

**Andy Saberi**  
1045 Airport Boulevard  
South San Francisco, CA 94080

Mr. Jerry Wickham  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

Re: 1230 14<sup>th</sup> Street, Oakland, California  
ACEH Case No. 295

**RECEIVED**

**5:53 pm, Mar 05, 2012**

Alameda County  
Environmental Health

Dear Mr. Wickham:

I, Mr. Andy Saberi, have retained Pangea Environmental Services, Inc. (Pangea) as the environmental consultant for the project referenced above. Pangea is submitting the attached report on my behalf.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached report are true and correct to the best of my knowledge.

If you have any questions, please call me at (650) 588-3088.

Sincerely,



Andy Saberi



VIA ALAMEDA COUNTY FTP SITE

February 29, 2012

Mr. Jerry Wickham  
Hazardous Materials Specialist  
Alameda County Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

Re: **Groundwater Monitoring and Remediation Report – Second Half 2011**  
Former Shell Service Station  
1230 14<sup>th</sup> Street  
Oakland, California  
Fuel Leak Case No. RO0000433

Dear Mr. Wickham:

On behalf of property owner Andy Saberi, Pangea Environmental Services, Inc has prepared this *Groundwater Monitoring and Remediation Report – Second Half 2011*. The report describes groundwater monitoring and sampling performed in December 2011, site remediation efforts, and other site activities. During the December 2011 monitoring event, Pangea sampled site remediation wells to help optimize site remediation as recommended in our *Groundwater Monitoring and Remediation Report – First Half 2011*.

Due to budget limitations and limited active site remediation caused by equipment issues, Pangea skipped the third quarter 2011 groundwater monitoring event. This cost saving measure helped preserve available funds for operation and maintenance of the DPE/AS remediation system. To date, the California UST Cleanup Fund has authorized a budget of only \$50,000 for all site monitoring and remediation for the July 2011/June 2012 fiscal year. The Cleanup Fund also states that reimbursement of costs in excess of the approved budget for the July 2011/June 2012 fiscal year may be ‘delayed indefinitely’ and ‘over-budget costs’ may *not* roll over to the next fiscal year. Accordingly, Pangea is attempting to optimize use of available funds.

On February 23, 2012, ACEH issued a letter requesting remediation system monitoring information and a plan for air sparge system operation and monitoring. The enclosed report presents initial information and our plan for continued operation and monitoring of the DPE/AS system. Pangea plans to present additional requested information within a first quarter 2012 remediation monitoring report by the requested March 27, 2012 date. Additional proposals for enhanced site remediation and a modified groundwater monitoring plan are described herein. If you have any questions, please contact me at (510) 435-8664 or email briddell@pangeaenv.com.

Sincerely,  
**Pangea Environmental Services, Inc.**

Bob Clark-Riddell, P.E.  
Principal Engineer

Attachment: *Groundwater Monitoring and Remediation Report – Second Half 2011*

cc: Andy Saberi, 1045 Airport Blvd., South San Francisco, California 94080  
Denis Brown, Shell Oil Products US, 20945 S. Wilmington Avenue, Carson, CA 90810-1039  
SWRCB Geotracker (electronic copy)

**PANGEA Environmental Services, Inc.**



## GROUNDWATER MONITORING AND REMEDIATION REPORT – SECOND HALF 2011

Former Shell Service Station  
1230 14<sup>th</sup> Street  
Oakland, California  
Fuel Leak Case No. RO0000433

February 29, 2012

*Prepared for:*

Andy Saberi  
1045 Airport Boulevard  
South San Francisco, California 94080

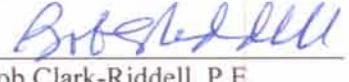
*Prepared by:*

Pangea Environmental Services, Inc.  
1710 Franklin Street, Suite 200  
Oakland, California 94612

*Written by:*



  
Morgan Gillies  
Project Manager

  
  
Bob Clark-Riddell, P.E.  
Principal Engineer

**PANGEA Environmental Services, Inc.**

1710 Franklin Street, Suite 200, Oakland, CA 94612 Telephone 510.836.3700 Facsimile 510.836.3709 [www.pangeaenv.com](http://www.pangeaenv.com)

Groundwater Monitoring and Remediation Report – Second Half 2011  
1230 14<sup>th</sup> Street  
Oakland, California  
February 29, 2012

## **INTRODUCTION**

On behalf of Andy Saberi, Pangea Environmental Services, Inc. (Pangea) conducted groundwater monitoring and sampling, and remediation system maintenance and sampling at the subject site (Figure 1). The purpose of the monitoring and sampling is to evaluate dissolved contaminant concentrations and groundwater flow direction. The purpose of the remediation is to remove residual petroleum hydrocarbon from site soil and groundwater. Current groundwater analytical results and elevation data are shown on Figure 2. Current and historical data are summarized on Table 1. Site remediation data are summarized on Tables 2 and 3.

In response to the February 23, 2012 letter from ACEH, this report also presents initial requested information and our plan for continued operation and monitoring of the DPE/AS system. Additional proposals for enhanced site remediation and a modified groundwater monitoring plan are also described herein.

## **SITE BACKGROUND**

The former Shell-branded service station is located at the northeast corner of 14th Street and Union Street in Oakland, California (Figure 1). Currently, an abandoned one-story station building and a pump-island canopy occupy the site, and much of the property is paved except for the former UST excavation. Land use in the surrounding area is currently residential to the north, south, and east, and is commercial/industrial to the west and southwest. The site topography is essentially flat.

### **Site History**

According to prior reports, the current site building was constructed in 1958 and gas station operations at the site reportedly began in 1958 and ceased in 1993. Petroleum hydrocarbons were first discovered in site soil near the underground storage tanks (USTs) during the completion of three borings at the site in February 1991. Four gasoline USTs and one waste oil storage tank were removed from the site on August 24, 1993. The current property owner, Mr. Andy Saberi, purchased the property in the mid 1980s.

### **Previous Environmental Work**

Previous environmental work has included site assessment, a sensitive receptor evaluation/well survey, risk evaluation, two rounds of feasibility testing (in 2000 and 2006), and several remedial actions. Remedial action included injection of oxygen releasing compound (ORC) into site wells in 1997, groundwater extraction (GWE) and dual-phase extraction (DPE) from 2002 to 2004 (performed with mobile equipment for approximately 11 separate days removing 6.0 lbs aqueous phase and 5.6 lbs vapor phase hydrocarbons), and hydrogen peroxide injection into site wells in 2003. Groundwater monitoring has been performed at the site since 1996.

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In January 2008, Pangea submitted a *Draft Corrective Action Plan and Pilot Test Work Plan* (Draft CAP/Test Workplan) as required by Alameda County Environmental Health (ACEH). In June 2008, with ACEH approval, Pangea installed new remediation test wells, repaired damaged remediation wells, and destroyed one remediation well, as detailed in the *Well Installation and Destruction Report* dated October 6, 2008. In early July 2008, Pangea conducted the approved pilot testing using the newly installed remediation test wells to determine whether SVE or DPE would most effectively remove contaminants and capture hydrocarbon vapors resulting from air sparging. In the *SVE/DPE Pilot Test Report* dated October 7, 2008, Pangea recommended DPE/AS as the most effective remedial approach for the site. In a letter dated October 29, 2008, ACEH approved implementation of DPE/AS remediation at the site. On June 15, 2009, the California UST Cleanup Fund completed a 5-year review of the claim and recommended implementation of site remediation. The DPE remediation system was started up on April 27, 2011 but only operated for approximately three weeks in April/May 2011 and two weeks in December 2011 due to equipment issues and budget limitations from the UST Cleanup Fund. The AS system also only operated intermittently due to equipment malfunction. Following repair of the DPE/AS equipment, continuous operation of DPE/AS resumed on February 23, 2012.

## **GROUNDWATER MONITORING AND SAMPLING**

On December 27, 2011, site monitoring wells were gauged for depth-to-water and inspected for separate-phase hydrocarbons (SPH) prior to collection of groundwater samples. Site wells were sampled according to the approved groundwater monitoring program shown on Table A in Appendix A. In addition, Pangea sampled remediation wells DP-1 through DP-5 to help optimize site remediation. Well caps were removed from all monitoring wells and technicians allowed at least 15 minutes for water level equilibration before measuring depth to water.

Before well purging, the dissolved oxygen (DO) concentration was measured in each well. DO was measured by lowering a downwell sensor to the approximate middle of the water column and allowing the reading to stabilize during gentle height adjustment. Prior to sample collection, approximately three casing volumes of water were purged using disposable bailers, an electric submersible pump, check valve with tubing, a clean PVC bailer, or a peristaltic pump. During well purging, field technicians measured pH, temperature and conductivity. A groundwater sample was collected from each well with a disposable bailer, and decanted into the appropriate containers supplied by the analytical laboratory. Groundwater samples were labeled, placed in protective plastic bags, and stored on crushed ice at or below 4°C. All samples were transported under chain-of-custody to the State-certified analytical laboratory. Purge water was pumped through the remediation system. Groundwater monitoring field data sheets, including purge volumes and field parameter measurements, are presented in Appendix B.

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1230 14<sup>th</sup> Street  
Oakland, California  
February 29, 2012

## **MONITORING RESULTS**

Current and historical groundwater elevation data and analytical results are described below and summarized on Table 1. Groundwater samples were collected from wells MW-1 MW-2, MW-3, MW-4, MW-5R, MW-6, MW-7, VW/MW-2, VW/MW-4, and AS-1, in accordance with the approved groundwater monitoring program (Appendix A). In addition, Pangea collected samples from remediation wells DP-1 through DP-5. Samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8015Cm/8021B. Samples were analyzed by McCampbell Analytical, Inc., of Pittsburg, California, a State-certified laboratory. The laboratory analytical report is included in Appendix C.

### **Groundwater Flow Direction**

Based on depth-to-water data collected on December 27, 2011, the groundwater flow direction at the site is approximately *northeastwards*, as shown on Figure 2. The inferred groundwater flow direction is generally consistent with previous monitoring results. Depth-to-water and groundwater elevation data are presented in Table 1. The groundwater elevation measurement from well AS-1 was not used for contouring due to this well being screened at a deeper interval (22 to 25 ft bgs) than other site wells.

### **Hydrocarbon Distribution in Groundwater**

No SPH were observed in any of the site wells. The maximum TPHg and benzene concentrations detected this monitoring event were in remediation well DP-1, at concentrations of 41,000 µg/L and 4,400 µg/L, respectively. In general, hydrocarbon concentrations are within historic ranges and exhibit a stable to decreasing trend. Groundwater analytical data are included in Table 1 and on Figure 2. The distribution of benzene in groundwater is shown on Figure 3.

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## Fuel Oxygenate Distribution in Groundwater

MTBE was not detected in any site wells this quarter. Historically, MTBE has been detected only sporadically in site wells. Since 2003, detected MTBE concentrations have been below the Maximum Contaminant Level (MCL) for drinking water of 13 µg/L, except for a concentration of 20 µg/L detected in well MW-5 in February 2008. This MTBE result could be a false positive result; EPA Method 8260 was not used to confirm the MTBE detected by EPA Method 8021B. MTBE is not a primary constituent of concern at this site due to limited and sporadic (and potentially false) MTBE detections. MTBE concentrations are shown in Table 1 and on Figure 2.

## REMEDIATION SUMMARY

### Dual Phase Extraction/Air Sparging System

The dual phase extraction (DPE) remediation system simultaneously extracts groundwater and soil vapor from site remediation wells. The remediation system layout is shown on Figure 3. The DPE system installed at the site consists of a 250 cfm electric catalytic oxidizer equipped with a 7.5 hp positive-displacement blower. To maximize groundwater depression, a “stinger” (vacuum tube inserted below the water table) is used to both depress the water table and extract soil vapor in each of the remediation wells (DP-1 through DP-5). Extracted vapors are routed through an air/water separator and then treated by the electric catalytic oxidizer. The treated vapor is discharged to the atmosphere in accordance with Bay Area Air Quality Management District (BAAQMD) requirements. Groundwater captured within the air/water separator is pumped through two 1,000-lb canisters of granular activated carbon plumbed in series. The treated groundwater is discharged into the sewer in accordance with East Bay Municipal Utility District’s (EBMUD) requirements.

The air sparging (AS) system consists of a 5-hp piston air compressor for injecting air into sparge wells AS-1 through AS-5. Air flow to the sparge wells is controlled by timer-activated solenoid valves and individual well flow meters. The air sparging system is enclosed within a small shed to help reduce noise from the compressor.

The DPE/AS system is monitored in accordance with air permit requirements of the *Authority to Construct Permit* issued by the Bay Area Air Quality Management District (BAAQMD) and groundwater discharge requirements of the *Wastewater Discharge Permit* issued by East Bay Municipal Utility District.

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## **Operation and Performance**

The DPE remediation system was started up on April 27, 2011 but only operated for approximately three weeks in April/May 2011 and two weeks in December 2011 due to equipment issues and budget limitations from the UST Cleanup Fund. The AS system also only operated intermittently due to equipment malfunction. Following recent repair of the DPE/AS equipment, continuous operation of DPE/AS resumed on February 23, 2012.

This report summarized remediation data from startup through December 14, 2011, the last day of remediation effort in 2011. Operation and performance data for the vapor-phase and aqueous-phase portions of the DPE system is summarized on Tables 2 and 3, respectively. Tables 2 and 3 present system operation time, extraction flow rates, influent TPHg and benzene concentrations, and contaminant removal rates and cumulative mass removal. Air sparge system data is summarized on Table 4.

As of December 14, 2011, the DPE system operated for a total of approximately 38 days. Based on laboratory analytical and performance data, Pangea estimates that soil vapor removal rates during this reporting period peaked near 47.9 lbs/day TPHg and 0.57 lbs/day benzene. As of December 14, 2011, the vapor-phase portion of the DPE system removed a total of approximately 127 lbs TPHg and 3 lbs benzene. The groundwater portion of the DPE system has removed a total of approximately 0.8 lbs TPHg and 0.1 lbs benzene to date. Additional parameters are summarized on Tables 2 and 3.

## **FUTURE SITE ACTIVITIES**

### **Planned DPE/AS Remediation**

Following recent repair of the DPE/AS equipment, continuous operation of DPE/AS resumed on February 23, 2012. Current DPE is focused on wells DP-1, DP-2, DP-4 and DP-5 to optimize hydrocarbon removal and capture vapors created by air sparging. Air sparging is currently limited to source area well AS-2 and upgradient well AS-4 at approximately 3 cfm per well. Due to noise concerns, the air compressor is cycled intermittently between 9 am and 9 pm. Pangea plans to continue pilot testing and routine operation and maintenance of the DPE/AS system as described herein to optimize hydrocarbon removal rates and to demonstrate capture of vapors created by air sparging.

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To address concerns raised by the ACEH letter of February 23, 2012, Pangea offers the information below. The following system and monitoring data suggests that the DPE system is effectively capturing vapors created by sparging:

- The soil vapor extraction rate (SVE) of approximately 175 cfm vastly exceeds the air sparge (AS) injection rate of approximately 6 cfm (a ratio of nearly 30:1 for extraction: injection)(based on February 2012 data);
- The hydrocarbon concentrations in extracted soil vapor increase significantly upon commencement of air sparging, slowly decrease with time, and return to pre-AS levels soon after AS ceases;
- Vacuum influence was measured up in many site wells during DPE and AS on February 28, 2012, including 2.0" water vacuum in MW-5R; 1.75" water in VW/MW-2; 0.17" in VW/MW-4, and 0.02" water in MW-1, MW-2 and MW-7;
- No positive air pressure was measured in the following observation points VMP-1, MW-3, MW-4, and MW-6; and
- No vapor-phase hydrocarbon concentrations have been observed in vapor monitoring point VMP-1, located immediately adjacent the nearby residence. VMP-1 was sampled using a Summa canister on December 23, 2011, and was sampled using a Horiba organic vapor analyzer on February 23, 2012. A Tedlar bag sample was also collected from VMP-1 on February 28, 2012 and submitted for laboratory analysis. The laboratory report for the December 23, 2011 sampling is presented in Appendix C.

Pangea plans to continue DPE and AS from the current wells until hydrocarbon removal rates significantly decrease. At that time Pangea plans to expand sparging to source area well AS-1 and monitor influent vapor concentrations and vacuum/pressure in surrounding wells to confirm capture of vapors created by sparging. Air sparging will be then be expanded to well AS-3 using this procedure.

### **Requested Remediation System Monitoring and Operations Report**

The February 23, 2012, ACEH letter requested a *Remediation Systems Monitoring and Operations Report*. To address this ACEH request, Pangea has included initial information above, and plans to submit additional information in a *Groundwater Monitoring and Remediation Report - First Quarter 2012* by the requested March 27, 2012 date. To control cost and reduce redundancy, Pangea proposes to not submit a separate report entitled *Remediation Systems Monitoring and Operations Report*.

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## **Workplan for Enhanced Site Remediation**

To accelerate site cleanup and therefore reduce overall remediation cost, Pangea recently submitted a *Workplan for Enhanced Site Remediation (Workplan)*. The Workplan proposes to use a bio-organic catalyst (BOC) to enhance the effectiveness of ongoing dual phase extraction (DPE) and air sparging (AS) at the site. BOC use is also designed to help reduce air injection flow rates to help optimize capture of hydrocarbon vapors created by sparging, an agency concern reiterated by ACEH letter dated February 23, 2012. The BOC pilot test is consistent with the current operation of site remediation wells (source area DPE wells and source area/upgradient sparge wells AS-2 and AS-4). With agency approval, Pangea will add BOC to the designated pilot test wells (AS-2, AS-4 and VW/MW-4).

As detailed in the Workplan, Pangea proposes the following schedule for enhanced remediation and groundwater sampling:

- February and March 2012 – Startup and Continue DPE/AS System Operation/Vapor Monitoring
- April 2012 – Pilot Testing of BOC during DPE/AS Operation with Agency Approval
- May 2012 – Expanded BOC during DPE/AS Operation and System Shutdown/Rebound Test at End
- June 2012 – Sample All Site Wells after 4 Weeks of Subsurface Equilibrium (Semi-Annual Event)

As discussed with case worker Jerry Mitchell on February 28, 2012, this site represents an excellent opportunity to test the effectiveness of this inexpensive and ‘green’ BOC technology for remediating petroleum hydrocarbon impact.

## **Proposed Groundwater Monitoring**

Groundwater monitoring is important for evaluating the effectiveness of dual-phase extraction and air sparging, and implementation of the proposed BOC technology. Consistent with the Workplan, Pangea proposes to skip the first quarter 2012 groundwater monitoring event since limited active remediation has been performed after the prior monitoring event on December 27-28, 2011. As detailed in the BOC workplan, Pangea requests agency concurrence to perform *monthly* groundwater sampling of select wells during BOC addition, followed by groundwater sampling from *all* site wells to evaluate site conditions during the next semi-annual monitoring event in June 2012. The cost savings from skipping the first quarter 2012 event will offset cost for proposed monthly sampling and additional well sampling in June 2012. The semi-annual groundwater monitoring program from 2011 (limited remediation) is shown on Table A in Appendix A. The proposed quarterly groundwater monitoring program for 2012, for active remediation and BOC workplan implementation, is shown on Table B in Appendix A.

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As required, future groundwater monitoring will be performed *quarterly* from program wells to help focus any needed future remediation. Pangea may propose modification to the monitoring program based on remedial effectiveness and results of the June 2012 monitoring event.

### **Electronic Reporting**

This report will be uploaded to the Alameda County FTP site. The report, laboratory data, and other applicable information will also be uploaded to the State Water Resource Control Board's Geotracker database. As requested, report hard copies will no longer be provided to the local agencies.

