Mr. Paresh Khatri
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Former Exxon Station
5175 Broadway
Oakland, California
ACHCSA Fuel Leak Case No. RO0000139
SFRWQCB Site No. 01-0958
UST Fund Claim No. 003406

Dear Mr. Khatri:

I, Mr. Ernie Nadel of Rockridge Heights, LLC, 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 is true and correct to the best of my knowledge.

Feb. 15, 2011

Sincerely,

Ernie Nadel

Ernie Nadel
Rockridge Heights, LLC

August 26, 2011

VIA ALAMEDA COUNTY FTP SITE

Ms. Donna Drogos
Alameda County Environmental Health
1331 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: **Groundwater Monitoring and Remediation Report – Second Quarter 2011**
5175 Broadway Street
Oakland, California
ACEH Fuel Leak Case No. RO#0000139

Dear Ms. Drogos:

On behalf of Rockridge Heights LLC, Pangea Environmental Services, Inc., has prepared this *Groundwater Monitoring and Remediation Report — Second Quarter 2011.* The report describes groundwater monitoring, sampling, site remediation, and other site activities. The dramatic contaminant reduction in site wells achieved by site remediation is illustrated on Figures 5 and 6. This monitoring was performed six days following temporary remediation system shutdown to allow subsurface equilibration.

If you have any questions or comments, please call me at (510) 435-8664.

Sincerely,
Pangea Environmental Services, Inc.

Bob Clark-Riddell, P.E.
Principal Engineer

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

cc: Rockridge Heights, LLC, C/O Ernie Nadel, 6100 Pinewood Road, Oakland, California 94611
SWRCB Geotracker (Electronic copy)

GROUNDWATER MONITORING AND REMEDIATION REPORT – SECOND QUARTER 2011

5175 Broadway
Oakland, California

August 26, 2011

Prepared for:

Rockridge Heights, LLC
C/O Ernie Nadel
6100 Pinewood Road
Oakland, California 94611

Prepared by:

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

Written by:

REGISTERED PROFESSIONAL ENGINEER
ROBERT G. CLARK-RIDDELL
No. C 049629
Exp. 9/30/2012
CIVIL
STATE OF CALIFORNIA

Morgan Gillies
Project Manager

Bob Clark-Riddell, P.E.
Principal Engineer

INTRODUCTION

On behalf of Rockridge Heights, LLC, Pangea Environmental Services, Inc. (Pangea) conducted groundwater monitoring and sampling, and remediation system operation and sampling during this quarter at the subject site (Figure 1). The purpose of the monitoring and sampling is to evaluate dissolved contaminant concentrations, determine the groundwater flow direction, and inspect site wells for separate-phase hydrocarbons (SPH). The purpose of the remediation is to clean up petroleum hydrocarbons from a historic fuel release. Current groundwater analytical results and elevation data are shown on Figures 2 and 3. Current and historical groundwater data are summarized on Table 1. Site remediation data are summarized on Tables 3 and 4.

SITE BACKGROUND

The subject property is located at 5175 Broadway Street, at the southwest corner of the intersection of Broadway and Coronado Avenue in Oakland, California in Alameda County (Figure 1). The site is approximately 0.6 miles south-southeast of Highway 24 and approximately 2.3 miles east of Interstate 80 and the San Francisco Bay. The property is relatively flat lying, with a slight slope to the south-southwest, and lies at an elevation of approximately 160 feet above mean sea level. Topographic relief in the area surrounding the site also slopes generally towards the south-southwest. The western site boundary is the top of an approximately 10 foot high retaining wall that separates the site from an adjacent apartment complex.

The property has been vacant since 1979 and was formerly occupied by an Exxon Service Station used for fuel sales and automobile repair. The site is approximately 13,200 square feet in area and the majority of the ground surface is paved with concrete and/or asphalt, although the former tank location is not paved. Land use to the west and northwest is residential, including apartment buildings and single family homes. Properties to the northeast, east and south of the site are commercial. The site and adjacent properties are shown on Figure 2.

Environmental compliance work commenced when the site USTs were removed in January 1990. Three 8,000-gallon steel single-walled USTs, associated piping, and a 500-gallon steel single-walled waste oil tank were removed. Tank Project Engineering, Inc. (TPE) conducted the tank removal and observed holes in all four tanks. Approximately 700 tons of contaminated soil was excavated during tank removal and was subsequently remediated and reused for onsite backfill by TPE. In April 1990, TPE installed and sampled monitoring wells MW-1, MW-2 and MW-3. In June 1991, Soil Tech Engineering (STE), subsequently renamed Environmental Soil Tech Consultants (ESTC), installed monitoring wells STMW-4 and STMW-5. Groundwater monitoring was conducted on the site intermittently until October 2002. Golden Gate Tank Removal (GGTR) performed additional assessment in January and February 2006. In June 2006, the property was purchased by Rockridge Heights, LLC. Pangea commenced quarterly groundwater monitoring at the site in July 2006. MTBE is not

considered to be a contaminant of concern because use of the site for fuel sales predates widespread use of MTBE in gasoline and because analytical results have not shown significant detections of MTBE.

In January and March 2007, Pangea installed twelve wells (MW-2C, MW-3A, MW-3C, MW-4A, MW-5A, MW-5B, MW-5C, MW-6A, MW-7B, MW-7C, MW-8A and MW-8C) and three offsite soil borings to help define the vertical and lateral extent of groundwater contamination. Pangea also abandoned four monitoring wells (MW-2, MW-3, STMW-4 and STMW-5) to reduce the risk of vertical contaminant migration and improve the quality of monitoring data. New wells installed at the site were categorized according to the depths of their screen intervals. Shallow (A-zone) wells have screen intervals of approximately 10 to 15 feet bgs, which generally straddle the top of the water table and are generally screened in surficial fill and alluvium. Intermediate-depth (B-zone) wells are screened at approximately 15 to 20 feet bgs, either in surficial strata or underlying fractured bedrock, while deep (C-zone) wells are generally screened at approximately 20 to 25 feet bgs and into fractured bedrock. Well MW-1 is screened across both the A-zone and B-zone.

In April 2007, Pangea performed a dual-phase extraction (DPE) pilot test to evaluate whether DPE is an appropriate remedial technology to remove residual hydrocarbons from beneath the site. In July 2007, Pangea submitted an Interim Remedial Action Plan for site corrective action.

In August 2007, Pangea installed three offsite monitoring wells (MW-9A, MW-9C and MW-10A) and conducted subslab vapor sampling in the commercial building located immediately south of the site. The purpose of the offsite well installation was to determine the downgradient extent of contaminant migration, and to help evaluate downgradient effects of any future remediation conducted onsite. The purpose of the subslab vapor sampling was to determine whether vapor migrating from underlying groundwater had impacted soil vapor. Soil gas sampling was also conducted near the southern and western edge of the property. Soil gas sampling and offsite monitoring well installation is described in Pangea's *Soil Gas Sampling and Well Installation Report* dated October 23, 2007. Further subslab/soil gas sampling was conducted at the two adjacent properties in June 2008 and reported in Pangea's *Additional Soil Gas Sampling Report* dated July 14, 2008.

In response to a letter from ACEH dated June 10, 2008, Pangea submitted a *Revised Site Conceptual Model and Corrective Action Plan* (Revised CAP) dated July 23, 2008. ACEH commented on the Revised CAP in a letter dated July 31, 2008 and Pangea prepared a *Corrective Action Plan Addendum* dated August 11, 2008 to address ACEH comments. In a letter dated August 22, 2008, ACEH approved the CAP and Addendum as a 'Draft CAP' and initiated the public-participation process. The *Final Corrective Action Plan* dated March 25, 2009 recommended remediation via DPE and air sparging. In response to an ACEH letter dated April 16, 2009, Pangea submitted a *Final Corrective Action Plan – Addendum* dated May 18, 2009, which provided justification for the recommended remedial action. ACEH approved the *Final CAP Addendum* in a letter dated

June 18, 2009. On August 19, 2009, Pangea oversaw installation of six dual-phase extraction (DPE) wells and one air sparging (AS) well to facilitate implementation of the approved corrective action plan. Operation of the DPE system began on December 8, 2010 and operation of the AS system began on March 16, 2011.

GROUNDWATER MONITORING AND SAMPLING

On June 10, 2011, Pangea conducted groundwater monitoring and sampling at the site in accordance with the groundwater monitoring program in Appendix A. The monitoring was performed after approximately 6 days of surface equilibration following DPE/AS shutdown on June 4, 2011. Site monitoring wells were gauged for depth-to-water and inspected for separate-phase hydrocarbons (SPH). To obtain water levels representative of the piezometric surface, technicians removed all well caps (allowing water levels to equilibrate) and turned off the remediation system four days prior to sampling.

Prior to sample collection, approximately three casing volumes of water were purged using disposable bailers, an electric submersible pump, or a clean PVC bailer (although fewer casing volumes were purged if the well dewatered). During well purging, field technicians measured the pH, temperature and conductivity of the water. 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 stored onsite in DOT-approved 55-gallon drums. Groundwater monitoring field data sheets, including purge volumes and field parameter measurements, are presented in Appendix B.

MONITORING RESULTS

Current and historical groundwater elevation and analytical data are described below and summarized on Table 1, Figure 2 and Figure 3. To facilitate data evaluation, well construction details are summarized on Table 2. Groundwater samples were analyzed for total petroleum hydrocarbons as diesel (TPHd) by EPA Method 8015C with silica gel cleanup; total petroleum hydrocarbons as gasoline (TPHg) by modified EPA Method 8015C; and benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 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 June 10, 2011, shallow groundwater (A-zone) flows generally *southwestwards* throughout most of the site and turns *southwards* downgradient from the site, as shown on Figure 2. The relatively high groundwater elevation measured in well MW-6A suggests that shallow

groundwater is mounded in the former UST excavation and that the local flow direction radiates outwards away from the former excavation area towards the northeast corner of the site in the direction of MW-4A. These observations are interpreted as indicating that the unpaved former UST excavation has acted as a collector for rainwater and that the asphalt pavement covering the remainder of the site serves to reduce infiltration elsewhere while directing rainwater to the unpaved UST excavation area. The current inferred flow direction in shallow groundwater is generally consistent with previous monitoring results. In addition, groundwater flow direction may be affected by dual-phase extraction (DPE) from site wells.

Groundwater flow in deep groundwater (C-zone) is generally *southeastwards* to *southwards* across the site and turns southeast beneath the adjacent commercial property, as shown on Figure 3. Generally, the elevation of the piezometric surface for C-zone wells is lower than elevations for A-zone wells, indicating that a downward gradient is present. The inferred flow direction is generally consistent with previous monitoring results, and may be affected by DPE at the site.

Hydrocarbon Distribution in Groundwater

Current Distribution: The dramatic contaminant reduction in site wells achieved by site remediation is illustrated on Figures 5 and 6. This monitoring was performed six days following temporary remediation system shutdown to allow subsurface equilibration. The maximum TPHg and benzene concentrations detected this quarter were 5,100 µg/L and 350 µg/L, respectively, in source area well MW-3A. The maximum TPHd concentration detected this quarter was 5,100 µg/L in source area well MW-8A. Hydrocarbon concentrations were generally within historic ranges and trends in most site wells, except for *historic low* concentrations described below. No measurable thickness of separate-phase hydrocarbons (SPH) was observed in any monitoring wells this quarter, although an immeasurable sheen was observed by the laboratory in the sample from monitoring well MW-8A.

Most importantly, *historic low* concentrations of TPHg and benzene were detected in shallow well MW-4A, deep wells MW-3C, MW-7B and MW-7C, and remediation wells DPE-2, DPE-3 and DPE-4. These historic low concentrations are attributed to DPE and AS remediation at the site. For example, benzene concentrations in well MW-3C were reduced from 450 µg/L in March 2011 to 7.6 µg/L in June 2011, while TPHg concentrations were similarly reduced from 22,000 µg/L to 780 µg/L in the same time frame. TPHg and benzene concentration trends for key shallow and deep wells are illustrated on Figures 5 and 6, respectively.

Historic Distribution: Shallow (A-zone) groundwater contains petroleum hydrocarbons at elevated concentrations in two primary areas near the former UST excavation: a northern area in the vicinity of well MW-4A, and a southwestern area in the vicinity of wells MW-3A and MW-8A. Prior shallow grab groundwater sampling data also indicates that the southern area of contamination extends to the southern site boundary in the vicinity of wells MW-7B and MW-7C (where *benzene* concentrations are apparently

biodegrading in these deeper wells). The non-detect concentrations of hydrocarbons in wells MW-9A and MW-10A indicate that offsite migration of petroleum hydrocarbons in shallow groundwater is minimal. The observed distribution of hydrocarbons in A-zone groundwater is presumably due to plume migration radially away from the excavation area, likely caused by mounding of groundwater within the uncapped former UST excavation during the rainy season.

Contaminant distribution in deeper groundwater differs from the distribution of hydrocarbons in shallow groundwater. Elevated contaminant concentrations within deeper groundwater (B-zone and C-zone) are apparently present in the vicinity of wells MW-3C, MW-7B and MW-7C in the central and southern portions of the site. Again, the apparent biodegradation of benzene and select other compounds in wells MW-7B and MW-7C suggests that deeper hydrocarbons are attenuating. Site remediation is also likely improving site conditions. Well screen intervals for shallow and deep wells are summarized on Table 2.

Fuel Oxygenate Distribution in Groundwater

No MTBE was detected above reporting limits in any samples obtained from site monitoring wells this monitoring event. MTBE is not a contaminant of concern at this site both due to the lack of detections, and because the USTs were removed in 1990 prior to widespread use of MTBE as a fuel oxygenate.

