-4 until the hydrocarbon concentration in well IW-4 stabilizes. A progress report will be prepared following 2 more months of monitoring.

#### 7.0 REPORT LIMITATIONS AND SIGNATURES

This report presents a summary of work completed by AEI, 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 requested 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 and observations. 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 regarding this report, we can be reached at (925) 746-6000.

Sincerely,

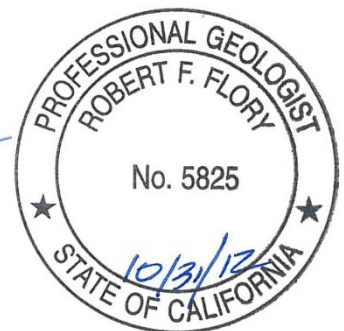
**AEI Consultants**



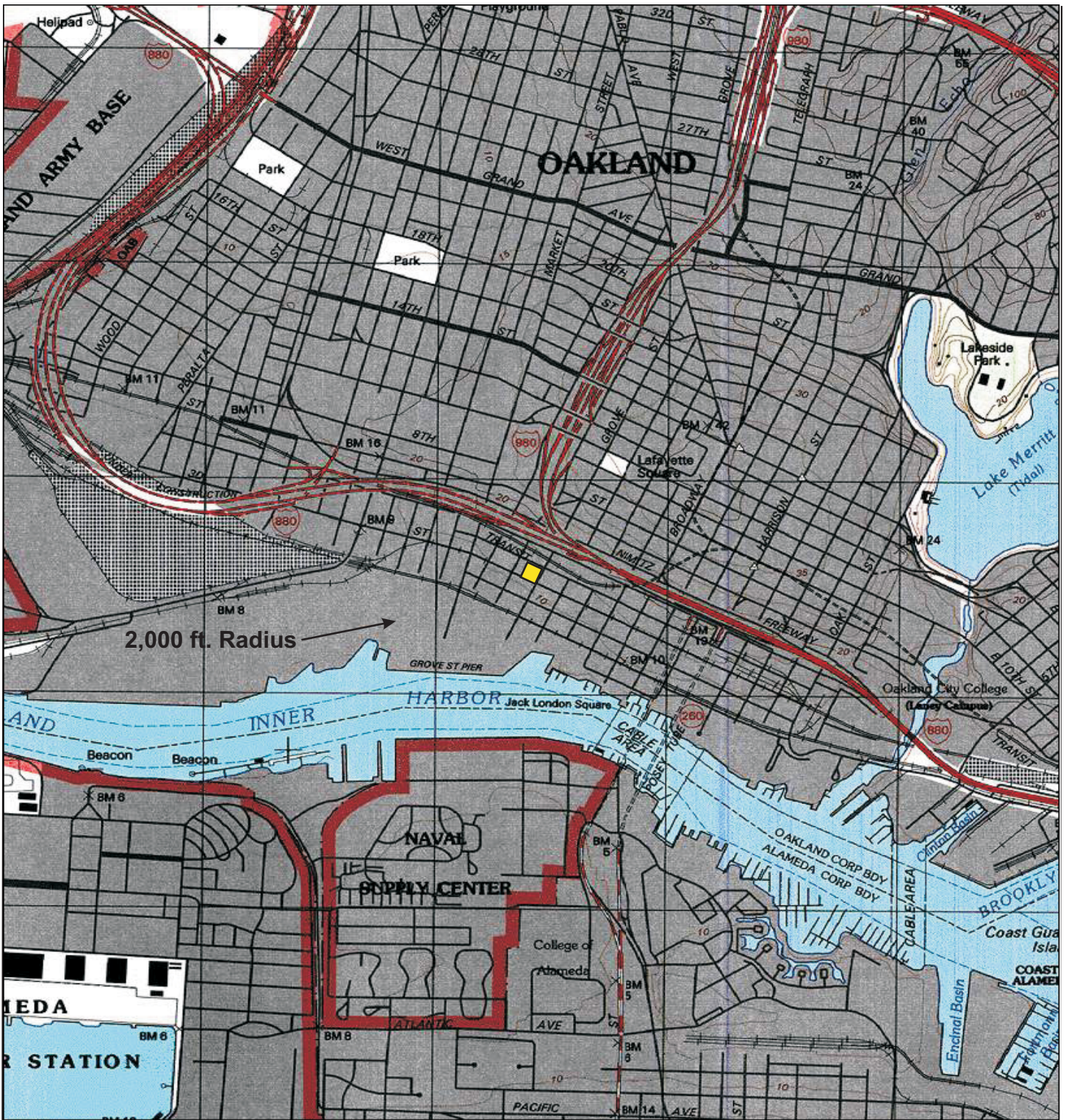
Adrian M. Angel, GIT  
Project Geologist



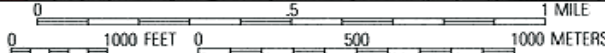
Robert F. Flory, PG  
Senior Geologist



## FIGURES





TN / MN  
15°



Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

**LEGEND**

 N

 SITE LOCATION

**AEI CONSULTANTS**  
2500 Camino Diablo, Walnut Creek, CA 94597

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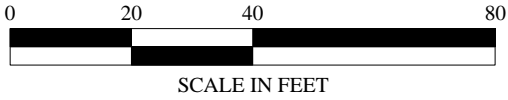
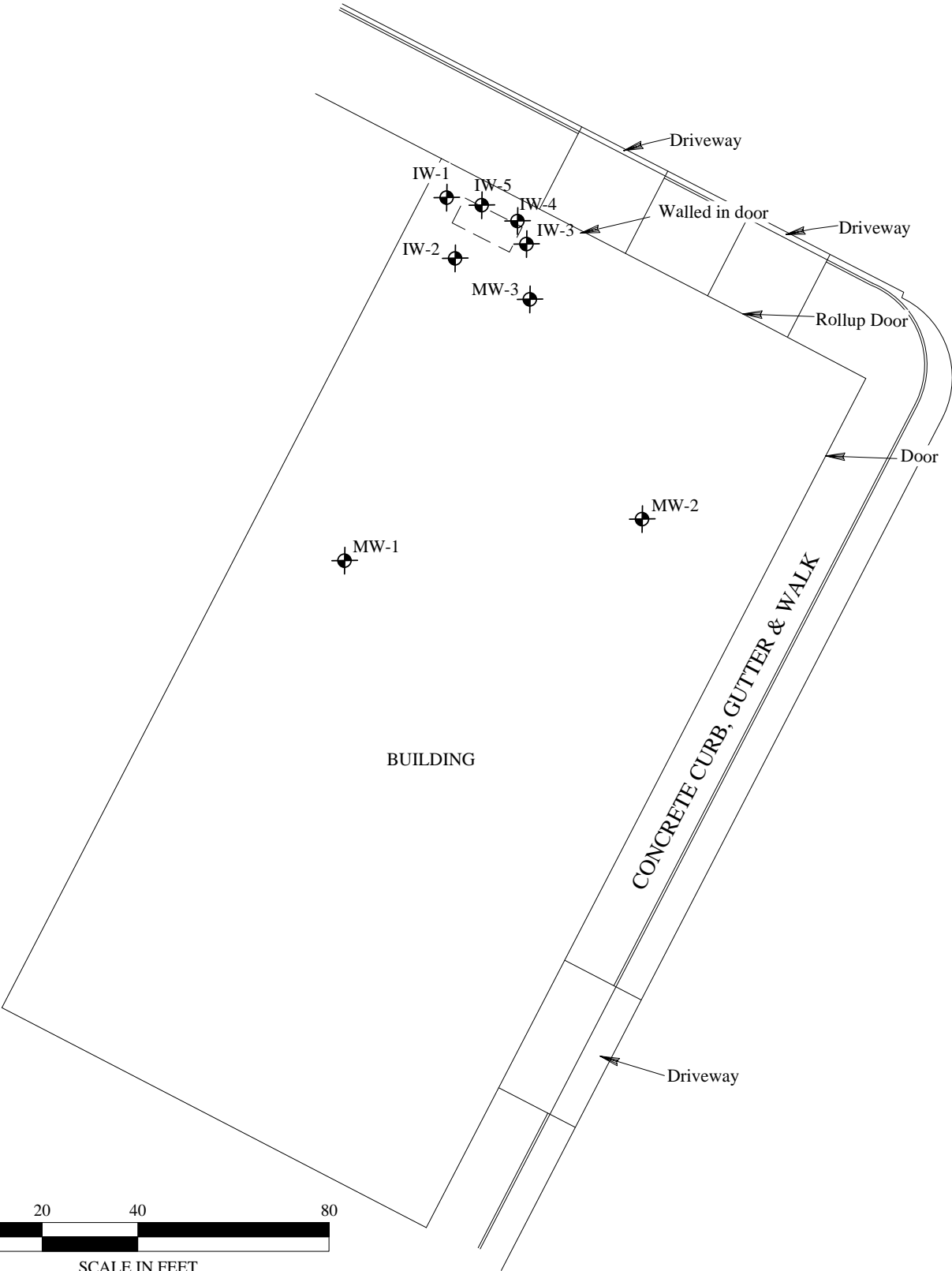
**SITE LOCATION MAP**

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325 Martin Luther King Jr. Way  
Oakland, CA 94607


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**FIGURE 1**  
Job No: 277915



LEGEND

 2" Monitoring / Infusion Well

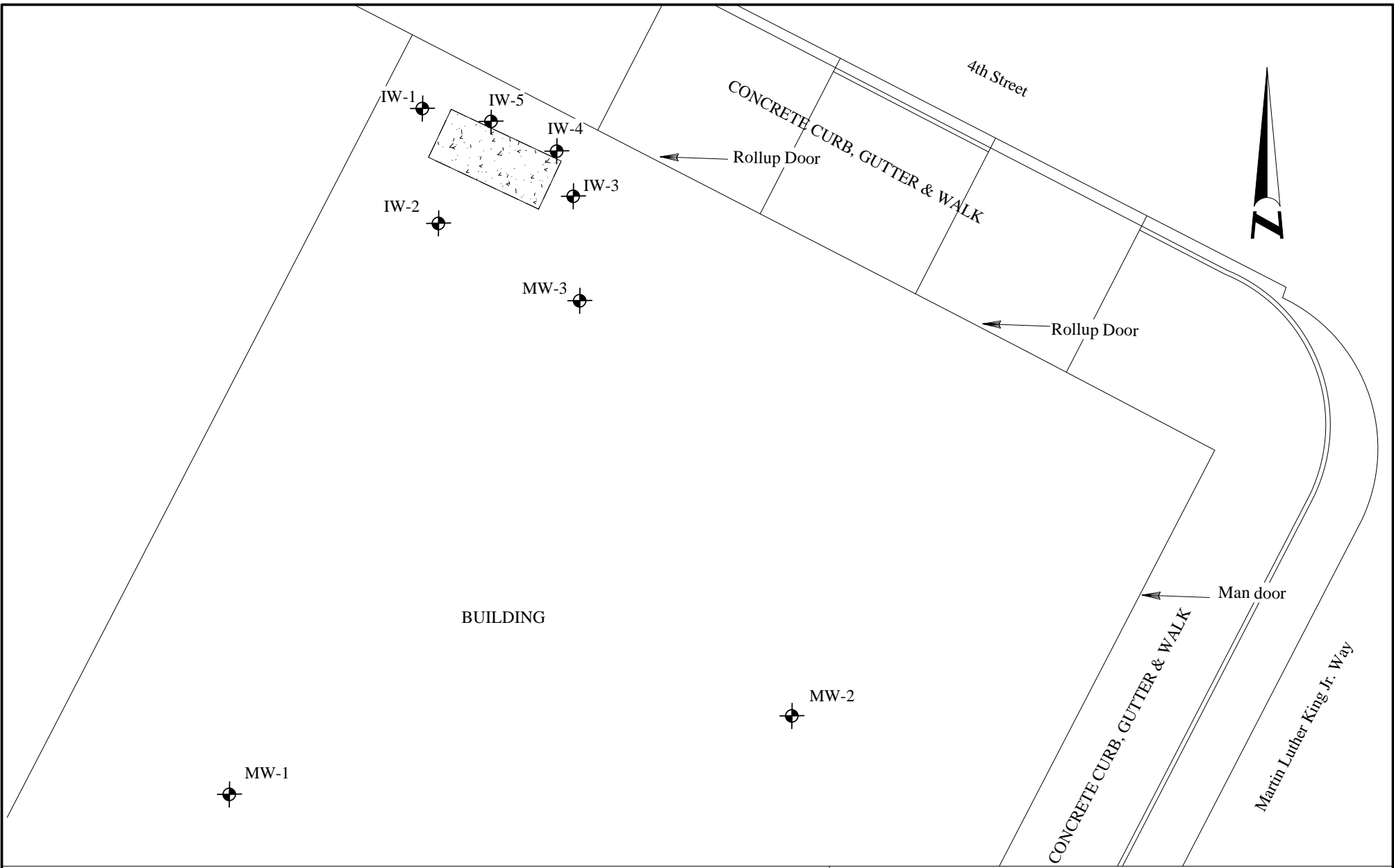
 Abandoned in place UST


**AEI CONSULTANTS**  
2500 Camino Diablo, Walnut Creek, CA


**Site Plan**

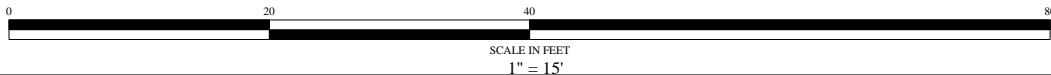
325 Martin Luther King Jr. Way  
Oakland, California