### **ATTACHMENTS**

Figure 1 – Vicinity Map

Figure 2 – Groundwater Elevation and Hydrocarbon Concentration Map

Figure 3 – Benzene Distribution in Groundwater, December 27-28, 2011

Figure 4 – Remediation System Layout

Table 1 – Groundwater Elevation and Analytical Data

Table 2 – SVE Performance Data

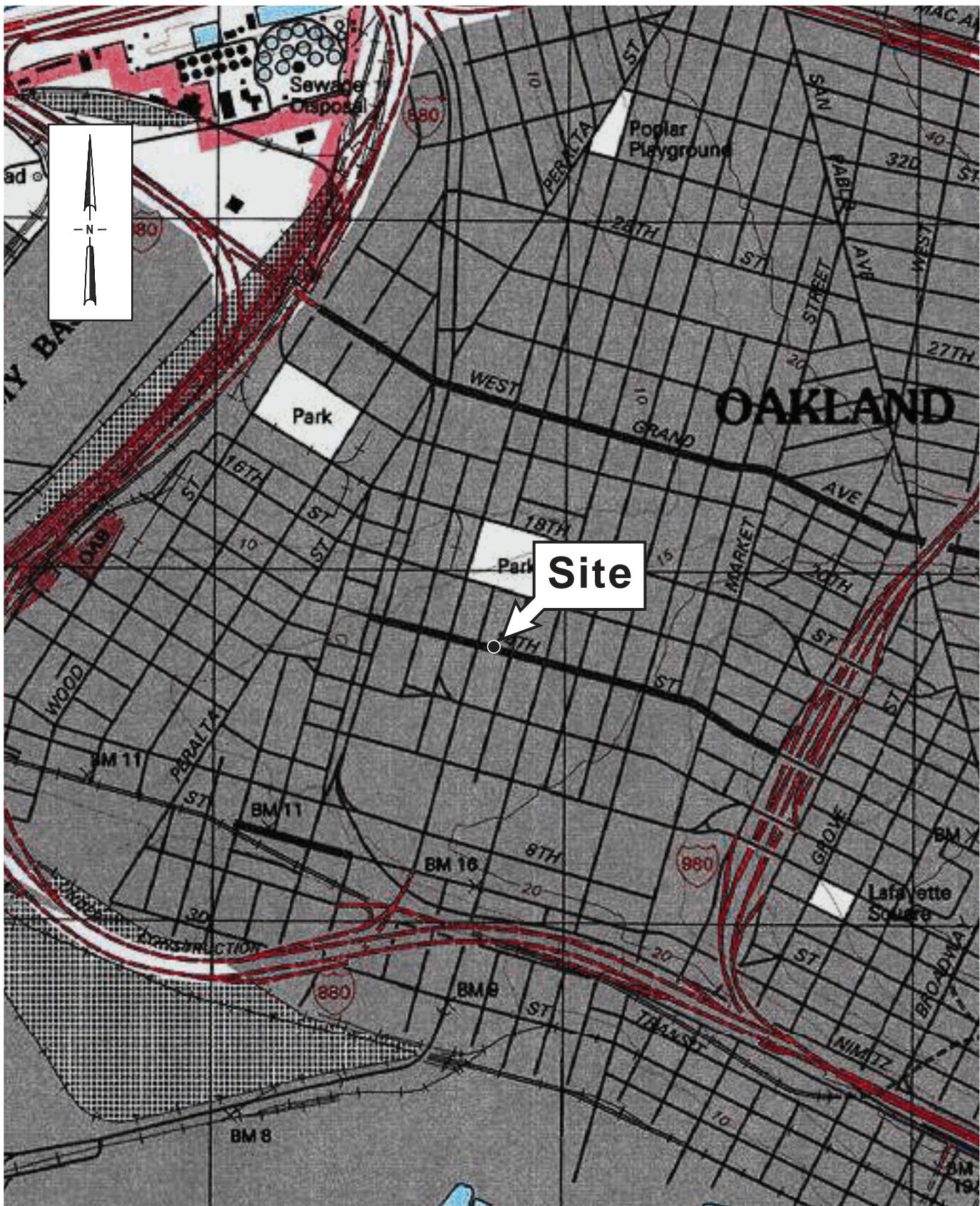
Table 3 – GWE Performance Data

Table 4 – AS Performance Data

Appendix A – Groundwater Monitoring Program

Appendix B – Groundwater Monitoring Field Data Sheets

Appendix C – Laboratory Analytical Reports



Figure

0      1/8      1/4      1/2      1  
SCALE : 1" = 1/4 MILE

1

**Former Shell Service Station**

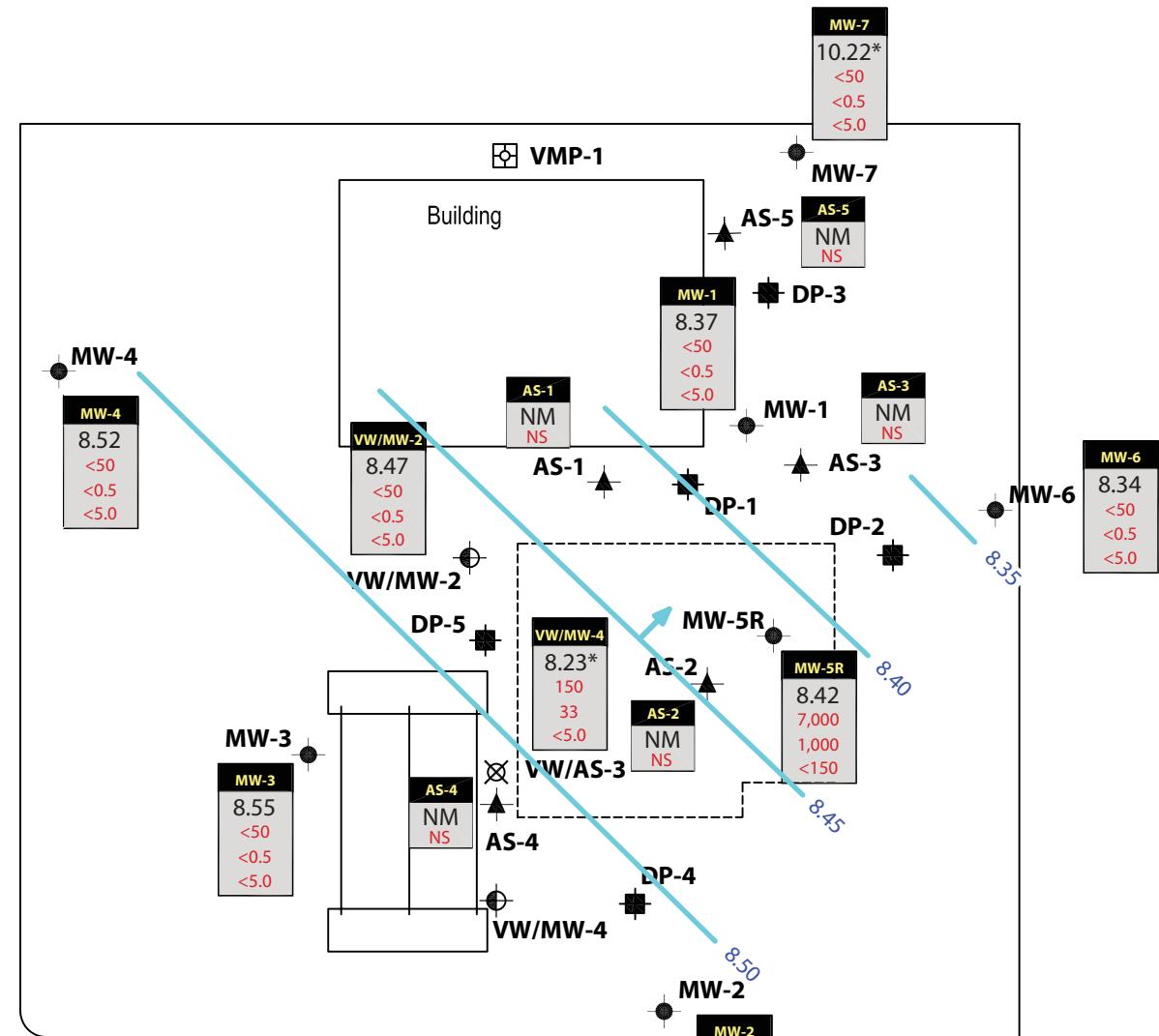
1230 14th Street  
Oakland, California



**PANGEA**

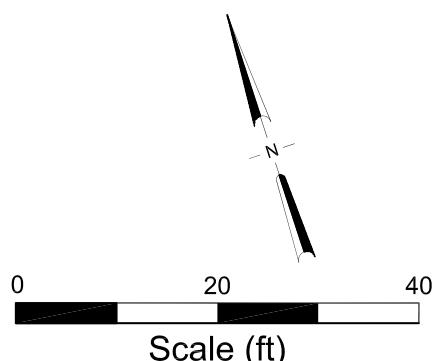
Vicinity Map

UNION STREET



#### EXPLANATION

- DP-1: Dual phase extraction (DPE) well
- AS-1: Air sparge well (AS)
- VMP-1: Vapor monitoring point
- MW-1: Groundwater monitoring well
- VW/MW-4: Combination soil vapor extraction well/monitoring well
- VW/AS-3: Destroyed Well
- Well ID**: Well designation
- ELEV**: Groundwater elevation
- TPHg**: Hydrocarbon concentrations in groundwater in micrograms per liter (ug/L)
- Benzene**
- MTBE**
- NM: Not measured
- 8.00: Groundwater elevation contour, in feet
- 8.45: Approximate groundwater flow direction

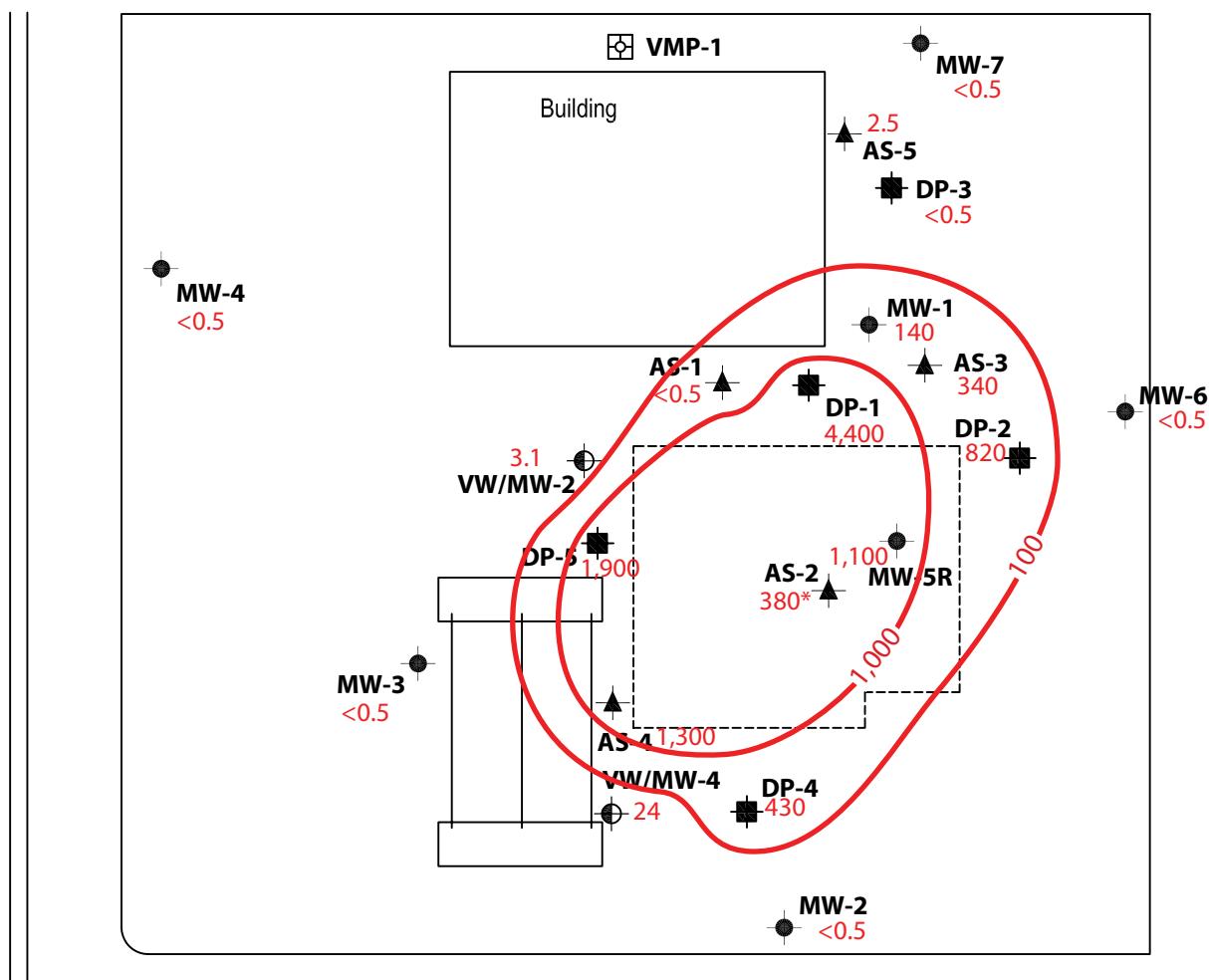


Figure

2

GW

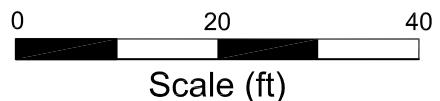
UNION STREET



#### EXPLANATION

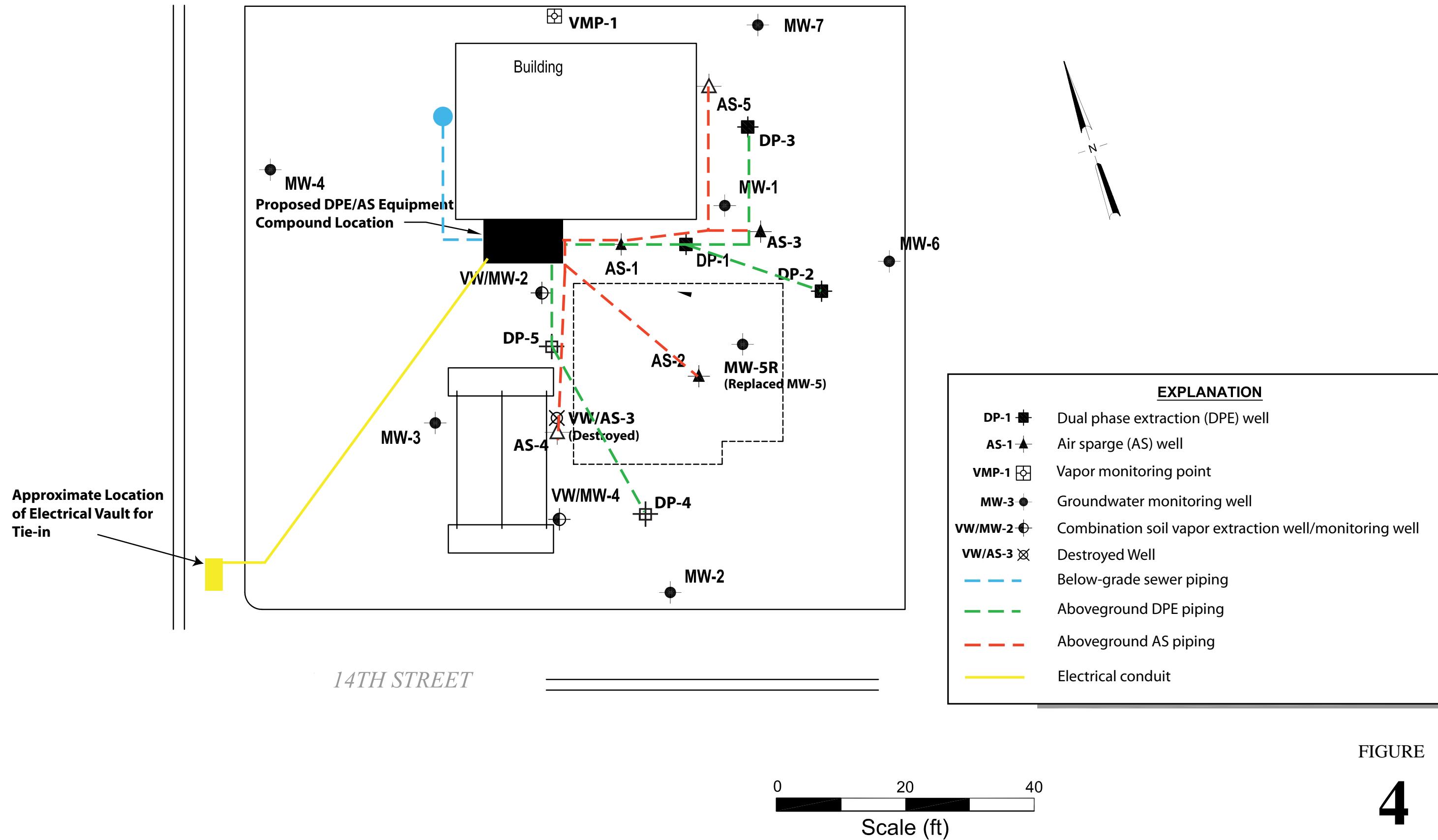
- DP-1 ■ Dual phase extraction (DPE) well
- AS-1 ▲ Air sparge well (AS)
- VMP-1 ☐ Vapor monitoring point
- MW-1 ● Groundwater monitoring well
- VW/MW-4 ○ Combination soil vapor extraction well/monitoring well
- GW → Estimated groundwater flow direction
- 140 Benzene in groundwater, concentrations in µg/L
- \* Not used for contouring
- 100 Isoconcentrations of benzene in groundwater, concentrations in µg/L, December 27-28, 2011 or most recent data

14TH STREET



Figure

3



# Pangea

**Table 1. Groundwater Elevation and Analytical Data - Saberi, 1230 14th Street, Oakland, CA**

Well ID	Date Measured	DTW (feet)	GWE (feet) (MSL)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Dissolved Oxygen (mg/L)
<b>REMEDIATION WELLS</b>										
<b>AS-1</b>	07/02/08	12.08	--	28,000	390	350	620	2,500	<500	--
	08/18/08	13.05	--	1,500	12	6.1	6.7	91	<17	1.94/2.41
	11/20/08	13.69	--	640	2.4	2.7	1.0	8.5	<5.0	2.51/2.91
	02/18/09	12.09	--	270	1.1	2.2	<0.5	<0.5	<5.0	2.94/2.99
	05/26/09	11.40	--	250	1.7	0.70	<0.5	3.5	<5.0	3.01/2.94
	11/23/09	13.38	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.94/2.65
	05/26/10	10.97	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	2.6/2.78
	12/30/10				Well Inaccessible					
<i>19.69</i>	05/23/11				Well Inaccessible					
	<b>12/27/11</b>	<b>14.02</b>	<b>5.67</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	<b>0.69/0.75</b>
<b>AS-2</b>	07/02/08	11.98	--	9,600	380	620	170	1,000	<50	--
<i>19.22</i>										
<b>AS-3</b>	07/02/08	12.42	--	2,800	340	7.2	20	37	<50	--
<i>19.5</i>										
<b>AS-4</b>	04/16/10	8.82	---	31,000	1,300	330	400	6,600	<500	---
<i>18.93</i>										
<b>AS-5</b>	04/16/10	10.03	---	120	2.5	1.3	1.2	17	<5.0	---
<i>19.99</i>										
<b>DP-1</b>	07/03/08	12.43	--	34,000	5,100	1,800	1,300	4,900	<350	--
<i>18.49</i>										
<b>DP-2</b>	07/03/08	12.92	--	15,000	2,800	300	560	1,600	<150	--
<i>19.04</i>										
<b>DP-3</b>	07/02/08	13.21	--	14,000	4,400	100	720	150	<350	--
<i>19.35</i>										
<b>DP-4</b>	04/16/10	8.95	--	4,700	300	45	260	570	<100	---
<i>18.21</i>										
<b>DP-5</b>	04/16/10	9.11	--	19,000	810	1,900	680	3,100	<350	---
<i>18.36</i>										
	<b>12/27/11</b>	<b>13.03</b>	<b>5.46</b>	<b>41,000</b>	<b>4,400</b>	<b>1,200</b>	<b>780</b>	<b>4,600</b>	<b>&lt;1,000</b>	<b>0.83/0.91</b>
<b>MW-1</b>	03/25/96	9.53	9.05	37,000	7,400	1,500	720	3,300	<500	--
<i>18.58</i>										
	06/21/96	10.72	7.86	35,000	9,900	460	340	3,500	890	--
	09/26/96	12.88	5.70	19,000	8,200	510	780	790	<250	--
	12/19/96	12.59	5.99	27,000	120	1,200	1,400	2,800	<100	--
	12/19/96	12.59	5.99	32,000	12,000	1,300	1,600	3,100	830	--
	03/25/97	11.10	7.48	39,000	13,000	1,600	840	3,100	730	1.2
	06/26/97	12.42	6.16	--	--	--	--	--	--	'--
	09/26/97	13.31	5.27	--	--	--	--	--	--	0.8
	12/05/97	12.65	5.93	--	--	--	--	--	--	0.3
	02/19/98	6.46	12.12	16,000	5,500	450	500	800	<500	2.4
	06/08/98	6.62	11.96	--	--	--	--	--	--	1.2
	08/25/98	11.83	6.75	--	--	--	--	--	--	2.8
	12/28/98	12.01	6.57	--	--	--	--	--	--	2.6
	03/26/99	9.15	9.43	--	--	--	--	--	--	2.2
	06/30/99	11.22	7.36	--	--	--	--	--	--	3.8
	09/30/99	11.89	6.69	--	--	--	--	--	--	3.0
	12/27/99	13.55	5.03	34,800	8,660	953	956	2,770	<1,000	2.4/2.1
	01/21/00	13.42	5.16	40,600	14,700	1,850	1,210	3,670	<500	2.8
	03/07/00	8.11	10.47	--	--	--	--	--	--	0.4
	04/17/00	9.78	8.80	--	--	--	--	--	--	3.0/3.4
				18,300	8,060	543	528	872	<50.0	

# Pangea

**Table 1. Groundwater Elevation and Analytical Data - Saberi, 1230 14th Street, Oakland, CA**

Well ID	Date Measured	DTW (feet)	GWE (feet) (MSL)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Dissolved Oxygen (mg/L)
<i>(MW-1 cont'd)</i>	09/21/00	13.11	5.47	--	--	--	--	--	--	5.2
	10/17/00	12.61	5.97	15,800	6,720	435	587	887	351(<66.7)	1.2/0.8
	01/09/01	12.94	5.64	--	--	--	--	--	--	0.3
	04/27/01	10.73	7.85	1,400	650	28	58	48	(<10)	1.8/2.1
	07/03/01	12.00	6.58	--	--	--	--	--	--	1.8
	12/06/01	10.53	8.05	4,500	1,500	85	160	210	(<50)	2.5/2.9
	01/23/02	9.33	9.25	--	--	--	--	--	--	0.1
	04/17/02	10.49	8.09	230	12	<0.50	4.6	2.5	(<5.0)	6.3/5.3
	07/18/02	11.98	6.60	--	--	--	--	--	--	1.2
	11/11/02	13.00	5.58	12,000	2,600	240	470	640	(-8.5)	0.2/0.2
	01/16/03	9.68	8.90	--	--	--	--	--	--	4.4
	03/13/03	10.45	8.13	820	340	2.7	<2.0	3.2	(<20)	2.8/0.9
	04/23/03	10.32	8.26	900	550	19	49	49	(<50)	0.9/0.1
	05/13/03	10.28	8.30	740	510	18	43	46	(<50)	0.1/0.2
	06/13/03	11.16	7.42	<5,000	1,500	82	180	250	(<500)	0.3/0.8
	07/14/03	11.66	6.92	5,300	3,400	160	340	420	(<20)	0.6/0.3
	09/29/03	12.44	6.14	10,000	5,700	400	670	1,000	(<50)	0.6/0.7
	10/29/03	12.63	5.95	19,000	6,600	560	820	1,300	(26)	0.6/0.4
	01/05/04	10.17	8.41	380	140	7.1	6.2	16	(<1.0)	5.0/0.8
	04/01/04	9.57	9.01	79	0.59	<0.50	<0.50	<1.0	(<0.50)	4.6/1.2
	07/02/04	11.81	6.77	4,100	2,100	33	110	81	(<10)	0.6/0.5
	11/03/04	12.53	6.05	8,000	3,800	150	480	460	(<25)	1.45/2.1
	01/04/05	9.39	9.19	120	23	1.6	2.0	3.5	(<0.50)	4.21/2.82
	04/13/05	7.63	10.95	<50	<0.50	<0.50	<0.50	<0.50	(<0.50)	2.44/2.77
	07/13/05	10.85	7.73	930 e	400	6.1	<5.0	10	(<5.0)	0.84/0.66
	10/28/05	12.44	6.14	8,300	5,500	190	590	470	(<25)	0.2/0.2
	01/17/06	8.61	9.97	<50	2.2	1.1	1.4	4.8	(<0.50)	5.8/5.3
	02/23/06	9.60	8.98	--	18.1	2.22	1.89	4.50	--	--
	03/09/06	7.65	10.93	--	1.80	<0.500	<0.500	1.82	--	--
	04/21/06	6.35	12.23	<50.0	1.54	1.03	4.20	5.82	(<0.500)	--
	05/01/06	7.38	11.20	268	41.3	4.62	3.83	26.1	(<0.500)	0.27/0.36
	06/23/06	10.09	8.49	3,990	362	13.1	12.4	71.5	(<0.500)	--
	07/11/06	10.09	8.49	6,190	3,740	52.0	67.8	982	(<0.500)	--
	08/30/06	11.55	7.03	29,200	7,380	596	443	1,680	(4.45)	0.39/0.52
	09/29/06	11.97	6.61	76,100	9,300	859 i	1,290	2,820 i	(<5.00)	--
	10/13/06	12.08	6.50	49,500	7,580	770	1,030	2,860	(2.75)	--
	11/03/06	12.47	6.11	42,600	8,450	592	869	1,970	(2.69)	2.60/1.15
	12/26/06	11.80	6.78	19,000	4,600	360	640	1,300	(<5.0)	--
	01/11/07	11.84	6.74	23,000	6,000	320	780	1,100	(<25)	--
	01/30/07	12.18	6.40	3,700	890	74	170	220	(<25)	1.18/0.76
	03/01/07	10.74	7.84	2,600	670	32	41	180	(<10)	--
	04/26/07	10.90	7.68	12,000 k,l	2,800	220	400	560	(<20)	--
	06/01/07	11.49	7.09	15,000 k	3,900	380	670	1,010	(1.8)	0.31/0.43
	06/21/07	12.07	6.51	13,000 k	3,800	400	620	1,060	(<50)	--
	07/03/07	12.00	6.58	21,000 k	6,100	510	960	1,760	(<50)	--
	08/16/07	12.55	6.03	20,000 k	5,800	460	1,100	1,730	(<50)	0.3/0.2
	12/06/07	13.00	5.58	53,000	9,400	560	1,400	3,000	(<25)	--
	02/25/08	9.91	8.67	<50	<0.5	<0.5	<0.5	<0.5	<5.0	3.74
	05/26/08	11.90	6.68	9,300	2,200	67	140	130	<250	1.96/1.13
	08/18/08	12.82	5.76	15,000	3,300	110	380	430	<250	0.97/0.77
	11/20/08	13.46	5.12	18,000	4,700	190	770	910	<100	1.04/1.27
	02/18/09	11.77	6.81	2,200	54	8.7	45	76	<10	1.21/1.40
	05/26/09	11.18	7.40	750	31	7.1	3.5	23	<5.0	0.90/1.21
	11/23/09	13.15	5.43	6,300	2,100	53	170	180	<250	1.12/1.85
	05/26/10	10.74	7.84	550	96	6.2	3.1	14	<10	0.86/1.13
	12/30/10	10.53	8.05	280	40	4.6	2.8	17	<5.0	0.88/1.07
	05/23/11	10.21	8.37	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.68
	<b>12/27/11</b>	<b>13.15</b>	<b>5.43</b>	<b>6,900</b>	<b>140</b>	<b>51</b>	<b>54</b>	<b>370</b>	<b>&lt;50</b>	<b>1.03/1.13</b>