REMEDIATION SYSTEM 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 4. Extraction and treatment is performed using a 25 hp liquid ring vacuum pump with a 400 cubic foot per minute (cfm) electric catalytic oxidizer. 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 10 remediation wells (DPE-1 through DPE-6 and MW-3A, MW-4A, MW-7B and MW-8A). 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 200-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 Ingersoll-Rand rotary-screw air compressor capable of injecting 16 cfm of air and reaching pressures of 125 psig. Injection into the seven air sparge wells (AS-1,

MW-1, MW-2C, MW-3C, MW-5B, MW-7C and MW-8C) is controlled by timer-activated solenoid valves and individual well needle valves on the well flow meters. The remediation system layout is shown on Figure 4.

Operation and Performance

DPE and AS system operation commenced on December 8, 2010 and March 16, 2011, respectively. The DPE system was initially operated to target elevated impact within the northern portion of the site (wells DPE-1, MW-3A, MW-4A and MW-8A). After initial contaminant mass removal rates decreased, DPE remediation was focused on the southern portion of the site, and AS was commenced soon thereafter. AS was initiated on wells MW-2C and MW-3C near the center of the site, and later expanded to include well MW-7C and well MW-8C. System operation and performance data is summarized on Tables 3 and 4. Subsequent DPE/AS targets wells across the site to optimize hydrocarbon removal.

As of July 19, 2011, the DPE system operated for a total of about 3,836 hours (approximately 160 days). Laboratory analytical and performance data indicates that soil vapor removal rates observed during this reporting period ranged from 2.6 to 10 lbs/day TPHg and 0.01 to 0.09 lbs/day benzene. As of July 19, 2011, the vapor-phase portion of the DPE system removed a total of approximately 1,088 lbs TPHg and 7.6 lbs benzene. The groundwater portion of the DPE system has removed a total of approximately 0.25 lbs TPHg and 0.006 lbs benzene. Additional hydrocarbon removal is provided by biodegradation stimulated by oxygenation from DPE/AS processes.

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.

Evaluation of Remediation Effectiveness

The calculated hydrocarbon mass removal and reported concentration reduction in groundwater suggest that the DPE/AS system is effectively remediating the site subsurface. Hydrocarbon mass removal and concentration reduction are described above. Pangea plans to continue operation and optimization of the DPE/AS system during the dry season to target residual elevated impact. Future groundwater monitoring will help evaluate the effectiveness of dual-phase extraction and air sparging. The TPHg and benzene concentration trends for key shallow and deep groundwater wells are illustrated on Figures 5 and 6.

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 – Site Location Map
Figure 2 – Groundwater Elevation Contour and Hydrocarbon Concentration Map (Shallow)
Figure 3 – Groundwater Elevation Contour and Hydrocarbon Concentration Map (Deep)
Figure 4 – Remediation System Layout
Figure 5 – TPHg and Benzene Concentration Trends in Shallow Groundwater
Figure 6 – TPHg and Benzene Concentration Trends in Deep Groundwater

Table 1 – Groundwater Analytical Data
Table 2 – Well Construction Details
Table 3 – SVE System Performance Data
Table 4 – GWE System Performance Data

Appendix A – Groundwater Monitoring Program
Appendix B – Groundwater Monitoring Field Data Sheets
Appendix C – Laboratory Analytical Reports

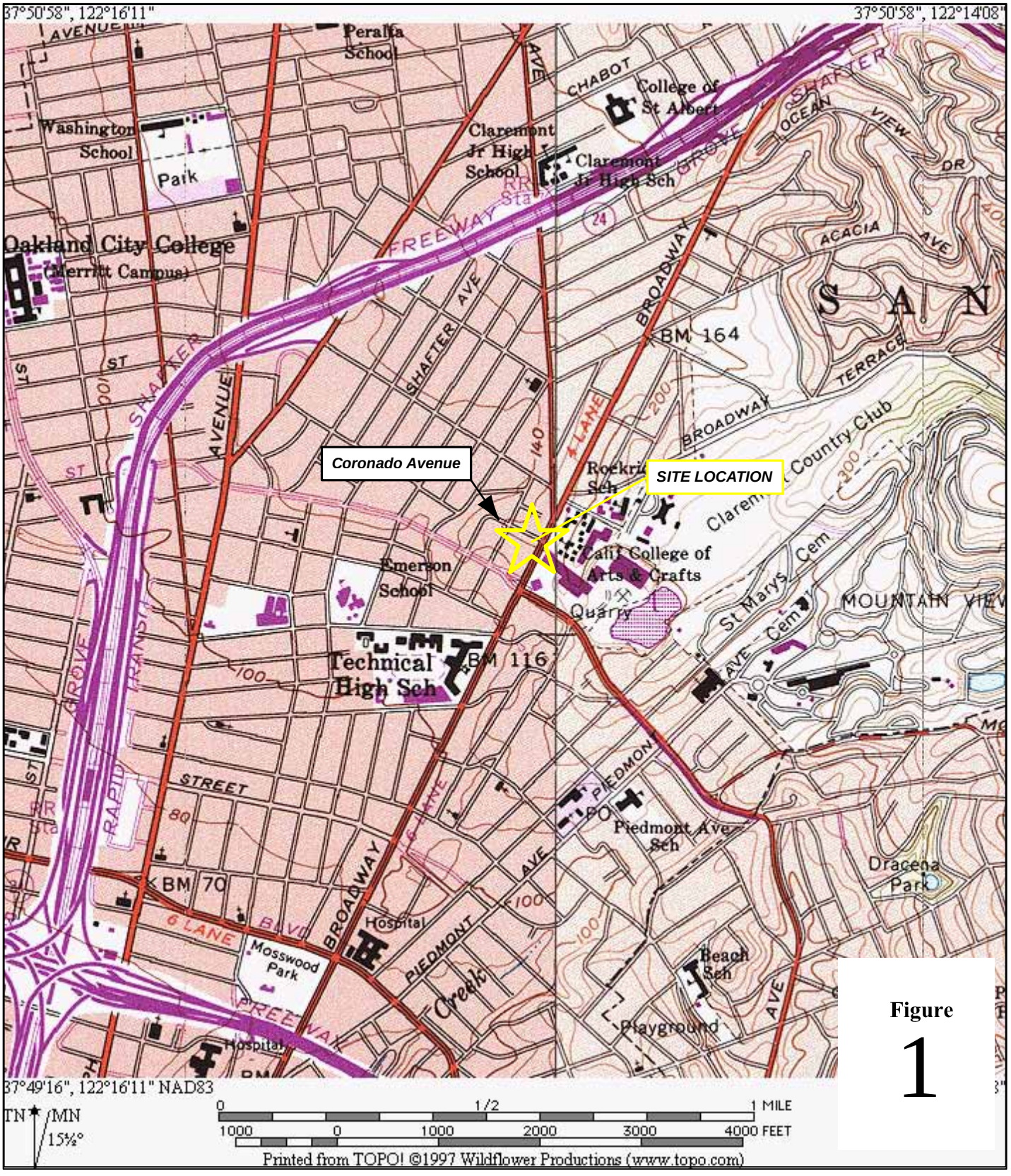


Figure 1

FeinerBroadway site loc.ai 8/30/06

Former Exxon Station
5175 Broadway
Oakland, California

PANGEA

Site Location Map

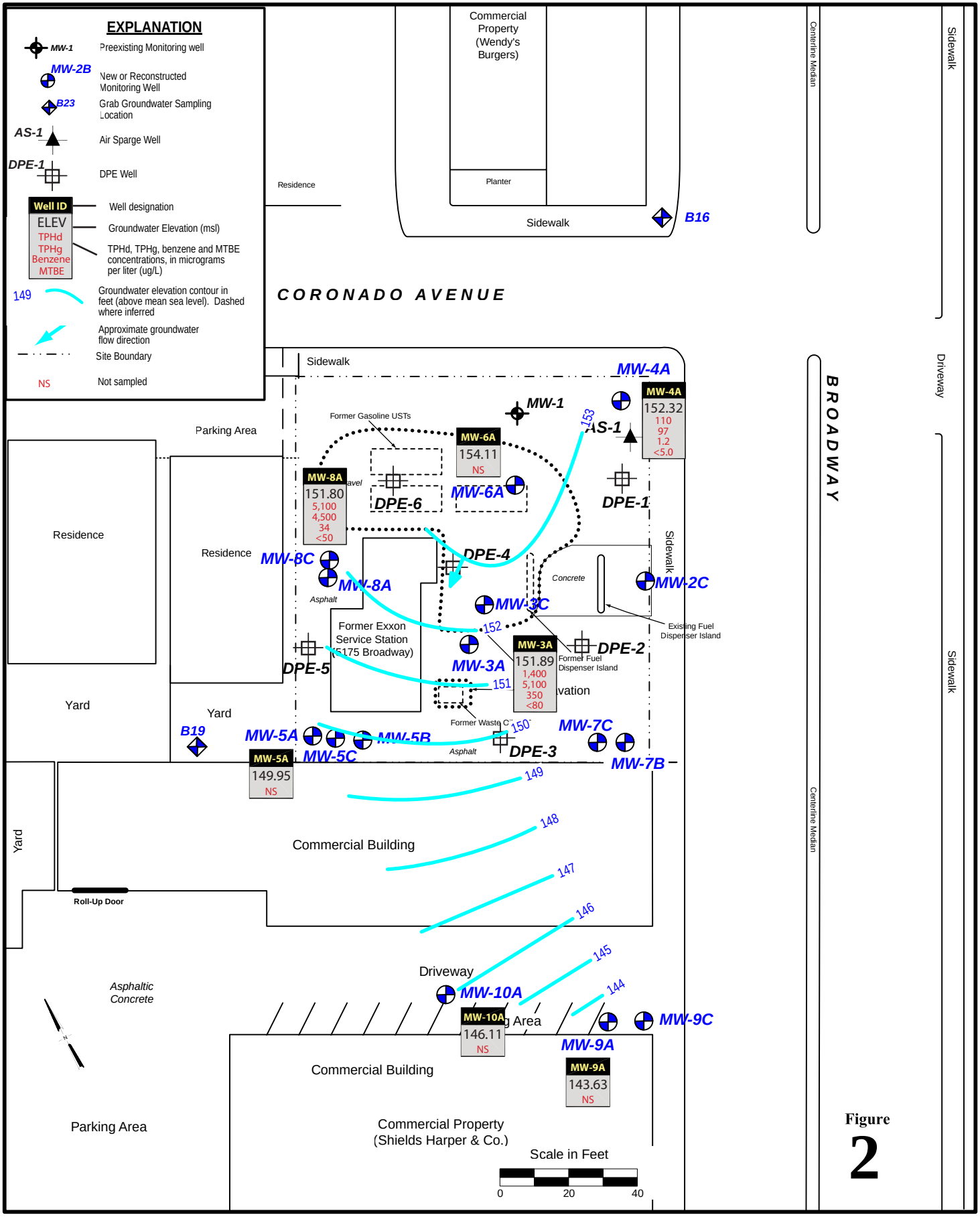


Figure
2

Former Exxon Station
5175 Broadway
Oakland, California

Groundwater Elevation Contour and Hydrocarbon Concentration Map (Shallow)
June 10, 2011

PANGEA

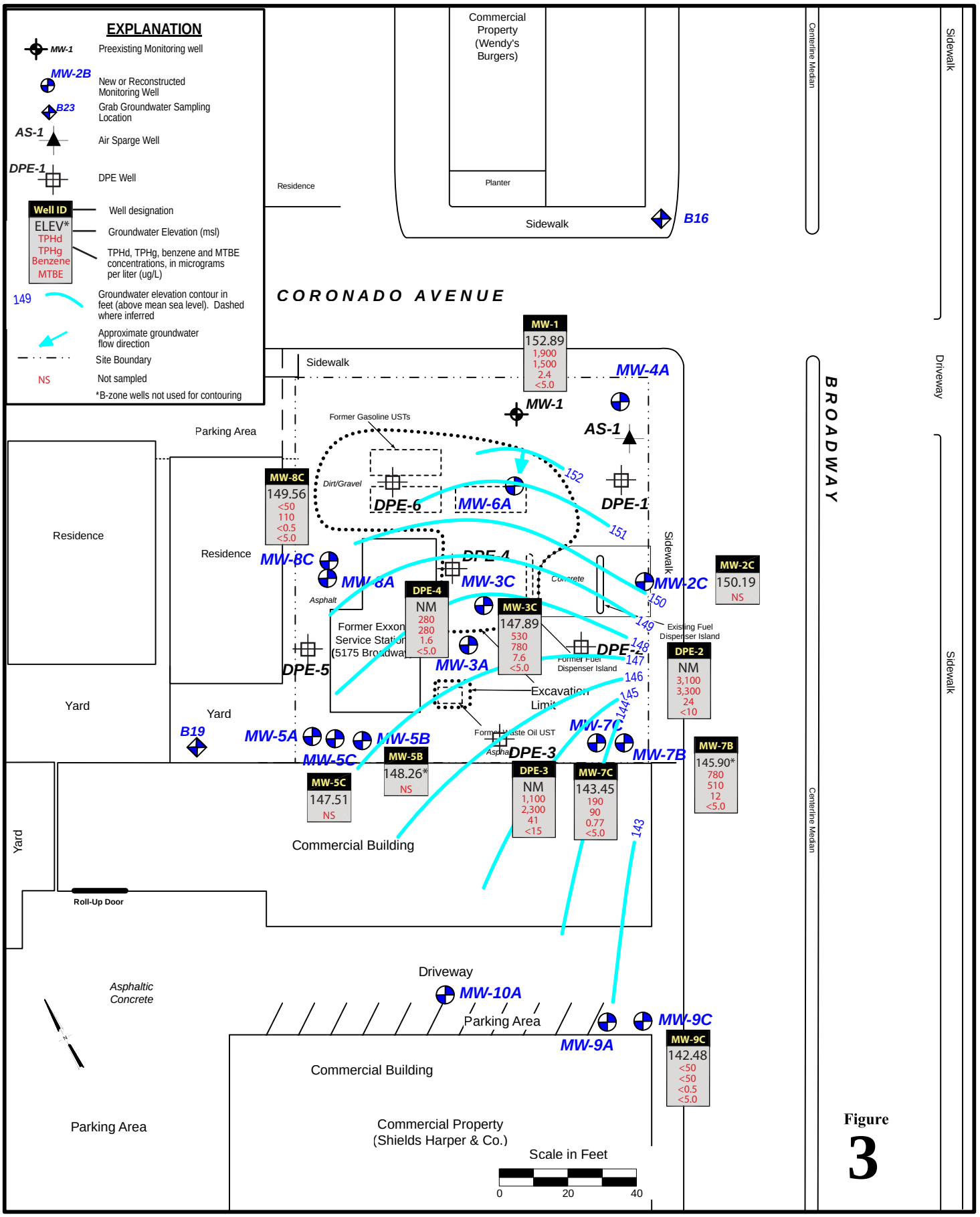


Figure 3

Former Exxon Station
5175 Broadway
Oakland, California

Groundwater Elevation Contour and Hydrocarbon Concentration Map (Deep)
June 10, 2011