FIGURE 2  
AEI Project # 277915



 2" Monitoring / Infusion Well

 Abandoned in place UST



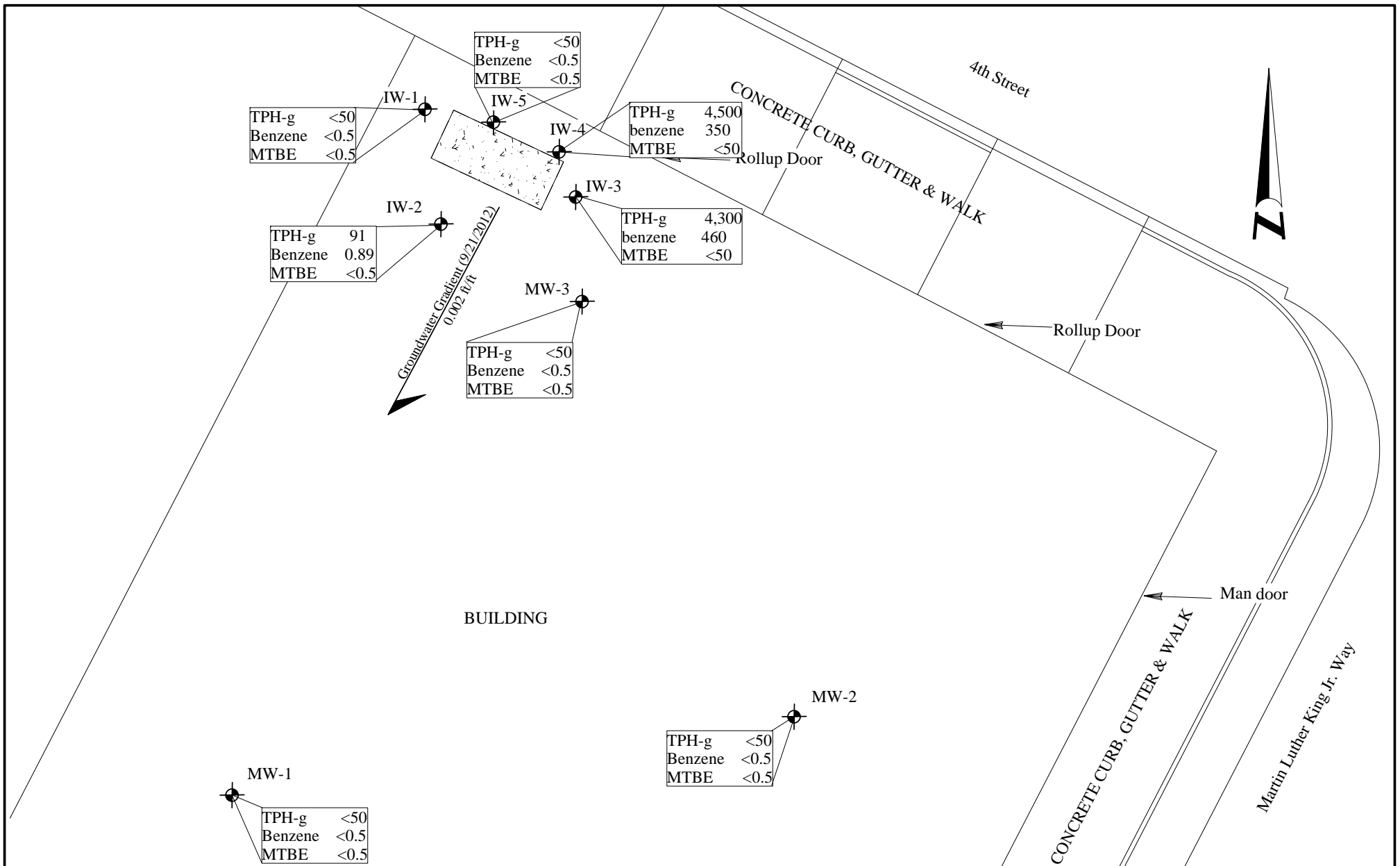
Drafted by RFF 3/4/2010 from Morrow 0116-034 MAM  
Revised by RFF 12/22/2011 from 2011 Morrow Survey

**AEI CONSULTANTS**  
2500 Camino Diablo, Walnut Creek, CA

## Detail Site Plan

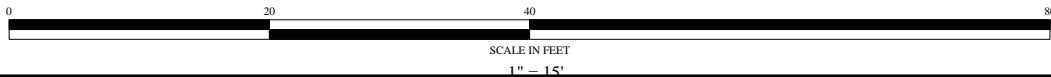
325 Martin Luther king Jr. Way  
Oakland, California

FIGURE 3  
AEI Project # 277915



2" Monitoring / Infusion Well

Abandoned in place UST



## AEI CONSULTANTS

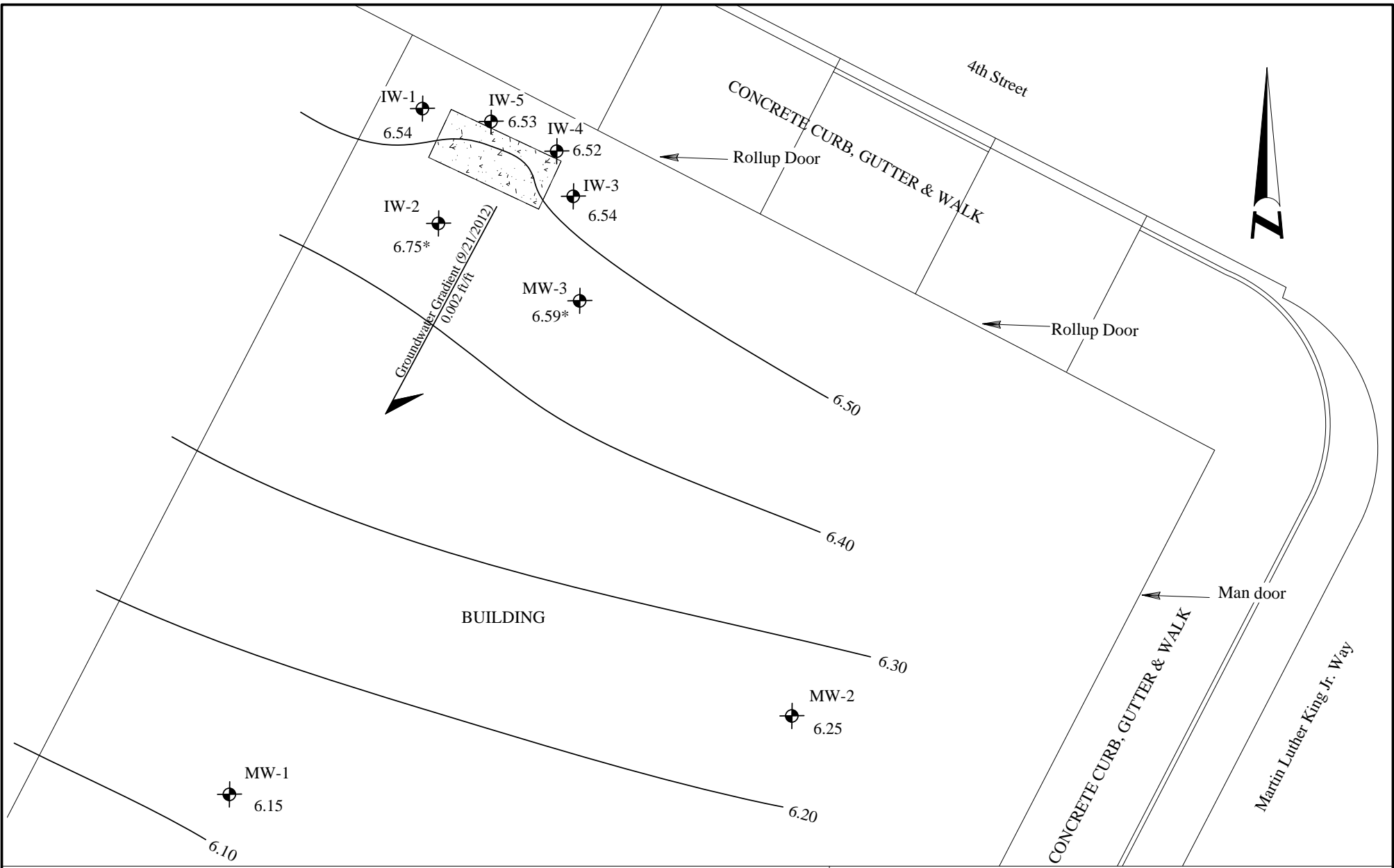
2500 Camino Diablo, Walnut Creek, CA


### Groundwater Analytical Data (9/21/2012)

325 Martin Luther King Jr. Way  
Oakland, California


FIGURE 4  
AEI Project # 277915

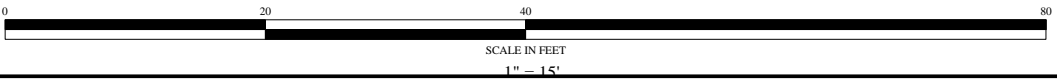




 2" Monitoring / Infusion Well  
 6.47

6.81\* Anomalous data, not used for contouring

 Abandoned in place UST



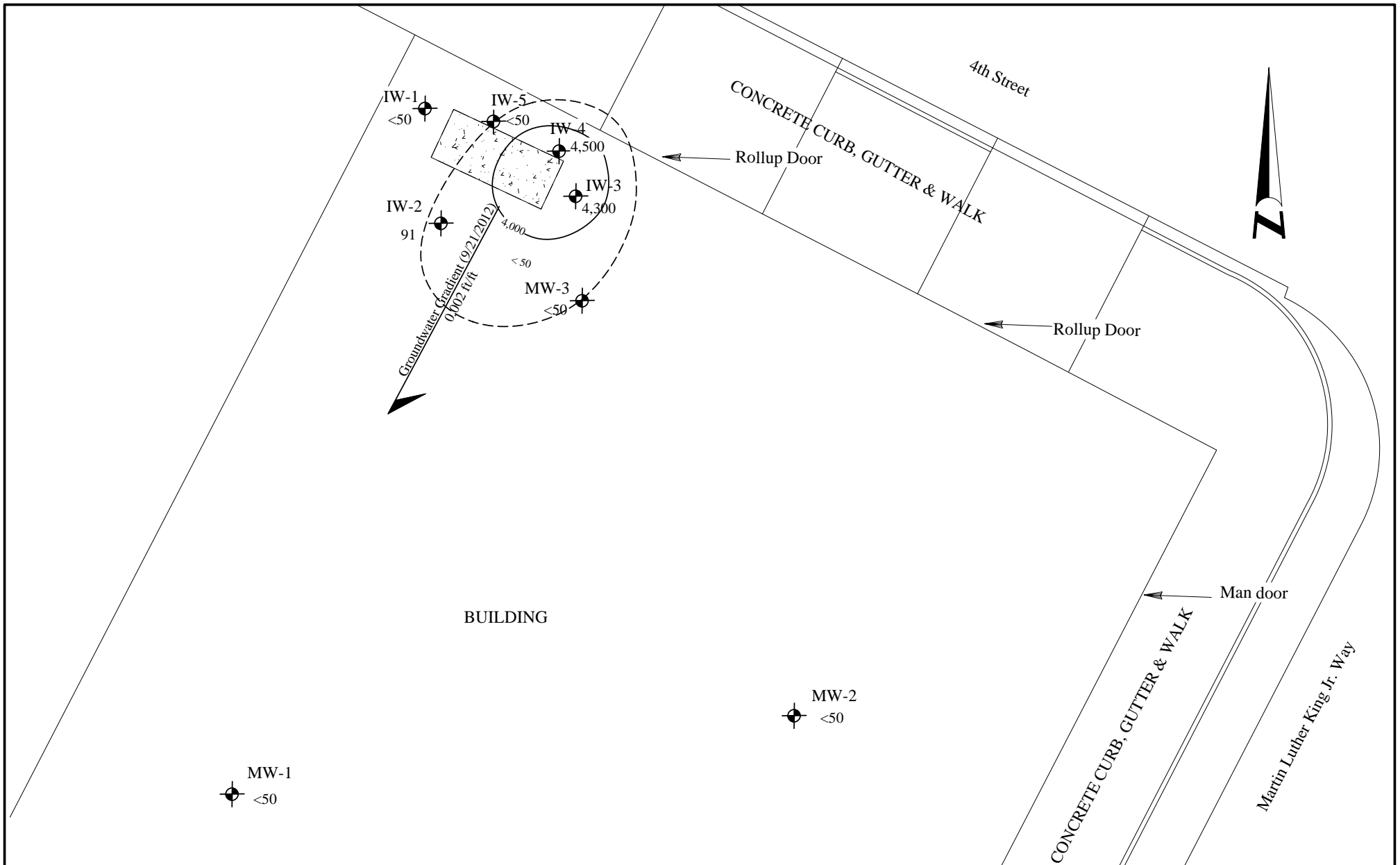
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2500 Camino Diablo, Walnut Creek, CA

### Groundwater Gradient (9/21/2012)

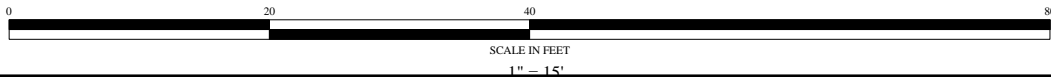
325 Martin Luther King Jr. Way  
 Oakland, California