# Pangea

**Table 1. Groundwater Elevation and Analytical Data - Saberi, 1230 14th Street, Oakland, CA**

Well ID	Date Measured	DTW (feet)	GWE (feet)	TPHg (MSL)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Dissolved Oxygen (mg/L)
				(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)
<b>MW-2</b>	03/25/96	8.19	9.71	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
<i>17.90</i>	06/21/96	9.94	7.96	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
	09/26/96	12.15	5.75	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
	12/19/96	11.70	6.20	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
	03/25/97	9.25	8.65	<50	<0.50	<0.50	<0.50	<0.50	<2.5	1.8
	06/26/97	11.36	6.54	<50	<0.50	<0.50	<0.50	<0.50	<2.5	2.4
	09/26/97	12.56	5.34	<50	<0.50	<0.50	<0.50	<0.50	<2.5	1.1
	09/26/97	12.56	5.34	<50	<0.50	<0.50	<0.50	<0.50	<2.5	1.1
	12/05/97	11.15	6.75	<50	<0.50	<0.50	<0.50	<0.50	<2.5	0.7
	02/19/98	5.61	12.29	<50	<0.50	<0.50	<0.50	<0.50	<2.5	2.7
	06/08/98	5.58	12.32	<50	<0.30	<0.30	<0.30	<0.60	<10	3.2
	08/25/98	10.67	7.23	--	--	--	--	--	--	1.7
	12/28/98	11.65	6.25	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	0.4/0.8
	03/26/99	8.60	9.30	--	--	--	--	--	--	0.7
	06/30/99	10.30	7.60	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	2.3
	09/30/99	10.77	7.13	--	--	--	--	--	--	1.9
	12/27/99	12.21	5.69	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	0.7/0.7
	03/07/00	7.13	10.77	--	--	--	--	--	--	1.1
	04/17/00	8.35	9.55	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	1.8/1.8
	09/21/00	11.76	6.14	--	--	--	--	--	--	2.1
	10/17/00	11.80	6.10	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	0.9/0.6
	01/09/01	12.14	5.76	--	--	--	--	--	--	0.7
	04/27/01	9.85	8.05	<50	<0.50	<0.50	<0.50	<0.50	(<0.50)	1.1/0.9
	07/03/01	11.20	6.70	--	--	--	--	--	--	1.2
	12/06/01	10.77	7.13	<50	<0.50	<0.50	<0.50	<0.50	(<5.0)	3.9/2.1
	01/23/02	8.64	9.26	--	--	--	--	--	--	2.5
	04/17/02	9.61	8.29	<50	<0.50	<0.50	<0.50	<0.50	(<5.0)	3.5/5.2
	07/18/02	11.09	6.81	--	--	--	--	--	--	1.4
	11/11/02	12.16	5.74	<50	<0.50	<0.50	<0.50	<0.50	(<5.0)	0.2/0.3
	01/16/03	8.92	8.98	--	--	--	--	--	--	1.7
	03/13/03	9.60	8.30	--	--	--	--	--	--	1.1
	04/23/03	9.48	8.42	<50	<0.50	<0.50	<0.50	<1.0	(<5.0)	0.4/0.2
	05/13/03	9.45	8.45	<50	<0.50	<0.50	<0.50	<1.0	(<5.0)	0.5/0.3
	06/13/03	10.28	7.62	<50	<0.50	<0.50	<0.50	<1.0	(<5.0)	0.6/0.9
	07/14/03	10.67	7.23	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	0.5/0.09
	09/29/03	11.58	6.32	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	1.9/1.3
	10/29/03	11.76	6.14	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	4.3/0.5
	01/05/04	9.36	8.54	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	1.2/0.8
	04/01/04	8.77	9.13	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	4.0/0.3
	07/02/04	11.04	6.86	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	0.4/0.3
	11/03/04	11.71	6.19	<50	<0.50	<0.50	<0.50	<1.0	(0.54)	6.4/1.40
	01/04/05	8.68	9.22	<50	<0.50	<0.50	<0.50	<1.0	(0.62)	4.41/2.88
	04/13/05	7.13	10.77	<50	<0.50	<0.50	<0.50	<0.50	(1.7)	0.71/0.23
	07/13/05	10.30	7.60	<50	<0.50	<0.50	<0.50	<1.0	(2.3)	0.90/0.33
	10/28/05	11.61	6.29	<50	<0.50	<0.50	<0.50	<1.0	(4.2)	0.4/0.1
	01/17/06	8.21	9.69	<50	<0.50	<0.50	<0.50	<0.50	(5.0)	0.8/0.2
	03/09/06	7.70	10.20	--	--	--	--	--	--	--
	04/21/06	5.83	12.07	--	--	--	--	--	--	--
	05/01/06	6.34	11.56	<50.0	<0.500	<0.500	<0.500	<0.500	(4.33)	0.52/0.18
	08/30/06	10.71	7.19	<50.0	<0.500	<0.500	<0.500	<0.500	(1.98)	0.51/1.04
	09/29/06	11.03	6.87	--	--	--	--	--	--	--
	11/03/06	11.62	6.28	<50.0	<0.500	<0.500	<0.500	<0.500	(3.08)	0.44/0.40
	01/30/07	11.30	6.60	<50	<0.50	<0.50	<0.50	<1.0	(2.9)	0.92/0.63
	06/01/07	10.52	7.38	<50 k	0.71	<1.0	0.20 m	0.39 m	(1.7)	0.71/0.56
	08/16/07	11.60	6.30	<50 k	<0.50	<1.0	<1.0	<1.0	(1.3)	0.5/0.2
	12/06/07	12.39	5.51	<50	0.97	<0.5	0.56	1.5	(0.99)	--
	02/25/08	9.15	8.75	<50	<0.5	<0.5	<0.5	<0.5	<5.0	2.82
	05/26/08	11.02	6.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.86/1.32
	08/18/08	11.97	5.93	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.45/1.12
	11/20/08	12.64	5.26	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.10/1.16

# Pangea

**Table 1. Groundwater Elevation and Analytical Data - Saberi, 1230 14th Street, Oakland, CA**

Well ID	Date Measured	DTW (feet)	GWE (feet) (MSL)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Dissolved Oxygen (mg/L)
<i>(MW-2 cont'd)</i>	02/18/09	11.14	6.76	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.98/1.11
	05/26/09	10.31	7.59	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.03/1.49
	11/23/09	12.32	5.58	--	--	--	--	--	--	--
	05/26/10	9.92	7.98	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.99/1.43
	12/30/10	9.80	8.10	--	--	--	--	--	--	--
	05/23/11	9.37	8.53	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.48
	<b>12/27/11</b>	<b>12.31</b>	<b>5.59</b>	--	--	--	--	--	--	--
<b>MW-3</b>	03/25/96	8.47	9.71	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
<i>18.18</i>	06/21/96	10.40	7.78	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
	09/26/96	12.45	5.73	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
	12/19/96	12.14	6.04	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
	03/25/97	9.54	8.64	<50	<0.50	<0.50	<0.50	<0.50	<2.5	2.2
	06/26/97	11.66	6.52	<50	<0.50	<0.50	<0.50	<0.50	<2.5	3.6
	09/26/97	12.85	5.33	<50	<0.50	<0.50	<0.50	<0.50	<2.5	1.1
	12/05/97	11.44	6.74	<50	<0.50	<0.50	<0.50	<0.50	<2.5	0.6
	02/19/98	6.78	11.40	<50	<0.50	<0.50	<0.50	<0.50	<2.5	3.6
	06/08/98	6.82	11.36	<50	<0.30	<0.30	<0.30	<0.60	<10	3.8
	06/08/98	6.82	11.36	<50	<0.30	<0.30	<0.30	<0.60	<10	3.8
	08/25/98	11.09	7.09	--	--	--	--	--	--	1.2
	12/28/98	11.84	6.34	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	0.9/0.6
	03/26/99	8.57	9.61	--	--	--	--	--	--	0.8
	06/30/99	10.61	7.57	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	4.8
	09/30/99	11.53	6.65	--	--	--	--	--	--	1.4
	12/27/99	12.35	5.83	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	1.4/2.5
	03/07/00	7.36	10.82	--	--	--	--	--	--	5.8
	04/17/00	8.39	9.79	<50.0	<0.500	<0.500	<0.500	<0.500	19.3	6.5/5.1
	09/21/00	12.01	6.17	--	--	--	--	--	--	3.0
	10/17/00	12.10	6.08	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	2.0/1.0
	01/09/01	12.43	5.75	--	--	--	--	--	--	1.9
	04/27/01	10.10	8.08	<50	<0.50	<0.50	<0.50	<0.50	(<0.50)	2.3/2.4
	07/03/01	11.45	6.73	--	--	--	--	--	--	1.4
	12/06/01	11.07	7.11	<50	<0.50	<0.50	<0.50	<0.50	(<5.0)	2.8/3.9
	01/23/02	8.89	9.29	--	--	--	--	--	--	3.1
	04/17/02	9.92	8.26	<50	<0.50	<0.50	<0.50	<0.50	(<5.0)	3.7/3.2
	07/18/02	11.42	6.76	--	--	--	--	--	--	1.6
	11/11/02	12.44	5.74	<50	<0.50	<0.50	<0.50	<0.50	(<5.0)	0.3/0.4
	01/16/03	9.25	8.93	--	--	--	--	--	--	2.1
	03/13/03	9.84	8.34	--	--	--	--	--	--	1.2
	04/23/03	9.71	8.47	<50	<0.50	<0.50	<0.50	<1.0	(<5.0)	0.7/0.2
	05/13/03	9.70	8.48	<50	<0.50	<0.50	<0.50	<1.0	(<5.0)	0.6/0.2
	06/13/03	10.58	7.60	<50	<0.50	<0.50	<0.50	<1.0	(<5.0)	0.4/1.3
	07/14/03	10.98	7.20	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	0.4/0.03
	09/29/03	11.84	6.34	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	1.4/1.1
	10/29/03	12.05	6.13	58 b	<0.50	<0.50	<0.50	<1.0	(<0.50)	0.8/0.4
	01/05/04	9.70	8.48	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	1.3/0.7
	04/01/04	9.03	9.15	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	1.2/0.6
	07/02/04	11.15	7.03	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	0.7/0.5
	11/03/04	11.98	6.20	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	1.65/2.75
	01/04/05	8.98	9.20	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	3.21/1.87
	04/13/05	7.22	10.96	<50	<0.50	<0.50	<0.50	<0.50	(<0.50)	4.92/5.28
	07/13/05	10.30	7.88	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	0.30/0.40
	10/28/05	11.81	6.37	<50 f	<0.50	<0.50	<0.50	<1.0	(<0.50)	0.8/0.2
	01/17/06	8.17	10.01	<50	<0.50	<0.50	<0.50	<0.50	(<0.50)	3.1/2.0
	03/09/06	6.45	11.73	--	--	--	--	--	--	--
	04/21/06	5.96	12.22	--	--	--	--	--	--	--
	05/01/06	6.40	11.78	<50.0	<0.500	<0.500	<0.500	<0.500	<0.500(<0.500)	0.68/0.42
	08/30/06	10.95	7.23	<50.0	<0.500	<0.500	<0.500	<0.500	<0.500(<0.500)	3.53/3.14
	09/29/06	11.40	6.78	--	--	--	--	--	--	--
	11/03/06	11.91	6.27	<50.0	<0.500	<0.500	<0.500	<0.500	<0.500(<0.500)	7.0/6.8

# Pangea

**Table 1. Groundwater Elevation and Analytical Data - Saberi, 1230 14th Street, Oakland, CA**

Well ID	Date Measured	DTW (feet)	GWE (feet) (MSL)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Dissolved Oxygen (mg/L)
<i>(MW-3 cont'd)</i>	01/30/07	11.55	6.63	<50	<0.50	<0.50	<0.50	<1.0	<0.50(<0.50)	1.45/1.10
	06/01/07	10.86	7.32	<50 k	0.34 m	<1.0	<1.0	<1.0	<1.0(<1.0)	0.62/0.56
	08/16/07	11.87	6.31	<50 k	<0.50	<1.0	<1.0	<1.0	<1.0(<1.0)	0.2/0.2
	12/06/07	14.43	3.75	<50	1.8	1.0	0.90	4.4	(<0.5)	--
	02/25/08	9.37	8.81	<50	<0.5	<0.5	<0.5	<0.5	<5.0	4.91
	05/26/08	11.31	6.87	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.79/2.01
	08/18/08	12.28	5.90	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.57/1.52
	11/20/08	12.84	5.34	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.24/1.68
	02/18/09	11.45	6.73	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.16/1.38
	05/26/09	10.62	7.56	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.21/1.40
	11/23/09	12.59	5.59	--	--	--	--	--	--	--
	05/26/10	10.17	8.01	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.29/1.38
	12/30/10	10.08	8.10	--	--	--	--	--	--	--
	05/23/11	9.63	8.55	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.52
	<b>12/27/11</b>	<b>12.58</b>	<b>5.60</b>	--	--	--	--	--	--	--
<b>MW-4</b>	03/25/96	9.20	8.81	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
<i>18.01</i>	06/21/96	10.25	7.76	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
	09/26/96	12.29	5.72	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
	12/19/96	12.47	5.54	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
	03/25/97	9.44	8.57	<50	<0.50	<0.50	<0.50	<0.50	<2.5	1.8
	06/26/97	11.57	6.44	<50	<0.50	<0.50	<0.50	<0.50	<2.5	6.2
	06/26/97	11.57	6.44	<50	<0.50	<0.50	<0.50	<0.50	<2.5	6.2
	09/26/97	12.75	5.26	<50	<0.50	<0.50	<0.50	<0.50	<2.5	2.1
	12/05/97	11.37	6.64	<50	<0.50	<0.50	<0.50	<0.50	<2.5	1.0
	12/05/97	11.37	6.64	<50	<0.50	<0.50	<0.50	<0.50	<2.5	1.0
	02/19/98	5.59	12.42	<50	<0.50	<0.50	<0.50	<0.50	<2.5	6.5
	06/08/98	5.65	12.36	<50	<0.30	<0.30	<0.30	<0.60	<10	2.6
	08/25/98	10.98	7.03	--	--	--	--	--	--	2.4
	12/28/98	11.83	6.18	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	1.3/1.2
	03/26/99	8.40	9.61	--	--	--	--	--	--	1.9
	06/30/99	10.53	7.48	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	7.6
	09/30/99	11.03	6.98	--	--	--	--	--	--	2.6
	12/27/99	12.53	5.48	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	1.9/0.8
	03/07/00	7.00	11.01	--	--	--	--	--	--	6.5
	04/17/00	8.57	9.44	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	5.1/5.1
	09/21/00	12.05	5.96	--	--	--	--	--	--	3.0
	10/17/00	11.96	6.05	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	5.5/1.2
	01/09/01	12.33	5.68	--	--	--	--	--	--	2.1
	04/27/01	9.96	8.05	<50	<0.50	<0.50	<0.50	<0.50	(<0.50)	5.3/3.8
	07/03/01	11.35	6.66	--	--	--	--	--	--	4.5
	12/06/01	10.99	7.02	<50	<0.50	<0.50	<0.50	<0.50	(<5.0)	10.23/6.5
	01/23/02	8.80	9.21	--	--	--	--	--	--	8.8
	04/17/02	9.75	8.26	<50	<0.50	<0.50	<0.50	<0.50	(<5.0)	7.0/5.1
	07/18/02	11.32	6.69	--	--	--	--	--	--	5.3
	11/11/02	12.36	5.65	<50	<0.50	<0.50	<0.50	<0.50	(<5.0)	3.6/2.0
	01/16/03	10.33	7.68	--	--	--	--	--	--	6.5
	03/13/03	10.06	7.95	--	--	--	--	--	--	6.5
	04/23/03	9.57	8.44	<50	<0.50	<0.50	<0.50	<1.0	(<5.0)	5.1/5.7
	05/13/03	9.55	8.46	<50	<0.50	<0.50	<0.50	<1.0	(<5.0)	2.0/2.5
	06/13/03	10.50	7.51	<50	<0.50	<0.50	<0.50	<1.0	(<5.0)	5.0/5.6
	07/14/03	10.86	7.15	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	3.9/4.2
	09/29/03	11.74	6.27	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	1.6/1.4
	10/29/03	11.95	6.06	58 b	<0.50	<0.50	<0.50	<1.0	(<0.50)	2.4/1.0
	01/05/04	10.35	7.66	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	7.4/7.5
	04/01/04	8.81	9.20	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	6.0/6.4
	07/02/04	11.10	6.91	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	0.8/0.6
	11/03/04	11.85	6.16	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	1.3/2.84
	01/04/05	9.06	8.95	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	7.12/6.37
	04/13/05	6.84	11.17	<50	<0.50	<0.50	<0.50	<0.50	(<0.50)	5.81/5.66