PANGEA

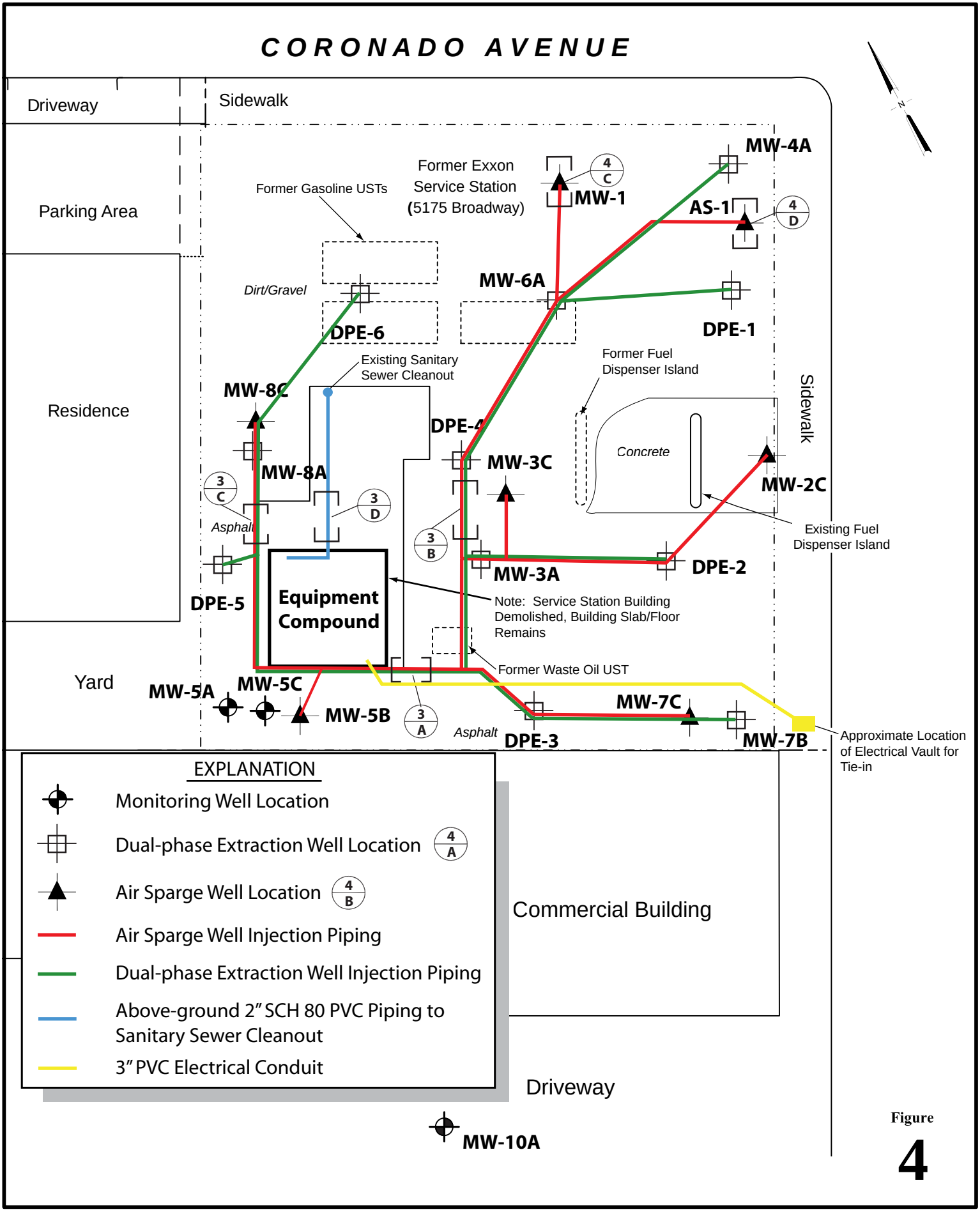
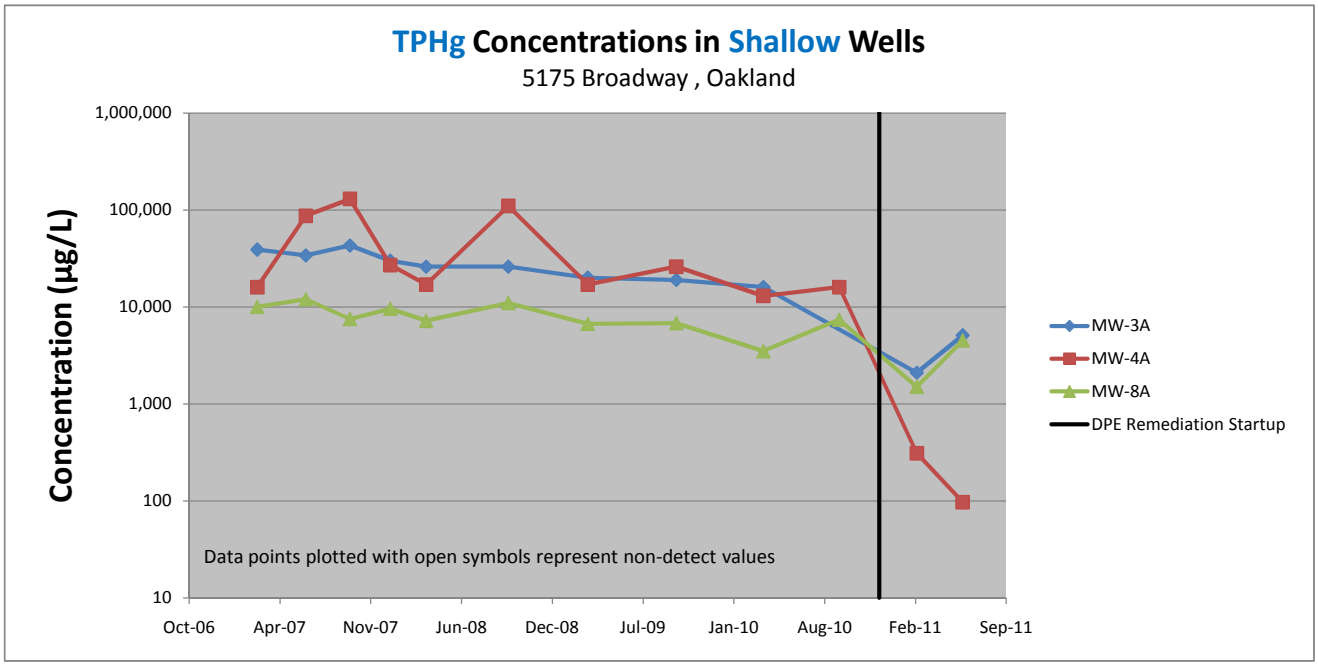


Figure
4

Former Exxon Station
5175 Broadway
Oakland, California

PANGEA

Remediation System Layout



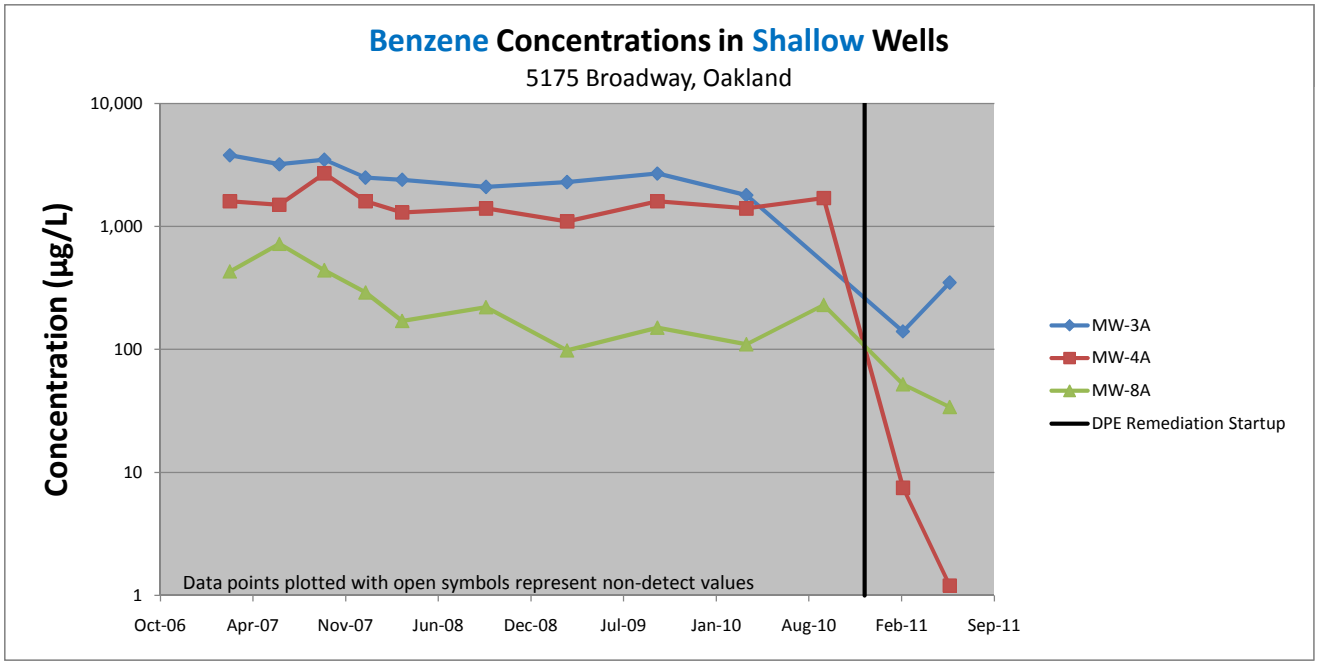
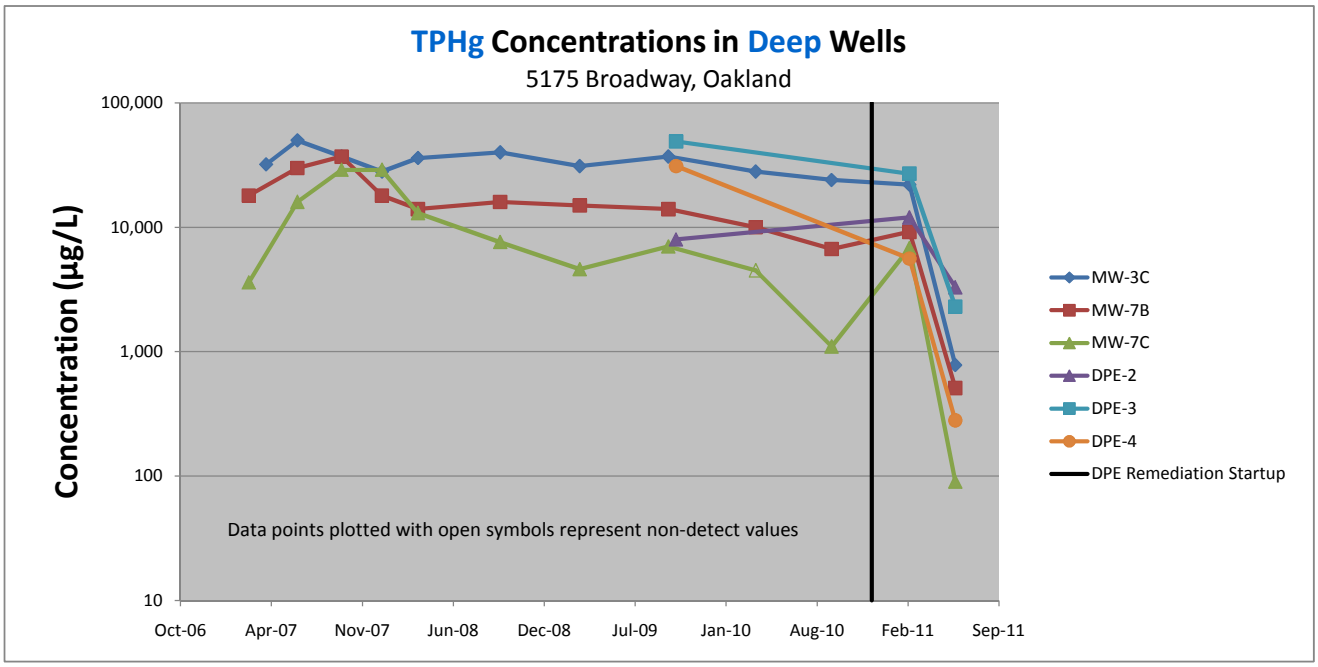