FIGURE 5  
 AEI Project # 277915



⊕ 2" Monitoring / Infusion Well

▨ Abandoned in place UST



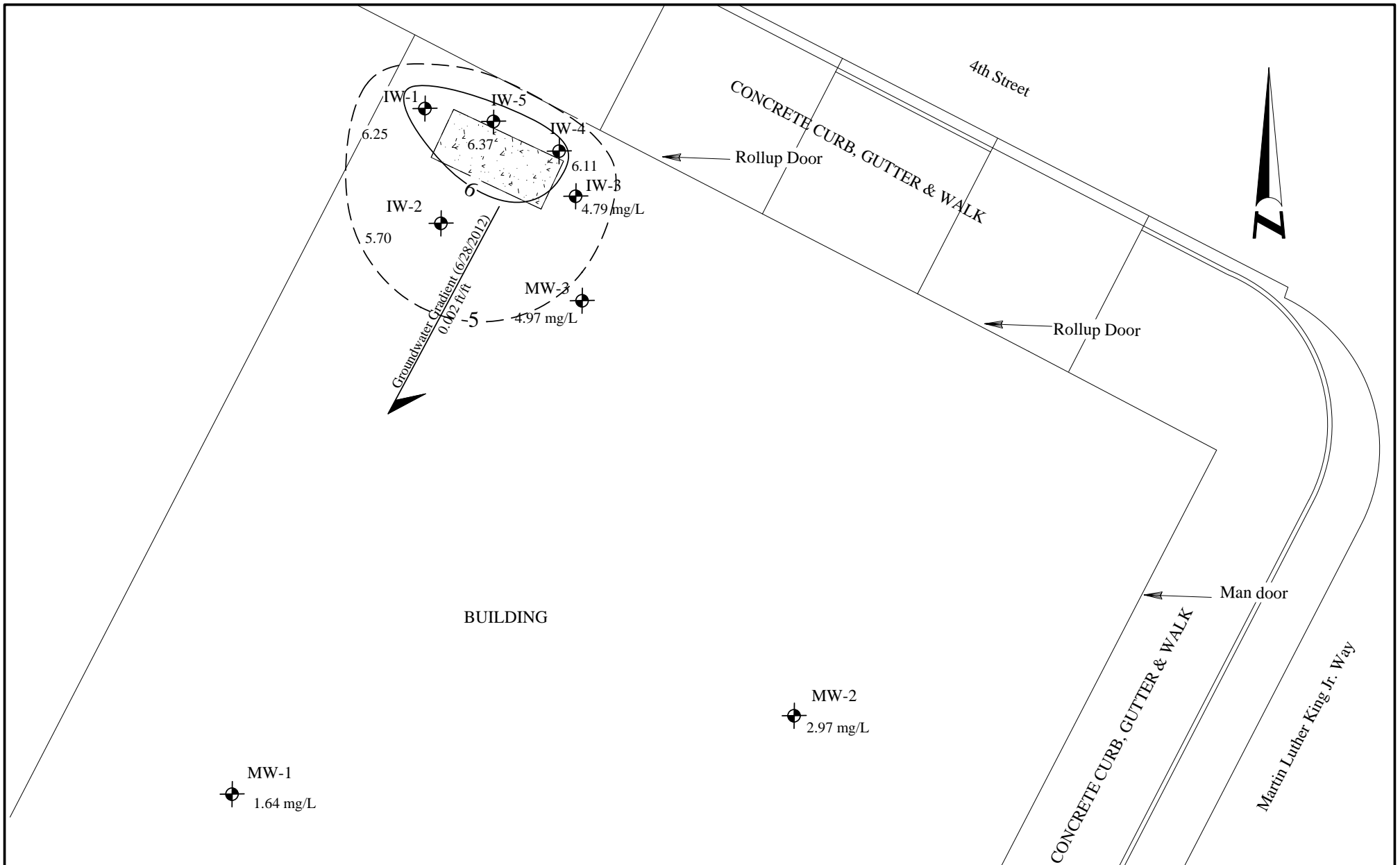
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2500 Camino Diablo, Walnut Creek, CA

### TPH-g Isoconcentration Map (9/21/2012)

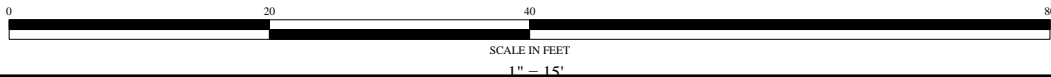
325 Martin Luther King Jr. Way  
Oakland, California

FIGURE 6  
AEI Project # 277915



2" Monitoring / Infusion Well

Abandoned in place UST



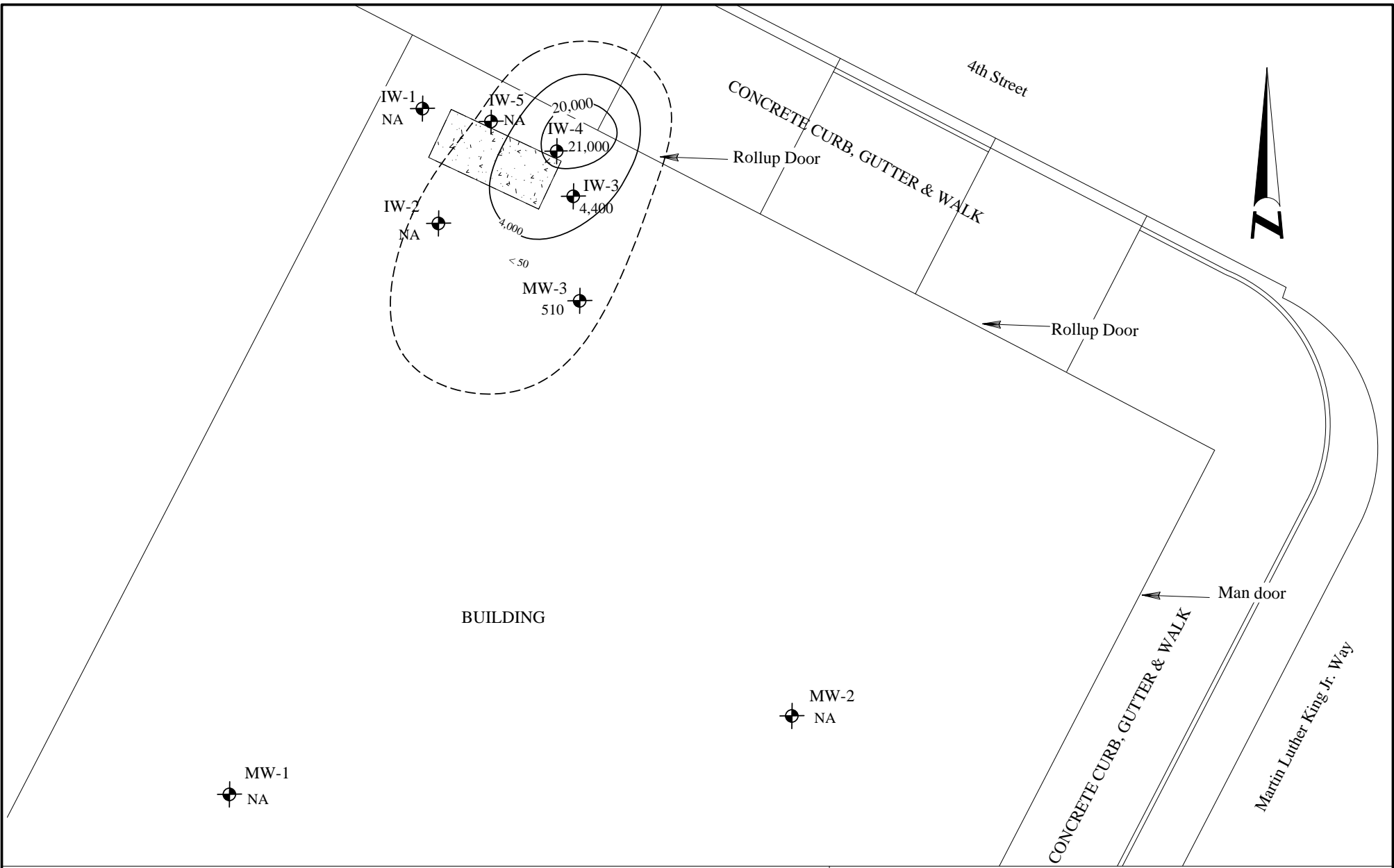
**AEI CONSULTANTS**


2500 Camino Diablo, Walnut Creek, CA


**DO Concentration Map (9/21/2012)**

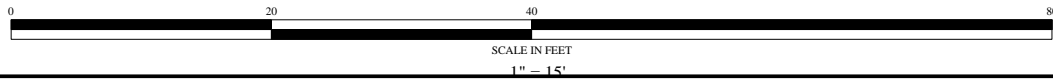
325 Martin Luther King Jr. Way  
Oakland, California

FIGURE 7  
AEI Project # 277915



 2" Monitoring / Infusion Well

 Abandoned in place UST



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2500 Camino Diablo, Walnut Creek, CA

### TPH-g Isoconcentration Map (10/24/2012)

325 Martin Luther King Jr. Way  
Oakland, California

FIGURE 8  
AEI Project # 277915

## TABLES

**Table 1 - Well Construction Details**

**AEI Project # 277915**

Well ID	Date Installed	Top of Casing Elevation (ft amsl)	Well Box 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	08/10/07	14.87*	15.34	18	8 - 18	0.010	7 - 18	# 2/12	7 - 8	0.75 - 7
MW-2	08/10/07	15.27	15.52	17	7 - 17	0.010	6 - 17	# 2/12	6 - 7	0.75 - 6
MW-3	08/10/07	15.11*	15.57	18	8 - 18	0.010	7 - 18	# 2/12	7 - 8	0.75 - 7
IW-1	02/09/10	15.20**	15.61	15	5 - 15	0.010	4 - 15	2/12	3 - 4	0.5 - 3
IW-2	02/09/10	15.04**	15.63	15	5 - 15	0.010	4 - 15	2/12	3 - 4	0.5 - 3
IW-3	02/09/10	15.29**	15.60	15	5 - 15	0.010	4 - 15	2/12	3 - 4	0.5 - 3
IW-4	12/01/11	14.74	15.66	15	5 - 15	0.010	4 - 15	2/12	3 - 4	1 - 3
IW-5	12/01/11	14.54	15.64	15	5 - 15	0.010	4 - 15	2/12	3 - 4	0.5 - 3

Notes:

ft amsl = feet above mean sea level

14.87\* = Casing elevation changes, 02/09/2010

15.29\*\* = Casing elevation changes, 12/06/2012

**Table 2 - Groundwater Elevation Data**

**AEI Project # 277915**

Well ID (Screen Interval)	Date Collected	Well Elevation (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	Elevation Change (ft)
MW-1 (8 - 18)	8/21/2007	14.92	8.38	6.54	----
	11/21/2007	14.92	8.37	6.55	0.01
	2/26/2008	14.92	7.98	6.94	0.39
	6/18/2008	14.92	8.41	6.51	-0.43
	9/19/2008	14.92	8.56	6.36	-0.15
	12/29/2008	14.92	8.66	6.26	-0.10
	3/17/2009	14.92	7.84	7.08	0.82
	6/15/2009	14.92	8.31	6.61	-0.47
	9/18/2009	14.92	8.59	6.33	-0.28
	3/16/2010*	14.87	7.80	7.07	----
	9/9/2010	14.87	8.75	6.12	-0.95
	3/24/2011	14.87	7.66	7.21	1.09
	12/14/2011	14.87	8.85	6.02	-1.19
	6/28/2012	14.87	8.41	6.46	0.44
	<b>9/21/2012</b>	<b>14.87</b>	<b>8.72</b>	<b>6.15</b>	<b>-0.31</b>
MW-2 (7 - 17)	8/21/2007	15.27	8.78	6.49	----
	11/21/2007	15.27	8.72	6.55	0.06
	2/26/2008	15.27	8.37	6.90	0.35
	6/18/2008	15.27	8.82	6.45	-0.45
	9/19/2008	15.27	8.92	6.35	-0.10
	12/29/2008	15.27	8.87	6.40	0.05
	3/17/2009	15.27	8.27	7.00	0.60
	6/15/2009	15.27	8.71	6.56	-0.44
	9/18/2009	15.27	8.98	6.29	-0.27
	3/16/2010	15.27	8.19	7.08	0.79
	9/9/2010	15.27	9.04	6.23	-0.85
	3/24/2011	15.27	7.89	7.38	1.15
	12/14/2011	15.27	9.17	6.10	-1.28
	6/28/2012	15.27	8.80	6.47	0.37
	<b>9/21/2012</b>	<b>15.27</b>	<b>9.02</b>	<b>6.25</b>	<b>-0.22</b>
MW-3 (8 - 18)	8/21/2007	15.26	8.59	6.67	----
	11/21/2007	15.26	8.55	6.71	0.04
	2/26/2008	15.26	8.11	7.15	0.44
	6/18/2008	15.26	8.62	6.64	-0.51
	8/4/2008	15.26	8.65	6.61	-0.03
	8/20/2008	15.26	8.68	6.58	-0.03
	9/19/2008	15.26	8.74	6.52	-0.06
	12/29/2008	15.26	8.67	6.59	0.07
	3/17/2009	15.26	7.96	7.30	0.71
	6/15/2009	15.26	8.47	6.79	-0.51
	9/18/2009	15.26	8.78	6.48	-0.31
	10/30/2009	15.26	8.62	6.64	-0.15
	3/16/2010	15.11	7.57	7.54	----
	7/19/2010	15.11	8.53	6.58	-0.96
	9/9/2010	15.11	8.73	6.38	-0.20
	3/24/2011	15.11	7.35	7.76	1.38
	12/14/2011	15.11	8.78	6.33	-1.43
	6/28/2012	15.20	8.41	6.79	0.37
<b>9/21/2012</b>	<b>15.20</b>	<b>8.61</b>	<b>6.59</b>	<b>-0.20</b>	

**Table 2 - Groundwater Elevation Data**

**AEI Project # 277915**

Well ID (Screen Interval)	Date Collected	Well Elevation (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)	Elevation Change (ft)
<b>IW-1</b>	10/30/2009	15.23	8.53	6.70	----
	3/16/2010	15.23	7.68	7.55	0.85
	9/9/2010	15.23	8.72	6.51	-1.04
	3/24/2011	15.23	7.36	7.87	1.36
	12/14/2011	15.20**	8.85	6.35	-1.49
	6/28/2012	15.20	8.41	6.79	0.44
	<b>9/21/2012</b>	<b>15.20</b>	<b>8.66</b>	<b>6.54</b>	<b>-0.25</b>
<b>IW-2</b>	10/30/2009	15.06	8.37	6.69	----
	3/16/2010	15.06	7.57	7.49	0.80
	7/19/2010	15.06	8.29	6.77	-0.72
	9/9/2010	15.06	8.62	6.44	-0.33
	3/24/2011	15.06	7.26	7.80	1.36
	12/14/2011	15.04**	8.72	6.32	-1.46
	6/28/2012	15.29	8.45	6.84	0.27
<b>9/21/2012</b>	<b>15.29</b>	<b>8.54</b>	<b>6.75</b>	<b>-0.09</b>	
<b>IW-3</b>	10/30/2009	15.30	8.68	6.62	----
	3/16/2010	15.30	7.82	7.48	0.86
	7/19/2010	15.30	8.51	6.79	-0.69
	9/9/2010	15.30	8.83	6.47	-0.32
	3/24/2011	15.30	7.44	7.86	1.39
	12/14/2011	15.29**	8.91	6.38	-1.47
	6/28/2012	15.29	8.45	6.84	0.46
<b>9/21/2012</b>	<b>15.29</b>	<b>8.75</b>	<b>6.54</b>	<b>-0.30</b>	
<b>IW-4</b>	12/14/2011	14.74	8.38	6.36	----
	6/28/2012	14.74	7.92	6.82	0.46
	<b>9/21/2012</b>	<b>14.74</b>	<b>8.22</b>	<b>6.52</b>	<b>-0.30</b>
<b>IW-5</b>	12/14/2011	14.54	8.18	6.36	----
	6/28/2012	14.54	7.72	6.82	0.46
	<b>9/21/2012</b>	<b>14.54</b>	<b>8.01</b>	<b>6.53</b>	<b>-0.29</b>