# Pangea

**Table 1. Groundwater Elevation and Analytical Data - Saberi, 1230 14th Street, Oakland, CA**

Well ID	Date Measured	DTW (feet)	GWE (feet) (MSL)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Dissolved Oxygen (mg/L)
<i>(MW-4 cont'd)</i>	07/13/05	10.20	7.81	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	1.87/3.75
	10/28/05	11.75	6.26	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	1.4/0.8
	01/17/06	8.00	10.01	<50	<0.50	<0.50	<0.50	<0.50	(<0.50)	6.4/6.2
	03/09/06	6.55	11.46	--	--	--	--	--	--	--
	04/21/06	5.45	12.56	--	--	--	--	--	--	--
	05/01/06	6.14	11.87	<50.0	<0.500	<0.500	<0.500	<0.500	(<0.50)	1.09/0.72
	08/30/06	10.82	7.19	<50.0	<0.500	<0.500	<0.500	<0.500	(<0.50)	4.31/4.35
	09/29/06	11.29	6.72	--	--	--	--	--	--	--
	11/03/06	11.81	6.20	<50.0	<0.500	<0.500	<0.500	<0.500	(<0.50)	3.30/2.40
	01/30/07	11.45	6.56	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	1.67/0.94
	06/01/07	10.72	7.29	67 k	<0.50	<1.0	<1.0	<1.0	(<1.0)	0.93/0.81
	08/16/07	11.81	6.20	<50 k	<0.50	<1.0	<1.0	<1.0	(<1.0)	0.5/1.3
	12/06/07	12.34	5.67	<50	<0.5	<0.5	<0.5	<0.5	(<0.5)	--
	02/25/08	9.03	8.98	<50	<0.5	<0.5	<0.5	<0.5	<5.0	6.84
	05/26/08	11.23	6.78	<50	<0.5	<0.5	<0.5	<0.5	<5.0	6.59/5.22
	08/18/08	12.20	5.81	<50	<0.5	<0.5	<0.5	<0.5	<5.0	7.99/2.89
	11/20/08	12.83	5.18	<50	<0.5	<0.5	<0.5	<0.5	<5.0	3.51/3.18
	02/18/09	11.23	6.78	<50	<0.5	<0.5	<0.5	<0.5	<5.0	2.90/3.15
	05/26/09	10.47	7.54	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.78/2.85
	11/23/09	12.51	5.50	--	--	--	--	--	--	--
	05/26/10	10.05	7.96	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.49/2.12
	12/30/10	10.11	7.90	--	--	--	--	--	--	--
	05/23/11	9.49	8.52	<50	<0.5	<0.5	<0.5	<0.5	<5.0	4.13
	<b>12/27/11</b>	<b>12.48</b>	<b>5.53</b>	--	--	--	--	--	--	--
<b>MW-5</b>	12/03/01	11.86	6.61	--	--	--	--	--	--	--
<i>18.47</i>	12/06/01	11.40	7.07	31,000	3,000	2,000	1,100	3,000	(<50)	3.1/3.2
	01/23/02	9.24	9.23	--	--	--	--	--	--	0.9
	04/17/02	10.35	8.12	33,000	3,800	2,400	1,300	4,400	(<200)	5.3/3.8
	07/18/02	11.82	6.65	--	--	--	--	--	--	0.8
	11/11/02	12.86	5.61	100,000	7,100	12,000	3,000	17,000	(5.10)	1.2/1.4
	01/16/03	9.57	8.90	--	--	--	--	--	--	0.0
	03/13/03	10.30	8.17	33,000	2,800	2,200	980	4,600	(<100)	0.5/0.3
	04/07/03	10.29	8.18	--	--	--	--	--	--	--
	04/23/03	10.15	8.32	33,000	2,900	3,100	960	5,800	(<250)	0.1/0.1
	05/13/03	10.12	8.35	30,000	2,600	1,500	850	4,500	(<250)	0.4/0.3
	06/13/03	11.00	7.47	33,000	3,400	2,300	1,000	4,400	(<500)	0.3/0.3
	07/14/03	11.39	7.08	41,000	5,100	3,500	1,400	5,100	(<50)	0.5/0.5
	09/29/03	12.24	6.23	59,000	6,600	4,200	1,500	6,500	(<50)	0.6/0.5
	10/29/03	12.45	6.02	45,000	6,800	3,500	1,500	6,400	(21)	0.5/0.3
	01/05/04	9.97	8.50	26,000	4,900	1,700	1,100	3,300	(<50)	0.9/1.2
	04/01/04	9.43	9.04	29,000	5,300	2,700	880	2,900	(<50)	0.3/1.0
	07/02/04	11.62	6.85	19,000	5,300	740	1,100	1,400	(<50)	0.4/0.5
	11/03/04	12.26	6.21	31,000	7,500	2,300	1,400	4,400	(<50)	2.5/1.9
	01/04/05	9.13	9.34	18,000	3,500	1,200	730	2,300	(<25)	0.44/1.64
	04/13/05	7.60	10.87	7,000	100	460	180	880	(<1.0)	0.17/0.45
	07/13/05	10.63	7.84	9,400	2,400	840	440	1,100	(<13)	0.13/0.27
	10/28/05	12.14	6.33	28,000	16,000	2,900	1,400	3,100	(<50)	0.3/1.3
	01/17/06	8.52	9.95	6,700	1,200	720	400	1,500	(1.3)	0.6/2.6
	02/23/06	9.22	9.25	--	4,630	1,470	709	2,310	--	--
	03/09/06	7.15	11.32	--	474	90.3	63.3	169	--	--
	04/21/06	5.82	12.65	<50.0	<0.500	<0.500	<0.500	<0.500	(<0.500)	--
	05/01/06	7.23	11.24	779	6.77	41.1	20.0	130	(<0.500)	0.39/1.52
	06/23/06	10.06	8.41	22,600	2,830	557	469	1,210	(<0.500)	--
	07/11/06	10.06	8.41	31,100	3,880	2,080	857	3,700	(<0.500)	--
	08/30/06	11.32	7.15	28,200	4,840	1,320	705	2,430	(5.35)	0.47/3.64
	09/29/06	11.81	6.66	94,900	10,100	2,960	1,810	5,310 i	(7.20)	--
	10/13/06	12.01	6.46	48,200	7,710	1,360	1,250	3,460	(5.64)	--
	11/03/06	12.31	6.16	50,600	11,300	1,730	1,250	3,840	(<0.500)	0.60/4.10
	12/26/06	11.58	6.89	32,000	11,000	780	1,200	2,800	(<10)	--

# Pangea

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Well ID	Date Measured	DTW (feet)	GWE (feet) (MSL)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Dissolved Oxygen (mg/L)
<i>(MW-5 cont'd)</i>	01/11/07	11.61	6.86	35,000	11,000	1,100	1,200	3,100	<50)	--
	01/30/07	11.95	6.52	27,000	9,800	610	860	2,400	<50)	0.87/0.62
	03/01/07	10.95	7.52	23,000	9,400	640	1,200	3,100	<50)	--
	04/26/07	10.69	7.78	48,000 k,l	14,000	1,300	1,600	3,600	<100)	--
	06/01/07	11.25	7.22	54,000 k	15,000	2,800	2,200	6,100	<100)	0.44/0.87
	06/21/07	11.96	6.51	32,000 k	12,000	1,200	1,400	2,780	<100)	--
	07/03/07	11.81	6.66	41,000 k	15,000	1,800	1,900	4,050	<100)	--
	08/16/07	12.36	6.11	43,000 k,l	13,000	2,000	2,000	4,150	<100)	0.6/0.1
	12/06/07	12.81	5.66	37,000	7,900	640	1,100	1,500	<17)	--
	02/25/08	9.75	8.72	3,000	640	9.7	52	77	20	2.19
	05/26/08	11.69	6.78	39,000	9,600	1,100	1,400	2,400	<250	1.10/1.52
	06/27/08							MW-5 drilled out and replaced with MW-5R		
<b>MW-5R</b>	07/02/08	11.91	--	22,000	4,100	710	750	2,300	<250	--
	08/18/08	12.59	--	27,000	3,100	340	780	2,100	<100	0.57/3.23
	11/20/08	13.24	--	23,000	5,200	470	1,200	1,500	<250	0.83/2.50
	02/18/09	11.58	--	32,000	4,500	610	990	1,400	<500	1.04/2.11
	05/26/09	10.92	--	15,000	3,500	520	680	1,500	<200	0.85/1.05
	11/23/09	12.92	--	15,000	3,200	350	560	940	<250	0.98/2.30
	05/26/10	10.51	--	15,000	3,400	310	460	1,300	<350	0.88/0.95
	12/30/10	10.35	--	11,000	3,400	190	360	620	<250	0.89/1.02
<i>I8.40</i>	05/23/11	9.98	8.42	7,000	1,000	49	320	190	<150	0.03
	<b>12/27/11</b>	<b>12.92</b>	<b>5.48</b>	<b>9,900</b>	<b>1,100</b>	<b>160</b>	<b>480</b>	<b>740</b>	<b>&lt;250</b>	<b>0.32/0.47</b>
<b>MW-6</b>	12/03/01	12.19	6.65	--	--	--	--	--	--	--
<i>18.84</i>	12/06/01	11.70	7.14	76	5.7	3.8	1.4	7.0	<5.0)	6.3/6.1
	01/23/02	9.57	9.27	--	--	--	--	--	--	8.7
	04/17/02	10.73	8.11	<50	<0.50	<0.50	<0.50	<0.50	<5.0)	9.8/9.1
	07/18/02	12.27	6.57	--	--	--	--	--	--	1.7
	11/11/02	13.24	5.60	580	55	<0.50	<0.50	2.8	<5.0)	0.3/0.6
	01/16/03	9.89	8.95	--	--	--	--	--	--	6.4
	03/13/03	10.66	8.18	--	--	--	--	--	--	5.5
	04/23/03	10.57	8.27	<50	<0.50	<0.50	<0.50	<1.0	<5.0)	3.7/4.4
	05/13/03	10.56	8.28	<50	<0.50	<0.50	<0.50	<1.0	<5.0)	3.5/3.0
	06/13/03	11.48	7.36	<50	<0.50	<0.50	<0.50	<1.0	<5.0)	2.7/3.1
	07/14/03	11.83	7.01	230 b	3.4	<0.50	<0.50	<1.0	<0.50)	1.8/1.3
	09/29/03	12.70	6.14	910 b	46	<2.5	<2.5	<5.0	<2.5)	1.1/1.0
	10/29/03	12.91	5.93	830	38	0.53	<0.50	3.3	(0.60)	1.2/0.9
	01/05/04	10.35	8.49	93	0.92	<0.50	<0.50	<1.0	<0.50)	6.2/4.3
	04/01/04	9.80	9.04	<50	<0.50	<0.50	<0.50	<1.0	<0.50)	3.5/3.4
	07/02/04	12.09	6.75	370	3.0	<0.50	<0.50	<1.0	<0.50)	0.6/1.0
	11/03/04	12.84	6.00	540	22	0.73	<0.50	1.5	(0.82)	2.28/0.84
	01/04/05	9.55	9.29	<50	<0.50	<0.50	<0.50	<1.0	<0.50)	6.71/5.16
	04/13/05	7.89	10.95	<50	<0.50	<0.50	<0.50	<0.50	<0.50)	2.99/2.87
	07/13/05	11.13	7.71	170	6.2	1.1	<0.50	<1.0	(0.71)	0.10/1.32
	10/28/05	12.74	6.10	490	22	<0.50	<0.50	<1.0	<0.50)	0.6/0.3
	01/17/06	8.80	10.04	<50	<0.50	<0.50	<0.50	<0.50	<0.50)	5.3/4.9
	02/23/06	9.54	9.30	--	<0.500	<0.500	<0.500	<0.500	--	--
	03/09/06	7.25	11.59	--	<0.500	<0.500	<0.500	<0.500	--	--
	04/21/06	6.34	12.50	<50.0	<0.500	<0.500	<0.500	<0.500	(<0.500)	--
	05/01/06	7.32	11.52	<50.0	<0.500	<0.500	<0.500	<0.500	(<0.500)	0.72/0.63
	06/23/06	10.12	8.72	<50.0	<0.500	<0.500	<0.500	<0.500	(<0.500)	--
	07/11/06	10.12	8.72	<50.0	<0.500	<0.500	<0.500	<0.500	(<0.500)	--
	08/30/06	11.79	7.05	<50.0	3.32	<0.500	<0.500	<0.500	(<0.500)	0.80/0.86
	09/29/06	12.32	6.52	<50.0	1.59	<0.500	<0.500	<0.500	(<0.500)	--
	10/13/06	12.38	6.46	934	3.14	<0.500	<0.500	<0.500	(<0.500)	--
	11/03/06	12.77	6.07	112	10.6	<0.500	<0.500	<0.500	(<0.500)	3.80/1.10
	12/26/06	12.05	6.79	690	62	<0.50	<0.50	4.5	(<0.50)	--
	01/11/07	12.12	6.72	660	11	<0.50	<0.50	2.3	(<0.50)	--
	01/30/07	12.44	6.40	310	1.5	<0.50	<0.50	<1.0	(<0.50)	1.47/0.81

# Pangea

**Table 1. Groundwater Elevation and Analytical Data - Saberi, 1230 14th Street, Oakland, CA**

Well ID	Date Measured	DTW (feet)	GWE (feet) (MSL)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Dissolved Oxygen (mg/L)
<i>(MW-6 cont'd)</i>	03/01/07	10.97	7.87	360	3.6	<0.50	<0.50	0.87	(<0.50)	--
	04/26/07	11.18	7.66	210 k	0.72	<1.0	<1.0	<1.0	(<1.0)	--
	06/01/07	11.72	7.12	640 k	3.1	<1.0	<1.0	0.27 m	(<1.0)	0.69/0.50
	06/21/07	12.22	6.62	390 k	3.0	<1.0	<1.0	0.17 m	(<1.0)	--
	07/03/07	12.22	6.62	360 k	3.0	<1.0	0.36 m	1.2	(<1.0)	--
	08/16/07	12.74	6.10	400 k,l	2.8	<1.0	<1.0	<1.0	(<1.0)	0.4/0.1
	12/06/07	13.24	5.60	130	<0.5	1.6	<0.5	<0.5	(<0.5)	--
	02/25/08	10.26	8.58	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.81
	05/26/08	12.20	6.64	<50	1.1	0.88	<0.5	<0.5	<5.0	6.77/6.59
	08/18/08	13.10	5.74	160	11	2.4	<0.5	0.57	<5.0	1.13/3.35
	11/20/08	13.73	5.11	120	1.1	1.7	<0.5	0.68	<5.0	0.98/2.11
	02/18/09	11.95	6.89	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.70/1.92
	05/26/09	11.46	7.38	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.72/1.65
	11/23/09	13.42	5.42	220	1.3	2.6	<0.5	1.0	<15	0.91/1.51
	05/26/10	11.04	7.80	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.82/1.49
	12/30/10	10.83	8.01	150	0.73	2.4	<0.5	<0.5	<5.0	1.02/2.19
	05/23/11	10.50	8.34	<50	<0.5	<0.5	<0.5	<0.5	<5.0	2.93
	<b>12/27/11</b>	<b>13.42</b>	<b>5.42</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	<b>0.58/0.64</b>
<b>MW-7</b>	12/03/01	12.66	6.54	--	--	--	--	--	--	--
<i>19.20</i>	12/06/01	12.20	7.00	1,800	390	<2.0	6.2	<2.0	(<20)	3.9/3.8
	01/23/02	10.00	9.20	--	--	--	--	--	--	9.4
	04/17/02	11.21	7.99	<50	<0.50	<0.50	<0.50	<0.50	(<5.0)	8.8/7.3
	07/18/02	12.69	6.51	--	--	--	--	--	--	0.8
	11/11/02	13.69	5.51	3,000	190	<0.50	<0.50	4.3	(5.2)	0.4/0.8
	01/16/03	10.36	8.84	--	--	--	--	--	--	7.9
	03/13/03	11.16	8.04	--	--	--	--	--	--	5.2
	04/23/03	11.02	8.18	250	48	<0.50	<0.50	<1.0	(<5.0)	3.2/1.3
	05/13/03	11.00	8.20	1,700	550	<2.5	<2.5	<5.0	(<25)	2.0/1.5
	06/13/03	11.90	7.30	1,500 b	470	<2.5	<2.5	<5.0	(<25)	1.8/1.6
	07/14/03	12.29	6.91	1300 b	1,200	<10	<10	<20	(<10)	0.4/0.2
	09/29/03	13.12	6.08	5,200	1,200	<10	<10	<20	(<10)	0.9/0.9
	10/29/03	13.34	5.86	4,800	1,100	<5.0	<5.0	<10	(8.9)	0.4/0.3
	01/05/04	10.85	8.35	53	6.7	<0.50	<0.50	<1.0	(<0.50)	1.4/2.3
	04/01/04	10.28	8.92	<50	<0.50	<0.50	<0.50	<1.0	(<0.50)	5.5/6.2
	07/02/04	12.48	6.72	8,100 d	3,400	<25	<25	<50	(<25)	0.8/0.8
	11/03/04	13.25	5.95	3,700	1,200	<5.0	<5.0	<10	(<5.0)	1.9/0.8
	01/04/05	10.02	9.18	<50	2.0	<0.50	<0.50	<1.0	(<0.50)	6.31/5.71
	04/13/05	8.46	10.74	<50	<0.50	<0.50	<0.50	<0.50	(<0.50)	5.87/5.89
	07/13/05	11.57	7.63	1,100	380	9.2	<2.5	37	(<2.5)	0.30/0.33
	10/28/05	13.15	6.05	5,100	2,900	<13	<13	<25	(<13)	0.6/0.9
	01/17/06	9.30	9.90	<50	<0.50	<0.50	<0.50	<0.50	(<0.50)	6.4/7.4
	02/23/06	10.03	9.17	--	<0.500	<0.500	<0.500	<0.500	--	--
	03/09/06	7.70	11.50	--	<0.500	<0.500	<0.500	<0.500	--	--
	04/21/06	6.66	12.54	<50.0	<0.500	<0.500	<0.500	<0.500	(<0.500)	--
	05/01/06	7.72	11.48	<50.0	<0.500	<0.500	<0.500	<0.500	(<0.500)	0.67/0.98
	06/23/06	10.55	8.65	<50.0	<0.500	<0.500	<0.500	<0.500	(<0.500)	--
	07/11/06	10.55	8.65	<50.0	<0.500	<0.500	<0.500	<0.500	(<0.500)	--
	08/30/06	12.35	6.85	1,520	150	13.3	5.78	53.0	(0.640)	0.52/0.79
	09/29/06	12.66	6.54	2,420	384	1.80	<0.500	5.44	(0.850)	--
	10/13/06	12.85	6.35	5,980	549	0.540	0.680	11.7	(0.930)	--
	11/03/06	13.73	5.47	3,190	501	<0.500	<0.500	5.38	(0.560)	2.2/1.4
	12/26/06	12.51	6.69	4,600	570	<0.50	44	2.1	(<0.50)	--
	01/11/07	12.55	6.65	3,900	490	<2.5	46	<5.0	(<2.5)	--
	01/30/07	12.89	6.31	2,500	380	<2.5	40	<5.0	(<2.5)	1.37/0.90
	03/01/07	11.45	7.75	2,600	350	<2.5	35	3.5	(<2.5)	--
	04/26/07	11.62	7.58	2,300 k	290	<5.0	31	1.3 m	(<5.0)	--
	06/01/07	12.23	6.97	4,400 k	350	<2.0	19	<2.0	(1.1 m)	0.04/0.71
	06/21/07	12.67	6.53	2,600 k	260	<2.0	12	<2.0	(1.4 m)	--
	07/03/07	12.76	6.44	1,700 k	170	<1.0	7.7	0.86 m	(<1.0)	--

# Pangea

**Table 1. Groundwater Elevation and Analytical Data - Saberi, 1230 14th Street, Oakland, CA**

Well ID	Date Measured	DTW (feet)	GWE (feet) (MSL)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Dissolved Oxygen (mg/L)
<i>(MW-7 cont'd)</i>	08/16/07	13.20	6.00	1,900 k	44	<1.0	<1.0	<1.0	(<1.0)	0.5/1.1
	12/06/07	13.73	5.47	510	21	3.1	5.8	14	(1.2)	--
	02/25/08	10.65	8.55	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.11
	05/26/08	12.62	6.58	600	190	2.3	<0.5	<0.5	<35	1.31/3.52
	08/18/08	13.52	5.68	540	71	2.7	<0.5	0.85	<25	1.12/4.75
	11/20/08	14.14	5.06	160	2.2	1.3	<0.5	<0.5	<10	1.46/2.90
	02/18/09	12.48	6.72	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.08/2.70
	05/26/09	11.90	7.30	<50	2.8	0.60	<0.5	<0.5	<5.0	1.02/1.77
	11/23/09	13.85	5.35	230	3.8	3.5	<0.5	<0.5	<30	1.08/2.14
	05/26/10	11.46	7.74	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.88/1.61
	12/30/10	11.18	8.02	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.91/1.7
	05/23/11	8.98	10.22	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.91
	<b>12/27/11</b>	<b>13.84</b>	<b>5.36</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	<b>1.81/2.02</b>
<b>VW/MW-2</b>	03/25/96	9.04	9.26	13,000	900	920	180	1,500	<250	--
<i>18.30</i>	06/21/96	10.48	7.82	27,000	4,100	1,100	1,400	3,200	700	--
	09/26/96	12.52	5.78	27,000	5,300	1,900	980	2,200	<500	--
	09/26/96	12.52	5.78	29,000	5,800	2,200	1,100	2,500	<250	--
	12/19/96	12.42	5.88	50,000	6,200	5,100	1,700	5,600	590	--
	03/25/97	9.83	8.47	210	5.6	<0.50	0.52	<0.50	14	2.0
	03/25/97	9.83	8.47	250	1.7	0.58	0.51	<0.50	4.7	2.0
	06/26/97	12.43	5.87	--	--	--	--	--	--	--
	09/26/97	12.98	5.32	--	--	--	--	--	--	0.9
	12/05/97	12.20	6.10	--	--	--	--	--	--	0.4
	02/19/98	5.83	12.47	<50	1.5	<0.50	<0.50	0.71	<2.5	3.6
	06/08/98	5.80	12.50	--	--	--	--	--	--	1.0
	08/25/98	11.72	6.58	--	--	--	--	--	--	4.8
	12/28/98	11.69	6.61	--	--	--	--	--	--	2.7
	03/26/99	8.75	9.55	--	--	--	--	--	--	2.8
	06/30/99	10.72	7.58	--	--	--	--	--	--	4.7
	09/30/99	12.24	6.06	--	--	--	--	--	--	4.9
	12/27/99	13.92	4.38	13,500	1,330	1,310	490	1,400	<250	2.1/1.9
	01/21/00	13.26	5.04	12,100	2,200	1,080	429	1,120	<250	2.8
	03/07/00	7.87	10.43	--	--	--	--	--	--	3.7
	04/17/00	9.65	8.65	--	--	--	--	--	--	3.7/4.1
	04/18/00	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--
	09/21/00	12.75	5.55	--	--	--	--	--	--	6.2
	10/17/00	12.21	6.09	4,070	763	589	214	501	<50.0	0.8/0.7
	01/09/01	12.51	5.79	--	--	--	--	--	--	0.7
	04/27/01	10.21	8.09	80	5.7	<0.50	2.7	4.9	(<0.50)	2.3/2.8
	07/03/01	11.60	6.70	--	--	--	--	--	--	0.6
	12/06/01	11.15	7.15	160	1.7	1.0	1.8	4.6	(<5.0)	3.7/2.3
	01/23/02	9.07	9.23	--	--	--	--	--	--	0.5
	04/17/02	10.11	8.19	<50	2.1	<0.50	<0.50	<0.50	(<5.0)	4.9/4.4
	07/18/02	11.61	6.69	--	--	--	--	--	--	0.9
	11/11/02	12.63	5.67	15,000	1,300	1,300	680	1,800	(<5.0)	0.2/0.2
	01/16/03	9.35	8.95	--	--	--	--	--	--	0.4
	03/13/03	10.09	8.21	--	--	--	--	--	--	0.8
	04/07/03	10.09	8.21	--	--	--	--	--	--	--
	04/23/03	9.95	8.35	1,100	76	29	45	66	(<5.0)	0.8/0.3
	05/13/03	9.90	8.40	1,200	38	16	16	24	(<5.0)	0.2/0.2
	06/13/03	10.80	7.50	9,600	1,300	1,100	440	890	(<250)	0.2/0.5
	07/14/03	11.20	7.10	11,000	1,300	1,800	430	1,500	(<5.0)	0.5/0.5
	09/29/03	12.05	6.25	12,000	860	980	410	1,100	(<10)	0.4/0.4
	10/29/03	12.29	6.01	12,000	1,100	940	530	1,200	(<10)	0.7/0.3
	01/05/04	9.82	8.48	190 b	<0.50	<0.50	<0.50	<1.0	(<0.50)	2.8/1.8
	04/01/04	9.24	9.06	410	1.4	0.54	1.6	1.0	(<0.50)	1.7/0.1
	07/02/04	11.33	6.97	5,500	440	370	170	410	(<2.5)	0.5/0.4
	11/03/04	12.14	6.16	3,800	260	210	150	600	(<2.5)	0.9/1.4
	01/04/05	9.03	9.27	280	5.8	20	7.8	26	(<0.50)	1.66/2.66