Figure 5. TPHg and Benzene Concentration Trends in Shallow Groundwater



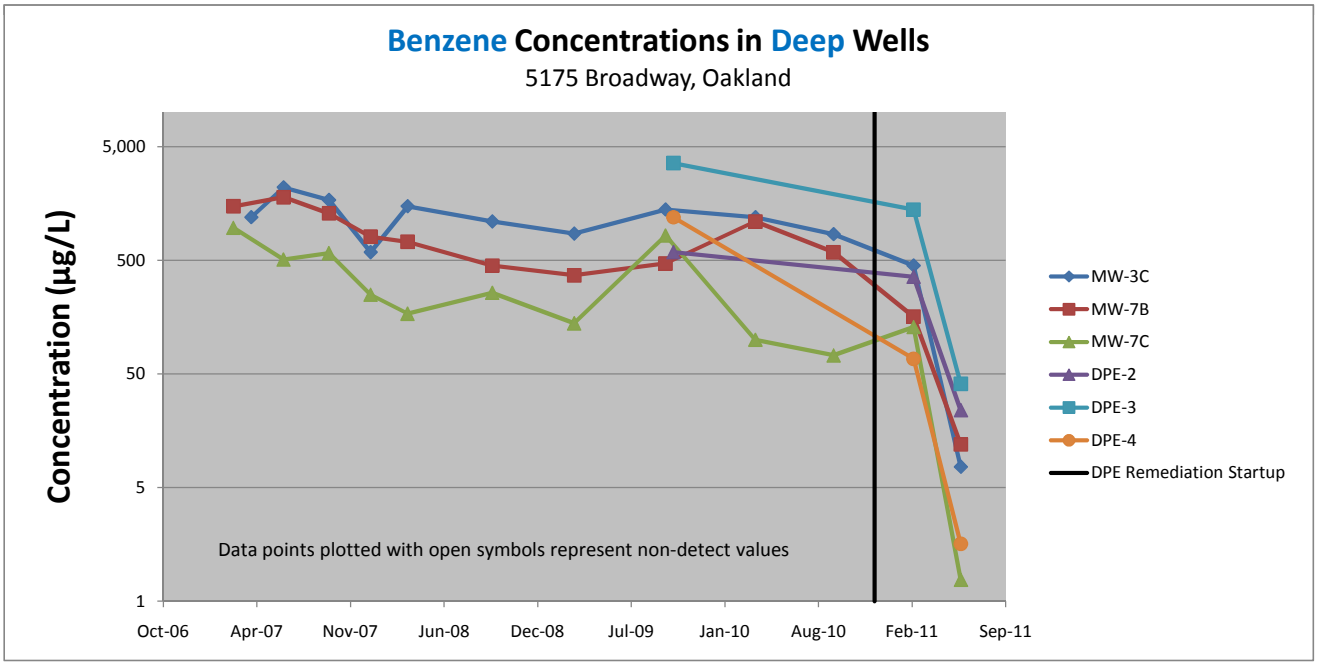


Figure 6. TPHg and Benzene Concentration Trends in Deep Groundwater

Pangea

Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA

Well ID *TOC Elev* *(ft)*	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved Oxygen mg/L
					←			µg/L					→	
SHALLOW WELLS														
MW-3A	03/09/07	--	152.20	9.35	4,500	39,000	3,800	220	830	2,800	<500	--	--	--
(161.55)	03/26/07	--	152.33	9.22	--	--	--	--	--	--	--	--	--	--
(161.57)	06/24/07	--	151.61	9.94	11,000	34,000	3,200	330	990	3,200	<250	--	--	--
	09/29/07	--	150.21	11.36	11,000	43,000	3,500	150	730	2,200	<1,000	--	--	--
	12/27/07	--	150.20	11.37	8,700	30,000	2,500	24	520	930	<100	--	--	--
	03/15/08	--	152.27	9.30	10,000	26,000	2,400	110	700	1,200	<250	--	--	--
	09/12/08	--	149.57	12.00	9,000	26,000	2,100	29	560	280	<100	--	--	--
	03/06/09	--	152.66	8.91	6,500	20,000	2,300	59	740	410	<180	--	--	--
	09/17/09	--	149.47	12.10	6,900	19,000	2,700	33	660	110	<250	--	--	--
	03/28/10	--	152.50	9.07	4,300	16,000	1,800	38	220	340	<100	--	--	--
	09/11/10	--	149.44	12.13	Insufficent water to sample									
	03/01/11	--	150.01	11.56	2,200	2,100	140	10	37	97	<10	--	--	--
	06/10/11	**--**	**151.89**	**9.68**	**1,400**	**5,100**	**350**	**140**	**110**	**490**	**<80**	**--**	**--**	**--**
MW-4A	03/09/07	--	152.88	9.56	3,600	16,000	1,600	36	37	150	<250	--	--	--
(162.44)	03/26/07	--	152.56	9.88	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	152.02	10.42	110,000	87,000	1,500	59	290	800	<500	--	--	--
	09/29/07	--	151.33	11.11	170,000	130,000	2,700	69	400	1,400	<240	--	--	--
	12/27/07	--	152.33	10.11	19,000	27,000	1,600	31	100	320	<90	--	--	--
	03/15/08	--	152.51	9.93	38,000	17,000	1,300	<50	120	380	<500	--	--	--
	09/12/08	--	151.72	10.72	120,000	110,000	1,400	<50	210	660	<500	--	--	--
	03/06/09	--	153.84	8.60	32,000	17,000	1,100	15	<10	190	<100	--	--	--
	09/17/09	--	151.44	11.00	25,000	26,000	1,600	63	140	320	<350	--	--	--
	03/28/10	--	152.69	9.75	9,200	13,000	1,400	29	16	160	<100	--	--	--
	09/11/10	--	151.34	11.10	23,000	16,000	1,700	43	140	330	<250	--	--	--
	03/01/11	--	148.94	13.50	270	310	7.5	1.0	<0.5	7.7	<5.0	--	--	--
	06/10/11	**--**	**152.32**	**10.12**	**110**	**97**	**1.2**	**<0.5**	**<0.5**	**1.7**	**<5.0**	**--**	**--**	**--**
MW-5A	03/09/07	--	150.40	10.42	56	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
(160.82)	03/26/07	--	150.00	10.82	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	148.94	11.88	<50	180	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/29/07	--	147.86	12.96	--	--	--	--	--	--	--	--	--	--
	12/27/07	--	148.40	12.42	--	--	--	--	--	--	--	--	--	--
	03/15/08	--	149.96	10.86	<50	180	0.91	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/12/08	--	147.50	13.32	Insufficent water to sample									
	03/06/09	--	151.33	9.49	230	460	2.0	3.0	0.68	1.9	<5.0	--	--	--
	09/17/09	--	148.02	12.80	Insufficent water to sample									
	03/28/10	--	150.30	10.52	<50	69	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	09/11/10	--	147.72	13.10	Insufficent water to sample									
	03/01/11	--	150.98	9.84	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	06/10/11	**--**	**149.95**	**10.87**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**

Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA

Well ID *TOC Elev* *(ft)*	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved Oxygen mg/L
					←				µg/L				→	
MW-6A	03/09/07	--	154.91	6.67	380	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
(161.58)	03/26/07	--	154.41	7.17	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	153.79	7.79	590	140	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/29/07	--	152.84	8.74	540	52	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	12/27/07	--	154.27	7.31	170	94	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/15/08	--	154.42	7.16	150	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/12/08	--	152.92	8.66	510	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/06/09	--	155.76	5.82	110	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/17/09	--	152.89	8.69	280	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/28/10	--	154.55	7.03	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/11/10	--	152.99	8.59	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/01/11	--	154.57	7.01	67	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	06/10/11	**--**	**154.11**	**7.47**	--	--	--	--	--	--	--	--	--	--
MW-8A	03/09/07	--	152.05	9.52	4,200	10,000	430	18	<10	88	<100	--	--	--
(161.57)	03/26/07	--	151.74	9.83	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	151.40	10.17	17,000	12,000	720	500	230	880	<300	--	--	--
	09/29/07	--	150.64	10.95	5,300	7,500	440	67	26	240	<90	--	--	--
(161.59)	12/27/07	--	152.00	9.59	13,000	9,600	290	100	90	360	<100	--	--	--
	03/15/08	--	152.00	9.59	7,500	7,200	170	28	270	110	<100	--	--	--
	09/12/08	--	150.27	11.32	9,900	11,000	220	31	110	180	<50	--	--	--
	03/06/09	--	153.01	8.58	5,500	6,700	98	17	57	63	<50	--	--	--
	09/17/09	--	150.83	10.76	5,200	6,800	150	19	10	35	<25	--	--	--
	03/28/10	--	151.86	9.73	2,600	3,500	110	7.2	<1.7	19	<17	--	--	--
	09/11/10	--	150.43	11.16	4,800	7,400	230	25	15	40	<90	--	--	--
	03/01/11	--	152.80	8.79	1,000	1,500	52	3.5	24	11	<10	--	--	--
	06/10/11	**--**	**151.80**	**9.79**	**5,100**	**4,500**	**34**	**11**	**42**	**240**	**<50**	--	--	--
MW-9A	09/29/07	--	142.76	12.61	86	<50	2.6	<0.5	<0.5	<0.5	<5.0	--	--	--
(155.37)	12/27/07	--	143.51	11.86	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/15/08	--	143.35	12.02	<50	<50	0.85	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/12/08	--	142.60	12.77	<50	<50	1.2	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/06/09	--	144.18	11.19	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/17/09	--	142.91	12.46	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/28/10	--	143.49	11.88	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/11/10	--	142.71	12.66	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/01/11	--	143.86	11.51	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	06/10/11	**--**	**143.63**	**11.74**	--	--	--	--	--	--	--	--	--	--
MW-10A	09/29/07	--	144.35	10.53	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
(154.88)	12/27/07	--	145.50	9.38	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/15/08	--	145.96	8.92	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/12/08	--	143.82	11.06	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/06/09	--	147.45	7.43	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/17/09	--	144.11	10.77	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/28/10	--	146.25	8.63	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/11/10	--	144.19	10.69	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/01/11	--	147.12	7.76	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	06/10/11	**--**	**146.11**	**8.77**	--	--	--	--	--	--	--	--	--	--

Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA

Well ID *TOC Elev* *(ft)*	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved Oxygen mg/L
					←				µg/L				→	
DEEP WELLS														
MW-1	04/30/89	--	--	--	--	200	18	5	2	12	--	--	--	--
(97.71)	05/17/90	--	88.45	9.26	--	--	--	--	--	--	--	--	--	--
	09/26/90	--	87.79	9.92	--	1,300	55	31	120	100	--	--	--	--
	01/14/91	--	88.17	9.54	--	3,100	350	83	86	130	--	--	--	--
(102.04)	07/03/91	--	92.62	9.42	--	580	32	41	40	55	--	--	--	--
	11/11/91	--	92.59	9.45	--	330	20	2	2	11	--	--	--	--
(101.83)	03/04/92	--	93.90	7.93	--	810	11	5	10	23	--	--	--	--
	06/02/92	--	92.85	8.98	--	2,200	93	32	40	120	--	--	--	--
	09/28/92	--	92.54	9.29	--	2,900	24	78	19	37	--	--	--	--
	01/11/93	--	94.27	7.56	--	1,700	5.7	6	11	28	--	--	--	--
	08/15/94	--	92.64	9.19	--	2,000	120	3	6	16	--	--	--	--
(97.50)	11/07/96	--	88.77	8.73	270	1,200	3	1.1	1.5	3.8	<0.5	--	--	--
	02/12/97	--	89.58	7.92	<50	1,800	13	5.7	4.8	17	<0.5	--	--	--
	06/16/97	--	88.46	9.04	<50	330	27	<0.5	<0.5	1.2	<0.5	--	--	--
	09/30/97	--	89.94	7.56	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
(97.50)	01/27/98	--	89.54	7.96	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	04/24/98	--	89.52	7.98	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	08/17/98	--	88.52	8.98	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	11/16/98	--	88.60	8.90	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	02/16/99	--	88.86	8.64	<50	110	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	05/17/99	--	89.00	8.50	--	280	1.1	0.6	<0.5	<0.5	<0.5	--	--	--
	08/17/99	--	88.26	9.24	86	790	5.6	4.3	4.5	11	<5.0	--	--	--
	11/17/99	--	87.06	10.44	--	1,300	3.6	1.9	2.7	6.6	<1.0	--	--	--
	02/17/00	--	89.02	8.48	--	580	1.1	2.3	3.6	4.9	<5.0	--	--	--
	05/17/00	--	89.26	8.24	--	1,500	130	6.8	6.1	<5.0	<5.0	--	--	--
	08/17/00	--	88.73	8.77	--	550	160	<25	<25	<25	<25	--	--	--
	11/15/00	--	88.46	9.04	--	130	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--
	02/16/01	--	89.90	7.60	--	400	26	<5.0	<5.0	<5.0	<5.0	--	--	--
	01/11/02	--	89.42	8.08	160	600	74	53	14	52	110	--	--	--
(161.03)	07/01/02	--	152.01	9.02	280	670	25	<5.0	<5.0	<5.0	<5.0	--	--	--
	10/04/02	--	151.29	9.74	520	1,800	130	7.8	8.1	14	<5.0	--	--	--
	07/28/06	--	151.93	9.10	86	250	42	1.7	1.4	3.1	<1.0	51	1.5	0.21
	10/16/06	--	151.98	9.05	110	390	16	<0.5	1.5	2.2	<0.5	41	1.6	0.17
(161.10)	01/09/07	--	152.90	8.20	160	530	21	1.7	2.8	5.1	--	--	--	0.22
	03/26/07	--	152.84	8.26	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	152.12	8.98	220	500	24	1.1	2.2	4.2	<5.0	--	--	--
	09/29/07	--	151.44	9.66	180	540	19	1.2	2.3	5.3	<5.0	--	--	--
	12/27/07	--	152.60	8.50	200	290	10	0.65	1.2	3.0	<5.0	--	--	--
	03/15/08	--	152.72	8.38	340	680	24	1.1	1.9	2.9	<10	--	--	--
	09/12/08	--	151.86	9.24	320	1,000	13	<0.5	0.61	1.4	<5.0	--	--	--
	03/06/09	--	154.40	6.70	2,700	2,500	28	3.2	4.8	10	<17	--	--	--
	09/17/09	--	151.67	9.43	170	300	4.4	<0.5	<0.5	2.3	<5.0	--	--	--
	03/28/10	--	153.05	8.05	290	1,000	16	1.2	1.1	4.2	<5.0	--	--	--
	09/11/10	--	151.50	9.60	190	270	6.9	<0.5	0.75	2.1	<5.0	--	--	--
	03/01/11	--	152.61	8.49	1,600	940	<0.5	<0.5	0.55	2.0	<5.0	--	--	--
	06/10/11	--	**152.89**	**8.21**	**1,900**	**1,500**	**2.4**	**<0.5**	**0.84**	**7.9**	**<5.0**	**--**	**--**	**--**
MW-2C	03/09/07	--	152.24	8.41	140	450	40	9.3	2.9	16	<10	--	--	--
(160.65)	03/26/07	--	151.93	8.72	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	151.21	9.44	160	440	30	1.8	5.9	7.4	<5.0	--	--	--
	09/29/07	--	150.45	10.20	120	200	13	<0.5	<0.5	2.0	<5.0	--	--	--
	12/27/07	--	151.42	9.23	83	190	13	0.83	<0.5	1.9	<5.0	--	--	--
	03/15/08	--	151.83	8.82	120	250	24	2.2	5.2	4.5	<5.0	--	--	--

Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA

Well ID *TOC Elev* *(ft)*	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved Oxygen mg/L
					←				µg/L				→	
MW-2C	09/12/08	--	150.73	9.92	<50	130	7.1	<0.5	1.2	0.83	<5.0	--	--	--
(cont.)	03/06/09	--	153.21	7.44	95	180	8.0	1.1	1.5	2.8	<5.0	--	--	--
	09/17/09	--	150.57	10.08	<50	64	4.3	<0.5	0.62	0.88	<5.0	--	--	--
	03/28/10	--	152.02	8.63	<50	94	4.6	<0.5	0.77	1.2	<5.0	--	--	--
	09/11/10	--	150.31	10.34	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/01/11	--	146.88	13.77	66	670	9.9	<0.5	0.92	0.58	<5.0	--	--	--
	06/10/11	**--**	**150.19**	**10.46**	--	--	--	--	--	--	--	--	--	--
MW-3C	03/26/07	--	151.15	10.64	--	--	--	--	--	--	--	--	--	--
(161.79)	04/16/07	--	150.87	10.92	36,000	32,000	1,200	710	600	1,900	<500	--	--	--
	06/24/07	--	149.43	12.36	200,000	50,000	2,200	4,100	860	6,100	<500	--	--	--
	09/29/07	--	148.33	13.46	48,000	37,000	1,700	3,300	830	4,800	<1,000	--	--	--
	12/27/07	--	149.79	12.00	29,000	28,000	590	900	630	2,000	<500	--	--	--
	03/15/08	--	150.70	11.09	21,000	36,000	1,500	2,400	570	3,700	<500	--	--	--
	09/12/08	--	148.37	13.42	11,000	40,000	1,100	1,200	600	3,000	<500	--	--	--
	03/06/09	--	152.04	9.75	13,000	31,000	860	420	540	2,200	<500	--	--	--
	09/17/09	--	148.59	13.20	14,000	37,000	1,400	690	400	4,300	<1,200	--	--	--
	03/28/10	--	151.15	10.64	10,000	28,000	1,200	540	750	3,200	<150	--	--	--
	09/11/10	--	148.48	13.31	13,000	24,000	850	390	550	3,100	<1,000	--	--	--
	03/01/11	--	148.27	13.52	19,000	22,000	450	110	600	1,500	<300	--	--	--
	06/10/11	**--**	**147.89**	**13.90**	**530**	**780**	**7.6**	**3.4**	**2.7**	**16**	**<5.0**	**--**	**--**	**--**
MW-5B	03/09/07	--	146.42	15.08	59	140	1.3	0.77	<0.5	1.6	<5.0	--	--	--
(161.50)	03/26/07	--	148.88	12.62	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	147.98	13.52	53	52	1.1	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/29/07	--	146.60	14.90	<50	<50	0.95	<0.5	<0.5	<0.5	<5.0	--	--	--
	12/27/07	--	148.41	13.09	<50	58	1.4	<0.5	0.60	<0.5	<5.0	--	--	--
	03/15/08	--	148.95	12.55	<50	61	2.6	1.1	1.1	3.0	<5.0	--	--	--
	09/12/08	--	146.35	15.15	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/06/09	--	150.36	11.14	<50	67	2.0	1.4	1.3	3.3	<5.0	--	--	--
	09/17/09	--	146.94	14.56	<50	58	0.66	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/28/10	--	149.38	12.12	<50	110	2.7	0.78	<0.5	1.6	<5.0	--	--	--
	09/11/10	--	145.55	15.95	<50	110	0.56	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/01/11	--	149.53	11.97	97	120	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	06/10/11	**--**	**148.26**	**13.24**	--	--	--	--	--	--	--	--	--	--
MW-5C	03/09/07	--	148.12	12.91	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
(161.03)	03/26/07	--	148.41	12.62	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	147.58	13.45	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/29/07	--	146.41	14.62	66	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	12/27/07	--	148.10	12.93	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/15/08	--	148.48	12.55	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/12/08	--	146.04	14.99	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/06/09	--	149.73	11.30	<50	<50	0.52	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/17/09	--	146.60	14.43	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/28/10	--	148.68	12.35	<50	<50	1.3	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/11/10	--	146.22	14.81	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/01/11	--	148.95	12.08	66	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	06/10/11	**--**	**147.51**	**13.52**	--	--	--	--	--	--	--	--	--	--

Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA

Well ID *TOC Elev* *(ft)*	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved Oxygen mg/L
					←				µg/L				→	
MW-7B	03/09/07	--	147.97	11.18	930	18,000	1,500	1,600	140	1,800	<600	--	--	--
(159.15)	03/26/07	--	148.10	11.05	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	147.54	11.61	40,000	30,000	1,800	2,400	240	2,800	<700	--	--	--
(159.02)	09/29/07	--	146.91	12.11	16,000	37,000	1,300	1,500	180	2,700	<500	--	--	--
	12/27/07	--	147.37	11.65	7,700	18,000	810	880	38	1,600	<50	--	--	--
	03/15/08	--	147.66	11.36	7,900	14,000	730	820	110	1,200	<250	--	--	--
	09/12/08	--	146.87	12.15	27,000	16,000	450	340	19	1,300	<120	--	--	--
	03/06/09	--	147.90	11.12	15,000	15,000	370	270	13	1,000	<150	--	--	--
	09/17/09	--	146.94	12.08	10,000	14,000	470	330	44	1,100	<170	--	--	--
	03/28/10	--	148.17	10.85	2,300	10,000	1,100	750	46	1,100	<300	--	--	--
	09/11/10	--	146.81	12.21	2,900	6,700	590	260	84	550	<210	--	--	--
	03/01/11	--	147.28	11.74	31,000	9,200	160	96	53	510	<50	--	--	--
	06/10/11	**--**	**145.90**	**13.12**	**780**	**510**	**12**	**5.5**	**1.4**	**28**	**<5.0**	**--**	**--**	**--**
MW-7C	03/09/07	--	145.44	13.09	190	3,600	970	100	12	90	<120	--	--	--
(158.53)	03/26/07	--	147.53	11.00	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	146.65	11.88	7,100	16,000	510	520	190	1,300	<100	--	--	--
	09/29/07	--	146.21	12.32	11,000	29,000	580	1,400	600	4,800	<1,000	--	--	--
	12/27/07	--	146.74	11.79	56,000	29,000	250	410	430	3,300	<50	--	--	--
	03/15/08	--	147.45	11.08	7,000	13,000	170	58	170	1,300	<100	--	--	--
	09/12/08	--	146.02	12.51	2,600	7,600	260	38	76	330	<50	--	--	--
	03/06/09	--	147.65	10.88	1,900	4,600	140	21	15	93	<15	--	--	--
	09/17/09	--	146.23	12.30	2,200	7,000	830	38	23	90	<100	--	--	--
	03/28/10	--	147.32	11.21	940	4,500	<100	79	2.0	59	66	--	--	--
	09/11/10	--	145.77	12.76	350	1,100	73	3.6	2.0	5.2	<15	--	--	--
	03/01/11	--	146.11	12.42	1,400	6,800	130	9.6	3.1	8.0	<10	--	--	--
	06/10/11	**--**	**143.45**	**15.08**	**190**	**90**	**0.77**	**1.1**	**<0.5**	**1.1**	**<5.0**	**--**	**--**	**--**
MW-8C	03/09/07	--	149.18	12.15	<50	150	9.8	1.3	2.0	3.9	<5.0	--	--	--
(161.33)	03/26/07	--	149.56	11.77	--	--	--	--	--	--	--	--	--	--
	06/24/07	--	148.96	12.37	<50	<50	0.57	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/29/07	--	148.35	12.98	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	12/27/07	--	149.84	11.49	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/15/08	--	149.94	11.39	<50	110	6.0	1.7	2.4	2.4	<5.0	--	--	--
	09/12/08	--	148.18	13.15	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/06/09	--	151.25	10.08	<50	<50	2.1	<0.5	0.87	0.76	<5.0	--	--	--
	09/17/09	--	148.63	12.70	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/28/10	--	149.94	11.39	<50	84	6.6	0.89	2.9	2.7	<5.0	--	--	--
	09/11/10	--	148.33	13.00	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/01/11	--	150.45	10.88	65	280	16	3.7	7.9	6.2	<10	--	--	--
	06/10/11	**--**	**149.56**	**11.77**	**<50**	**110**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**--**	**--**	**--**
MW-9C	09/29/07	--	142.67	12.27	390	68	2.2	0.88	<0.5	<0.5	<5.0	--	--	--
(154.94)	12/27/07	--	143.40	11.54	<50	<50	0.84	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/15/08	--	143.98	10.96	<50	<50	0.55	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/12/08	--	142.53	12.41	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/06/09	--	144.09	10.85	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/17/09	--	142.84	12.10	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/28/10	--	143.34	11.60	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	09/11/10	--	139.13	15.81	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	03/01/11	--	143.74	11.20	480	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--
	06/10/11	**--**	**142.48**	**12.46**	**<50**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**--**	**--**	**--**

Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA

Well ID *TOC Elev* *(ft)*	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved Oxygen mg/L
					←				µg/L				→	
REMEDIATION WELLS														
AS-1	10/04/09	--	--	11.38	--	<50	3.6	<0.5	<0.5	<0.5	<5.0	--	--	--
DPE-1	10/04/09	--	--	10.38	--	1,600	210	4.4	5.1	34	<35	--	--	--
DPE-2	10/04/09	--	--	11.33	--	8,000	590	220	92	760	<250	--	--	--
	03/01/11	--	--	16.10	14,000	12,000	360	130	96	1,700	<50	--	--	--
	06/10/11	**--**	**--**	**12.41**	**3,100**	**3,300**	**24**	**40**	**16**	**340**	**<10**	**--**	**--**	**--**
DPE-3	10/04/09	--	--	11.85	--	49,000	3,600	4,400	1,300	6,500	<2,500	--	--	--
	03/01/11	--	--	11.37	51,000	27,000	1,400	810	870	3,300	<700	--	--	--
	06/10/11	**--**	**--**	**15.34**	**1,100**	**2,300**	**41**	**19**	**16**	**130**	**<15**	**--**	**--**	**--**
DPE-4	10/04/09	--	--	11.50	--	31,000	1,200	2,900	530	4,700	<1,200	--	--	--
	03/01/11	--	--	13.88	5,100	5,600	68	100	42	350	<50	--	--	--
	06/10/11	**--**	**--**	**11.07**	**280**	**280**	**1.6**	**4.2**	**2.5**	**25**	**<5.0**	**--**	**--**	**--**
DPE-5	10/04/09	--	--	14.46	--	2,900	78	71	29	260	<50	--	--	--
DPE-6	10/04/09	--	--	11.05	--	1,800	6.7	5.2	2.6	34	<5.0	--	--	--
DESTROYED WELLS														
MW-2	04/30/89	--	--	--	--	230	39	18	5	23	--	--	--	--
(97.78)	05/17/90	--	87.78	10.00	--	--	--	--	--	--	--	--	--	--
	09/29/90	--	86.95	10.83	--	850	970	5	25	47	--	--	--	--
	01/14/91	--	87.15	10.63	--	3,100	30	52	24	34	--	--	--	--
(102.02)	07/03/91	--	91.94	10.08	--	1,590	30	52	24	34	--	--	--	--
	11/11/91	--	91.81	10.21	--	960	320	15	4	29	--	--	--	--
	03/04/92	--	93.32	8.70	--	1,500	9.5	8.4	9.8	22	--	--	--	--
	06/02/92	--	92.50	9.52	--	2,800	84	41	59	95	--	--	--	--
	09/28/92	--	91.93	10.09	--	1,600	47	20	47	97	--	--	--	--
	01/11/93	--	93.50	8.52	--	2,500	8.6	10	17	32	--	--	--	--
(97.49)	08/15/94	--	87.58	9.91	--	6,000	450	60	100	95	--	--	--	--
	11/07/96	--	87.47	10.02	780	4,200	25	4.9	8.1	14	<0.5	--	--	--
	02/12/97	--	88.58	8.91	5,700	1,800	16	3.1	3.4	8.8	<0.5	--	--	--
	06/16/97	--	87.74	9.75	<50	2,500	22	5.1	7.8	11	<0.5	--	--	--
	09/30/97	--	89.60	7.89	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	01/27/98	--	89.11	8.38	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	04/24/98	--	88.81	8.68	1,400	2,100	18	6.5	4.8	21	<0.5	--	--	--
	08/17/98	--	87.75	9.74	<50	2,900	5.1	4.5	5.8	17	<0.5	--	--	--
	11/16/98	--	87.35	10.14	<50	1,400	2.1	1.9	2.3	4.8	<0.5	--	--	--
	02/16/99	--	88.57	8.92	<50	1,600	82	16	<2.5	40	59	--	--	--
	05/17/99	--	88.23	9.26	--	8,200	43	73	140	100	<250	--	--	--
	08/17/99	--	87.45	10.04	260	2,900	20	81	17	38	<5.0	--	--	--
	11/17/99	--	85.97	11.52	<50	2,600	7	3.7	5.3	12.9	<1.0	--	--	--
	02/17/00	--	87.99	9.50	--	1,700	3.2	6.8	11	12.3	<5.0	--	--	--
	05/17/00	--	88.65	8.84	--	3,800	450	65	110	80	<25	--	--	--
	08/17/00	--	88.99	8.50	--	4,300	440	<50	78	<50	<50	--	--	--
	11/15/00	--	87.55	9.94	--	5,800	320	41	78	64	<25	--	--	--
	02/16/01	--	88.97	8.52	--	2,200	110	20	38	33	<5.0	--	--	--
	01/11/02	--	88.67	8.82	620	3,100	280	86	84	110	<50	--	--	--
(160.98)	07/01/02	--	151.34	9.64	940	2,600	300	29	45	27	<10	--	--	--
	10/04/02	--	150.46	10.52	390	4,000	440	66	140	120	<25	--	--	--

Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA

Well ID *TOC Elev* *(ft)*	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved Oxygen mg/L
					←				µg/L				→	
MW-2	07/28/06	--	150.96	10.02	340	1,300	150	9.9	6	18	<0.5	3.6	<0.5	0.17
(cont.)	10/16/06	--	150.45	10.53	76	150	16	1.0	3.5	2.2	<0.5	1.2	<0.5	0.19
	01/09/07	--	151.65	9.33	84	210	27	2.6	8.1	6.8	--	--	--	0.14
	01/25/07	--				Well Destroyed								
MW-3	04/30/90	--	--	--	--	56,000	3,600	8,600	1,300	7,200	--	--	--	--
(98.14)	05/17/90	--	85.72	12.42	--	--	--	--	--	--	--	--	--	--
	09/26/90	--	84.64	13.50	--	54,000	5,100	420	1,600	8,000	--	--	--	--
	01/14/91	--	85.56	12.58	--	35,000	2,600	6,600	1,500	5,700	--	--	--	--
(102.46)	07/03/91	--	90.38	12.08	--	33,000	4,120	4,300	1,400	4,800	--	--	--	--
	11/11/91	--	90.17	12.29	--	57,000	3,900	8,400	2,100	14,000	--	--	--	--
(102.18)	03/04/92	--	91.92	10.26	--	57,000	720	870	81	3,100	--	--	--	--
(97.94)	06/02/92	--	86.54	11.40	--	50,000	240	240	220	740	--	--	--	--
	09/28/92	--	85.30	12.64	--	64,000	110	93	97	250	--	--	--	--
	01/11/93	--	87.84	10.10	--	68,000	210	280	360	990	--	--	--	--
	08/15/94	--	85.74	12.20	--	50,000	870	1,200	1,300	3,000	--	--	--	--
	11/07/96	--	85.54	12.40	470	68,000	33	27	63	120	<0.5	--	--	--
	02/12/97	--	87.71	10.23	3,500	25,000	39	43	15	91	<0.5	--	--	--
	06/16/97	--	86.15	11.79	<50	9,700	26	29	45	81	<0.5	--	--	--
	09/30/97	--	88.54	9.40	1,600	6,000	43	36	12	11	<0.5	--	--	--
	01/27/98	--	88.14	9.80	560	380	5.7	4.1	1.7	9.1	<0.5	--	--	--
	04/24/98	--	88.04	9.90	680	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	08/17/98	--	86.48	11.46	<50	16,000	200	18	31	82	<0.5	--	--	--
	11/16/98	--	85.54	12.40	<50	68,000	86	54	69	130	<0.5	--	--	--
	02/16/99	--	87.22	10.72	<50	33,000	270	110	<5.0	770	170	--	--	--
	05/17/99	--	87.40	10.54	--	72,000	280	230	320	890	<250	--	--	--
	08/17/99	--	85.99	11.95	1,800	20,000	51	41	61	130	<5.0	--	--	--
	11/17/99	--	84.34	13.60	--	1,700	39	22	31	84	<1.0	--	--	--
	02/17/00	--	87.26	10.68	--	8,800	16	39	74	90	<5.0	--	--	--
MW-3	05/17/00	--	87.69	10.25	--	22,000	300	260	410	940	<5.0	--	--	--
(cont.)	08/17/00	--	86.10	11.84	--	15,000	230	140	470	750	<50	--	--	--
	11/15/00	--	86.12	11.82	--	12,000	250	210	390	700	<25	--	--	--
	02/16/01	--	88.26	9.68	--	7,400	40	72	700	250	<25	--	--	--
	01/11/02	--	88.36	9.58	1,900	9,300	230	200	290	580	<25	--	--	--
(161.43)	07/01/02	--	150.29	11.14	5,200	13,000	230	220	450	890	<13	--	--	--
	10/04/02	--	148.61	12.82	4,900	11,000	280	170	450	730	<25	--	--	--
	07/28/06	--		Not Sampled - Unable to locate well										
	10/16/06	--		Not Sampled - Unable to locate well										
	01/09/07	--		Not Sampled - Unable to locate well										
	01/22/07	--	149.81	11.62	93,000	34,000	770	250	760	2,000	<1,000	--	--	--
	03/16/07	--					Well Destroyed							
STMW-4	07/03/91	--	92.58	11.00	--	3,100	610	62	39	150	--	--	--	--
(103.58)	11/11/91	--	92.50	11.08	--	3,600	990	15	2.6	180	--	--	--	--
(101.08)	03/04/92	--	91.64	9.44	--	5,000	35	20	22	71	--	--	--	--
(98.80)	06/02/92	--	88.48	10.32	--	13,000	140	45	63	210	--	--	--	--
	09/28/92	--	88.04	10.76	--	40,000	35	20	48	110	--	--	--	--
	01/11/93	--	89.52	9.28	--	24,000	26	88	92	280	--	--	--	--
	08/15/94	--	88.26	10.54	--	9,000	500	34	46	130	--	--	--	--
	11/07/96	--	88.43	10.37	180	13,000	40	2.9	7.8	19	<0.5	--	--	--
	02/12/97	--	89.44	9.36	5,700	5,300	95	5.3	5.9	18	<0.5	--	--	--

Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA

Well ID *TOC Elev* *(ft)*	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved Oxygen mg/L
					←			µg/L					→	
STMW-4	06/16/97	--	88.40	10.40	<50	5,300	37	6.2	1.7	11	<0.5	--	--	--
(cont.)	09/30/97	--	90.30	8.50	<50	2,700	42	7.7	5.7	26	<0.5	--	--	--
	01/27/98	--	89.90	8.90	300	3,000	60	17	12	49	<0.5	--	--	--
	04/24/98	--	89.30	9.50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	08/17/98	--	88.44	10.36	<50	29,000	36	24	59	160	<0.5	--	--	--
	11/16/98	--	88.24	10.56	<50	13,000	26	21	20	41	--	--	--	--
	02/16/99	--	89.16	9.64	<50	32,000	660	16	16	150	<100	--	--	--
	05/17/99	--	88.84	9.96	--	13,000	1600	30	45	78	<250	--	--	--
	08/17/99	--	88.16	10.64	990	12,000	260	22	33	72	<5.0	--	--	--
	11/17/99	--	86.78	12.02	--	7,900	21	12	17	40	<1.0	--	--	--
	02/17/00	--	89.48	9.32	--	4,900	8.9	21	38	50	<5.0	--	--	--
	05/17/00	--	89.15	9.65	--	9,600	840	<50	61	<50	<50	--	--	--
	08/17/00	--	88.46	10.34	--	5,100	680	<50	62	<50	<50	--	--	--
	11/15/00	--	88.28	10.52	--	3,900	640	<25	26	27	<25	--	--	--
	02/16/01	--	89.60	9.20	--	5,700	560	<25	<25	<25	<25	--	--	--
	01/11/02	--	89.22	9.58	930	4,900	560	59	25	<25	<250	--	--	--
(162.13)	07/01/02	--	151.85	10.28	6,700	6,700	470	18	32	45	<13	--	--	--
	10/04/02	--	151.05	11.08	2,900	13,000	590	26	65	110	<25	--	--	--
	07/28/06	0.04	151.53	10.60	39,000	25,000	960	21	73	130	<5.0	65	<5.0	0.22
	10/16/06	0.06	151.30	10.83	14,000	14,000	790	28	81	130	<5.0	30	<5.0	0.26
	01/09/07	0.03	152.20	9.93			Not Sampled - SPH							0.24
	01/26/07						Well Destroyed							0.24
STMW-5	07/03/91	--	88.70	13.29	--	690	99	81	19	98	--	--	--	--
(101.99)	11/11/91	--	87.99	14.00	--	410	61	2.4	1.4	20	--	--	--	--
(101.36)	03/04/92	--	89.56	11.80	--	460	13	6.5	11	18	--	--	--	--
	06/02/92	--	88.30	13.06	--	1,800	27	20	21	43	--	--	--	--
	09/28/92	--	87.32	14.04	--	1,500	14	6.1	18	22	--	--	--	--
	01/11/93	--	89.75	11.61	--	800	1.8	3	3.1	9.4	--	--	--	--
	08/15/94	--	87.51	13.85	--	3,000	320	62	34	220	--	--	--	--
(97.14)	11/07/96	--	83.47	13.67	330	1,200	11	1.7	4.4	13	<0.5	--	--	--
	02/17/97	--	85.07	12.07	3,700	1,000	11	17	1.7	9.7	<0.5	--	--	--
	06/19/97	--	83.81	13.33	2,300	950	7.4	1	1	7.2	<0.5	--	--	--
	09/30/97	--	85.90	11.24	1,100	710	5.8	4	1	1	<0.5	--	--	--
	01/27/98	--	85.50	11.64	1,100	340	2	1.8	1.6	8.2	<0.5	--	--	--
	04/24/98	--	85.30	11.84	<50	3,300	12	9.4	8.5	37	<0.5	--	--	--
	08/17/98	--	83.94	13.20	<50	5,300	26	17	14	39	<0.5	--	--	--
	11/16/98	--	83.40	13.74	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
	02/16/99	--	84.92	12.22	<50	950	150	3.8	1.4	14	11	--	--	--
	05/17/99	--	84.56	12.58	--	2,800	67	9.4	<2.5	16	30	--	--	--
	08/17/99	--	83.66	13.48	230	2,800	18	17	18	36	<5.0	--	--	--
	11/17/99	--	82.26	14.88	--	1,600	3.9	2.3	3.2	7.5	<1.0	--	--	--
	02/17/00	--	84.58	12.56	--	770	1.5	3.2	5.8	7	<5.0	--	--	--
	05/17/00	--	85.06	12.08	--	4,500	<25	<25	<25	<25	<25	--	--	--
	08/17/00	--	83.58	13.56	--	2,900	170	64	100	250	<10	--	--	--
	11/15/00	--	83.86	13.28	--	2,100	120	24	40	54	<5.0	--	--	--
	02/16/01	--	85.54	11.60	--	850	58	9.8	9.4	18	<5.0	--	--	--
	01/11/02	--	85.42	11.72	<50	920	76	16	16	28	13	--	--	--
(160.65)	07/01/02	--	147.51	13.14	1,500	4,300	71	14	14	36	<5.0	--	--	--
	10/04/02	--	146.13	14.52	60	1,400	71	17	26	35	<5.0	--	--	--
	07/28/06	--	147.30	13.35	370	700	22	4.3	1.2	6.6	<0.5	<0.5	<0.5	0.24
	10/16/06	--	146.91	13.74	240	590	14	1.6	1.3	3.2	<0.5	<0.5	<0.5	0.21
	01/09/07	--	148.19	12.46	180	390	30	3.2	1.8	3.2	--	--	--	0.17
	01/18/07						Well Destroyed							

Table 1. Groundwater Analytical Data - Former Exxon Station, 5175 Broadway, Oakland, CA

Well ID *TOC Elev* *(ft)*	Date Sampled	SPH (ft)	Groundwater Elevation (ft)	Depth to Water (ft)	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DIPE	1,2-DCA	Dissolved Oxygen mg/L
					← µg/L →									
GRAB GROUNDWATER SAMPLING - 2007														
B-18	01/23/07	--	--	7.1	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
B-19	03/19/07	--	--	4	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--
GRAB GROUNDWATER SAMPLING - 2006														
B1-W	02/01/06	--	--	9.5	<84	710	(0.52)	(0.59)	(<0.50)	(0.66)	<1.0	<5.0	<0.50	--
B3-W	02/08/06	--	--	9.63	<280	23,000	(3,300)	(660)	(170)	(910)	<50	380	<25	--
B4-W	02/08/06	--	--	8.24	--	9,700	(320)	(13)	(200)	(180)	<20	1,300	12	--
B5-W	02/08/06	--	--	6.96	--	10,000	(150)	(11)	(210)	(190)	<10	<50	<5.0	--
B6-W	02/06/06	--	--	12.1	--	5,600	(3.9)	(3.1)	(54)	(61)	<5.0	<25	<2.5	--
B7-W	02/08/06	--	--	11.72	--	8,000	(2,200)	(300)	(240)	(830)	<20	<100	53	--
B8-W	02/08/06	--	--	9.97	--	18,000	(330)	(53)	(440)	(1,200)	<20	<100	11	--
B10-W	02/06/06	--	--	13.3	--	6,800	(<5.0)	(5.7)	(170)	(69)	<10	<50	<5.0	--
B11-W	02/10/06	--	--	14.3	--	230,000	(13,000)	(19,000)	(960)	(20,000)	<200	<1,000	150	--
B12-W	02/03/06	--	--	7.92	--	460	(1.6)	(2.1)	(1.6)	(3.5)	<1.0	<5.0	0.62	--
B13-W	02/03/06	--	--	11.67	<60	1,700	(12)	(9.4)	(18)	(22)	<5.0	<25	<2.5	--
B14-W	02/06/06	--	--	13.1	--	38,000	(410)	(25)	(290)	(95)	<50	<250	<25	--
B15-W	02/01/06	--	--	8.75	<620	2,700	(3.2)	(2.7)	(22)	(4.3)	<5.0	<25	<2.5	--

Abbreviations:

µg/L = Micrograms per liter - approximately equal to parts per billion = ppb.

mg/L = Milligrams per liter - approximately equal to parts per million = ppm.