**Notes**

14.87\* = Casing elevation changes, 02/09/10

15.29\*\* = Casing elevation changes, 12/14/2011



**Table 2A - Groundwater Elevation Data  
AEI Project # 277915**

Event #	Date	Average Water Table Elevation (ft amsl)	Change from Previous Episode (ft)	Flow Direction (gradient) (ft/ft)
1	8/21/2007	6.57	NA	S (0.003)
2	11/21/2007	6.60	0.04	S (0.005)
3	2/26/2008	7.00	0.39	S (0.005)
4	6/18/2008	6.53	-0.46	SSE (0.004)
5	9/19/2008	6.41	-0.12	S (0.003)
6	12/29/2008	6.42	0.01	SSW (0.005)
7	3/17/2009	7.13	0.71	SW (0.006 )
8	6/15/2009	6.65	-0.47	SW 0.004 )
9	9/18/2009	6.37	-0.29	SW (0.006 )
10**	3/16/2010	7.24	----	SW (0.006 )
11	9/9/2010	6.36	----	SW (0.005 )
12	3/24/2011	7.65	1.29	SW (0.009 )
13	12/14/2011	6.28	-1.37	SW (0.009 )
14	6/28/2012	6.73	0.45	SW (0.002 )
15	9/21/2012	6.48	-0.24	SW (0.002 )

ft amsl = feet above mean sea level

All water level depths are measured from the top of casing

\*\* Average calculated for all wells with 2/9/10 re-survey elevations

\*\*\* Average calculated for all wells with 12/14/2011re-survey elevations

**Table 3 - Groundwater Analytical Data  
AEI Project # 277915**

Sample ID	Date	Depth to Water	TPHg	TPHd	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	
			Method 8015		Method 8021B					
			µg/L							
<b>MW-1</b>	8/21/2007	8.38	<50	<50	15	<0.5	<0.5	<0.5	<0.5	
	11/21/2007	8.37	<50	<50	12	<0.5	<0.5	<0.5	<0.5	
	2/26/2008	7.98	<50	<50	-	<0.5	<0.5	<0.5	<0.5	
	6/18/2008	8.41	<50	<50	-	<0.5	<0.5	<0.5	<0.5	
	9/19/2008	8.56	<50	<50	-	<0.5	<0.5	<0.5	<0.5	
	12/29/2008	8.66	<50	<50	-	<0.5	<0.5	<0.5	<0.5	
	3/17/2009	7.84	<50	<50	-	<0.5	<0.5	<0.5	<0.5	
	6/15/2009	8.31	<50	<50	-	<0.5	<0.5	<0.5	<0.5	
	9/18/2009	8.59	<50	<50	-	<0.5	<0.5	<0.5	<0.5	
	3/16/2010	7.80	<50	-	-	<0.5	<0.5	<0.5	<0.5	
	9/9/2010	7.75	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	
	3/24/2011	7.66	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	
	12/14/2011	8.85	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	
	6/28/2012	8.41	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	
	<b>9/21/2012</b>	<b>8.72</b>	<b>&lt;50</b>	<b>-</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	
<b>MW-2</b>	8/21/2007	8.78	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	
	11/21/2007	8.72	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	
	2/26/2008	8.37	<50	<50	-	<0.5	<0.5	<0.5	<0.5	
	6/18/2008	53.00	<50	<50	-	<0.5	<0.5	<0.5	<0.5	
	9/19/2008	8.92	<50	<50	-	<0.5	<0.5	<0.5	<0.5	
	12/29/2008	8.87	<50	<50	-	<0.5	<0.5	<0.5	<0.5	
	3/17/2009	8.27	<50	<50	-	<0.5	<0.5	<0.5	<0.5	
	6/15/2009	8.71	<50	<50	-	<0.5	<0.5	<0.5	<0.5	
	9/18/2009	8.98	<50	<50	-	<0.5	<0.5	<0.5	<0.5	
	3/16/2010	8.19	<50	-	-	<0.5	<0.5	<0.5	<0.5	
	9/9/2010	9.04	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	
	3/24/2011	7.89	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	
	12/14/2011	9.17	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	
	6/28/2012	8.80	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	
	<b>9/21/2012</b>	<b>9.02</b>	<b>&lt;50</b>	<b>-</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	
<b>MW-3</b>	8/21/2007	8.59	24,000	2,100	<180	2,600	3,500	450	2,400	
	11/21/2007	8.55	36,000	3,800	<500	4,900	1,200	230	2,700	
	2/26/2008	8.11	31,000	5,400	-	4,200	1,900	590	2,200	
	6/18/2008	8.62	20,000	3,000	-	2,900	1,100	390	990	
	8/4/2008	8.65	110,000	27,000	-	5,900	9,000	76	8,100	
	8/20/2008	8.68	120,000	6,500	-	8,900	18,000	930	12,000	
	9/19/2008	8.74	64,000	4,500	-	6,200	9,200	660	6,600	
	12/29/2008	8.67	130,000	7,900	-	11,000	19,000	1,800	11,000	
	3/17/2009	7.96	83,000	8,000	-	7,400	10,000	1,100	8,500	
	6/15/2009	8.47	67,000	21,000	-	11,000	9,100	1,200	6,800	
	9/18/2009	8.78	58,000	16,000	-	11,000	7,000	1,400	4,700	
	10/30/2009	6.64	59,000	-	-	10,000	7,100	1,200	3,900	
	2/8/2010	7.74	13,000	-	<50	840	1,500	120	1,700	
	2/24/2010	8.03	16,000	-	<50	1,200	1,700	200	1,900	
	3/16/2010	7.75	34,000	-	<250	3,000	4,100	580	4,100	
	4/15/2010	-	-	-	-	-	-	-	-	
	5/24/2010	-	11,000	-	<250	910	1,600	120	2,400	

**Table 3 - Groundwater Analytical Data  
AEI Project # 277915**

Sample ID	Date	Depth to Water	TPHg	TPHd	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	
			Method 8015		Method 8021B					
			µg/L							
<b>MW-3 continued</b>	7/19/2010	8.33	270	-	<5.0	2.7	2.9	<0.5	4.8	
	8/5/2010	8.35	350	-	<5.0	15	6.3	4	46	
	9/9/2010	8.67	1,200	360	-	57	8.3	18	160	
	12/29/2010	-	130	-	<5.0	0.79	1.2	<0.5	3.1	
	2/7/2011	-	<50	-	<5.0	2.3	1.0	<0.5	6.4	
	3/24/2011	7.35	140	<50	<5.0	4.9	6.7	0.6	19	
	8/9/2011	-	590	200	<5.0	38	2.3	<0.5	60	
	12/14/2011	8.78	4,900	1,000	<120	1,400	28	54	250	
	6/28/2012	8.30	<50	-	<5.0	<0.5	<0.5	<0.5	0.86	
	7/27/2012	8.48	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	
	8/27/2012	8.59	51	<50	<5.0	2.4	<0.5	<0.5	4.9	
<b>9/21/2012</b>	<b>8.61</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>		
<b>10/24/2012</b>	<b>-</b>	<b>510</b>	<b>-</b>	<b>32</b>	<b>100</b>	<b>3.2</b>	<b>3.7</b>	<b>10</b>		
<b>IW-1</b>	10/30/2009	8.53	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	
	3/16/2010	7.68	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	
	9/9/2010	8.73	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	
	3/24/2011	7.36	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	
	12/14/2011	8.85	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	
	6/28/2012	8.41	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	
	<b>9/21/2012</b>	<b>8.66</b>	<b>&lt;50</b>	<b>-</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	
<b>IW-2</b>	10/30/2009	8.37	15,000	-	-	1,100	2,100	630	2,400	
	2/8/2010	7.70	630	-	<5.0	4.4	17	3.7	78	
	2/24/2010	-	3,500	-	<50	22	220	57	590	
	3/16/2010	7.57	20,000	-	<100	320	2,100	450	4,000	
	4/15/2010	-	-	-	-	-	-	-	-	
	5/24/2010	-	190	-	<5.0	0.82	6.9	1.0	20	
	7/19/2010	8.29	600	-	<5.0	5.8	43	5.3	110	
	8/5/2010	8.39	340	-	<5.0	1.8	14	2.7	74	
	9/9/2010	8.62	5,100	660	-	59	330	57.0	1,100	
	12/29/2010	-	<50	-	<5.0	<0.5	<0.5	<0.5	0.62	
	2/7/2011	-	<50	<50	<5.0	<0.5	<0.5	<0.5	0.98	
	3/24/2011	7.26	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	
	8/9/2011	-	1,700	-	<10	40	2.5	1.9	270	
	12/14/2011	8.72	2,900	710	<50	110	5.9	29	430	
	6/28/2012	8.28	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	
	<b>9/21/2012</b>	<b>8.54</b>	<b>91</b>	<b>&lt;50</b>	<b>&lt;5.0</b>	<b>0.89</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>7.5</b>	
<b>IW-3</b>	10/30/2009	8.68	61,000	-	<1,000	10,000	14,000	1,400	9,800	
	11/5/2009	8.60	64,000	-	<150	4,000	7,500	1,100	1,100	
	11/23/2009	-	77,000	-	<250	6,700	11,000	430	11,000	
	2/8/2010	7.74	18,000	-	<50	790	910	38	2,600	
	2/24/2010	-	36,000	-	<250	2,400	4,300	320	460	
	3/16/2010	7.82	44,000	-	<500	3,200	6,000	650	5,400	
	4/15/2010	-	-	-	-	-	-	-	-	
	5/24/2010	-	4,300	-	<60	170	430	19	680	
	7/19/2010	8.51	4,100	-	<50	190	450	28	440	
	8/5/2010	8.56	5,400	-	<50	360	780	62	730	
	9/9/2010	8.83	22,000	3,230	-	1,800	3,900	310	3,300	

**Table 3 - Groundwater Analytical Data  
AEI Project # 277915**

Sample ID	Date	Depth to Water	TPHg	TPHd	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes		
			Method 8015			Method 8021B					
			µg/L								
<b>IW-3</b>	12/29/2010	-	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5		
<b>continued</b>	2/7/2011	-	2,700	870	<50	180	330	18	360		
	3/24/2011	7.44	390	290	<5.0	3.7	7.4	2.4	53		
	8/9/2011	-	9,600	800	<250	2400	940	150	1,300		
	12/14/2011	8.91	36,000	4,200	<450	4,600	2,700	300	4,000		
	3/27/2012	-	390	-	<5.0	8.8	11	1.3	58		
	6/28/2012	8.45	91	-	<5.0	1.1	1.6	<0.5	3.7		
	7/27/2012	8.6	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5		
	8/27/2012	8.72	1,100	-	<45	100	160	5.1	150		
	<b>9/21/2012</b>	<b>8.75</b>	<b>4,300</b>	<b>360</b>	<b>&lt;50</b>	<b>460</b>	<b>580</b>	<b>32</b>	<b>560</b>		
	<b>10/24/2012</b>	-	<b>4,400</b>	-	<b>51</b>	<b>540</b>	<b>880</b>	<b>26</b>	<b>730</b>		
<b>IW-4</b>	12/14/2011	8.38	95,000	5,600	<1,000	13,000	13,000	1,200	7,400		
	3/27/2012	-	1,700	-	<5.0	64	150	29	160		
	6/28/2012	7.92	1,400	-	<5.0	49	190	29	140		
	7/27/2012	8.03	270	-	<5.0	2.0	4.3	1.5	3.4		
	8/27/2012	8.16	2,900	-	<50	230	520	46	260		
	<b>9/21/2012</b>	<b>8.22</b>	<b>4,500</b>	<b>150</b>	<b>&lt;50</b>	<b>350</b>	<b>820</b>	<b>64</b>	<b>370</b>		
	<b>10/24/2012</b>	-	<b>21,000</b>	-	<b>ND&lt;250</b>	<b>2,000</b>	<b>4,000</b>	<b>350</b>	<b>2,100</b>		
<b>IW-5</b>	12/14/2011	8.18	250	190	<5.0	11	0.56	<0.5	8.0		
	6/28/2012	7.72	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5		
	<b>9/21/2012</b>	<b>8.01</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>		
GW ESL (NDW) Gross Contamination			2,500	2,500	1,800	2,000	400	300	5,300		
GW ESL (NDW) Aquatic Habitat			210	210	1,800	46	130	43	100		

Notes:

- TPHg = total petroleum hydrocarbons as gasoline (C6-C12)
- TPHd = total petroleum hydrocarbons as diesel (C10-C23)
- Benzene, toluene, ethylbenzene, and xylenes using EPA Method 8021B
- MTBE = methyl-tertiary butyl ether
- mg/L= micrograms per liter
- ND<50 = non detect at respective reporting limit