# Pangea

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Well ID	Date Measured	DTW (feet)	GWE (feet) (MSL)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Dissolved Oxygen (mg/L)
VW/MW-2 cont'd)	04/13/05	7.38	10.92	<50	<0.50	<0.50	<0.50	<0.50	(<0.50)	0.79/0.58
	07/13/05	10.45	7.85	350	19	9.3	9.8	14	(<0.50)	0.10/0.08
	10/28/05	11.98	6.32	3,400	440	350	150	320	(<2.5)	0.4/0.1
	01/17/06	8.34	9.96	700	3.1	5.1	7.7	66	(<0.50)	2.7/1.6
	02/23/06	9.42	8.88	--	97.9	17.2	40.0	80.6	--	--
	03/09/06	7.35	10.95	--	<0.500	29.2	57.8	486	--	--
	04/21/06	5.99	12.31	<50.0	<0.500	0.960	<0.500	2.71	(<0.500)	--
	05/01/06	7.25	11.05	<50.0	<0.500	<0.500	<0.500	<0.500	(<0.500)	0.43/0.10
	06/23/06	10.05	8.25	3,150	35.6	9.24	20.7	113	(<0.500)	--
	07/11/06	10.05	8.25	9,270	413	78.2	91.5	341	(2.40)	--
	08/30/06	11.12	7.18	4,900	135	45.5	73.3	180	(2.40)	0.37/0.62
	09/29/06	11.61	6.69	12,300	243	142	290	634	(2.50)	--
	10/13/06	12.01	6.29	19,300	292	169	384	1,080	(1.84)	--
	11/03/06	12.12	6.18	9,300	655	233	366	729	(4.15)	2.0/1.05
	12/26/06	11.41	6.89	2,600	61	50	74	250	(<0.50)	--
	01/11/07	11.45	6.85	5,200	160	190	170	570	(<0.50)	--
	01/30/07	12.21	6.09	2,200	160	20	84	200	(<2.5)	1.37/0.79
	03/01/07	10.40	7.90	520	0.50	0.53	3.3	15	(<0.50)	--
	04/26/07	10.51	7.79	5,700 k	220	140	170	420	(<2.0)	--
	06/01/07	11.00	7.30	4,300 k	150	150	140	380	(<2.0)	0.36/0.23
	06/21/07	11.78	6.52	9,000 k	540	500	350	870	(1.8 m)	--
	07/03/07	11.64	6.66	4,500 k	230	160	160	440	(<5.0)	--
	08/16/07	12.12	6.18	8,800 k	550	520	430	1,020	(<5.0)	0.3/0.1
	12/06/07	12.43	5.87	2,600	110	84	64	180	(2.4)	--
	02/25/08	9.55	8.75	620	100	4.1	4.9	2.0	<5.0	2.48
	05/26/08	11.53	6.77	7,200	350	200	220	510	<100	1.52/0.99
	08/18/08	12.45	5.85	7,000	420	160	180	460	<100	0.70/0.67
	11/20/08	13.09	5.21	3,400	86	84	75	230	<50	0.93/1.47
	02/18/09	11.35	6.95	1,400	3.5	16	7.2	28	<15	0.77/1.18
	05/26/09	10.76	7.54	1,000	9.5	26	17	56	<5.0	0.84/1.19
	11/23/09	12.77	5.53	270	2.7	5.0	1.5	3.5	<5.0	0.81/2.49
	05/26/10	10.36	7.94	490	3.5	12	4.3	23	<5.0	0.69/0.94
	12/30/10	10.11	8.19	180	0.75	4.0	1.2	4.8	<5.0	0.79/1.02
	05/23/11	9.83	8.47	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.68
	<b>12/27/11</b>	<b>12.78</b>	<b>5.52</b>	<b>280</b>	<b>3.1</b>	<b>6.2</b>	<b>1.5</b>	<b>1.4</b>	<b>&lt;10</b>	<b>0.72/0.77</b>
<b>VW/MW-4</b>	03/25/96	8.45	9.69	83,000	6,500	7,000	2,000	11,000	<250	--
<i>18.14</i>	03/25/96	8.45	9.69	84,000	6,400	7,000	2,100	12,000	<250	--
	06/21/96	10.38	7.76	110,000	14,000	15,000	3,700	17,000	1,700	--
	06/21/96	10.38	7.76	100,000	12,000	12,000	2,900	13,000	<1,000	--
	09/26/96	12.43	5.71	52,000	13,000	2,700	2,100	3,200	<500	--
	12/19/96	11.87	6.27	75,000	15,000	6,600	3,000	7,600	<1,250	--
	03/25/97	9.60	8.54	56,000	4,700	1,500	2,500	6,300	580	2.4
	06/26/97	12.36	5.78	--	--	--	--	--	--	--
	09/26/97	12.82	5.32	--	--	--	--	--	--	0.4
	12/05/97	12.15	5.99	--	--	--	--	--	--	0.3
	02/19/98	5.85	12.29	4,100	320	40	44	520	<50	1.8
	02/19/98	5.85	12.29	4,300	340	44	47	540	<50	1.8
	06/08/98	5.87	12.27	--	--	--	--	--	--	1.8
	08/25/98	10.96	7.18	--	--	--	--	--	--	2.5
	12/28/98	11.28	6.86	--	--	--	--	--	--	0.9
	03/26/99	8.45	9.69	--	--	--	--	--	--	1.9
	06/30/99	9.70	8.44	--	--	--	--	--	--	3.6
	09/30/99	11.78	6.36	--	--	--	--	--	--	2.6
	12/27/99	12.63	5.51	33,900	3,740	2,000	1,130	5,090	587	0.4/0.2
	01/21/00	13.07	5.07	13,900	1,560	568	227	1,990	<500(21.0a)	1.0
	03/07/00	7.82	10.32	--	--	--	--	--	--	0.9
	04/17/00	9.18	8.96	--	--	--	--	--	--	1.4/1.9
	04/18/00	--	--	757	103	8.59	30.8	84.2	<25.0	--
	09/21/00	12.18	5.96	--	--	--	--	--	--	5.0

# Pangea

**Table 1. Groundwater Elevation and Analytical Data - Saberi, 1230 14th Street, Oakland, CA**

Well ID	Date Measured	DTW (feet)	GWE (feet) (MSL)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Dissolved Oxygen (mg/L)
VW/MW-4 cont'd)	10/17/00	12.03	6.11	8,360	2,060	391	468	1,170	147	0.7/0.8
	01/09/01	12.42	5.72	--	--	--	--	--	--	0.9
	04/27/01	10.13	8.01	7,100	2,300	50	460	250	(<10)	1.0/1.4
	07/03/01	11.42	6.72	--	--	--	--	--	--	1.2
	12/06/01	11.02	7.12	7,700	750	90	300	350	(<25)	2.5/1.9
	01/23/02	8.89	9.25	--	--	--	--	--	--	0.4
	04/17/02	9.89	8.25	4,800	760	27	240	150	(<25)	4.7/5.1
	07/18/02	11.37	6.77	--	--	--	--	--	--	0.6
	11/11/02	12.41	5.73	14,000	2,800	480	700	1,300	(<100)	0.3/0.3
	01/16/03	9.17	8.97	--	--	--	--	--	--	0.8
	03/13/03	9.85	8.29	--	--	--	--	--	--	1.1
	04/23/03	9.74	8.40	2,400	710	28	160	100	(<50)	0.2/0.05
	05/13/03	9.70	8.44	3,300	720	35	170	160	(<50)	0.2/0.2
	06/13/03	10.55	7.59	8,200	1,700	220	460	790	(<250)	0.3/0.3
	07/14/03	10.90	7.24	3,700	900	190	220	540	(<10)	0.5/0.4
	09/29/03	11.83	6.31	7,500	1,800	300	390	860	(<20)	0.5/0.6
	10/29/03	12.03	6.11	10,000	2,600	400	510	1,200	(<13)	0.5/0.4
	01/05/04	9.60	8.54	1,000	70	12	30	56	(<1.0)	1.7/1.2
	04/01/04	9.00	9.14	1,000	64	7.0	22	18	(<1.0)	0.6/0.1
	07/02/04	11.00	7.14	5,600	1,500	57	380	180	(<10)	0.4/0.4
	11/03/04	11.85	6.29	9,400	2,400	210	560	890	(<10)	1.5/2.1
	01/04/05	8.89	9.25	110	12	<0.50	2.3	<1.0	(<0.50)	2.40/1.05
	04/13/05	7.25	10.89	<50	<0.50	<0.50	<0.50	<0.50	(<0.50)	1.55/0.52
	07/13/05	10.20	7.94	1,300	520	5.1	100	17	(<2.5)	0.08/0.08
	10/28/05	11.84	6.30	2,500	830	44	170	140	(5.4)	0.6/0.2
	01/17/06	8.05	10.09	<50	<0.50	<0.50	0.56	<0.50	(<0.50)	2.7/0.6
	02/23/06	8.77	9.37	--	1.42	0.930	0.580	<0.500	--	--
	03/09/06	6.75	11.39	--	<0.500	<0.500	<0.500	0.680	--	--
	04/21/06	5.69	12.45	<50.0	<0.500	<0.500	<0.500	<0.500	(<0.500)	--
	05/01/06	6.65	11.49	<50.0	<0.500	<0.500	<0.500	<0.500	(<0.500)	0.51/0.37
	06/23/06	9.22	8.92	920	8.69	1.32	5.63	9.68	(<0.500)	--
	07/11/06	9.22	8.92	<50.0	109	<0.500	3.91	<0.500	(<0.500)	--
	08/30/06	10.87	7.27	2,360	331	12.8	65.4	29.3	(2.64)	0.24/0.56
	09/29/06	11.40	6.74	5,920	327	23.2 i	146	112 i	(2.63)	--
	10/13/06	11.53	6.61	6,560	299	16.6	134	90.4	(3.58)	--
	11/03/06	11.87	6.27	3,530	212	9.14	87.8	52.8	(5.11)	2.60/4.0
	12/26/06	11.17	6.97	960	43	1.0	17	2.7	(<0.50)	--
	01/11/07	11.18	6.96	830	86	1.8	41	3.9	(1.40)	--
	01/30/07	11.53	6.61	2,100	450	15	99	46	(3.0)	1.13/0.91
	03/01/07	10.00	8.14	700	4.8	<0.50	1.8	0.77	(<0.50)	--
	04/26/07	10.26	7.88	930 k	84	5.2	21	9.5	(<1.0)	--
	06/01/07	10.80	7.34	2,000 k	340	7.6	58	17.6	(1.7 m)	0.46/0.42
	06/21/07	11.32	6.82	1,400 k	360	9.7	46	26.1	(2.2)	--
	07/03/07	11.39	6.75	2,700 k	650	24	91	65	(<2.0)	--
	08/16/07	11.87	6.27	1,400 k	240	8.8	32	42.3	(<5.0)	0.3/0.1
	12/06/07	12.40	5.74	3,600	480	16	39	29	(3.5)	--
	02/25/08	9.39	8.75	56	22	<0.5	<0.5	0.50	<5.0	4.61
	05/26/08	11.27	6.87	650	76	7.9	4.9	<0.5	<5.0	0.95/0.96
	08/18/08	12.23	5.91	2,700	540	28	28	71	<25	0.78/0.79
	11/20/08	12.87	5.27	2,000	390	19	13	49	<50	1.17/0.95
	02/18/09	11.29	6.85	850	17	11	3.6	25	<15	0.82/1.02
	05/26/09	10.55	7.59	540	16	11	1.3	1.1	<10	0.81/1.06
	11/23/09	12.55	5.59	1,200	200	12	3.5	12	<5.0	0.84/1.66
	05/26/10	10.15	7.99	410	26	6.3	2.3	3.7	<5.0	0.77/0.84
	12/30/10	9.96	8.18	520	14	8.7	2.3	2.4	<5.0	0.8/1.26
	05/23/11	9.91	8.23	150	33	2.2	3.4	2.1	<5.0	0.50
	<b>12/27/11</b>	<b>12.57</b>	<b>5.57</b>	<b>460</b>	<b>24</b>	<b>4.0</b>	<b>0.99</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	<b>0.61</b>
VW/AS-1	03/25/96	8.98	9.62	--	--	--	--	--	--	--
	18.60	06/21/96	10.95	7.65	--	--	--	--	--	--

# Pangea

**Table 1. Groundwater Elevation and Analytical Data - Saberi, 1230 14th Street, Oakland, CA**

Well ID	Date Measured	DTW (feet)	GWE (feet) (MSL)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Dissolved Oxygen (mg/L)
(VW/AS-1 cont'd)	09/26/96	12.98	5.62	--	--	--	--	--	--	--
	12/19/96	12.67	5.93	--	--	--	--	--	--	--
	03/25/97	10.12	8.48	--	--	--	--	--	--	--
	06/26/97	12.34	6.26	--	--	--	--	--	--	--
	09/26/97	13.40	5.20	--	--	--	--	--	--	--
	12/05/97	11.96	6.64	--	--	--	--	--	--	5.2
	02/19/98	6.22	12.38	--	--	--	--	--	--	1.3
	06/08/98	6.20	12.40	--	--	--	--	--	--	1.0
	08/25/98	11.59	7.01	--	--	--	--	--	--	1.6
	12/28/98	11.74	6.86	--	--	--	--	--	--	1.3
	03/26/99	9.20	9.40	--	--	--	--	--	--	1.3
	06/30/99	11.08	7.52	--	--	--	--	--	--	2.1
	09/30/99	11.94	6.66	--	--	--	--	--	--	1.9
	12/27/99	11.01	7.59	8,940	2,000	95.7	1,200	570	606	1.6/1.8
	03/07/00	7.35	11.25	--	--	--	--	--	--	--
	04/17/00	9.08	9.52	--	--	--	--	--	--	1.9/2.0
	04/18/00	--	--	20,800	6,550	1,220	2,270	1,720	<250	--
	09/21/00	11.98	6.62	--	--	--	--	--	--	2.1
	10/17/00	12.62	5.98	38,400	7,240	5,980	1,960	5,730	534(72.4)	2.5/1.0
	01/09/01	13.03	5.57	--	--	--	--	--	--	1.9
	04/27/01	10.71	7.89	34,000	8,000	2,100	2,500	2,000	<25)	2.9/2.1
	07/03/01	12.03	6.57	--	--	--	--	--	--	2.0
	12/06/01	11.63	6.97	6,000	990	35	820	59	<25)	1.2/0.8
	01/23/02	9.34	9.26	--	--	--	--	--	--	0.9
	04/17/02	10.41	8.19	12,000	2,900	57	1,400	98	<200)	3.3/2.9
	07/18/02	12.13	6.47	--	--	--	--	--	--	0.3
	11/11/02	13.15	5.45	2,200	340	7.3	250	24	<20)	1.2/1.3
	01/16/03	9.73	8.87	--	--	--	--	--	--	2.3
	03/13/03	10.45	8.15	11,000	2,500	55	1,800	170	<100)	2.1/1.9
	04/07/03	10.40	8.20	--	--	--	--	--	--	--
	04/23/03	10.28	8.32	9,500	4,100	200	1,400	200	<250)	1.2/0.4
	05/13/03	10.26	8.34	9,700	2,300	110	1,100	140	<250)	0.5/2.0
	06/13/03	11.15	7.45	9,300	2,300	77	820	<100	<500)	1.0/0.5
	07/15/03	11.62	6.98	5,500	2,000	230	620	360	(20)	1.8/1.9
	09/29/03	12.48	6.12	9,600	2,300	100	1,200	670	<20)	2.3/3.6
	10/29/03	12.73	5.87	10,000	2,000	39	1,000	370	(16)	3.3/3.6
	01/05/04	10.25	8.35	2,000	710	18	410	18	(13)	3.0/2.8
	04/01/04	9.60	9.00	27,000	9,100	1,200	2,200	1,400	<50)	1.0/1.4
	07/02/04	11.80	6.80	18,000	6,500	170	1,200	1,200	<50)	3.2/0.8
	11/03/04	12.56	6.04	4,500	1,700	23	280	55	(9.8)	1.7/1.9
	01/04/05	9.50	9.10	7,500	2,500	74	540	110	<13)	1.19/0.53
	04/13/05	7.84	10.76	34,000	6,600	290	930	2,100	<15)	1.60/1.88
	07/13/05	10.90	7.70	--	--	--	--	--	--	--
	07/22/05	10.96	7.64	8,200	5,900	86	340	320	<25)	1.7/1.0
	10/28/05	12.30	6.30	2,100	1,300	18	63	21	<5.0)	0.5/1.6
	01/17/06	8.65	9.95	6,200 g	2,900	190	400	600	(4.70)	1.4/1.0
	02/23/06	9.33	9.27	--	3,080	222	414	778	--	--
	03/09/06	7.40	11.20	--	1,350	88.5	128	164	--	--
	04/21/06	6.44	12.16	18,200	4,460	167	419	717	(2.79)	--
	05/01/06	7.22	11.38	19,700	5,300	261	664	1,050	<0.500)	0.71/1.23
	06/23/06	9.73	8.87	20,600	3,820	305	259	435	(3.31 h)	--
	07/11/06	9.73	8.87	9,130	6,200	108	232	254	<0.500)	--
	08/30/06	11.60	7.00	164,000	3,190	6,240	3,780	17,900	<10.0)	0.4
	09/29/06	11.97	6.63	130,000	6,160	6,370 i	2,910	11,600 i	<25.0)	--
	10/13/06	12.18	6.42	144,000	6,320	5,710	2,930	13,100	(1.03)	--
	11/03/06	12.21	6.39	112,000	8,290	5,670	2,760	12,100	<0.500)	0.80

# Pangea

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Well ID	Date Measured	DTW (feet)	GWE (feet) (MSL)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Dissolved Oxygen (mg/L)
(VW/AS-1 cont'd)	12/26/06	11.74	6.86	94,000	6,900	5,100	3,100	13,000	<50)	--
	01/11/07	11.83	6.77	73,000	6,600	5,500	3,000	12,000	<50)	--
	01/30/07	12.12	6.48	54,000	6,800	4,500	2,200	8,800	<50)	1.16/1.16
	03/01/07	10.71	7.89	52,000	6,300	3,700	3,400	12,000	<50)	--
	04/26/07	10.84	7.76	72,000 k	7,200	4,500	3,000	10,900	<50)	--
	06/01/07	11.40	7.20	70,000 k	7,600	4,900	3,200	12,100	<50)	0.60/1.09
	06/21/07	11.92	6.68	59,000 k	7,300	3,700	3,200	12,100	<50)	--
	07/03/07	11.98	6.62	70,000 k	8,800	4,700	3,500	13,500	<50)	--
	08/16/07	12.53	6.07	67,000 k	9,000	5,500	3,900	14,200	<50)	0.2/0.1
	12/06/07	12.97	5.63	180,000	9,500	5,000	4,100	16,000	<17)	--
	02/25/08	9.84	8.76	47,000	3,500	1,200	1,500	4,400	<350	2.39
	05/26/08	11.88	6.72	82,000	8,100	3,000	3,100	12,000	<500	1.65/1.05
	06/27/08							VW/AS-1 drilled out and replaced with AS-1		
<b>VW/AS-2</b>	03/09/06	6.95	--	--	--	--	--	--	--	--
<b>VW/AS-3</b>	03/25/96	8.50	9.67	--	--	--	--	--	--	--
18.17	06/21/96	10.42	7.75	--	--	--	--	--	--	--
	09/26/96	12.49	5.68	--	--	--	--	--	--	--
	12/19/96	12.28	5.89	--	--	--	--	--	--	--
	03/25/97	9.61	8.56	--	--	--	--	--	--	--
	06/26/97	11.80	6.37	--	--	--	--	--	--	--
	09/26/97	12.89	5.28	--	--	--	--	--	--	--
	12/05/97	11.38	6.79	--	--	--	--	--	--	1.8
	02/19/98	6.24	11.93	--	--	--	--	--	--	1.3
	06/08/98	6.25	11.92	--	--	--	--	--	--	1.2
	08/25/98	11.43	6.74	--	--	--	--	--	--	1.3
	12/28/98	11.63	6.54	--	--	--	--	--	--	1.7
	03/26/99	8.92	9.25	--	--	--	--	--	--	1.5
	06/30/99	10.71	7.46	--	--	--	--	--	--	2.5
	09/30/99	11.78	6.39	--	--	--	--	--	--	1.5
	12/27/99	12.57	5.60	488	47.9	2.60	16.9	8.50	35.4	1.5/2.1
	03/07/00	4.82	13.35	--	--	--	--	--	--	--
	04/17/00	8.69	9.48	--	--	--	--	--	--	2.0/2.4
	04/18/00	--	--	3,110	871	<5.00	141	56.8	78.2	--
	09/21/00	11.65	6.52	--	--	--	--	--	--	2.5
	10/17/00	12.13	6.04	7,730	2,700	<50.0	542	344	<250(42.1)	1.6/1.0
	01/09/01	12.51	5.66	--	--	--	--	--	--	2.2
	04/27/01	10.20	7.97	14,000	3,900	62	690	560	(46)	2.8/1.6
	07/03/01	11.55	6.62	--	--	--	--	--	--	2.6
	12/06/01	11.10	7.07	5,000	1,200	19	380	320	<50)	0.9/1.1
	01/23/02	8.93	9.24	--	--	--	--	--	--	1.1
	04/17/02	10.00	8.17	17,000	5,000	<25	1,100	390	(<250)	3.2/3.2
	07/18/02	11.49	6.68	--	--	--	--	--	--	0.4
	11/11/02	12.43	5.74	1,700	290	1.5	150	2.8	(<10)	1.0/1.1
	01/16/03	9.32	8.85	--	--	--	--	--	--	4.7
	03/13/03	9.88	8.29	--	--	--	--	--	--	2.7
	04/23/03	9.85	8.32	150	47	0.67	8.5	3.2	(<5.0)	2.1/0.7
	05/13/03	9.81	8.36	440	35	<0.50	1.7	<1.0	(<5.0)	1.4/1.8
	06/13/03	10.77	7.40	580	71	<2.5	40	<5.0	(<25)	1.1/0.6
	07/14/03	11.12	7.05	1,100	120	4.9	63	9.3	(16)	2.0/2.2
	09/29/03	12.02	6.15	160	54	2.2	6.9	8.7	(1.1)	4.1/1.6
	10/29/03	12.25	5.92	350	16	<0.50	1.1	<1.0	(6.3)	3.2/1.6
	01/05/04	9.74	8.43	2,700	870	39	130	250	(5.5)	3.6/2.8
	04/01/04	9.06	9.11	1,300	240	4.1	36	45	(12.0)	1.1/1.0
	07/02/04	11.29	6.88	610	59	<1.0	3.6	<2.0	(10.0)	2.0/2.2
	11/03/04	12.02	6.15	200	<0.50	<0.50	<0.50	<1.0	(10.0)	2.1/2.3
	01/04/05	8.99	9.18	2,500	730	42	36	190	(<10)	1.72/1.36
	04/13/05	7.25	10.92	<50	1.6	<0.50	<0.50	<0.50	(0.61)	2.85/3.04
	07/13/05	10.30	7.87	--	--	--	--	--	--	--

# Pangea

**Table 1. Groundwater Elevation and Analytical Data - Saberi, 1230 14th Street, Oakland, CA**

Well ID	Date Measured	DTW (feet)	GWE (feet) (MSL)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	Dissolved Oxygen (mg/L)
(VW/AS-3 cont'd)	07/22/05	10.51	7.66	160	36	0.65	<0.50	2.5	(2.60)	1.4/1.3
	10/28/05	11.93	6.24	100	<0.50	<0.50	<0.50	<1.0	(1.70)	1.6/0.9
	01/17/06	8.25	9.92	1,400	510	29	16	47	(5.40)	1.9/0.8
	04/21/06	6.06	12.11	--	--	--	--	--	--	--
	05/01/06	6.83	11.34	1,350	74.4	<0.500	12.5	0.520	(3.30)	1.35/0.78
	08/30/06	11.00	7.17	940	77.7	2.67	2.94	5.57	(3.45)	0.80/0.98
	09/29/06	11.30	6.87	--	--	--	--	--	--	--
	11/03/06	12.29	5.88	346 j	83.6 j	5.17 j	2.34 j	13.5 j	(3.47 j)	1.10/0.80
	01/30/07	12.59	5.58	130	13	0.64	<0.50	7.2	(3.4)	0.76/0.64
	06/01/07	10.82	7.35	2,200 k	650	13	3.2 m	143	(7.8)	1.21/0.93
	08/16/07	11.95	6.22	1,000 k	200	4.0	1.1	47.7	(3.3)	0.8/0.2
	12/06/07	12.43	5.74	<50	<0.5	<0.5	<0.5	<0.5	(<0.5)	--
	02/25/08	9.40	8.77	<50	<0.5	<0.5	<0.5	<0.5	<5.0	3.14
	05/26/08	11.20	6.97	1,800	260	6.0	4.3	35	<17	0.86/4.39
	6/26/2008									Well Destroyed

Notes:

a = Sample was analyzed outside of the EPA recommended holding time.

b = Hydrocarbon reported does not match the pattern of the laboratory's standard.

c = Top of casing change due to maintenance.

d = Sample contains discrete peak in addition to gasoline.

e = Quantity of unknown hydrocarbon(s) in sample based on gasoline.

f = The concentration reported reflects individual or discrete unidentified peaks not matching a typical fuel pattern.

g = The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.

h = Secondary ion abundances were outside method requirements. Identification based on a'-lytical judgement.

i = Analyte was detected in the associated Method Blank.

j = pH>2

k = Analyzed by EPA Method 8015B (M).

l = The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

m = Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.