SPH = Separate-phase hydrocarbons encountered in well (value in parentheses is thickness in feet).

Groundwater elevation is calculated according to the relationship: groundwater elevation = TOC (elevation) - (depth to water) + (0.8)(SPH thickness).

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

TPHd = Total petroleum hydrocarbons as diesel by EPA Method 8015C.

BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8021B.

MTBE = Methyl tertiary-butyl ether by EPA Method 8021B. (Concentrations in parentheses are by EPA Method 8260B).

DIPE = Diisopropyl ether by EPA Method 8260B.

1,2-DCA = 1,2-Dichloroethane by EPA Method 8260B.

Table 2 – Well Use and Construction Details–5175 Broadway, Oakland, CA

Well ID	Total Depth of Well (feet bgs)	Screened Interval (ft bgs)	Well Casing Nominal Diameter (inches)	Sand & Slot Size
DPE – Existing Wells				
MW-3A (DPE)	14	9-14	2	#2/12 – 0.01 Slot
MW-4A (DPE)	15	8-15	2	#2/12 – 0.01 Slot
MW-6A (DPE)	17	8-17	2	#2/12 – 0.01 Slot
MW-7B (DPE)	18.5	15.5-18.5	2	#2/12 – 0.01 Slot
MW-8A (DPE)	15	8-15	2	#2/12 – 0.01 Slot
DPE – New Wells				
DPE 1 – DPE 6	19 – 20	10-13/19-20	2	#2/12 – 0.01 Slot
AIR SPARGING – Existing Wells				
MW-1 (AS)	23	13-23	4	8x20 – 0.02 Slot
MW-2C (AS)	23	18-23	2	#2/12 – 0.01 Slot
MW-3C (AS)	27	22-27	2	#2/12 – 0.01 Slot
MW-5B (AS)	20	17-20	2	#2/12 – 0.01 Slot
MW-7C (AS)	25	20-25	2	#2/12 – 0.01 Slot
MW-8C (AS)	25	20-25	2	#2/12 – 0.01 Slot
AIR SPARGING –New Well				
AS-1	20	16-20	1	#2/12 – 0.01 Slot
GROUNDWATER MONITORING ONLY				
MW-5A	14	10-14	2	#2/12 – 0.01 Slot
MW-5C	27	22-27	2	#2/12 – 0.01 Slot
MW-9A	15.5	7.5-15.5	2	#2/12 – 0.01 Slot
MW-9C	21	17-21	2	#2/12 – 0.01 Slot
MW-10A	18	8-18	2	#2/12 – 0.01 Slot

bgs = below ground surface

Pangea

Table 3. SVE (DPE) Performance Data - 5175 Broadway, Oakland, CA

Date	Wells	Oxidizer Hr Meter Reading (hours)	Interval Time (days)	System Vapor Flow Rate (cfm)	Applied Vacuum ("Hg)	Lab Sample ID	Influent TPHg Data (ppmv)	Influent Benzene Data (ppmv)	Influent OVA Reading (ppmv)	Removal: SVE TPHg Removal Rate (lbs/day)	Removal: SVE Benzene Removal Rate (lbs/day)	Removal: Cumulative SVE TPHg Removal (lbs)	Removal: Cumulative SVE Benzene Removal (lbs)	Emission Reporting: Effluent TPHg Lab (ppmv)	Effluent Benzene Lab (ppmv)	TPHg Abatement Efficiency (lbs/day)	Benzene Abatement Efficiency (lbs/day)	Benzene Emission Rate (lbs/day)	Cumulative Vapor Flow (cf)	Notes
12/08/10	DPE-1, MW-3A, 4A, 8A	5040.8	0.0	65	22	INF-V	**1,300**	**6.4**	1,270	27.1	0.12	0.0	0	---	---	---	---	---	0	Startup Test
12/10/10	DPE-1, MW-3A, 4A, 8A	5051.8	0.5	65	22	---	900	5.7	916	18.8	0.11	8.6	0.05	---	---	---	---	---	42,900	Off. Start.
12/13/10	DPE-1, MW-3A, 4A, 8A	5120.8	2.9	93	20	INF-V	**430**	**1.7**	---	12.8	0.05	45.5	0.18	< **7.0**	< **0.077**	> **98.4**	> **95.5**	**0.002**	427,920	On.
12/22/10	DPE-1, MW-3A, 4A, 8A	5337.2	9.0	125	17	INF-V	**460**	**5.2**	758	18.4	0.19	211.8	1.89	---	---	---	---	---	2,050,920	On. Shutdown due to noise. Restart 12/29.
01/07/11	DPE-1, 4	5585.0	10.3	31	25	INF-V	**640**	**6.1**	1,000	6.4	0.06	277.5	2.46	---	---	---	---	---	2,511,828	Shutdown 1/14 due to noise. Restart 1/19.
02/02/11	DPE-1, 4	6019.4	18.1	31	18	INF-V	**1,200**	**6.1**	1,168	11.9	0.06	493.6	3.45	---	---	---	---	---	3,319,812	Off on arrival, restart. Add oil.
02/22/11	DPE-1, 2, 4, MW-4A	6490.1	19.6	30	18	INF-V	**370**	**1.8**	632	3.6	0.02	563.4	3.76	---	---	---	---	---	4,167,072	On. Add oil.
02/28/11	DPE-1, 2, 4, MW-4A	6633.6	6.0	30	26	---	370	1.8	---	3.6	0.02	584.7	3.85	---	---	---	---	---	4,425,372	On. Shutdown for GWM and restarted.
03/09/11	DPE-1, 2, 4, MW-4A	6797.1	6.8	86	18	INF-V	**77**	**0.12**	54	2.1	0.00	599.2	3.87	---	---	---	---	---	5,269,032	On.
03/15/11	DPE-1, 2, 4, MW-4A	6940.7	6.0	31	21	---	77	0.12	63	0.8	0.00	603.8	3.88	---	---	---	---	---	5,536,128	On.
03/16/11	DPE-2, 3, 4, MW-7B	6966.5	1.1	31	22	---	160	0.12	200	1.6	0.00	605.5	3.88	---	---	---	---	---	5,584,116	On.
03/21/11	DPE-2, 3, 4, MW-7B	7081.1	4.8	53	23	INF-V	**420**	**4.8**	760	7.1	0.07	639.6	4.23	---	---	---	---	---	5,948,544	Start Air Sparging (AS)
03/31/11	DPE-2, 3, 4, MW-7B	7131.3	2.1	98	26	---	350	3.5	603	11.0	0.10	662.6	4.57	---	---	---	---	---	6,243,720	Off. Install additional soundproofing. Restart.
04/06/11	DPE-2, 3, 4, MW-7B	7272.9	5.9	77	24	---	350	3.5	---	8.6	0.08	713.6	4.86	---	---	---	---	---	6,897,912	On. Optimize.
04/12/11	DPE-2, 3, 4, MW-7B	7293.0	0.8	73	17	---	350	3.5	---	8.2	0.07	720.5	5.07	---	---	---	---	---	6,985,950	Off on arrival, restart.
04/26/11	DPE-2, 3, 4, MW-7B, 8A	7626.9	13.9	130	20	INF-V	**240**	**2.5**	259	10.0	0.09	859.7	6.26	---	---	---	---	---	9,590,370	On.
05/04/11	DPE-2, 3, 4, MW-7B, 8A	7818.0	8.0	110	18	---	200	2.0	213	7.1	0.06	915.9	6.77	---	---	---	---	---	10,851,630	Off on arrival, restart.
05/24/11	DPE-2, 3, 4, MW-7B, 8A	8278.0	19.2	104	18	INF-V	**160**	**0.97**	235	5.3	0.03	1018.3	7.33	< **7.0**	< **0.077**	> **95.6**	> **92.1**	**0.002**	13,722,030	On. Add oil.
06/02/11	DPE-1,2,3,4, MW-4A,7B,8A	8488.2	8.8	90	18	---	100	0.50	130	2.9	0.01	1043.5	7.44	---	---	---	---	---	14,857,110	On.
06/06/11	DPE-1,2,3,4, MW-4A,7B,8A	8529.1	1.7	90	18	---	100	0.50	130	2.9	0.01	1048.5	7.47	---	---	---	---	---	15,077,970	Off on arrival. AS shutdown. Off on departure.
06/27/11	DPE-1,2,3,4, MW-4A,7B,8A	8661.0	5.5	90	18	---	100	0.50	130	2.9	0.01	1064.3	7.54	---	---	---	---	---	15,790,230	Off on arrival, blown fuse. Off on departure.
07/11/11	DPE-1,2,3,4, MW-4A,7B,8A	8730.7	2.9	90	18	---	90	0.40	116	2.6	0.01	1071.9	7.57	---	---	---	---	---	16,166,610	Off on arrival, overheating, restart.
07/18/11	DPE-1, 2, 3, MW-4A, 7B, 8A	8874.8	6.0	90	18	---	90	0.40	116	2.6	0.01	1087.5	7.63	---	---	---	---	---	16,944,750	Off on arrival, overheating, restart.
07/19/11	DPE-1, 2, 3, MW-4A, 7B, 8A	8876.3	0.1	87	19	---	100	0.50	127	2.8	0.01	1087.7	7.63	---	---	---	---	---	16,952,580	Off on arrival, overheating, restart.

Notes:
ALL = Wells DPE-1 through DPE-6, MW-3A, MW-4A, MW-7B and MW-8A
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). Flow rate is estimated on select days when anemometer measurements are anomalous (anemometer repair was required 2nd Qtr 2011).
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 ^{3}) x molecular weight (86 lb/lb-mole for TPH-Gas hexane) x 1440 min/day x 1/1,000,000.

Pangea

Table 4. GWE (DPE) System Performance Summary - 5175 Broadway, Oakland, California

Well ID	Date	Totalizer Reading[1] (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
System Influent	12/08/10	0	0	0	--	---	---	---	0.000	0.000	0.000	System startup testing, water not discharged to sewer yet.
	12/10/10	248	248	2	0.09	---	---	---	0.000	0.000	0.000	Off; restart.
	12/14/10	1,120	872	4	0.15	**300**	**4.6**	**ND (<5.0)**	0.002	0.000	0.000	Startup water sampling of influent (12/14)
	12/22/10	3,585	2,465	8	0.21	---	---	---	0.006	0.000	0.000	On. Shutdown due to noise, restarted 12/29.
	01/07/11	7,622	4,037	16	0.18	---	---	---	0.010	0.000	0.000	On. System off 1/14 due to noise, restart 1/19.
	02/02/11	16,840	9,218	26	0.25	**1,300**	**52**	**ND (<10)**	0.100	0.004	0.000	Off on arrival; add oil and restart.
	02/22/11	25,427	8,587	20	0.30	**680**	**8.4**	**ND (<5.0)**	0.049	0.001	0.000	On. Add more oil.
	02/28/11	28,855	3,428	6	0.40	---	---	---	0.019	0.000	0.000	On. Shutdown for GWM and restarted.
	03/09/11	31,981	3,126	9	0.24	---	---	---	0.018	0.000	0.000	On.
	03/15/11	34,398	2,417	6	0.28	---	---	---	0.014	0.000	0.000	On.
	03/16/11	34,961	563	1	0.39	---	---	---	0.003	0.000	0.000	On.
	03/31/11	36,763	1,802	15	0.08	---	---	---	0.010	0.000	0.000	Off. Add more soundproffing and restart.
	04/06/11	39,571	2,808	6	0.33	---	---	---	0.016	0.000	0.000	On.
	04/12/11	39,671	100	6	0.01	**240**	**4.8**	**ND (<5.0)**	0.000	0.000	0.000	See NOTE below.
	04/26/11	41,195	1,524	14	0.08	---	---	---	0.003	0.000	0.000	On.
	05/04/11	41,703	508	8	0.04	---	---	---	0.001	0.000	0.000	Off. Pump overheating. Restart
	05/24/11	42,965	1,262	20	0.04	**66**	**0.92**	**ND (<5.0)**	0.001	0.000	0.000	Off. Restart
	06/02/11	43,908	943	9	0.07	---	---	---	0.001	0.000	0.000	On.
	06/06/11	47,392	3,484	4	0.60	---	---	---	0.002	0.000	0.000	Off on arrival; restart. Off on departure
	07/13/11	48,851	1,459	37	0.03	---	---	---	0.001	0.000	0.000	Off on arrival; restart.
	07/21/11	51,271	2,420	8	0.21	---	---	---	0.001	0.000	0.000	Off. Restart.
									0.255	**0.006**	**0.000**	**Total Cumulative Removal (Lbs)**
System Midpoint	04/12/11	---	---	---	---	**ND (<50)**	**ND (<0.5)**	**ND (<5.0)**	---	---	---	See NOTE below.
	05/24/11	---	---	---	---	**ND (<50)**	**ND (<0.5)**	**ND (<5.0)**	---	---	---	
System Effluent	12/08/10	---	---	---	---	---	---	---	---	---	---	
	12/14/10	---	---	---	---	**ND (<50)**	**ND (<0.5)**	**ND (<5.0)**	---	---	---	Startup water sampling of effluent (12/14)
	02/22/11	---	---	---	---	**ND (<50)**	**ND (<0.5)**	**ND (<5.0)**	---	---	---	
	05/24/11	---	---	---	---	**ND (<50)**	**ND (<0.5)**	**ND (<5.0)**	---	---	---	

Discharge Limits (ug/L):	***5***	***5***	***5***	***5***
	Benzene	***Toluene***	***Ethylbenzene***	***Total Xylenes***

ABBREVIATIONS AND NOTES:

NOTE = Based on previous and subsequent analytical results Pangea switched the 4/12/11 analyltical results for System Influent and Midpoint. Pangea suspects that the samples were accidently switched by the lab or mislabeled by the technician.