Table 4 - Groundwater Analytical Data - Fuel Additives

AEI Project # 277915

Sample ID	Date	TAME	TBA	EDB	1,2-DCA	DIPE	ETBE	MTBE
		mg/L						
MW-1	08/21/07	<0.5	<5.0	<0.5	5.2	<0.5	<0.5	18
	11/21/07	-	-	-	-	-	-	-
	02/26/08	-	-	<0.5	6.9	-	-	16
	06/18/08	-	-	<0.5	5.4	-	-	15
	09/19/08	-	-	<0.5	6.8	-	-	4.2
	12/29/08	-	-	<0.5	6.8	-	-	0.62
	03/17/09	-	-	<0.5	4.6	-	-	11
	06/15/09	-	-	<0.5	5.8	-	-	8.1
	09/18/09	-	-	<0.5	5.2	-	-	0.7
	03/24/11	<0.5	<2.0	<0.5	9.3	<0.5	<0.5	1.9
	06/28/12	<0.5	<2.0	<0.5	7.0	<0.5	<0.5	0.73
	<b>09/21/12</b>	<b>&lt;0.5</b>	<b>&lt;2.0</b>	<b>&lt;0.5</b>	<b>13</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>1.2</b>
	MW-2	08/21/07	<0.5	<5.0	<0.5	<0.5	<0.5	<0.5
11/21/07		-	-	-	-	-	-	-
02/26/08		-	-	<0.5	<0.5	-	-	<0.5
06/18/08		-	-	<0.5	<0.5	-	-	<0.5
09/19/08		-	-	<0.5	<0.5	-	-	<0.5
12/29/08		-	-	<0.5	<0.5	-	-	<0.5
03/17/09		-	-	<0.5	<0.5	-	-	<0.5
06/15/09		-	-	<0.5	<0.5	-	-	<0.5
09/18/09		-	-	<0.5	<0.5	-	-	<0.5
03/24/11		<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5
06/28/12		<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5
<b>09/21/12</b>		<b>&lt;0.5</b>	<b>&lt;2.0</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
MW-3		08/21/07	<5.0	<50	34	140	<5.0	<5.0
	11/21/07	-	-	-	-	-	-	-
	02/26/08	-	-	31	220	-	-	<12
	06/18/08	-	-	21	190	-	-	<5.0
	08/04/08	-	-	220	410	-	-	<50
	08/20/08	-	-	330	410	-	-	<50
	09/19/08	-	-	160	320	-	-	<17
	12/29/08	-	-	200	440	-	-	<50
	03/17/09	-	-	98	370	-	-	<25
	06/15/09	-	-	87	490	-	-	<50
	09/18/09	-	-	110	500	-	-	<17
	10/30/09	-	-	96	470	-	-	<50
	02/08/10	-	-	42	42	-	-	<50
	03/16/10	<25	430	110	130	<25	<25	<25
	03/24/11	<0.5	10	2.2	0.61	<5.0	<5.0	<5.0
	06/28/12	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5
	<b>09/21/12</b>	<b>&lt;0.5</b>	<b>&lt;2.0</b>	<b>1.1</b>	<b>4.4</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>

Table 4 - Groundwater Analytical Data - Fuel Additives

AEI Project # 277915

Sample ID	Date	TAME	TBA	EDB	1,2-DCA	DIPE	ETBE	MTBE
		mg/L						
IW-1	10/30/09	-	-	<0.5	<0.5	-	-	<0.5
	03/16/10	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5
	03/24/11	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5
	06/28/12	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5
	<b>09/21/12</b>	<b>&lt;0.5</b>	<b>&lt;2.0</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
IW-2	10/30/09	-	-	13	51	-	-	<10
	02/08/10	-	-	5.1	3.9	-	-	
	03/16/10	<10	70	20	15	<10	<10	<10
	03/24/11	<0.5	5.2	<0.5	<0.5	<0.5	<0.5	<0.5
	06/28/12	<0.5	2.5	1.3	<0.5	<0.5	<0.5	<0.5
	<b>09/21/12</b>	<b>&lt;0.5</b>	<b>8.0</b>	<b>0.71</b>	<b>8.0</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
IW-3	10/30/09	-	-	220	480	-	-	<10
	02/08/10	-	-	94	82	-	-	
	03/16/10	<25	120	230	220	<25	<25	<25
	03/24/11	<0.5	47	22	13	<0.5	<0.5	<0.5
	03/27/12	<0.5	13	8.2	4.5	<0.5	<0.5	<0.5
	06/28/12	<0.5	4.2	2.4	1.5	<0.5	<0.5	<0.5
	<b>09/21/12</b>	<b>&lt;2.5</b>	<b>25</b>	<b>52</b>	<b>51</b>	<b>&lt;2.5</b>	<b>&lt;2.5</b>	<b>&lt;2.5</b>
IW-4	03/27/12	<0.5	9.7	8.4	4.0	<0.5	<0.5	<0.5
	06/28/12	<0.5	4.7	2.3	0.62	<0.5	<0.5	<0.5
	09/21/12	<1.2	19	48	30	<1.2	<1.2	<1.2
IW-5	06/28/12	<0.5	2.0	<0.5	<0.5	<0.5	<0.5	<0.5
	<b>09/21/12</b>	<b>&lt;0.5</b>	<b>&lt;2.0</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
GW ESL (NDW) GC		-	54,000	50,000	50,000	-	-	1,800
GW ESL (NDW) AH		-	18,000	150	200	-	-	1,800
DW - Ceiling Value		-	50,000	50,000	50,000	-	-	5
DW -VI		-	use soil gas	150	150	-	-	24,000
DW Toxicity		-	12	0.05	0.5	-	-	13

Notes: TAME - tert-amyl methyl ether  
 mg/L= micrograms per liter TBA - tert-butyl alcohol  
 ND<50 = non detect at respective reporting DIPE - diisopropyl ether  
 MTBE - methyl tertiary butyl ether ETBE - ethyl tert-butyl ether

**APPENDIX A**

**GROUNDWATER MONITORING WELL FIELD SAMPLING  
FORMS**

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

**Monitoring Well Number: MW-3**

Project Name:	ALLEN	Date of Sampling:	7-27-12
Job Number:	277925	Name of Sampler:	J. Sigg
Project Address:	325 Martin Luther King Jr Way, Oakland CA		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	15.26		
Depth of Well	18.00		
Depth to Water (from top of casing)	8.48		
Water Elevation (feet above msl)	15.26		
Well Volumes Purged	Micropurged with peristaltic pump		
Actual Volume Purged (liters)	5		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	---

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Volume Removed (liters)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
0650	1	17.85	8.21	488	8.66	283.4	
	2	17.83	8.07	493	8.73	288.7	
	3	17.83	7.89	490	9.07	280.1	
	4	17.83	7.87	495	9.13	277.3	
0700	5	17.83	7.83	498	9.25	272.7	

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

Purge line @ 10.0 ft b gs



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

**Monitoring Well Number: IW-3**

Project Name:	ALLEN	Date of Sampling:	7-27-12
Job Number:	277925	Name of Sampler:	J. Sigg
Project Address:	325 Martin Luther King Jr Way, Oakland CA		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK <input type="button" value="v"/>		
Elevation of Top of Casing (feet above msl)	15.29		
Depth of Well	18.00		
Depth to Water (from top of casing)	8.60		
Water Elevation (feet above msl)	6.38		
Well Volumes Purged	Micropurged with peristaltic pump		
Actual Volume Purged (liters)	5		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	---

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Volume Removed (liters)	Temperature (deg C)	pH	Conductivity ( $\mu$ sec/cm)	DO (mg/L)	ORP (meV)	Comments
0750	1	17.82	7.98	521	18.65	283.4	
	2	17.84	8.01	532	18.73	261.7	
	3	17.84	8.02	538	18.82	255.4	
0800	4	17.84	8.01	541	18.87	250.3	
	5	17.85	8.02	545	18.90	244.7	

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

Purge line @ 10.0 ft b gs

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

**Monitoring Well Number: IW-4**

Project Name:	ALLEN	Date of Sampling:	7-27-12
Job Number:	277925	Name of Sampler:	J. Sigg
Project Address:	325 Martin Luther King Jr Way, Oakland CA		

**MONITORING WELL DATA**

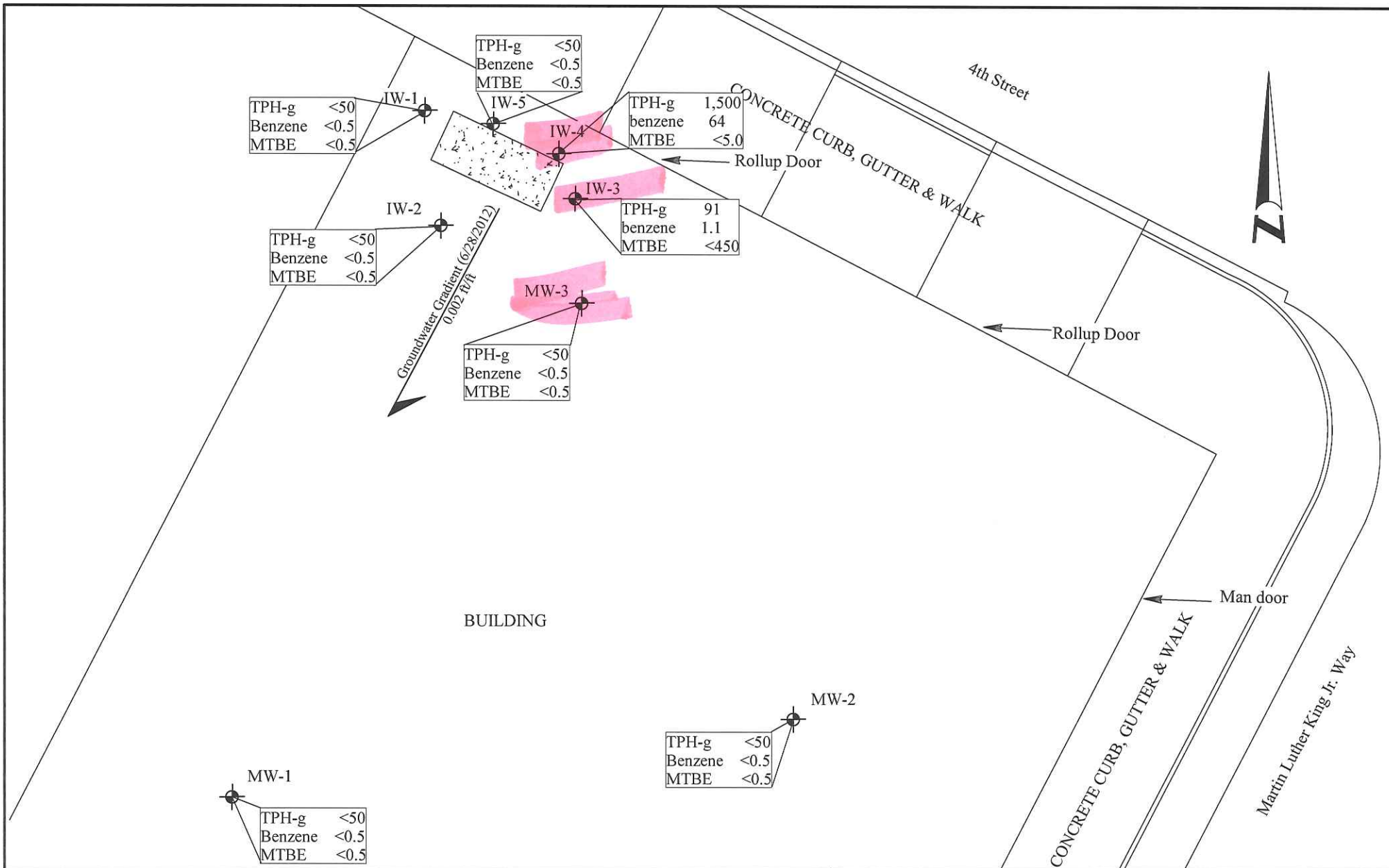
Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	14.74		
Depth of Well	15.00		
Depth to Water (from top of casing)	8.03		
Water Elevation (feet above msl)	6.36		
Well Volumes Purged	Micropurged with peristaltic pump		
Actual Volume Purged (liters)	5		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	---

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Volume Removed (liters)	Temperature (deg C)	pH	Conductivity ( $\mu$ sec/cm)	DO (mg/L)	ORP (meV)	Comments
0850	1	18.62	6.82	225	16.65	302.4	
	2	18.66	6.80	230	17.03	300.1	
	3	18.64	6.81	233	17.18	298.7	
	4	18.64	6.81	238	17.20	296.5	
0900	5	18.65	6.81	240	17.22	293.1	

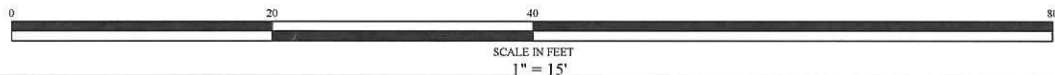
**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Purge line @ 10.0 ft b gs



2" Monitoring / Infusion Well

Abandoned in place UST



## AEI CONSULTANTS

2500 Camino Diablo, Walnut Creek, CA

### Groundwater Analytical Data (6/28/2012)

325 Martin Luther King Jr. Way  
Oakland, California

FIGURE 4  
AEI Project # 277915

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

**Monitoring Well Number: MW-3**

Project Name:	ALLEN	Date of Sampling:	8/27/2012
Job Number:	277925	Name of Sampler:	RFF
Project Address:	325 Martin Luther King Jr Way, Oakland CA		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	15.11		
Depth of Well	18.00		
Depth to Water (from top of casing)	8.59		
Water Elevation (feet above msl)	15.11		
Well Volumes Purged	Micropurged with peristaltic pump		
Actual Volume Purged (liters)	5.0		
Appearance of Purge Water	light yellow, <b>clear</b>		
Free Product Present?	No	Thickness (ft):	---

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Volume Removed (liters)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
1025	1.0	19.04	8.14	590	6.27	52.3	Clear
	2.0	18.91	7.77	609	5.74	60.4	"
	3.0	18.74	8.06	627	6.42	44.3	"
	4.0	18.71	8.11	641	6.29	42.3	"
1035	5.0	18.64	7.93	639	6.98	58.5	"

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

Purge line @ 10.0 ft b gs

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

**Monitoring Well Number: IW-3**

Project Name:	ALLEN	Date of Sampling:	8/27/2012
Job Number:	277925	Name of Sampler:	RFF
Project Address:	325 Martin Luther King Jr Way, Oakland CA		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	15.29		
Depth of Well	18.00		
Depth to Water (from top of casing)	8.72		
Water Elevation (feet above msl)	15.29		
Well Volumes Purged	Micropurged with peristaltic pump		
Actual Volume Purged (liters)	5.0		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Volume Removed (liters)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
1055	1.0	18.97	6.56	243	7.22	132.2	Clear
	2.0	19.04	6.68	231	6.78	106.5	"
	3.0	19.08	6.71	230	6.11	96.1	"
	4.0	19.06	6.77	239	6.19	96.2	"
1105	5.0	18.98	6.82	252	7.41	102.9	"