Site surveyed November 1, 2001 by Virgil Chavez Land Surveying of Vallejo, CA.

Site remediation wells surveyed March 21, 2011 by Virgil Chavez Land Surveying of Vallejo, CA.

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015C.

Benzene, Toluene, Ethylbenzene, and Xylenes by EPA Method 8260B from April 27, 2001 through August 16, 2007. Concentrations prior to April 27, 2001 and after August 16, 2007 by EPA Method 8021B.

MTBE = Methyl tert-butyl ether by EPA Method 8021B, concentrations in parentheses by EPA Method 8260B

-- = Not applicable

ug/L = micrograms per liter (Parts per billion)

mg/L = milligrams per liter (Parts per million)

MSL = Mean sea level

ft. = Feet

<n = Below detection limit

(D) = Duplicate sample

n/n = Pre-purge/Post-purge Dissolved Oxygen Readings

# Pangea

**Table 2. SVE (DPE) Performance Data - 1230 14th Street, Oakland, CA**

Date	Wells	System										Air Sparge (status)	Removal				Emission Reporting								Notes
		Oxidizer Hr Meter Reading (hours)	Total Time (days)	Interval (days)	Vapor Flow (cfm)	App Vac ("Hg)	Lab ID	Influent TPHg Lab	Influent Benzene Lab	Influent OVA Reading	SVE TPHg Removal Rate (lbs/day)	SVE Benzene Removal Rate (lbs/day)	Cumulative SVE TPHg (lbs)	Cumulative SVE Benz (lbs)	Effluent OVA Reading	Abate OVA (%)	Effluent TPHg Lab	Effluent Benzene Lab	TPHg Abate (ppmv)	Benzene Effic (%)	Benzene Emission Rate (lbs/day)	Cumulative Vapor Flow (cf)			
		Interv Time (days)	App Vac ("Hg)	Lab ID	TPHg Lab	Benzene Lab	OVA Reading	TPHg Lab	Benzene Lab	OVA Reading	TPHg Lab	Benzene Lab	Emission Rate (lbs/day)	Vapor Flow (cf)											
04/27/11	DP-1,2,4,5	10730.2	0.0	0.0	107	9	---	32	2.0	34	Off	1.1	0.06	0.0	0	6	<b>82.4</b>	---	---	---	---	---	0	Startup Test	
05/05/11	DP-1,2,4,5	10895.3	6.9	6.9	107	7	INF-V	<b>28</b>	<b>1.5</b>	23	Off	1.0	0.05	6.6	0.32	11	<b>52.2</b>	<b>22</b>	<b>1.0</b>	<b>21.4</b>	<b>33.3</b>	<b>0.031</b>	1,059,942	On	
05/16/11	DP-1,2,4,5	11164.0	18.1	11.2	107	4	---	20	1.0	---	Off	0.7	0.03	14.3	0.67	---	---	---	---	---	---	---	2,784,996	On	
05/24/11	DP-1,2,4,5	11239.0	21.2	3.1	107	4	---	20	1.0	12	Off	0.7	0.03	16.4	0.77	4	<b>66.7</b>	---	---	---	---	---	---	3,266,496	On. Shutdown due to high EFF-V conc in lab report.
07/13/11	DP-1,2,4,5	11241.4	21.3	0.1	107	7	---	20	1.0	31	Off	0.7	0.03	16.5	0.77	15	<b>51.6</b>	---	---	---	---	---	---	3,281,904	Off. Restart, check cat cell, send for repair.
09/06/11	DP-1,2,4,5	11250.6	21.7	0.4	55	5	---	400	10.0	451	Test	7.1	0.16	19.2	0.83	336	<b>25.5</b>	---	---	---	---	---	---	3,312,385	Off. Test with air sparging and HVOCs. Off at departure.
10/24/11	DP-1,2,4,5	11251.7	21.7	0.0	79	7	---	1,800	20.0	1906	Test	45.8	0.46	21.3	0.85	905	<b>52.5</b>	---	---	---	---	---	---	3,317,621	Off. Test new cat cell. Heat exchgr issue. Off at departure.
11/23/11	DP-1,2,4,5	11261.3	22.1	0.4	43	5	---	3,500	40.0	3670	Test	47.9	0.50	40.5	1.05	156	<b>95.7</b>	---	---	---	---	---	---	3,342,170	Off. Install repaired heat exch and repaired cat cell.
11/28/11	DP-1,2,4,5	11287.4	23.2	1.1	76	8	---	600	13.0	693	Test	14.6	0.29	56.4	1.36	3	<b>99.6</b>	---	---	---	---	---	---	3,461,186	Off. Test for lead in influent with sparging. Meets permit.
11/29/11	DP-1,2,4,5	11295.3	23.5	0.3	151	6	---	600	13.0	693	Test	29.1	0.57	66.0	1.55	19	<b>97.3</b>	---	---	---	---	---	---	3,532,760	Off. Restart to test. Meets permit. Left on for testing.
12/01/11	DP-1,2,4,5	11342.8	25.5	2.0	68	6	---	500	10.0	548	Test	10.9	0.20	87.5	1.94	16	<b>97.1</b>	---	---	---	---	---	---	3,726,560	On. Meets permit. Left on for testing.
12/14/11	DP-1,2,4,5	11653.4	38.5	12.9	64	5	---	200	5.0	203	Test	4.1	0.09	127.2	2.94	11	<b>94.6</b>	---	---	---	---	---	---	4,725,464	On. <97% dest so turn off. Test another unit 12/21/11: similar.

Notes:

ALL = Wells DP-1, DP-2, DP-3, DP-4 and DP-5.

NA = not analyzed; NM = not measured; --- = not available

System data estimated when specific data not available.

cfm = actual cubic feet (cf) per minute based on anemometer readings (from vacuum side of vacuum pump during SVE).

ppmv = parts per million on volume to volume basis. Actual lab data shown in **bold**. Lab data estimated for dates without lab data to allow mass removal calculation.

lbs = Pounds

"Hg = Inches of mercury vacuum

SVE = Soil Vapor Extraction

OVA = Organic Vapor Analyzer (Horiba Model MEXA 324JU)

TPHg and Benzene Removal Rates = For dates where no laboratory analytical data was collected, the lab data is estimated based on prior lab data and OVA readings to calculate period and cumulative mass removal.

Hydrocarbon Removal/Emission Rate = Rate based on Bay Area Air Quality Management District's Manual of Procedures for Soil Vapor Extraction dated July 17, 1991.

Rate = lab concentration (ppmv) x system flowrate (scfm) x (1lb-mole/386 ft<sup>3</sup>) x molecular weight (86 lb/lb-mole for TPH-Gas hexane) x 1440 min/day x 1/1,000,000.

# Pangea

**Table 3. GWE (DPE) System Performance Summary - 1230 14th Street, Oakland, California**

Well ID	Date	Totalizer Reading <sup>1</sup> (gallons)	Interval Flow Volume (gallons)	Interval Duration (days)	Average Flow Rate (gpm)	TPHg Concentration (ug/L)	Benzene Concentration (ug/L)	MTBE Concentration (ug/L)	TPHg Removed (Lbs)	Benzene Removed (Lbs)	MTBE Removed (Lbs)	Comments	
<b>System Influent</b>	04/27/11	0	0	0	--	<b>960</b>	<b>120</b>	<b>ND (&lt;5.0)</b>	0.000	0.000	0.000	Starup water sampling of influent (3/7/11)	
	05/05/11	60,732	60,732	8	5.27	---	---	---	0.485	0.061	0.000	On.	
	05/16/11	98,599	37,867	11	2.39	---	---	---	0.302	0.038	0.000	On.	
	05/19/11	99,596	997	3	0.23	---	---	---	0.008	0.001	0.000	On. Shutdown due to high EFF-V conc.	
	07/13/11	99,596	0	55	0.00	---	---	---	0.000	0.000	0.000	Off. Restart, check cat cell. Send for repair.	
	09/06/11	100,663	1,067	55	0.01	---	---	---	0.009	0.001	0.000	Off. Restart, off at departure.	
	10/24/11	100,663	0	48	0.00	---	---	---	0.000	0.000	0.000	Off. Restart, install new cat cell. Off at departure.	
	11/22/11	101,390	727	29	0.02	---	---	---	0.006	0.001	0.000	Off. Restart.	
	11/23/11	101,503	113	1	0.08	---	---	---	0.001	0.000	0.000	Off. Restart.	
	11/28/11	101,921	418	5	0.06	---	---	---	0.003	0.000	0.000	Off. Restart.	
	11/29/11	102,015	94	1	0.07	---	---	---	0.001	0.000	0.000	Off. Restart.	
	12/01/11	103,905	1,890	2	0.66	---	---	---	0.015	0.002	0.000	On.	
	12/14/11	105,677	1,772	13	0.09	<b>320</b>	<b>8.9</b>	<b>ND (&lt;5.0)</b>	0.005	0.000	0.000	Off. Restart. Stopped later.	
											<b>0.834</b>	<b>0.104</b>	<b>0.000</b>
<b>Total Cumulative Removal (Lbs)</b>													
<b>System Effluent</b>	04/27/11	---	---	---	---	<b>ND (&lt;50)</b>	<b>ND (&lt;0.5)</b>	<b>ND (&lt;5.0)</b>	---	---	---	Startup water sampling of effluent (3/7/11)	
	12/14/11	---	---	---	---	<b>ND (&lt;50)</b>	<b>ND (&lt;0.5)</b>	<b>ND (&lt;5.0)</b>	---	---	---		

<i>Discharge Limits (ug/L):</i>	<i>5</i>	<i>5</i>	<i>5</i>	<i>5</i>
	<i>Benzene</i>	<i>Toluene</i>	<i>Ethylbenzene</i>	<i>Total Xylenes</i>

**ABBREVIATIONS AND NOTES:**

1 = Initial totalizer reading was 2,090. Therefore, shown reading above 0 is actual reading plus minus 2,090. The 05/05/11 reading of 62,822 less 2,090 equals 60,732 gallons discharged.

gpm = Gallons per minute

TPHd = Total Petroleum Hydrocarbon as Diesel analyzed by EPA Method 8015B with silica gel cleanup

TPHg = Total Petroleum Hydrocarbon as Gasoline analyzed by EPA Method 8015B

Benzene analyzed by EPA Method 8021B

MTBE = Methyl tertiary butyl ether analyzed by EPA Method 8021 Cm

Toulene, Ethylbenzene and Total Xylenes analyzed by EPA Method 8015B

-- = not measured/not available

\* Estimated contaminant mass calculated by multiplying average concentration detected during period (Table 1) by volume of extracted groundwater. Uses most recent lab data.

\*\*Unless noted Toulene, Ethylbenzene and Total Xylenes non-detect (<0.5)

# Pangea

**Table 4. Air Sparge Performance Data - 1230 14th Street, Oakland, CA**

Date	Compressor				AS-1		AS-2		AS-3		AS-4		AS-5		Notes
	Sparge Wells	Hr Meter Reading <sup>1</sup> (hours)	Total Time <sup>1</sup> (days)	Interval Time <sup>1</sup> (days)	Flow Rate (scfm)	Injection Pressure (PSI)									
04/27/11	---	---	0.0	0.0	---	---	---	---	---	---	---	---	---	---	Startup Test of DPE System
05/05/11	---	---	0.0	0.0	---	---	---	---	---	---	---	---	---	---	Off
05/16/11	---	---	0.0	0.0	---	---	---	---	---	---	---	---	---	---	Off
05/24/11	---	---	0.0	0.0	---	---	---	---	---	---	---	---	---	---	Off.
07/13/11	---	---	0.0	0.0	---	---	---	---	---	---	---	---	---	---	Off.
09/06/11	AS-1,3,4,5	---	0.1	0.1	---	---	---	---	---	---	---	---	---	---	Off. Compressor on for test with DPE. Off at departure.
10/24/11	AS-1,3,4,5	---	0.2	0.1	1.8	9	---	---	2.0	8	1.6	10	1.0	10	Off. Test.
11/23/11	AS-1,3,4	---	0.3	0.1	2.5	8	---	---	2.5	6	2.6	10	---	---	Off. Test
11/28/11	AS-1,3,4	---	0.4	0.1	NM	NM	---	---	NM	NM	NM	NM	---	---	Off. Test with DPE.
11/29/11	AS-1,3,4	---	0.5	0.1	2.0	NM	---	---	2.0	NM	2.0	NM	---	---	Off. Restart. DPE/AS left on for testing.
12/01/11	AS-1,3,4	---	0.6	0.1	2.0	NM	---	---	2.0	NM	2.0	NM	---	---	On. Left on for testing.
12/14/11	AS-1,3,4	---	0.7	0.1	2.0	NM	---	---	2.0	NM	2.0	NM	---	---	On. Turned off with DPE unit.

Notes:

1 = Compressor hour meter records run time of compressor when filling air tank: does not record air injection into wells when compressor idle. Actu ALL = Wells AS-1, AS-2, AS-3, AS-4 and AS-5.

scfm = standard cubic feet per minute based on in-line visi-float air meter.

PSI = pounds per square inch

NA = not analyzed; NM = not measured; --- = not available

System data estimated when specific data not available.

**APPENDIX A**

**Groundwater Monitoring Program**

**Table A - Semi-Annual Groundwater Monitoring Program: 2011**

1230 14th Street, Oakland, CA

Well ID	Well Type	Screened Interval (ft bgs)	Well Location for Monitoring	Casing Diam. (in)	Gauge Frequency	Sample Frequency <sup>1</sup>
<b>Monitoring Wells</b>						
MW-1	Mon	7-22	Downgradient	2	2nd, 4th	2nd, 4th
MW-2	Mon	7.5-22.5	S Upgradient	2	2nd, 4th	2nd
MW-3	Mon	7-21.5	W Upgradient	2	2nd, 4th	2nd
MW-4	Mon	7-22	NW Crossgradient	2	2nd, 4th	2nd
MW-5R	Mon	5-20	Source	4	2nd, 4th	2nd, 4th
MW-6	Mon	5-20	E Downgradient	4	2nd, 4th	2nd, 4th
MW-7	Mon	5-20	NE Downgradient	4	2nd, 4th	2nd, 4th
VMP-1	Vapor Monitoring	4.25-4.75	N Boundary (Downgradient)	1/2	--	--
<b>Remediation/Monitoring Wells</b>						
AS-1	Mon/Air Sparging	22-25	N Source	1	2nd, 4th	2nd, 4th
AS-2	Air Sparging	22-25	--	1	--	--
AS-3	Air Sparging	22-25	--	1	--	--
AS-4	Air Sparging	22-25	--	1	--	--
AS-5	Air Sparging	21.5-25	--	1	--	--
VW/MW-2	Mon/Vapor Extraction	6-22	W Crossgradient	2	2nd, 4th	2nd, 4th
VW/MW-4	Mon/Vapor Extraction	5-20	SW Downgradient	2	2nd, 4th	2nd, 4th
DP-1	Dual Phase Extraction (Rem)	8-20	--	4	--	--
DP-2	Dual Phase Extraction (Rem)	8-20	--	4	--	--
DP-3	Dual Phase Extraction (Rem)	8-20	--	4	--	--
DP-4	Dual Phase Extraction (Rem)	8-20	--	4	--	--
DP-5	Dual Phase Extraction (Rem)	8-20	--	4	--	--

Notes and Abbreviations:

**1= Sample Analytes:** Total Petroleum Hydrocarbons as Gasoline (TPHg), benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8015Cm/8021B.

2nd, 4th = Semi Annually during second and fourth quarter, typically May and November

2nd = Annually during second quarter, typically May

Mon = Groundwater Monitoring Well

Rem= Remediation Well

VW = Vapor Extraction Well

VMP= Vapor Monitoring Well

DP = Dual Phase Extraction

N, S, W, E = Cardinal directions North, South, West, East and other directions (e.g., Northeast = NE)

-- = Not applicable, gauged or sampled.

**Table B - Proposed Quarterly Groundwater Monitoring Program: 2012 with BOC Workplan**

1230 14th Street, Oakland, CA

Well ID	Well Type	Screened Interval (ft bgs)	Well Location for Monitoring	Casing Diam. (in)	Gauge Frequency	Sample Frequency <sup>1</sup>
<b>Monitoring Wells</b>						
MW-1	Mon	7-22	Downgradient	2	2nd, 3rd, 4th	2nd, 3rd, 4th (and April/May <sup>2</sup> )
MW-2	Mon	7.5-22.5	S Upgradient	2	2nd, 3rd, 4th	2nd (June)
MW-3	Mon	7-21.5	W Upgradient	2	2nd, 3rd, 4th	2nd (June)
MW-4	Mon	7-22	NW Crossgradient	2	2nd, 3rd, 4th	2nd (June)
MW-5R	Mon	5-20	Source	4	2nd, 3rd, 4th	2nd, 3rd, 4th (and April/May <sup>2</sup> )
MW-6	Mon	5-20	E Downgradient	4	2nd, 3rd, 4th	2nd, 3rd, 4th (and April/May <sup>2</sup> )
MW-7	Mon	5-20	NE Downgradient	4	2nd, 3rd, 4th	2nd, 3rd, 4th
VMP-1	Vapor Monitoring	4.25-4.75	N Boundary (Downgradient)	1/2	--	--
<b>Remediation/Monitoring Wells</b>						
AS-1	Mon/Air Sparging	22-25	N Source	1	2nd (June)	2nd (June)
AS-2	Air Sparging	22-25	--	1	2nd (June)	2nd (June)
AS-3	Air Sparging	22-25	--	1	2nd (June)	2nd (June)
AS-4	Air Sparging	22-25	--	1	2nd (June)	2nd (June)
AS-5	Air Sparging	21.5-25	--	1	2nd (June)	2nd (June)
VW/MW-2	Mon/Vapor Extraction	6-22	W Crossgradient	2	2nd, 3rd, 4th	2nd, 3rd, 4th
VW/MW-4	Mon/Vapor Extraction	5-20	SW Downgradient	2	2nd, 3rd, 4th	2nd, 3rd, 4th
DP-1	Dual Phase Extraction (Rem)	8-20	--	4	2nd, 3rd, 4th	2nd (and April/May <sup>2</sup> )
DP-2	Dual Phase Extraction (Rem)	8-20	--	4	2nd, 3rd, 4th	2nd (and April/May <sup>2</sup> )
DP-3	Dual Phase Extraction (Rem)	8-20	--	4	2nd, 3rd, 4th	2nd (June)
DP-4	Dual Phase Extraction (Rem)	8-20	--	4	2nd, 3rd, 4th	2nd (and April/May <sup>2</sup> )
DP-5	Dual Phase Extraction (Rem)	8-20	--	4	2nd, 3rd, 4th	2nd (and April/May <sup>2</sup> )

Notes and Abbreviations:

**1= Sample Analytes:** Total Petroleum Hydrocarbons as Gasoline (TPHg), benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8015Cm/8021B.

**2=Monthly Sampling in April/May 2012 per Workplan for Enhanced Site Remediation (if approved by ACEH). Grab sample DP wells.**

2nd, 3rd, 4th = Quarterly during second, third and fourth quarter. Propose June, September and December for 2012.

2nd = Annually during second quarter, typically May

Mon = Groundwater Monitoring Well

Rem= Remediation Well

VW = Vapor Extraction Well

VMP= Vapor Monitoring Well

DP = Dual Phase Extraction

N, S, W, E = Cardinal directions North, South, West, East and other directions (e.g., Northeast = NE)

-- = Not applicable, gauged or sampled.