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

Hydrocarbon odor
Purge line @ 10.0 ft bgs

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

**Monitoring Well Number: IW-4**

Project Name:	ALLEN	Date of Sampling:	8/27/2012
Job Number:	277925	Name of Sampler:	RFF
Project Address:	325 Martin Luther King Jr Way, Oakland CA		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK <input type="button" value="v"/>		
Elevation of Top of Casing (feet above msl)	14.74		
Depth of Well	15.00		
Depth to Water (from top of casing)	8.16		
Water Elevation (feet above msl)	14.74		
Well Volumes Purged	Micropurged with peristaltic pump		
Actual Volume Purged (liters)	5.0		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Volume Removed (liters)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
1125	1.0	19.44	6.80	185	4.38	119.2	Clear
	2.0	19.05	7.01	233	6.97	110.3	ll
	3.0	19.00	7.06	229	8.00	114.5	ll
	4.0	19.02	6.92	220	7.90	118.1	ll
1135	5.0	19.07	7.00	218	7.76	114.1	ll

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

Strong hydrocarbon odor
Purge line @ 10.0 ft b gs



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

**Monitoring Well Number: MW-1**

Project Name:	ALLEN	Date of Sampling:	9-21-12 <del>3/27/2012</del>
Job Number:	277925	Name of Sampler:	RFF JS
Project Address:	325 Martin Luther King Jr Way, Oakland CA		

**MONITORING WELL DATA**

Well Casing Diameter (2" / 4" / 6")	2"		
Wellhead Condition	OK <input type="checkbox"/>		
Elevation of Top of Casing (feet above msl)	14.87		
Depth of Well	18.00		
Depth to Water (from top of casing)	8.72		
Water Elevation (feet above msl)	14.87		
Well Volumes Purged	Micropurged with peristaltic pump		
Actual Volume Purged (liters)	5.0		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Volume Removed (liters)	Temperature (deg C)	pH	Conductivity ( $\mu$ sec/cm)	DO (mg/L)	ORP (meV)	Comments
0805	1.0	18.53	5.56	1167	4.31	448.1	Clean
	2.0	18.54	5.63	1166	3.04	434.6	"
	3.0	18.57	5.56	1165	2.39	428.7	"
	4.0	18.59	5.51	1165	1.92	422.9	"
0815	5.0	18.61	5.47	1165	1.64	422.4	1/

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

Purge line @ 10.0 ft b gs



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

**Monitoring Well Number: MW-2**

Project Name:	ALLEN	Date of Sampling:	<del>3/27/2012</del> 9-21-12
Job Number:	277925	Name of Sampler:	RFF JS
Project Address:	325 Martin Luther King Jr Way, Oakland CA		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		▼
Elevation of Top of Casing (feet above msl)	15.27		
Depth of Well	17.00		
Depth to Water (from top of casing)	9.02		
Water Elevation (feet above msl)	15.27		
Well Volumes Purged	Micropurged with peristaltic pump		
Actual Volume Purged (liters)	5.0		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Volume Removed (liters)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
0835	1.0	18.78	5.37	1036	6.81	534.2	Clear
	2.0	18.79	5.42	1032	4.56	527.4	"
	3.0	18.81	5.47	1029	3.81	527.7	"
	4.0	18.84	5.49	1026	3.30	529.2	"
0845	5.0	18.87	5.48	1025	2.97	530.7	"

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

Purge line @ 10.0 ft b gs

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

**Monitoring Well Number: MW-3**

Project Name:	ALLEN	Date of Sampling:	9/2/12 <del>3/27/2012</del>
Job Number:	277925	Name of Sampler:	RFF JJ
Project Address:	325 Martin Luther King Jr Way, Oakland CA		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	15.11		
Depth of Well	18.00		
Depth to Water (from top of casing)			
Water Elevation (feet above msl)	15.11		
Well Volumes Purged	Micropurged with peristaltic pump		
	8.61		
Actual Volume Purged (liters)	5.0		
Appearance of Purge Water	light yellow		
Free Product Present?	No	Thickness (ft):	---

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Volume Removed (liters)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
0905	1.0	18.70	5.47	680	5.68	537.2	clear
	2.0	18.70	5.50	684	5.27	525.3	"
	3.0	18.71	5.51	676	5.17	519.4	"
	4.0	18.73	5.53	667	5.08	513.7	"
0915	5.0	18.75	5.55	660	4.97	508.2	"

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

Purge line @ 10.0 ft b gs

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

**Monitoring Well Number: IW-1**

9-21-12

Project Name:	ALLEN	Date of Sampling:	9/27/2012
Job Number:	277925	Name of Sampler:	RFF JS
Project Address:	325 Martin Luther King Jr Way, Oakland CA		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	15.20		
Depth of Well	18.00		
Depth to Water (from top of casing)	8.66		
Water Elevation (feet above msl)	15.20		
Well Volumes Purged	Micropurged with peristaltic pump		
Actual Volume Purged (liters)	5.0		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	---

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Volume Removed (liters)	Temperature (deg C)	pH	Conductivity ( $\mu$ sec/cm)	DO (mg/L)	ORP (meV)	Comments
0935	1.0	18.62	5.63	712	5.58	539.2	Clear
	2.0	18.63	5.61	726	6.07	527.7	
	3.0	18.64	5.62	727	6.19	524.5	
	4.0	18.66	5.60	726	6.23	523.3	
0945	5.0	18.68	5.61	726	6.25	524.7	

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

Purge line @ 10.0 ft b gs

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

**Monitoring Well Number: IW-2**

Project Name:	ALLEN	Date of Sampling:	9-21-12 <del>3/27/2012</del>
Job Number:	277925	Name of Sampler:	RFF JS
Project Address:	325 Martin Luther King Jr Way, Oakland CA		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	15.04		
Depth of Well	18.00		
Depth to Water (from top of casing)	854		
Water Elevation (feet above msl)	15.04		
Well Volumes Purged	Micropurged with peristaltic pump		
Actual Volume Purged (liters)	5.0		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	---

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Volume Removed (liters)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
1005	1.0	18.50	5.66	5.23	6.14	636.4	Clear
	2.0	18.53	5.65	6.07	6.07	612.0	"
	3.0	18.55	5.62	5.08	5.96	604.4	"
	4.0	18.58	5.60	5.13	5.84	599.2	"
1015	5.0	18.60	5.61	5.07	5.70	596.0	"

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

Purge line @ 10.0 ft bgs

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

Monitoring Well Number: **IW-3**

9-21-12

Project Name:	ALLEN	Date of Sampling:	9/27/2012
Job Number:	277925	Name of Sampler:	RFF - J.S.
Project Address:	325 Martin Luther King Jr Way, Oakland CA		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	15.29		
Depth of Well	18.00		
Depth to Water (from top of casing)	8.75		
Water Elevation (feet above msl)	15.29		
Well Volumes Purged	Micropurged with peristaltic pump		
Actual Volume Purged (liters)	5.0		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	---

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Volume Removed (liters)	Temperature (deg C)	pH	Conductivity ( $\mu$ sec/cm)	DO (mg/L)	ORP (meV)	Comments
1035	1.0	18.83	5.67	349	4.78	575.0	Clear
	2.0	18.86	4.72	297	4.72	571.8	"
	3.0	18.92	5.60	286	4.96	595.1	"
	4.0	18.96	5.61	280	4.92	604.6	"
1045	5.0	18.99	5.60	277	4.79	611.0	"

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

Hydrocarbon odor
Purge line @ 10.0 ft bgs

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

**Monitoring Well Number:** IW-4

9-2-12

Project Name:	ALLEN	Date of Sampling:	9/27/2012
Job Number:	277925	Name of Sampler:	RFF JS
Project Address:	325 Martin Luther King Jr Way, Oakland CA		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	14.74		
Depth of Well	15.00		
Depth to Water (from top of casing)	8.22		
Water Elevation (feet above msl)	14.74		
Well Volumes Purged	Micropurged with peristaltic pump		
Actual Volume Purged (liters)	5.0		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Volume Removed (liters)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
1105	1.0	19.01	5.40	253	6.29	760.1	Clear
	2.0	19.05	5.41	248	6.26	643.8	"
	3.0	19.07	5.37	242	6.29	607.1	"
	4.0	19.08	5.39	236	6.22	582.3	"
1115	5.0	19.11	5.40	231	6.11	587.6	"

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

Strong hydrocarbon odor
Purge line @ 10.0 ft b gs

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

**Monitoring Well Number: IW-5**

9-21-12

Project Name:	ALLEN	Date of Sampling:	3/27/2012
Job Number:	277925	Name of Sampler:	RFF JS
Project Address:	325 Martin Luther King Jr Way, Oakland CA		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	14.54		
Depth of Well	15.00		
Depth to Water (from top of casing)	8.01		
Water Elevation (feet above msl)	14.54		
Well Volumes Purged	Micropurged with peristaltic pump		
Actual Volume Purged (liters)	5.0		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size							
Time	Volume Removed (liters)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
1135	1.0	18.90	5.38	226	5.55	600.7	Clear
	2.0	18.89	5.42	226	6.20	597.7	"
	3.0	18.90	5.40	227	6.30	597.8	"
	4.0	18.91	5.41	226	6.35	597.5	"
1145	5.0	18.91	5.39	226	6.37	597.9	"

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

Purge line @ 10.0 ft b gs





## **APPENDIX B**

### **LABORATORY ANALYSES WITH CHAIN OF CUSTODY DOCUMENTATION**



## Analytical Report

AEI Consultants  2500 Camino Diablo, Ste.#200  Walnut Creek, CA 94597	Client Project ID: #277915; Allen	Date Sampled: 10/24/12
		Date Received: 10/24/12
	Client Contact: Robert Flory	Date Reported: 10/29/12
	Client P.O.: #WC083825	Date Completed: 10/26/12

**WorkOrder: 1210797**

October 30, 2012

Dear Robert:

Enclosed within are:

- 1) The results of the **3** analyzed samples from your project: **#277915; Allen,**
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

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

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
 Laboratory Manager  
 McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*





1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1210797

ClientCode: AEL

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQuIS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**

Robert Flory  
 AEI Consultants  
 2500 Camino Diablo, Ste.#200  
 Walnut Creek, CA 94597  
 (925) 283-6000    FAX: (925) 283-6121

Email: rflory@aeiconsultants.com  
 cc:  
 PO: #WC083825  
 ProjectNo: #277915; Allen

**Bill to:**

Sara Guerin  
 AEI Consultants  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597  
 AccountsPayable@AEIConsultants.c

**Requested TAT:**

**5 days**

*Date Received:* 10/24/2012

*Date Printed:* 10/24/2012

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1210797-001	MW-3	Water	10/24/2012 10:00	<input type="checkbox"/>	A	A										
1210797-002	IW-3	Water	10/24/2012 9:40	<input type="checkbox"/>	A											
1210797-003	IW-4	Water	10/24/2012 9:25	<input type="checkbox"/>	A											

**Test Legend:**

1	G-MBTX_W	2	PREFD REPORT	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Melissa Valles**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **AEI Consultants** Date and Time Received: **10/24/2012 11:09:08 AM**  
 Project Name: **#277915; Allen** Login Reviewed by: **Melissa Valles**  
 WorkOrder N°: **1210797** 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: 6.6°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted   
 Sample labels checked for correct preservation? Yes  No   
 Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA   
 Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----  
 Comments:





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

W.O. Sample Matrix: Water

QC Matrix:

BatchID: 71945

WorkOrder: 1210797

EPA Method:		Extraction: SW5030B					Spiked Sample ID: 1210704-002A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
			% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
TPH(btex) <sup>£</sup>	ND	60	107	113	5.38	105	70 - 130	20	80 - 120	
MTBE	ND	10	90.7	92.1	1.56	86.5	70 - 130	20	80 - 120	
Benzene	ND	10	103	104	1.59	102	70 - 130	20	80 - 120	
Toluene	ND	10	102	104	1.51	105	70 - 130	20	80 - 120	
Ethylbenzene	ND	10	104	106	1.50	104	70 - 130	20	80 - 120	
Xylenes	ND	30	107	109	1.91	108	70 - 130	20	80 - 120	
%SS:	96	10	99	96	3.32	97	70 - 130	20	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 71945 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1210797-001A	10/24/12 10:00 AM	10/26/12	10/26/12 2:46 AM	1210797-002A	10/24/12 9:40 AM	10/24/12	10/24/12 10:57 PM
1210797-003A	10/24/12 9:25 AM	10/26/12	10/26/12 4:15 AM				

DHS ELAP Certification 1644

 QA/QC Officer



## Analytical Report

AEI Consultants  2500 Camino Diablo, Ste.#200  Walnut Creek, CA 94597	Client Project ID: #277915; Allen	Date Sampled: 09/21/12
		Date Received: 09/21/12
	Client Contact: Robert Flory	Date Reported: 09/27/12
	Client P.O.: #WC083767	Date Completed: 09/26/12

**WorkOrder: 1209554**

September 27, 2012

Dear Robert:

Enclosed within are:

- 1) The results of the **8** analyzed samples from your project: **#277915; Allen,**
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

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

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
 Laboratory Manager  
 McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*



1209554

**McCAMPBELL ANALYTICAL INC.**

1534 Willow Pass Road  
Pittsburg, CA 94565

Telephone: (925) 252-9262

Fax: (925) 252-9269

**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: Robert Flory Bill To: Same  
Company: AEI Consultants PO #: WCO 83766  
2500 Camino Diablo  
Walnut Creek, CA 94597 E-Mail: rflory@aeiconsultants.com  
Tel: (925) 746-6000 Fax: (925) 946-6099  
Project #: 277915 Project Name: Allen  
Project Location: 325 Martin Luther King Jr. Way  
Sampler Signature: *John Sagg*

**Analysis Request**

**Other**

**Comments**

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				MBTEX & TPH as Gas (602/8020 + 8015)	TPH as Diesel (8015) w/ 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)	Diss Hexachrome (E218.6)	Arsenic, Barium, Cadmium, Total Chromium, Copper, total Iron, Lead, Selenium (E200.8)	5 Fuel Additives, EDB, and 1,2-DCA (8260)	TPH-g (TO-3) + MBTEX (TO-15)	2-propanol (TO-15)						
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other																									
✓ MW-1		9-21-12	0815	3		X					X	X																											
✓ MW-2			0845	3		X					X	X																											
✓ MW-3			0915	4		X					X	X		X	X																								
✓ IW-1			0945	3		X					X	X		X																									
+ IW-2			1015	4		X					X	X		X	X																								
✓ IW-3			1045	4		X					X	X		X	X																								
✓ IW-4			1115	4		X					X	X		X	X																								
+ IW-5			1145	4		X					X	X		X	X																								

Relinquished By: *John Sagg* Date: 9-22-12 Time: 1230 Received By: *M... 2-6*

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

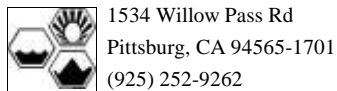
Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

ICE/t° 3.2

GOOD CONDITION  PRESERVATION  VOAS  O&G  METALS  OTHER

HEAD SPACE ABSENT  APPROPRIATE CONTAINERS

DECLORINATED IN LAB \_\_\_\_\_ PERSERVED IN LAB \_\_\_\_\_



# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1209554

ClientCode: AEL

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQuIS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**  
 Robert Flory  
 AEI Consultants  
 2500 Camino Diablo, Ste.#200  
 Walnut Creek, CA 94597  
 (925) 283-6000    FAX: (925) 283-6121

Email: rflory@aeiconsultants.com  
 cc:  
 PO: #WC083766  
 ProjectNo: #277915; Allen

**Bill to:**  
 Sara Guerin  
 AEI Consultants  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597  
 AccountsPayable@AEIConsultants.c

**Requested TAT: 5 days**

**Date Received: 09/21/2012**

**Date Printed: 09/21/2012**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1209554-001	MW-1	Water	9/21/2012 8:15	<input type="checkbox"/>	B	A	A										
1209554-002	MW-2	Water	9/21/2012 8:45	<input type="checkbox"/>	B	A											
1209554-003	MW-3	Water	9/21/2012 9:15	<input type="checkbox"/>	C	A		B									
1209554-004	IW-1	Water	9/21/2012 9:45	<input type="checkbox"/>	B	A											
1209554-005	IW-2	Water	9/21/2012 10:15	<input type="checkbox"/>	C	A		B									
1209554-006	IW-3	Water	9/21/2012 10:45	<input type="checkbox"/>	C	A		B									
1209554-007	IW-4	Water	9/21/2012 11:15	<input type="checkbox"/>	C	A		B									
1209554-008	IW-5	Water	9/21/2012 11:45	<input type="checkbox"/>	C	A		B									

**Test Legend:**

1	5-OXYS+PBSCV_W	2	G-MBTX_W	3	PREFDF REPORT	4	TPH(D)WSG_W	5	
6		7		8		9		10	
11		12							

**Prepared by: Maria Venegas**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **AEI Consultants** Date and Time Received: **9/21/2012 1:15:50 PM**  
 Project Name: **#277915; Allen** LogIn Reviewed by: **Maria Venegas**  
 WorkOrder N°: **1209554** 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: 3.2°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted   
 Sample labels checked for correct preservation? Yes  No   
 Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA   
 Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----  
 Comments:



**McC Campbell Analytical, Inc.**

*"When Quality Counts"*

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
http://www.mccampbell.com / E-mail: main@mccampbell.com

AEI Consultants  2500 Camino Diablo, Ste.#200  Walnut Creek, CA 94597	Client Project ID: #277915; Allen	Date Sampled: 09/21/12
		Date Received: 09/21/12
	Client Contact: Robert Flory	Date Extracted: 09/23/12-09/25/12
	Client P.O.: #WC083767	Date Analyzed: 09/23/12-09/25/12

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

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1209554

Lab ID	1209554-001B	1209554-002B	1209554-003C	1209554-004B	Reporting Limit for DF = 1	
Client ID	MW-1	MW-2	MW-3	IW-1		
Matrix	W	W	W	W		
DF	1	1	1	1		

Compound	Concentration				ug/kg	µg/L
	tert-Amyl methyl ether (TAME)	ND	ND	ND	ND	NA
t-Butyl alcohol (TBA)	ND	ND	ND	ND	NA	2.0
1,2-Dibromoethane (EDB)	ND	ND	1.1	ND	NA	0.5
1,2-Dichloroethane (1,2-DCA)	13	ND	4.4	ND	NA	0.5
Diisopropyl ether (DIPE)	ND	ND	ND	ND	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND	ND	ND	ND	NA	0.5
Methyl-t-butyl ether (MTBE)	1.2	ND	ND	ND	NA	0.5

**Surrogate Recoveries (%)**

%SS1:	112	103	103	107	
-------	-----	-----	-----	-----	--

**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/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

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



AEI Consultants  2500 Camino Diablo, Ste.#200  Walnut Creek, CA 94597	Client Project ID: #277915; Allen	Date Sampled: 09/21/12
		Date Received: 09/21/12
	Client Contact: Robert Flory	Date Extracted: 09/23/12-09/25/12
	Client P.O.: #WC083767	Date Analyzed: 09/23/12-09/25/12

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

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1209554

Lab ID	1209554-005C	1209554-006C	1209554-007C	1209554-008C	Reporting Limit for DF =1	
Client ID	IW-2	IW-3	IW-4	IW-5		
Matrix	W	W	W	W		
DF	1	5	2.5	1		

Compound	Concentration				ug/kg	µg/L
	tert-Amyl methyl ether (TAME)	ND	ND<2.5	ND<1.2	ND	NA
t-Butyl alcohol (TBA)	8.0	25	19	ND	NA	2.0
1,2-Dibromoethane (EDB)	0.71	52	48	ND	NA	0.5
1,2-Dichloroethane (1,2-DCA)	8.0	51	30	ND	NA	0.5
Diisopropyl ether (DIPE)	ND	ND<2.5	ND<1.2	ND	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND	ND<2.5	ND<1.2	ND	NA	0.5
Methyl-t-butyl ether (MTBE)	ND	ND<2.5	ND<1.2	ND	NA	0.5

**Surrogate Recoveries (%)**

%SS1:	106	103	113	104	
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**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/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

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



AEI Consultants  2500 Camino Diablo, Ste.#200  Walnut Creek, CA 94597	Client Project ID: #277915; Allen	Date Sampled: 09/21/12
		Date Received: 09/21/12
	Client Contact: Robert Flory	Date Extracted: 09/23/12-09/25/12
	Client P.O.: #WC083767	Date Analyzed: 09/23/12-09/25/12

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1209554

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	MW-1	W	ND	ND	ND	ND	ND	ND	1	89	
002A	MW-2	W	ND	ND	ND	ND	ND	ND	1	90	
003A	MW-3	W	ND	ND	ND	ND	ND	ND	1	89	
004A	IW-1	W	ND	ND	ND	ND	ND	ND	1	102	
005A	IW-2	W	91	ND	0.89	ND	ND	7.5	1	101	d1
006A	IW-3	W	4300	ND<50	460	580	32	560	10	99	d1
007A	IW-4	W	4500	ND<50	350	820	64	370	10	105	d1
008A	IW-5	W	ND	ND	ND	ND	ND	ND	1	103	

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	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	mg/Kg

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

# cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference. %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:  
 d1) weakly modified or unmodified gasoline is significant





**QC SUMMARY REPORT FOR SW8260B**

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 70995

WorkOrder: 1209554

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1209554-001B			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
tert-Amyl methyl ether (TAME)	ND	10	110	113	2.59	114	70 - 130	20	70 - 130	
Benzene	ND	10	106	103	2.53	108	70 - 130	20	70 - 130	
t-Butyl alcohol (TBA)	ND	40	84.9	91.9	7.42	89.5	70 - 130	20	70 - 130	
Chlorobenzene	ND	10	103	99.9	2.77	106	70 - 130	20	70 - 130	
1,2-Dibromoethane (EDB)	ND	10	109	113	2.95	113	70 - 130	20	70 - 130	
1,2-Dichloroethane (1,2-DCA)	13	10	88.3	94.2	2.71	103	70 - 130	20	70 - 130	
Diisopropyl ether (DIPE)	ND	10	102	103	1.34	106	70 - 130	20	70 - 130	
Ethyl tert-butyl ether (ETBE)	ND	10	106	112	4.65	114	70 - 130	20	70 - 130	
Methyl-t-butyl ether (MTBE)	1.2	10	105	111	5.33	112	70 - 130	20	70 - 130	
Toluene	ND	10	109	105	4.00	111	70 - 130	20	70 - 130	
Trichloroethene	ND	10	101	99.7	1.51	106	70 - 130	20	70 - 130	
%SS1:	112	25	116	117	0.949	116	70 - 130	20	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 70995 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1209554-001B	09/21/12 8:15 AM	09/23/12	09/23/12 11:34 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 $\% \text{ Recovery} = 100 * (\text{MS-Sample}) / (\text{Amount Spiked})$ ;  $\text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$ .  
 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.  
 Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.





### QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 71026

WorkOrder: 1209554

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1209474-001A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
tert-Amyl methyl ether (TAME)	ND	10	93	96.7	3.90	93.5	70 - 130	30	70 - 130	
Benzene	ND	10	93.9	94.5	0.683	94.8	70 - 130	30	70 - 130	
t-Butyl alcohol (TBA)	ND	40	84	76.8	8.88	79.6	70 - 130	30	70 - 130	
Chlorobenzene	ND	10	94	94.7	0.747	91.1	70 - 130	30	70 - 130	
1,2-Dibromoethane (EDB)	ND	10	107	107	0	99.2	70 - 130	30	70 - 130	
1,2-Dichloroethane (1,2-DCA)	ND	10	84.5	82.8	1.95	84.8	70 - 130	30	70 - 130	
Diisopropyl ether (DIPE)	ND	10	90.6	89.3	1.41	93.6	70 - 130	30	70 - 130	
Ethyl tert-butyl ether (ETBE)	ND	10	89.7	89	0.764	90.5	70 - 130	30	70 - 130	
Methyl-t-butyl ether (MTBE)	ND	10	91.5	90.9	0.719	89.9	70 - 130	30	70 - 130	
Toluene	ND	10	90.5	92.4	2.14	90.4	70 - 130	30	70 - 130	
Trichloroethene	ND	10	94.5	97.1	2.71	92.9	70 - 130	30	70 - 130	
%SS1:	102	25	104	105	0.660	105	70 - 130	30	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 71026 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1209554-002B	09/21/12 8:45 AM	09/24/12	09/24/12 9:18 PM	1209554-003C	09/21/12 9:15 AM	09/24/12	09/24/12 9:56 PM
1209554-004B	09/21/12 9:45 AM	09/24/12	09/24/12 10:35 PM	1209554-005C	09/21/12 10:15 AM	09/24/12	09/24/12 11:14 PM
1209554-006C	09/21/12 10:45 AM	09/24/12	09/24/12 11:52 PM	1209554-007C	09/21/12 11:15 AM	09/25/12	09/25/12 11:58 PM
1209554-008C	09/21/12 11:45 AM	09/25/12	09/25/12 1:10 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 $\% \text{ Recovery} = 100 * (\text{MS-Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2).$   
 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.  
 Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



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

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 70992

WorkOrder: 1209554

EPA Method: SW8021B/8015Bm		Extraction: SW5030B					Spiked Sample ID: 1209553-006A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
TPH(btex) £	ND	60	107	113	5.44	109	70 - 130	20	70 - 130	
MTBE	ND	10	98.8	102	3.00	98.8	70 - 130	20	70 - 130	
Benzene	ND	10	101	102	0.860	97	70 - 130	20	70 - 130	
Toluene	ND	10	102	104	2.27	98.3	70 - 130	20	70 - 130	
Ethylbenzene	ND	10	104	107	2.89	100	70 - 130	20	70 - 130	
Xylenes	ND	30	107	111	3.18	104	70 - 130	20	70 - 130	
%SS:	87	10	93	91	2.50	90	70 - 130	20	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 70992 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1209554-001A	09/21/12 8:15 AM	09/23/12	09/23/12 6:46 AM	1209554-002A	09/21/12 8:45 AM	09/23/12	09/23/12 7:16 AM
1209554-003A	09/21/12 9:15 AM	09/23/12	09/23/12 8:15 AM	1209554-004A	09/21/12 9:45 AM	09/23/12	09/23/12 8:45 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 enough sample to perform matrix spike and matrix spike duplicate.  
 NR = matrix interference and/or 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, or inconsistency in sample containers.



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

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 70993

WorkOrder: 1209554

EPA Method: SW8021B/8015Bm		Extraction: SW5030B					Spiked Sample ID: 1209525-049B			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
TPH(btex) £	ND	60	102	104	1.82	102	70 - 130	20	70 - 130	
MTBE	ND	10	90.2	90.6	0.377	88.2	70 - 130	20	70 - 130	
Benzene	ND	10	103	98.7	4.14	99.1	70 - 130	20	70 - 130	
Toluene	ND	10	103	98.6	4.23	100	70 - 130	20	70 - 130	
Ethylbenzene	ND	10	102	99.5	2.81	99.5	70 - 130	20	70 - 130	
Xylenes	ND	30	105	100	4.60	99.8	70 - 130	20	70 - 130	
%SS:	102	10	108	103	4.20	104	70 - 130	20	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 70993 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1209554-008A	09/21/12 11:45 AM	09/23/12	09/23/12 5:21 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 enough sample to perform matrix spike and matrix spike duplicate.  
 NR = matrix interference and/or 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, or inconsistency in sample containers.



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

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 71039

WorkOrder: 1209554

EPA Method: SW8021B/8015Bm		Extraction: SW5030B					Spiked Sample ID: 1209525-046B			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
TPH(btex) £	ND	60	102	92.8	9.74	94.9	70 - 130	20	70 - 130	
MTBE	ND	10	99.4	88.6	11.5	81.4	70 - 130	20	70 - 130	
Benzene	ND	10	99.4	94.7	4.85	89	70 - 130	20	70 - 130	
Toluene	ND	10	100	94.5	5.64	88.1	70 - 130	20	70 - 130	
Ethylbenzene	ND	10	99.6	93.7	6.03	87	70 - 130	20	70 - 130	
Xylenes	ND	30	100	93.6	6.91	87.8	70 - 130	20	70 - 130	
%SS:	104	10	100	103	3.17	101	70 - 130	20	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 71039 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1209554-005A	09/21/12 10:15 AM	09/24/12	09/24/12 8:25 PM	1209554-006A	09/21/12 10:45 AM	09/25/12	09/25/12 7:15 PM
1209554-007A	09/21/12 11:15 AM	09/25/12	09/25/12 7:45 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.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = matrix interference and/or 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, or inconsistency in sample containers.