**APPENDIX B**

**Groundwater Monitoring Field Data Sheets**

Well Gauging Data Sheet

Project Task #: 1150.001			Project Name: Saberi 1230 14th St.				
Address: 1230 14th Street Oakland, CA					Date: 12-27-11		
Name: Steve Hunter			Signature: <i>Steve Hunter</i>				
Well ID	Well Size (in.)	Time	Depth to Immiscible Liquid (ft)	Thickness of Immiscible Liquid (ft)	Depth to Water (ft)	Total Depth (ft)	Measuring Point
MW-1	2	0948	—	—	13.15	21.28	TOC
MW-2	2	0928	—	—	12.31	22.11	
MW-3	2	0924	—	—	12.58	18.60	
MW-4	2	0920	—	—	12.48	19.82	
MW-5R	4	1011	—	—	12.92	22.70	
MW-6	4	0952	—	—	13.42	19.81	
MW-7	4	1935	—	—	13.84	19.91	
AS-1	1	1016	—	—	12.08	14.02	
VW/MW-2	2	1019	—	—	12.78	21.75	
VW/MW-4	2	1025	—	—	12.57	17.56	
DP-1	4	1022	—	—	13.03	22.63	✓

Comments: System not operating. Wells opened 1 hour prior to Sampling



Page 2 of 2

## Well Gauging Data Sheet

#### Comments:

**MONITORING FIELD DATA SHEET**

Well ID: MW-1

Project Task #: 1150.001-229	Project Name: Saberi 1230 14th Street				
Address: 1230 14th Street Oakland, CA					
Date: 12-28-11	Weather: Clear				
Well Diameter: 2"	Volume/ft.	1" = 0.04 2" = 0.16	3" = 0.37 4" = 0.65 radius <sup>2</sup> * 0.163		
Total Depth (TD): 21.28	Depth to Product: —				
Depth to Water (DTW): 13.15	Product Thickness: —				
Water Column Height: 8.13	1 Casing Volume: 1.30 gallons				
Reference Point: TOC	3 Casing Volumes: 4 gallons				
Purging Device: Disposable Bailer					
Sampling Device: Disposable Bailer					
Time	Temp ©	pH	Cond (µs)		
0837				1.03	0
0844	15.3	6.93	796	-61	1.5
0848	15.7	6.87	772	-41	3
0852	16.1	6.85	761	-29	4
0858				1.13	—

Comments:

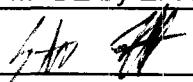
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Sample ID: MW-1	Sample Time: 12-28-11 0910
Laboratory: McCampbell	Sample Date: 12-28-11
Containers/Preservative: 3 HCl Voas	
Analyzed for: TPHg and BTEX by EPA Method 8015Cm/8020MTBE by EPA Method 8260B	
Sampler Name: Steve Hunter	Signature: 

# MONITORING FIELD DATA SHEET

**Well ID:** MW-5 R

### Comments:

Sample ID: MW-SR	Sample Time: 1445
Laboratory: McCampbell	Sample Date: 12-27-14
Containers/Preservative: 3 HCl Voas	
Analyzed for: TPHg and BTEX by EPA Method 8015Cm/8020 MTBE by EPA Method 8260B	
Sampler Name: Steve Hunter	Signature: Gt. C.H.

**MONITORING FIELD DATA SHEET**

**Well ID:** MW-6

Project Task #: 1150.001-229	Project Name: Saberi 1230 14th Street							
Address: 1230 14th Street Oakland, CA								
Date: 12-28-11	Weather: Clear							
Well Diameter: 4"	Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47	2" = 0.16	4" = 0.65	radius <sup>2</sup> * 0.163	
Total Depth (TD): 19.81	Depth to Product: —							
Depth to Water (DTW): 13.42	Product Thickness: —							
Water Column Height: 6.39	1 Casing Volume: 4.15 gallons							
Reference Point: TOC	Casing Volumes: 12.5 gallons							
Purging Device: Disposable Bailer								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
1243					0.58		9	
1249	17.2	7.24	718			-61	4	
1255	17.4	6.91	715			-22	8	
1303	17.3	6.87	713			-19	12.5	
1307					0.64			

Comments:

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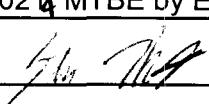
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Sample ID: MW-6	Sample Time: 1317
Laboratory: McCampbell	Sample Date: 12-28-11
Containers/Preservative: 3 HCl Voas	
Analyzed for: TPHg and BTEX by EPA Method 8015Cm/8021 MTBE by EPA Method 8260B	
Sampler Name: Steve Hunter	Signature: 

**MONITORING FIELD DATA SHEET**

**Well ID: MW-7**

Project Task #: 1150.001-229	Project Name: Saberi 1230 14th Street						
Address: 1230 14th Street Oakland, CA							
Date: 12-28-11	Weather: Clear						
Well Diameter: 4"	Volume/ft.	1" = 0.04 2" = 0.16	3" = 0.37 4" = 0.65 radius <sup>2</sup> * 0.163				
Total Depth (TD): 19.91	Depth to Product: —						
Depth to Water (DTW): 13.84	Product Thickness: —						
Water Column Height: 8.91	1 Casing Volume: 5.79 gallons						
Reference Point: TOC	3 Casing Volumes: 17.5 gallons						
Purging Device: Disposable Bailer							
Sampling Device: Disposable Bailer							
Time	Temp ©	pH	Cond (µs)				
1332				1.81		4	
1340	17.7	6.99	502		-1	6	
1346	17.9	6.91	502		+3	12	
1352	17.9	6.93	500		+6	17.5	
1358				2.02		—	

Comments:

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Sample ID: MW-7	Sample Time: 1410
Laboratory: McCampbell	Sample Date: 12-28-11
Containers/Preservative: 3 HCl Voas	
Analyzed for: TPHg and BTEX by EPA Method 8015Cm/8020, MTBE by EPA Method 8260B	
Sampler Name: Steve Hunter	Signature: J. Hunter

## **MONITORING FIELD DATA SHEET**

**Well ID:** ~~44~~ 45-1

**Comments:**

Sample ID: AS-1	Sample Time: 0825
Laboratory: McCampbell	Sample Date: 12-28-11
Containers/Preservative: 3 HCl Voas	
Analyzed for: TPHg and BTEX by EPA Method 8015Cm/8020 MTBE by EPA Method 8260B	
Sampler Name: Steve Kurner	Signature: 

# MONITORING FIELD DATA SHEET

Well ID: VV1mW-2

### Comments:

Sample ID: <u>VIN/MW-2</u>	Sample Time: <u>11:30</u>
Laboratory: McCampbell	Sample Date: <u>12-27-14</u>
Containers/Preservative: 3 HCl Voas	
Analyzed for: TPHg and BTEX by EPA Method 8015Cm/8020D MTBE by EPA Method 8260B	
Sampler Name: <u>Steve Hunter</u>	Signature: <u></u>

# MONITORING FIELD DATA SHEET

Well ID: Wfyn-4

### Comments:

Sample ID: <u>VW/MW-4</u>	Sample Time: <u>1300</u>
Laboratory: McCampbell	Sample Date: <u>12-27-11</u>
Containers/Preservative: 3 HCl Voas	
Analyzed for: TPHg and BTEX by EPA Method 8015Cm/8020C MTBE by EPA Method 8260B	
Sampler Name: <u>Steve Hunter</u>	Signature: <u></u>

# MONITORING FIELD DATA SHEET

**Well ID:** DPF-1

### Comments:

Sample ID: DP-1	Sample Time: 1540
Laboratory: McCampbell	Sample Date: 12-27-11
Containers/Preservative: 3 HCl Voas	
Analyzed for: TPHg and BTEX by EPA Method 8015Cm/8020 MTBE by EPA Method 8260B	
Sampler Name: Steve Hunter	Signature: 

# MONITORING FIELD DATA SHEET

DP-2

**Comments:**

Sample ID: <del>DP-2</del> DP-2	Sample Time: 12:30
Laboratory: McCampbell	Sample Date: 12-28-11
Containers/Preservative: 3 HCl Voas	
Analyzed for: TPHg and BTEX by EPA Method 8015Cm/8020, MTBE by EPA Method 8260B	

DP-3

**MONITORING FIELD DATA SHEET**

Well ID: ~~DP-3~~

Project Task #: 1150.001, 229	Project Name: Saberi 1230 14th Street							
Address: 1230 14th Street Oakland, CA								
Date: 12-28-11	Weather: clear							
Well Diameter: 4"	Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47				
		2" = 0.16	4" = 0.65	radius <sup>2</sup> * 0.163				
Total Depth (TD): 22.43	Depth to Product:							
Depth to Water (DTW): 13.92	Product Thickness:							
Water Column Height: 8.51	1 Casing Volume: 5.53 gallons							
Reference Point: TOC	5 Casing Volumes: 17 gallons							
Purging Device: Disposable Bailer								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
0927					0.59		0	
0933	15.8	6.58	610			-16	6	
0939	16.1	6.75	593			-11	12	
0948	16.3	6.79	587			-10	17	
0952					0.66			

Comments:

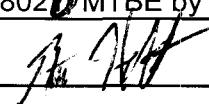
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Sample ID: <del>DP-3</del> DP-3	Sample Time: 1003
Laboratory: McCampbell	Sample Date: 12-28-11
Containers/Preservative: 3 HCl Voas	
Analyzed for: TPHg and BTEX by EPA Method 8015Cm/8020 MTBE by EPA Method 8260B	
Sampler Name: Steve Hunter	Signature: 

DP-4

# MONITORING FIELD DATA SHEET

**Well ID:** ~~000-000~~

#### **Comments:**

Sample ID: <del>1227</del> DP-4	Sample Time: 1350
Laboratory: McCampbell	Sample Date: 12-27-11
Containers/Preservative: 3 HCl Voas	
Analyzed for: TPHg and BTEX by EPA Method 8015Cm/8020D MTBE by EPA Method 8260B	
Sampler Name: Steve Hunter	Signature: 

DP-5

# MONITORING FIELD DATA SHEET

**Well ID:** ~~BP-5~~

Project Task #: 1150.001, 229	Project Name: Saberi 1230 14th Street
Address: 1230 14th Street Oakland, CA	
Date: 12-27-11	Weather: Clear
Well Diameter: 4"	Volume/ft. 1" = 0.04    3" = 0.37    6" = 1.47 2" = 0.16    4" = 0.65    radius <sup>2</sup> * 0.163
Total Depth (TD): 20.13	Depth to Product:
Depth to Water (DTW): 12.78	Product Thickness:
Water Column Height: 7.35	1 Casing Volume: 5 gallons
Reference Point: Top	Casing Volumes: 15 gallons

## Purging Device: Disposable Bailer

## **Sampling Device: Disposable Bailer**

### Comments:

Sample ID: <del>DP-5</del> DP-5	Sample Time: 1225
Laboratory: McCampbell	Sample Date: 12-27-11
Containers/Preservative: 3 HCl Voas	
Analyzed for: TPHg and BTEX by EPA Method 8015Cm/8020 MTBE by EPA Method 8260B	
Sampler Name: Steve Hunter	Signature: 

**APPENDIX C**

Laboratory Analytical Report



McCampbell 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

## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1150.001; 1230 14th St  Client Contact: Tina De La Fuente  Client P.O.:	Date Sampled: 12/27/11-12/28/11  Date Received: 12/29/11  Date Reported: 01/05/12  Date Completed: 01/04/12
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**WorkOrder: 1112792**

January 05, 2012

Dear Tina:

Enclosed within are:

- 1) The results of the **12** analyzed samples from your project: **#1150.001; 1230 14th St,**
- 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  
McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McCampbell Analytical, Inc.

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

1112792

## McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Road  
Pittsburg, CA 94565Website: [www.mccampbell.com](http://www.mccampbell.com) Email: main@mccampbell.com  
Telephone: (925) 252-9262 Fax: (925) 252-9269

## CHAIN OF CUSTODY RECORD

## TURN AROUND TIME

5 DAY

RUSH No 24 HR Write On (DW) 48 HR 72 HR No

EDF Required? Coelt (Normal)

Report To: Tine de la Fuente Bill To: Pangea

Company: Pangea Environmental Services, Inc.

1710 Franklin Street, Suite 200, Oakland, CA 94612

E-Mail: tdelefuentes@pangeaenv.com

Tele: (510) 836-3702

Fax: (510) 836-3709

Project #: 1150.001

Project Name: 1230 14<sup>th</sup> StProject Location: 1230 14<sup>th</sup> St., OaklandSampler Signature: \* *S. de la Fuente*

## Analysis Request

Other

Comments  
Filter Samples for Metals analysis:  
Yes / No

SAMPLE ID	LOCATION (Field Point Name)	SAMPLING		# Containers	MATRIX		METHOD PRESERVED	TPHg (8015C) BTEX (8020) MTBE (8015C.m/8021B)			
		Date	Time		Water	Soil	Air		Sludge	Other	ICE
MW-1		12-28-11	0910	3	Xba	X		X X			X X X
MW-5		12-27-11	1445		X			X X			X X X
MW-6		12-28-11	1317		X			X X			X X X
MW-7		12-28-11	1410		X			X X			X X X
VW/MW-2		12-27-11	1130		X			X X			X X X
VW/MW-4		12-27-11	1300		X			X X			X X X
AS-1		12-28-11	0825		X			X X			X X X
DPE-1		12-27-11	1540		X			X X			X X X
DPE-2		12-28-11	1230		X			X X			X X X
DPE-3		12-28-11	1003		X			X X			X X X
DPE-4		12-27-11	1350		X			X V			X X X
DPE-5		12-27-11	1225	↓	X			X X			X X X

Relinquished By:

Date:

Time:

Received By:

COMMENTS:

ICE/t°

GOOD CONDITION

HEAD SPACE ABSENT

DECHLORINATED IN LAB

APPROPRIATE CONTAINERS

PRESERVED IN LAB

Relinquished By:

Date:

Time:

Received By:

Relinquished By:

Date:

Time:

Received By:

PRESERVATION

VOAS

O&amp;G

METALS

OTHER

pH&lt;2

# McCampbell Analytical, Inc.

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

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WaterTrax  WriteOn  EDF  Excel  Fax  Email  HardCopy  ThirdParty  J-flag

**Report to:**

Tina De La Fuente Email: tdelafuente@pangeaenv.com  
Pangea Environmental Svcs., Inc. cc:  
1710 Franklin Street, Ste. 200 PO:  
Oakland, CA 94612 ProjectNo: #1150.001; 1230 14th St  
(510) 836-3700 FAX: (510) 836-3709

**Bill to:**

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

**Requested TAT:** 5 days

**Date Received:** 12/29/2011  
**Date Printed:** 01/05/2012

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
1112792-001	MW-1	Water	12/28/2011 9:10	<input type="checkbox"/>	A	A										
1112792-002	MW-5R	Water	12/27/2011 14:45	<input type="checkbox"/>	A											
1112792-003	MW-6	Water	12/28/2011 13:17	<input type="checkbox"/>	A											
1112792-004	MW-7	Water	12/28/2011 14:10	<input type="checkbox"/>	A											
1112792-005	VW/MW-2	Water	12/27/2011 11:30	<input type="checkbox"/>	A											
1112792-006	VW/MW-4	Water	12/27/2011 13:00	<input type="checkbox"/>	A											
1112792-007	AS-1	Water	12/28/2011 8:25	<input type="checkbox"/>	A											
1112792-008	DP-1	Water	12/27/2011 15:40	<input type="checkbox"/>	A											
1112792-009	DP-2	Water	12/28/2011 12:30	<input type="checkbox"/>	A											
1112792-010	DP-3	Water	12/28/2011 10:03	<input type="checkbox"/>	A											
1112792-011	DP-4	Water	12/27/2011 13:50	<input type="checkbox"/>	A											
1112792-012	DP-5	Water	12/27/2011 12:25	<input type="checkbox"/>	A											

**Test Legend:**

<b>1</b>	G-MBTEX_W	<b>2</b>	PREDF REPORT	<b>3</b>		<b>4</b>		<b>5</b>	
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: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **12/29/2011 3:26:03 PM**

Project Name: **#1150.001; 1230 14th St**

Checklist completed and reviewed by: **Maria Venegas**

WorkOrder N°: **1112792**      Matrix: Water

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

- |   |   |                             |
|---|---|-----------------------------|
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Sample IDs noted by Client on COC?                      | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Date and Time of collection noted by Client on COC?     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Sampler's name noted on COC?                            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |

### Sample Receipt Information

- |   |   |                             |  |
|---|---|-----------------------------|--|
| Custody seals intact on shipping container/coolier? | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| Shipping container/coolier in good condition?       | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Samples in proper containers/bottles?               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sample containers intact?                           | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sufficient sample volume for indicated test?        | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |

### Sample Preservation and Hold Time (HT) Information

- |   |  |                             |   |
|---|--|-----------------------------|---|
| All samples received within holding time?           | Yes <input checked="" type="checkbox"/>        | No <input type="checkbox"/> |   |
| Container/Temp Blank temperature                    | Cooler Temp: 6.2°C NA <input type="checkbox"/> |                             |   |
| Water - VOA vials have zero headspace / no bubbles? | Yes <input checked="" type="checkbox"/>        | No <input type="checkbox"/> | No VOA vials submitted <input type="checkbox"/> |
| Sample labels checked for correct preservation?     | Yes <input checked="" type="checkbox"/>        | No <input type="checkbox"/> |   |
| Metal - pH acceptable upon receipt (pH<2)?          | Yes <input type="checkbox"/>                   | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/>          |
| Samples Received on Ice?                            | Yes <input checked="" type="checkbox"/>        | No <input type="checkbox"/> |   |

(Ice Type: WET ICE )

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

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1150.001; 1230 14th St	Date Sampled:	12/27/11-12/28/11
		Date Received:	12/29/11
	Client Contact: Tina De La Fuente	Date Extracted:	12/29/11-01/04/12
	Client P.O.:	Date Analyzed:	12/29/11-01/04/12

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1112792

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	MW-1	W	6900	ND<50	140	51	54	370	10	106	d1,b6
002A	MW-5R	W	9900	ND<250	1100	160	480	740	50	119	d1
003A	MW-6	W	ND	ND	ND	ND	ND	ND	1	119	
004A	MW-7	W	ND	ND	ND	ND	ND	ND	1	102	
005A	VW/MW-2	W	280	ND<10	3.1	6.2	1.5	1.4	1	122	d1
006A	VW/MW-4	W	460	ND	24	4.0	0.99	ND	1	116	d1
007A	AS-1	W	ND	ND	ND	ND	ND	ND	1	108	
008A	DP-1	W	41,000	ND<1000	4400	1200	780	4600	200	104	d1
009A	DP-2	W	9100	ND<80	820	46	320	790	10	99	d1
010A	DP-3	W	ND	ND	ND	ND	ND	ND	1	114	
011A	DP-4	W	4500	ND<300	430	48	67	150	5	106	d1,b1
012A	DP-5	W	23,000	ND<500	1900	1700	960	3000	100	107	d1

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

\* water and vapor samples are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in ug/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 McCampbell Analytical is not responsible for their interpretation:

b1) aqueous sample that contains greater than ~1 vol. % sediment

b6) lighter than water immiscible sheen/product is present

d1) weakly modified or unmodified gasoline is significant



## QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 63698

WorkOrder: 1112792

EPA Method: SW8021B/8015Bm		Extraction: SW5030B		Spiked Sample ID: 1112792-004A					
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
TPH(btex) <sup>E</sup>	ND	60	91.6	87.1	4.96	101	70 - 130	20	70 - 130
MTBE	ND	10	112	106	6.08	110	70 - 130	20	70 - 130
Benzene	ND	10	111	104	6.29	105	70 - 130	20	70 - 130
Toluene	ND	10	98.8	94	5.00	96.4	70 - 130	20	70 - 130
Ethylbenzene	ND	10	100	93.8	6.74	95.1	70 - 130	20	70 - 130
Xylenes	ND	30	114	107	7.05	110	70 - 130	20	70 - 130
%SS:	102	10	102	102	0	103	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 63698 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1112792-001A	12/28/11 9:10 AM	01/03/12	01/03/12 11:17 PM	1112792-002A	12/27/11 2:45 PM	12/29/11	12/29/11 8:48 PM
1112792-003A	12/28/11 1:17 PM	12/29/11	12/29/11 9:49 PM	1112792-004A	12/28/11 2:10 PM	12/29/11	12/29/11 10:19 PM
1112792-005A	12/27/11 11:30 AM	12/29/11	12/29/11 10:49 PM	1112792-006A	12/27/11 1:00 PM	01/03/12	01/03/12 4:35 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.

<sup>E</sup> 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: 63715

WorkOrder: 1112792

EPA Method: SW8021B/8015Bm		Extraction: SW5030B		Spiked Sample ID: 1112792-010A						
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>E</sup>	ND	60	108	122	11.6	125	70 - 130	20	70 - 130	
MTBE	ND	10	94.1	108	13.4	121	70 - 130	20	70 - 130	
Benzene	ND	10	94.6	104	9.55	117	70 - 130	20	70 - 130	
Toluene	ND	10	94.4	103	8.99	116	70 - 130	20	70 - 130	
Ethylbenzene	ND	10	91.4	100	9.48	113	70 - 130	20	70 - 130	
Xylenes	ND	30	95.1	104	8.53	117	70 - 130	20	70 - 130	
%SS:	114	10	102	102	0	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 63715 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1112792-007A	12/28/11 8:25 AM	12/29/11	12/29/11 11:48 PM	1112792-008A	12/27/11 3:40 PM	12/30/11	12/30/11 9:05 PM
1112792-009A	12/28/11 12:30 PM	01/03/12	01/03/12 11:47 PM	1112792-010A	12/28/11 10:03 AM	12/31/11	12/31/11 2:24 AM
1112792-011A	12/27/11 1:50 PM	01/04/12	01/04/12 12:17 AM	1112792-012A	12/27/11 12:25 PM	12/30/11	12/30/11 8:07 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.

<sup>E</sup> 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

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1150.001; 1230 14th St.	Date Sampled: 12/14/11
		Date Received: 12/16/11
	Client Contact: Morgan Gillies	Date Reported: 12/22/11
	Client P.O.:	Date Completed: 12/19/11

**WorkOrder: 1112519**

December 22, 2011

Dear Morgan:

Enclosed within are:

- 1) The results of the **2** analyzed samples from your project: **#1150.001; 1230 14th St.,**
- 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  
McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McCampbell Analytical, Inc.