**QC SUMMARY REPORT FOR SW8015B**

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 70893

WorkOrder: 1209554

EPA Method: SW8015B		Extraction: SW3510C/3630C					Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
TPH-Diesel (C10-C23)	N/A	1000	N/A	N/A	N/A	106	N/A	N/A	70 - 130	
%SS:	N/A	625	N/A	N/A	N/A	88	N/A	N/A	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 70893 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1209554-003B	09/21/12 9:15 AM	09/21/12	09/23/12 10:22 AM	1209554-005B	09/21/12 10:15 AM	09/21/12	09/24/12 11:44 PM
1209554-006B	09/21/12 10:45 AM	09/21/12	09/23/12 11:28 AM	1209554-007B	09/21/12 11:15 AM	09/21/12	09/25/12 11:17 PM
1209554-008B	09/21/12 11:45 AM	09/21/12	09/25/12 3:07 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.



## Analytical Report

AEI Consultants  2500 camino diablo,ste.#200  Walnut creek, CA 94597	Client Project ID: #277915; Allen	Date Sampled: 08/27/12
		Date Received: 08/27/12
	Client Contact: Robert Flory	Date Reported: 08/30/12
	Client P.O.: #WC083733	Date Completed: 08/29/12

**WorkOrder: 1208645**

August 31, 2012

Dear Robert:

Enclosed within are:

- 1) The results of the **3** analyzed samples from your project: **#277915; Allen,**
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

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

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
 Laboratory Manager  
 McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*





1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1208645

ClientCode: AEL

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQulS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**

Robert Flory  
 AEI Consultants  
 2500 camino diablo,ste.#200  
 Walnut creek, CA 94597  
 (925) 283-6000    FAX: (925) 283-6121

Email: rflory@aeiconsultants.com  
 cc:  
 PO:  
 ProjectNo: #277915; Allen

**Bill to:**

Sara Guerin  
 AEI Consultants  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597  
 AccountsPayable@AEIConsultants.c

**Requested TAT: 5 days**

*Date Received: 08/27/2012*

*Date Printed: 08/27/2012*

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1208645-001	MW-3	Water	8/27/2012 10:35	<input type="checkbox"/>	A	A	B										
1208645-002	IW-4	Water	8/27/2012 11:35	<input type="checkbox"/>	A		B										
1208645-003	IW-3	Water	8/27/2012 11:05	<input type="checkbox"/>	A		B										

**Test Legend:**

1	G-MBTEX_W	2	PREFD REPORT	3	TPH(D)WSG_W	4		5	
6		7		8		9		10	
11		12							

**Prepared by: Maria Venegas**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.





### Sample Receipt Checklist

Client Name: **AEI Consultants** Date and Time Received: **8/27/2012 12:25:30 PM**  
 Project Name: **#277915; Allen** LogIn Reviewed by: **Maria Venegas**  
 WorkOrder N°: **1208645** 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   
 Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA   
 Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----  
 Comments:







**QC SUMMARY REPORT FOR SW8015B**

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 70192

WorkOrder: 1208645

EPA Method: SW8015B		Extraction: SW3510C/3630C					Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
TPH-Diesel (C10-C23)	N/A	1000	N/A	N/A	N/A	108	N/A	N/A	70 - 130	
%SS:	N/A	625	N/A	N/A	N/A	100	N/A	N/A	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 70192 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1208645-001B	08/27/12 10:35 AM	08/27/12	08/28/12 9:59 PM	1208645-002B	08/27/12 11:35 AM	08/27/12	08/27/12 11:52 PM
1208645-003B	08/27/12 11:05 AM	08/27/12	08/27/12 10:45 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 $\% \text{ Recovery} = 100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked})$ ;  $\text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2)$ .  
 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.



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

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 70226

WorkOrder: 1208645

EPA Method: SW8021B/8015Bm		Extraction: SW5030B					Spiked Sample ID: 1208629-004A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
TPH(btex) £	ND	60	94.2	93.7	0.557	83.6	70 - 130	20	70 - 130	
MTBE	ND	10	80.7	77	4.36	87	70 - 130	20	70 - 130	
Benzene	ND	10	91.9	89.3	2.86	91.2	70 - 130	20	70 - 130	
Toluene	ND	10	93.3	91.5	1.91	93.2	70 - 130	20	70 - 130	
Ethylbenzene	ND	10	95.4	93.7	1.79	93.6	70 - 130	20	70 - 130	
Xylenes	ND	30	98.6	97.7	0.882	95.9	70 - 130	20	70 - 130	
%SS:	87	10	89	88	1.62	92	70 - 130	20	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 70226 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1208645-001A	08/27/12 10:35 AM	08/28/12	08/28/12 6:33 AM	1208645-002A	08/27/12 11:35 AM	08/28/12	08/28/12 7:02 AM
1208645-003A	08/27/12 11:05 AM	08/28/12	08/28/12 9:44 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.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = matrix interference and/or 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, or inconsistency in sample containers.



## Analytical Report

AEI Consultants  2500 Camino Diablo, Ste. #200  Walnut Creek, CA 94597	Client Project ID: #277915; Allen	Date Sampled: 07/27/12
		Date Received: 07/27/12
	Client Contact: Robert Flory	Date Reported: 08/01/12
	Client P.O.: #WCO83684	Date Completed: 07/31/12

**WorkOrder: 1207697**

August 02, 2012

Dear Robert:

Enclosed within are:

- 1) The results of the **3** analyzed samples from your project: **#277915; Allen,**
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

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 McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*





1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1207697

ClientCode: AEL

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQulS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

<b>Report to:</b>	Robert Flory	Email: rflory@aeiconsultants.com	<b>Bill to:</b>	Sara Guerin	<b>Requested TAT:</b>	<b>5 days</b>
	AEI Consultants	cc:		AEI Consultants	<i>Date Received:</i>	<b>07/27/2012</b>
	2500 Camino Diablo, Ste. #200	PO: #WCO83684		2500 Camino Diablo, Ste. #200	<i>Date Printed:</i>	<b>07/27/2012</b>
	Walnut Creek, CA 94597	ProjectNo: #277915; Allen		Walnut Creek, CA 94597		
	(925) 283-6000    FAX: (925) 283-6121			AccountsPayable@AEIConsultants.c		

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1207697-001	MW-3	Water	7/27/2012 7:00	<input type="checkbox"/>	A	A	B										
1207697-002	IW-3	Water	7/27/2012 8:00	<input type="checkbox"/>	A		B										
1207697-003	IW-4	Water	7/27/2012 9:00	<input type="checkbox"/>	A		B										

**Test Legend:**

1	G-MBTEX_W	2	PREFD REPORT	3	TPH(D)WSG_W	4		5	
6		7		8		9		10	
11		12							

**Prepared by: Melissa Valles**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.





### Sample Receipt Checklist

Client Name: **AEI Consultants** Date and Time Received: **7/27/2012 11:52:57 AM**  
 Project Name: **#277915; Allen** Login Reviewed by: **Melissa Valles**  
 WorkOrder N°: **1207697** 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: 1.3°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted   
 Sample labels checked for correct preservation? Yes  No   
 Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA   
 Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----  
 Comments:







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

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 69523

WorkOrder: 1207697

EPA Method: SW8021B/8015Bm		Extraction: SW5030B					Spiked Sample ID: 1207737-001A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
TPH(btex) £	ND	60	105	107	1.45	106	70 - 130	20	70 - 130	
MTBE	ND	10	98.9	95	3.79	87.2	70 - 130	20	70 - 130	
Benzene	ND	10	98	94	4.17	91.3	70 - 130	20	70 - 130	
Toluene	ND	10	101	97.8	3.10	96.7	70 - 130	20	70 - 130	
Ethylbenzene	ND	10	103	100	2.74	96.1	70 - 130	20	70 - 130	
Xylenes	ND	30	106	103	2.18	98.3	70 - 130	20	70 - 130	
%SS:	85	10	91	90	1.31	90	70 - 130	20	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 69523 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1207697-001A	07/27/12 7:00 AM	07/30/12	07/30/12 8:28 PM	1207697-002A	07/27/12 8:00 AM	07/31/12	07/31/12 7:30 PM
1207697-003A	07/27/12 9:00 AM	07/31/12	07/31/12 8:33 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.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = matrix interference and/or 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, or inconsistency in sample containers.



**QC SUMMARY REPORT FOR SW8015B**

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 69420

WorkOrder: 1207697

EPA Method: SW8015B		Extraction: SW3510C/3630C					Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
TPH-Diesel (C10-C23)	N/A	1000	N/A	N/A	N/A	107	N/A	N/A	70 - 130	
%SS:	N/A	625	N/A	N/A	N/A	102	N/A	N/A	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 69420 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1207697-001B	07/27/12 7:00 AM	07/27/12	07/28/12 9:33 AM	1207697-002B	07/27/12 8:00 AM	07/27/12	07/27/12 6:00 PM
1207697-003B	07/27/12 9:00 AM	07/27/12	07/27/12 7:06 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 $\% \text{ Recovery} = 100 * (\text{MS-Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2).$   
 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.



## Analytical Report

AEI Consultants  2500 Camino Diablo, Ste.#200  Walnut Creek, CA 94597	Client Project ID: #277915; Allen	Date Sampled: 11/20/12
		Date Received: 11/20/12
	Client Contact: Robert Flory	Date Reported: 11/27/12
	Client P.O.: WC083869	Date Completed: 11/27/12

**WorkOrder: 1211565**

November 28, 2012

Dear Robert:

Enclosed within are:

- 1) The results of the **3** analyzed samples from your project: **#277915; Allen,**
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

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 McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.

*The analytical results relate only to the items tested.*

1211565

**McCAMPBELL ANALYTICAL INC.**  
 1534 Willow Pass Road  
 Pittsburg, CA 94565  
 Telephone: (925) 252-9262 Fax: (925) 252-9269

**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: Robert Flory Bill To: Same  
 Company: AEI Consultants PO #: ~~WEO083825~~ **WC083869**  
 2500 Camino Diablo  
 Walnut Creek, CA 94597 E-Mail: rflory@aeiconsultants.com  
 Tel: (925) 746-6000 Fax: (925) 946-6099  
 Project #: 277915 Project Name: Allen  
 Project Location: 325 Martin Luther King Jr. Way  
 Sampler Signature: *[Signature]*

Analysis Request														Other		Comments		
MBTEX & TPH as Gas (602/8020 + 8015)	TPH as Diesel (8015) w/ 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)	Diss Hexachrome (E218.6)	Arsenic, Barium, Cadmium, Total Chromium, Copper, total Iron, Lead, Selenium (E200.8)		5 Fuel Additives, EDB, and 1,2-DCA (8260)	TPH-g (TO-3) + MBTEX (TO-15)
X	X																	
X	X																	
X	X																	

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-3		11-20-12	0700	3	VOA	X					X	X						
IW-3		↓	0745	3	VOA	X					X	X						
IW-4		↓	0830	3	VOA	X					X	X						

Relinquished By: *[Signature]* Date: 11/20/12 Time: 0926 Received By: *[Signature]*  
 Relinquished By: Date: Time: Received By:  
 Relinquished By: Date: Time: Received By:

ICE/Temp 3.7° VOAS  O&G  METALS  OTHER   
 GOOD CONDITION yes PRESERVATION APPROPRIATE  
 HEAD SPACE ABSENT CONTAINERS  
 DECHLORINATED IN LAB PERSERVED IN LAB



1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1211565

ClientCode: AEL

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQuIS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**  
 Robert Flory  
 AEI Consultants  
 2500 Camino Diablo, Ste.#200  
 Walnut Creek, CA 94597  
 (925) 283-6000    FAX: (925) 283-6121

Email: rflory@aeiconsultants.com  
 cc:  
 PO: WC083869  
 ProjectNo: #277915; Allen

**Bill to:**  
 Sara Guerin  
 AEI Consultants  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597  
 AccountsPayable@AEIConsultants.c

**Requested TAT: 5 days**

**Date Received: 11/20/2012**

**Date Printed: 11/20/2012**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1211565-001	MW-3	Water	11/20/2012 7:00	<input type="checkbox"/>	A	A											
1211565-002	IW-3	Water	11/20/2012 7:45	<input type="checkbox"/>	A												
1211565-003	IW-4	Water	11/20/2012 8:30	<input type="checkbox"/>	A												

**Test Legend:**

1	G-MBTX_W	2	PREFD REPORT	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Rosa Venegas**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.





### Sample Receipt Checklist

Client Name: **AEI Consultants** Date and Time Received: **11/20/2012 10:29:24 AM**  
 Project Name: **#277915; Allen** Login Reviewed by: **Rosa Venegas**  
 WorkOrder N°: **1211565** 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: 3.7°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted   
 Sample labels checked for correct preservation? Yes  No   
 Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA   
 Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

\* NOTE: If the "No" box is checked, see comments below.

-----  
 Comments:





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

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 72665

WorkOrder: 1211565

EPA Method: SW8021B/8015Bm		Extraction: SW5030B					Spiked Sample ID: 1211605-001A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
TPH(btex) <sup>£</sup>	ND	60	93	97.5	4.75	109	70 - 130	20	80 - 120	
MTBE	ND	10	89.3	95.7	6.93	101	70 - 130	20	80 - 120	
Benzene	ND	10	103	102	0.187	108	70 - 130	20	80 - 120	
Toluene	ND	10	102	103	1.25	108	70 - 130	20	80 - 120	
Ethylbenzene	ND	10	102	104	1.75	107	70 - 130	20	80 - 120	
Xylenes	ND	30	102	104	2.05	106	70 - 130	20	80 - 120	
%SS:	108	10	102	100	1.52	100	70 - 130	20	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 72665 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1211565-001A	11/20/12 7:00 AM	11/21/12	11/21/12 6:34 PM	1211565-001A	11/20/12 7:00 AM	11/26/12	11/26/12 3:23 PM
1211565-002A	11/20/12 7:45 AM	11/26/12	11/26/12 3:53 PM	1211565-003A	11/20/12 8:30 AM	11/26/12	11/26/12 4:23 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.  
 N/A = not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = matrix interference and/or 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, or inconsistency in sample containers.