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

1112519

McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Road  
Pittsburg, CA 94565

## **CHAIN OF CUSTODY RECORD**

**TURN AROUND TIME**       RUSH       24 HR       48 HR       72 HR       5 DAY

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

**Report To:** Morgan Gillies      **Bill To:** Pangea

**Company:** Pangea Environmental Services, Inc.

1710 Franklin Street, Suite 200, Oakland, CA 94612

E-Mail: mgillies@pangeaenv.com

Tele: (510) 836-3702

Fax: (510) 836-3709

Project #: 1150.001

Project Name: 1230 14<sup>th</sup> St

**Project Location:** 1230 14<sup>th</sup> St., Oakland

**Sampler Signature:**

SAMPLE ID	LOCATION (Field Point Name)	SAMPLING		# Containers	MATRIX		METHOD PRESERVED
		Date	Time		Type	Containers	
EFF-W	EFF	12-14-1	0930	3 ✓	Water Soil Air	XX X	XX XX X
INF-W	INF	12-14-1	0945	3 ✓	Sludge Other	HCL HNO <sub>3</sub> Other	

**Relinquished By:**

Date: 12-16-11

Time: |

Received By:

**COMMENTS:**

Relinquished By:

Date: 3/6/11

Time:

---

Received By

ICE/t°

GOOD CONDITION

### HEAD SPACE ABSENT

#### **DECHLORINATED IN LAB**

## APPROPRIATE CONTAINERS PRESERVED IN LAB

VOAS O&G METALS OTHER  
PRESERVATION pH<2

# McCampbell Analytical, Inc.

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

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WaterTrax  WriteOn  EDF  Excel  Fax  Email  HardCopy  ThirdParty  J-flag

**Report to:**

Morgan Gillies  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612  
(510) 836-3700 FAX: (510) 836-3709

Email: mgillies@pangeaenv.com  
cc:  
PO:  
ProjectNo: #1150.001; 1230 14th St.

**Bill to:**

Bob Clark-Riddell  
Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

**Requested TAT:** 5 days

**Date Received:** 12/16/2011  
**Date Printed:** 12/16/2011

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
1112519-001	EFF-W	Water	12/14/2011 9:30	<input type="checkbox"/>	A	A										
1112519-002	INF-W	Water	12/14/2011 9:45	<input type="checkbox"/>	A											

**Test Legend:**

1	G-MBTEX_W
6	
11	

2	PREDF REPORT
7	
12	

3	
8	

4	
9	

5	
10	

**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: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **12/16/2011 4:38:37 PM**

Project Name: **#1150.001; 1230 14th St.**

Checklist completed and reviewed by: **Maria Venegas**

WorkOrder N°: **1112519**      Matrix: Water

Carrier: Rob Pringle (MAI Courier)

### Chain of Custody (COC) Information

- |   |   |                             |
|---|---|-----------------------------|
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Sample IDs noted by Client on COC?                      | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Date and Time of collection noted by Client on COC?     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Sampler's name noted on COC?                            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |

### Sample Receipt Information

- |   |   |                             |  |
|---|---|-----------------------------|--|
| Custody seals intact on shipping container/coolier? | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| Shipping container/coolier in good condition?       | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Samples in proper containers/bottles?               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sample containers intact?                           | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sufficient sample volume for indicated test?        | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |

### Sample Preservation and Hold Time (HT) Information

- |   |  |                             |   |
|---|--|-----------------------------|---|
| All samples received within holding time?           | Yes <input checked="" type="checkbox"/>        | No <input type="checkbox"/> |   |
| Container/Temp Blank temperature                    | Cooler Temp: 6.3°C NA <input type="checkbox"/> |                             |   |
| Water - VOA vials have zero headspace / no bubbles? | Yes <input checked="" type="checkbox"/>        | No <input type="checkbox"/> | No VOA vials submitted <input type="checkbox"/> |
| Sample labels checked for correct preservation?     | Yes <input checked="" type="checkbox"/>        | No <input type="checkbox"/> |   |
| Metal - pH acceptable upon receipt (pH<2)?          | Yes <input type="checkbox"/>                   | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/>          |
| Samples Received on Ice?                            | Yes <input checked="" type="checkbox"/>        | No <input type="checkbox"/> |   |

(Ice Type: WET ICE )

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

Comments:



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<http://www.mccampbell.com> / E-mail: [main@mccampbell.com](mailto:main@mccampbell.com)

Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: #1150.001; 1230 14th St.	Date Sampled: 12/14/11
		Date Received: 12/16/11
	Client Contact: Morgan Gillies	Date Extracted: 12/18/11-12/19/11
	Client P.O.:	Date Analyzed: 12/18/11-12/19/11

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1112519

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

\* water and vapor samples are reported in ug/L, soil/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 McCampbell Analytical is not responsible for their interpretation:  
d1) weakly modified or unmodified gasoline is significant



## QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 63389

WorkOrder: 1112519

EPA Method: SW8021B/8015Bm		Extraction: SW5030B		Spiked Sample ID: 1112499-001A						
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>E</sup>	ND	60	81.6	82.6	1.25	98.6	70 - 130	20	70 - 130	
MTBE	ND	10	113	108	4.20	115	70 - 130	20	70 - 130	
Benzene	ND	10	100	96.9	3.22	112	70 - 130	20	70 - 130	
Toluene	ND	10	103	99.5	3.34	107	70 - 130	20	70 - 130	
Ethylbenzene	ND	10	108	105	2.79	104	70 - 130	20	70 - 130	
Xylenes	ND	30	108	104	3.12	119	70 - 130	20	70 - 130	
%SS:	99	10	92	94	1.83	114	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 63389 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1112519-001A	12/14/11 9:30 AM	12/19/11	12/19/11 8:33 PM	1112519-002A	12/14/11 9:45 AM	12/18/11	12/18/11 4:27 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.

<sup>E</sup> 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.



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

## Analytical Report

Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1150.001; 1230 14th St.  Client Contact: Morgan Gillies  Client P.O.:	Date Sampled: 12/23/11  Date Received: 12/23/11  Date Reported: 12/30/11  Date Completed: 12/30/11
---	---	--

**WorkOrder: 1112721**

January 17, 2012

Dear Morgan:

Enclosed within are:

- 1) The results of the **1** analyzed sample from your project: **#1150.001; 1230 14th St.,**
- 2) QC data for the above sample, 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  
McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McCampbell Analytical, Inc.

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

**McCAMPBELL ANALYTICAL, INC.**

 1534 Willow Pass Road  
 Pittsburg, CA 94565

1112721

 Website: [www.mccampbell.com](http://www.mccampbell.com) Email: main@mccampbell.com  
 Telephone: (925) 252-9262 Fax: (925) 252-9269

**CHAIN OF CUSTODY RECORD**

 TURN AROUND TIME       
 EDF Required? Coelt (Normal) RUSH No 24 HR Write On (DW) 48 HR 72 HR 5 DAY No

Report To: Morgan Gillies Bill To: Pangea				Analysis Request										Other	Comments			
Company: Pangea Environmental Services, Inc. 1710 Franklin Street, Suite 200, Oakland, CA 94612 E-Mail: mgillies@pangeaenv.com																		
Tele: (510) 836-3702 Fax: (510) 836-3709																		
Project #: 1150.001 Project Name: 1230 14 <sup>th</sup> St																		
Project Location: 1230 14 <sup>th</sup> St., Oakland																		
Sampler Signature:																		
SAMPLE ID	LOCATION (Field Point Name)	SAMPLING		# Containers	MATRIX				METHOD PRESERVED				TPH/G/BTEX/Naphthalene/Isopropyl Alcohol by TO-15	Percent Oxygen				
		Date	Time		Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>					Other	
VMP-1		12/23	1039	1	Su		X					X	X					
VMP-1 Leak Check		12/23	1038	1	Su		X									HOLD		
Relinquished By:		Date: 12/23/11	Time: 1405	Received By:											COMMENTS:			
Relinquished By:		Date: 12/23	Time: 1638	Received By:											ICE/t° <u>n/a</u> GOOD CONDITION HEAD SPACE ABSENT DECHLORINATED IN LAB APPROPRIATE CONTAINERS PRESERVED IN LAB			
Relinquished By:		Date:	Time:	Received By:											VOAS O&G METALS OTHER PRESERVATION pH<2			

**McCAMPBELL ANALYTICAL, INC.**


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

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

 WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag
**Report to:**

Morgan Gillies                      Email: mgillies@pangeaenv.com  
 Pangea Environmental Svcs., Inc.  
 1710 Franklin Street, Ste. 200  
 Oakland, CA 94612  
 (510) 836-3700    FAX: (510) 836-3709

cc:  
 PO:  
 ProjectNo: #1150.001; 1230 14th St.

**Bill to:**

Bob Clark-Riddell  
 Pangea Environmental Svcs., Inc.  
 1710 Franklin Street, Ste. 200  
 Oakland, CA 94612

**Requested TAT:****5 days**

**Date Received:** 12/23/2011  
**Date Printed:** 12/23/2011

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
1112721-001	VMP-1	Soil Gas	12/23/2011	<input type="checkbox"/>	A	A	A									

**Test Legend:**

<b>1</b>	<b>LG_SUMMA_SOILGAS(%)</b>	<b>2</b>	<b>PREDF REPORT</b>	<b>3</b>	<b>TO15+GAS_SOIL(UG/M3)</b>	<b>4</b>		<b>5</b>	
<b>6</b>		<b>7</b>		<b>8</b>		<b>9</b>		<b>10</b>	
<b>11</b>		<b>12</b>							

The following SampID: 001A contains testgroup.

**Prepared by: Zoraida Cortez****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: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **12/23/2011 6:00:29 PM**

Project Name: **#1150.001; 1230 14th St.**

Checklist completed and reviewed by: **Zoraida Cortez**

WorkOrder N°: **1112721**

Matrix: **Soil Gas**

Carrier: **Benjamin Yslas (MAI Courier)**

### Chain of Custody (COC) Information

- |   |   |                             |
|---|---|-----------------------------|
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Sample IDs noted by Client on COC?                      | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Date and Time of collection noted by Client on COC?     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Sampler's name noted on COC?                            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |

### Sample Receipt Information

- |  |   |                             |  |
|--|---|-----------------------------|--|
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| Shipping container/cooler in good condition?       | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Samples in proper containers/bottles?              | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sample containers intact?                          | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sufficient sample volume for indicated test?       | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |

### Sample Preservation and Hold Time (HT) Information

- |   |   |  |  |
|---|---|--|--|
| All samples received within holding time?           | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Container/Temp Blank temperature                    | Cooler Temp:                            |  | NA <input checked="" type="checkbox"/>                     |
| Water - VOA vials have zero headspace / no bubbles? | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | No VOA vials submitted <input checked="" type="checkbox"/> |
| Sample labels checked for correct preservation?     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| Metal - pH acceptable upon receipt (pH<2)?          | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | NA <input checked="" type="checkbox"/>                     |
| Samples Received on Ice?                            | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> |  |

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

Comments:



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1150.001; 1230 14th St.	Date Sampled:
		Date Received:
	Client Contact: Morgan Gillies	Date Reported: 12/30/11
	Client P.O.:	Date Completed: 12/30/11

## Final Case Narrative

**Work Order: 1112721**

January 13, 2012

This narrative only applies to Atmospheric Light Gases data for work order 1112721. The TO15 data is valid. TO15 analysis is performed on a different instrument that has been confirmed to be leak tight.

The validity of the Atmospheric Light Gas data published in the report has been questioned. At the time of O2 analysis all method quality controls were performed and within acceptable parameters. The in-line method blank recovered below our reporting limits for O2. The LCS (Laboratory Control Sample) passed, and a second source CCV (Continuing Calibration Check) passed within the acceptance criteria of 70% to 130% for O2.

The canister dilution methods and equipment were all functioning properly. The samples were not compromised during this step of sample preparation. Nitrogen elutes very close to oxygen making it difficult to resolve the O2 peak from the large N2 peak on the chromatogram. This prompted the dilution of the samples with pure Helium at 1:50 for oxygen and nitrogen peak separation. This is an acceptable dilution factor.

A plausible site for atmosphere to enter the analytical instrument has since been found and fixed. The leak was discovered when an empty canister (-30psi) was in-line with the sample loop. An influx of pressure pulled room air into the system from an equilibration vent valve that was not jacketed by Helium. This problem was not seen during sample and QC analysis because standards and samples typically have positive pressure. We now require all standards, blanks and samples to have positive pressure. A mandatory (-30 psi) blank will be analyzed with every sequence to monitor pressure fluctuations and atmosphere intrusion.

Unfortunately these samples cannot be rerun to confirm or refute the published data so we can only speculate to the cause of elevated O2. If our instrument is the only source of atmosphere intrusion, then we would expect that O2 values would be elevated by as much as atmospheric O2 concentration of 20.9%.



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

Pangea Environmental Svcs., Inc.  
1710 Franklin Street, Ste. 200  
Oakland, CA 94612

Client Project ID: #1150.001; 1230  
14th St.

Date Sampled: 12/23/11

Date Received: 12/23/11

**Client Contact:** Morgan Gillies

Date Extracted: 12/27/11

Client P.O.:

Date Analyzed: 12/27/11

## **Light Gases\***

Extraction method: ASTM D 1946-90

Analytical methods: ASTM D 1946-90

Work Order: 1112721

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	psia	psia	NA	NA
	SoilGas	psia	psia	0.05	%

\* soil vapor samples are reported in %.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269  
<http://www.mccampbell.com> / E-mail: [main@mccampbell.com](mailto:main@mccampbell.com)

Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: #1150.001; 1230 14th St.	Date Sampled: 12/23/11
		Date Received: 12/23/11
	Client Contact: Morgan Gillies	Date Extracted: 12/30/11
	Client P.O.:	Date Analyzed: 12/30/11

## **Leak Check Compound\***

Extraction method: TO15

#### Analytical methods: TO15

Work Order: 1112721

Reporting Limit for DF=1; ND means not detected at or above the reporting limit	W	psia	psia	NA	NA
	SoilGas	psia	psia	50	$\mu\text{g}/\text{m}^3$

\* leak check compound is reported in  $\mu\text{g}/\text{m}^3$ .

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

The IPA reference is:

DTSC, Advisory-Active Soil Gas Investigations, March 3rd, 2010, page 24, section 2.4:

"The laboratory reports should quantify and annotate all detections of the leak check compound at the reporting limit of the target analytes."

%SS = Percent Recovery of Surrogate Standard

%SS = Percent Recovery  
DF = Dilution Factor



Pangea Environmental Svcs., Inc.  1710 Franklin Street, Ste. 200  Oakland, CA 94612	Client Project ID: #1150.001; 1230 14th St.	Date Sampled: 12/23/11
	Client Contact: Morgan Gillies	Date Received: 12/23/11
	Client P.O.:	Date Extracted: 12/30/11
		Date Analyzed: 12/30/11

**TPH gas + Volatile Organic Compounds in  $\mu\text{g}/\text{m}^3$ \***

Extraction Method: TO15

Analytical Method: TO15

Work Order: 1112721

Lab ID	1112721-001A				Reporting Limit for DF = 1 and Pressure Ratio (Final/Initial) = 2
Client ID	VMP-1				
Matrix	Soil Gas				
Initial Pressure (psia)	12.17				
Final Pressure (psia)	24.34				

Compound	Concentration				$\mu\text{g}/\text{m}^3$	ug/L
Benzene	ND				6.5	NA
Ethylbenzene	ND				8.8	NA
Naphthalene	ND				11	NA
Toluene	ND				7.7	NA
TPH(g)	ND				1800	NA
Xylenes, Total	ND				27	NA

**Surrogate Recoveries (%)**

%SS1:	102				
%SS2:	97				
%SS3:	100				
Comments					

\*vapor samples are reported in  $\mu\text{g}/\text{m}^3$ .

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

# surrogate diluted out of range or surrogate coelutes with another peak.

%SS = Percent Recovery of Surrogate Standard

DF = Dilution Factor



## QC SUMMARY REPORT FOR ASTM D 1946-90

W.O. Sample Matrix: SoilGas

QC Matrix: SoilGas

BatchID: 63661

WorkOrder: 1112721

EPA Method: ASTM D 1946-90		Extraction: ASTM D 1946-90		Spiked Sample ID: N/A					
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
	%	%	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Oxygen	N/A	100	N/A	N/A	N/A	127	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 63661 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1112721-001A	12/23/11	12/27/11	12/27/11 5:23 PM				

LCS = Laboratory Control Sample

DHS ELAP Certification 1644

 QA/QC Officer



## QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 63660

WorkOrder: 1112721

EPA Method: TO15	Extraction: TO15							Spiked Sample ID: N/A		
	Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
		nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Acrylonitrile		N/A	25	N/A	N/A	N/A	87.2	N/A	N/A	70 - 130
tert-Amyl methyl ether (TAME)		N/A	25	N/A	N/A	N/A	86.6	N/A	N/A	70 - 130
Benzene		N/A	25	N/A	N/A	N/A	82.9	N/A	N/A	70 - 130
Benzyl chloride		N/A	25	N/A	N/A	N/A	80.2	N/A	N/A	70 - 130
Bromodichloromethane		N/A	25	N/A	N/A	N/A	87.5	N/A	N/A	70 - 130
Bromoform		N/A	25	N/A	N/A	N/A	89	N/A	N/A	70 - 130
t-Butyl alcohol (TBA)		N/A	25	N/A	N/A	N/A	117	N/A	N/A	70 - 130
Carbon Disulfide		N/A	25	N/A	N/A	N/A	82.5	N/A	N/A	70 - 130
Carbon Tetrachloride		N/A	25	N/A	N/A	N/A	87.9	N/A	N/A	70 - 130
Chlorobenzene		N/A	25	N/A	N/A	N/A	85.4	N/A	N/A	70 - 130
Chloroethane		N/A	25	N/A	N/A	N/A	71.8	N/A	N/A	70 - 130
Chloroform		N/A	25	N/A	N/A	N/A	86.2	N/A	N/A	70 - 130
Chloromethane		N/A	25	N/A	N/A	N/A	98.1	N/A	N/A	70 - 130
Dibromochloromethane		N/A	25	N/A	N/A	N/A	90.1	N/A	N/A	70 - 130
1,2-Dibromo-3-chloropropane		N/A	25	N/A	N/A	N/A	76.7	N/A	N/A	70 - 130
1,2-Dibromoethane (EDB)		N/A	25	N/A	N/A	N/A	88.8	N/A	N/A	70 - 130
1,3-Dichlorobenzene		N/A	25	N/A	N/A	N/A	100	N/A	N/A	70 - 130
1,4-Dichlorobenzene		N/A	25	N/A	N/A	N/A	99	N/A	N/A	70 - 130
Dichlorodifluoromethane		N/A	25	N/A	N/A	N/A	124	N/A	N/A	70 - 130
1,1-Dichloroethane		N/A	25	N/A	N/A	N/A	86.4	N/A	N/A	70 - 130
1,2-Dichloroethane (1,2-DCA)		N/A	25	N/A	N/A	N/A	90.3	N/A	N/A	70 - 130
cis-1,2-Dichloroethene		N/A	25	N/A	N/A	N/A	87	N/A	N/A	70 - 130
trans-1,2-Dichloroethene		N/A	25	N/A	N/A	N/A	87.7	N/A	N/A	70 - 130
1,2-Dichloropropane		N/A	25	N/A	N/A	N/A	83.9	N/A	N/A	70 - 130
cis-1,3-Dichloropropene		N/A	25	N/A	N/A	N/A	87.4	N/A	N/A	70 - 130
trans-1,3-Dichloropropene		N/A	25	N/A	N/A	N/A	88.5	N/A	N/A	70 - 130
Diisopropyl ether (DIPE)		N/A	25	N/A	N/A	N/A	83.3	N/A	N/A	70 - 130
1,4-Dioxane		N/A	25	N/A	N/A	N/A	104	N/A	N/A	70 - 130
Ethyl acetate		N/A	25	N/A	N/A	N/A	100	N/A	N/A	70 - 130
Ethyl tert-butyl ether (ETBE)		N/A	25	N/A	N/A	N/A	86.6	N/A	N/A	70 - 130
Ethylbenzene		N/A	25	N/A	N/A	N/A	82.3	N/A	N/A	70 - 130

LCS = Laboratory Control Sample

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

DHS ELAP Certification 1644

QA/QC Officer



## QC SUMMARY REPORT FOR TO15

W.O. Sample Matrix: Soilgas

QC Matrix: Soilgas

BatchID: 63660

WorkOrder: 1112721

EPA Method: TO15	Extraction: TO15							Spiked Sample ID: N/A		
	Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)		
		nL/L	nL/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS
Freon 113		N/A	25	N/A	N/A	N/A	83.2	N/A	N/A	70 - 130
Hexachlorobutadiene		N/A	25	N/A	N/A	N/A	88.2	N/A	N/A	70 - 130
4-Methyl-2-pentanone (MIBK)		N/A	25	N/A	N/A	N/A	98.1	N/A	N/A	70 - 130
Methyl-t-butyl ether (MTBE)		N/A	25	N/A	N/A	N/A	89	N/A	N/A	70 - 130
Methylene chloride		N/A	25	N/A	N/A	N/A	101	N/A	N/A	70 - 130
Naphthalene		N/A	25	N/A	N/A	N/A	79.9	N/A	N/A	70 - 130
Styrene		N/A	25	N/A	N/A	N/A	81.5	N/A	N/A	70 - 130
1,1,1,2-Tetrachloroethane		N/A	25	N/A	N/A	N/A	80.5	N/A	N/A	70 - 130
1,1,2,2-Tetrachloroethane		N/A	25	N/A	N/A	N/A	86.3	N/A	N/A	70 - 130
Tetrachloroethene		N/A	25	N/A	N/A	N/A	84.9	N/A	N/A	70 - 130
Tetrahydrofuran		N/A	25	N/A	N/A	N/A	82.9	N/A	N/A	70 - 130
Toluene		N/A	25	N/A	N/A	N/A	83.7	N/A	N/A	70 - 130
1,2,4-Trichlorobenzene		N/A	25	N/A	N/A	N/A	72.9	N/A	N/A	70 - 130
1,1,1-Trichloroethane		N/A	25	N/A	N/A	N/A	90.1	N/A	N/A	70 - 130
1,1,2-Trichloroethane		N/A	25	N/A	N/A	N/A	85	N/A	N/A	70 - 130
Trichloroethene		N/A	25	N/A	N/A	N/A	83.1	N/A	N/A	70 - 130
1,2,4-Trimethylbenzene		N/A	25	N/A	N/A	N/A	86.7	N/A	N/A	70 - 130
1,3,5-Trimethylbenzene		N/A	25	N/A	N/A	N/A	88.2	N/A	N/A	70 - 130
Vinyl Chloride		N/A	25	N/A	N/A	N/A	104	N/A	N/A	70 - 130
%SS1:		N/A	500	N/A	N/A	N/A	104	N/A	N/A	70 - 130
%SS2:		N/A	500	N/A	N/A	N/A	103	N/A	N/A	70 - 130
%SS3:		N/A	500	N/A	N/A	N/A	104	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 63660 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1112721-001A	12/23/11	12/30/11	12/30/11 1:52 PM	1112721-001A	12/23/11	12/30/11	12/30/11 1:52 PM

LCS = Laboratory Control Sample

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

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QA/QC Officer