1 = Initial totalizer reading was 23,559. Therefore, shown reading above 0 is actual reading minus 23,559. The 12/10/10 reading of 23,807 less 23,559 equals 248 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)

APPENDIX A

Groundwater Monitoring Program

Table A. Quarterly Groundwater Monitoring Program During Active Remediation

Rockridge Heights, 5175 Broadway, Oakland, CA

Well ID	Well Type	Screened Interval (ft bgs)	Well Location for Monitoring	Casing Diam. (in)	Gauge Frequency	Sample Frequency[1]
Shallow Wells						
MW-3A	Mon + DPE	9-14	Downgradient (Onsite)	2	Q	Q
MW-4A	Mon + DPE	8-15	NE Corner, Upgradient (Onsite)	2	Q	Q
MW-5A	Mon	10-14	SW Corner, Downgradient (Onsite)	2	Q	A
MW-6A	Mon + DPE	8-17	Source Area, Upgradient (Onsite)	2	Q	A
MW-8A	Mon + DPE	8-15	W Boundary, Downgradient (Onsite)	2	Q	Q
MW-9A	Mon	7.5-15.5	Downgradient (Offsite)	2	Q	A
MW-10A	Mon	7.5-15.5	Downgradient (Offsite)	2	Q	A
Deep Wells						
MW-1	Mon + AS	13-23	N Boundary, Upgradient (Onsite)	2	Q	Q
MW-2C	Mon + AS	18-23	E Boundary, Downgradient (Onsite)	2	Q	A
MW-3C	Mon + AS	22-27	Source Area, Downgradient (Onsite)	2	Q	Q
MW-5B	Mon + AS	17-20	SW Corner, Downgradient (Onsite)	2	Q	A
MW-5C	Mon	22-27	SW Corner, Downgradient (Onsite)	2	Q	A
MW-7B	Mon + DPE	15.5-18.5	SE Corner, Downgradient (Onsite)	2	Q	Q
MW-7C	Mon + AS	20-25	SE Corner, Downgradient (Onsite)	2	Q	Q
MW-8C	Mon + AS	20-25	W Boundary, Crossgradient (Onsite)	2	Q	Q
MW-9C	Mon	17-21	Downgradient (Offsite)	2	Q	Q
AS-1	AS	16-20	NE Corner, Upgradient (Onsite)	1	---	---
DPE-1	DPE	9-19	NE Corner, Upgradient (Onsite)	4	---	---
DPE-2	DPE	9-19	E Boundary, Downgradient (Onsite)	4	Q	Q
DPE-3	DPE	10-20	S Boundary, Downgradient (Onsite)	4	Q	Q
DPE-4	DPE	13-18	Source Area, Downgradient (Onsite)	4	Q	Q
DPE-5	DPE	9-19	W Boundary, Crossgradient (Onsite)	4	---	---
DPE-6	DPE	14-19	Source Area (Onsite)	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 and Total Petroleum Hydrocarbons as Diesel (TPHd) by EPA Method 8015C with silica gel clean-up.

Q = Quarterly (Typically March, June, September and December)

A = Annually (Typically September)

Mon = Groundwater Monitoring Well

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

DPE = Dual Phase Extraction Well

AS = Air Sparge Well

APPENDIX B

Groundwater Monitoring Field Data Sheets

Pangea
ENVIRONMENTAL SERVICES, INC.

Well Gauging Data Sheet

Project.Task #: 1145.001.227 | Project Name: ~~Saberi-1590 McKee Road~~ Rockridge Heights

Address: 5175 Broadway, Oakland, CA | Date: 6-10-11

Name: Steve Hunter | Signature: Steve Hunter

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"				8.21	22.86	TOC
MW-2C	2"				10.46	23.52	
MW-3A	2"				9.68	13.90	
MW-3C	2"				13.90	26.89	
MW-4A	2"				10.12	14.77	
MW-5A	2"				10.87	13.04	
MW-5B	2"				13.24	19.32	
MW-5C	2"				13.52	26.82	
MW-6A	2"				7.47	15.00	
MW-7B	2"				13.12	18.42	
MW-7C	2"				15.08	24.42	

Comments:

Pangea
ENVIRONMENTAL SERVICES, INC.

Well Gauging Data Sheet

Project.Task #: 1145.001.227 | Project Name: ~~Sabori 1590 McKee Road~~ ROCKRIDGE HEIGHTS

Address: 5175 Broadway, Oakland, CA | Date: 6-10-11

Name: Steve Hunter | Signature: Steve Hunter

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-3A	2"				9.79	14.65	TOC
MW-2C	2"				11.77	25.02	"
DPE-2	4"				12.41	19.58	"
DPE-3	4"				15.34	19.58	"
DPE-4	4"				11.07	16.88	"
MW-9A	2"				11.74	15.30	"
MW-9C	2"				12.46	20.56	"
MW-10A	2"		-	-	8.77	18.07	"

Comments:

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET				Well ID: MW-1
Project.Task #: 1145.00.227	Project Name: Rockridge Heights			
Address: 5175 Broadway, Oakland, CA				
Date: 6-11-11	Weather: Clear			
Well Diameter: 2 in	Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47
		2" = 0.16	4" = 0.65	radius^2 * 0.163
Total Depth (TD): 22.86	Depth to Product:			
Depth to Water (DTW): 8.21	Product Thickness:			
Water Column Height: 14.65	1 Casing Volume: 2.34 gallons			
Reference Point: TOC	3 Casing Volumes: 7 gallons			
Purging Device: Disposable Bailer				
Sampling Device: Disposable Bailer				

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
0946	18.5	6.93	1031		[illegible]	-151	2.5	
0951	18.3	6.98	1045			-146	5	
0957	18.5	6.99	1051			-142	7	

Comments:

Sample ID: MW-1	Sample Time: 1010
Laboratory: McCampbell	Sample Date: 6-11-11
Containers/Preservative: 3 HCL VOAs (HCL), 1 Liter Amber (HCL)	
Analyzed for: TPH-g/BTEX/MTBE, TPH-d	
Sampler Name: Steve Hunter	Signature: [signature]

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET				Well ID: MW-3A
Project.Task #: 1145.00.227		Project Name: Rockridge Heights		
Address: 5175 Broadway, Oakland, CA				
Date: 6-11-11		Weather: Cloudy		
Well Diameter: 2"	Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47
		2" = 0.16	4" = 0.65	radius^2 * 0.163
Total Depth (TD): 13.90		Depth to Product:		
Depth to Water (DTW): 9.68		Product Thickness:		
Water Column Height: 13.62		1 Casing Volume: 1.65 gallons		
Reference Point: TOC 10.28		3 Casing Volumes: 5 gallons		
Purging Device: Disposable Bailer				
Sampling Device: Disposable Bailer				

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
0637	19.3	6.83	1056		[illegible]	-38	1.5	
0642	19.4	6.72	1051			-41	3.5	
0647	19.4	6.69	1047			-48	5	

Comments:

Sample ID: MW-3A	Sample Time: 0655
Laboratory: McCampbell	Sample Date: 6-11-11
Containers/Preservative: 3 HCL VOAs (HCL), 1 Liter Amber (HCL)	
Analyzed for: TPH-g / BTEX / MTBE, TPH-d	
Sampler Name: Steve Hunter	Signature: [signature]

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET				Well ID: MW-3C
Project.Task #: 1145.00.227	Project Name: Rockridge Heights			
Address: 5175 Broadway, Oakland, CA				
Date: 6-11-11	Weather: ~~Clear~~ Cloudy			
Well Diameter: 2"	Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47
		2" = 0.16	4" = 0.65	radius^2 * 0.163
Total Depth (TD): 26.88	Depth to Product:			
Depth to Water (DTW): 13.90	Product Thickness:			
Water Column Height: 12.98	1 Casing Volume: 2.08 gallons			
Reference Point: TOC	3 Casing Volumes: 6.5 gallons			
Purging Device: Disposable Bailer				
Sampling Device: Disposable Bailer				

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
0711	19.8	7.01	1176		~~Red~~	-44	2	
0716	19.9	7.07	1131			-41	4	
0721	19.9	7.03	1183			-38	6.5	

Comments:

Sample ID: MW-3C	Sample Time: 0735
Laboratory: McCampbell	Sample Date: 6-11-11
Containers/Preservative: 3 HCL VOAs (HCL), 1 Liter Amber (HCL)	
Analyzed for: TPHg / BTEX / MTBE, TPHd	
Sampler Name: Steve Hunter	Signature:

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET				Well ID: MW-4A
Project.Task #: 1145.00.227	Project Name: Rockridge Heights			
Address: 5175 Broadway, Oakland, CA				
Date: 6-11-11	Weather: Clear			
Well Diameter: 2"	Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47
		2" = 0.16	4" = 0.65	radius^2 * 0.163
Total Depth (TD): 14.77	Depth to Product:			
Depth to Water (DTW): 10.12	Product Thickness:			
Water Column Height: 4.65	1 Casing Volume: 0.74 gallons			
Reference Point: TOC	3 Casing Volumes: 2.5 gallons			
Purging Device: Disposable Bailer				
Sampling Device: Disposable Bailer				

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
1023	18.4	6.99	920			-99	1	
1027	18.7	6.93	935			-93	2	
1035	19.1	6.95	941			-91	2.5	

Comments:

Sample ID: MW-4A	Sample Time: 1053
Laboratory: McCampbell	Sample Date: 6-11-11
Containers/Preservative: 3 HCL VOAs (HCL), 1 Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE, TPHd	
Sampler Name: Steve Hunter	Signature:

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET				Well ID: MW-7B
Project.Task #: 1145.00.227	Project Name: Rockridge Heights			
Address: 5175 Broadway, Oakland, CA				
Date: 6-11-11	Weather: Clear			
Well Diameter: 2 "	Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47
		2" = 0.16	4" = 0.65	radius^2 * 0.163
Total Depth (TD): 18.42	Depth to Product:			
Depth to Water (DTW): 13.12	Product Thickness:			
Water Column Height: 5.30	1 Casing Volume: 0.85 gallons			
Reference Point: TOC	3 Casing Volumes: 2.5 gallons			
Purging Device: Disposable Bailer				
Sampling Device: Disposable Bailer				

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
1158	17.1	7.15	1065		[redacted]	-1	1	
1206							2	
[redacted]	(Dewatered @ 2 gallons)						[redacted]	

Comments: Well dewatered at 2 gallons

Sample ID: MW-7B	Sample Time: 1225
Laboratory: McCampbell	Sample Date: 6-11-11
Containers/Preservative: 3 HCL VOAs (HCL), 1 Liter Amber (HCL)	
Analyzed for: BTEX, MTBE, TPHg, TPHd	
Sampler Name: Steve Hunter	Signature:

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET				Well ID: MW-7C
Project.Task #: 1145.00.227		Project Name: Rockridge Heights		
Address: 5175 Broadway, Oakland, CA				
Date: 6-11-11		Weather: Clear		
Well Diameter: 2"	Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47
		2" = 0.16	4" = 0.65	radius^2 * 0.163
Total Depth (TD): 24.42		Depth to Product: —		
Depth to Water (DTW): 15.08		Product Thickness: —		
Water Column Height: 9.34		1 Casing Volume: 1.5 gallons		
Reference Point: TOC		3 Casing Volumes: 4.5 gallons		
Purging Device: Disposable Bailer				
Sampling Device: Disposable Bailer				

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
1237	17.4	7.27	1340		[redacted]	7	1.5	
1240	17.8	7.31	1352			11	3	
1245 ~~1245~~	18.1	7.34	1356			10	4.5	

Comments:

Sample ID: MW-7C	Sample Time: 1255
Laboratory: McCampbell	Sample Date: 6-11-11
Containers/Preservative: 3 HCL VOAs (HCL), 1 Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE, TPHd	
Sampler Name: Steve Hunter	Signature:

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET				Well ID: MW-8A
Project.Task #: 1145.00.227	Project Name: Rockridge Heights			
Address: 5175 Broadway, Oakland, CA				
Date: 6-11-11	Weather: Cloudy			
Well Diameter: 2"	Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47
		2" = 0.16	4" = 0.65	radius^2 * 0.163
Total Depth (TD): 14.65	Depth to Product: —			
Depth to Water (DTW): 9.79	Product Thickness: —			
Water Column Height: 4.86	1 Casing Volume: 0.78 gallons			
Reference Point: TOC	3 Casing Volumes: 2.5 gallons			
Purging Device: Disposable Bailer				
Sampling Device: Disposable Bailer				

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
0838	17.2	6.46	14.73		[redacted]	58	1	
0843	17.3	6.59	1563			62	2	
0849	17.5	6.67	1592			63	2.5	

Comments:

Sample ID: MW-8A	Sample Time: 0905
Laboratory: McCampbell	Sample Date: 6-11-11
Containers/Preservative: 3 HCL VOAs (HCL), 1 Liter Amber (HCL)	
Analyzed for: TPHg / BTEX / MTBE	
Sampler Name: Steve Hunter	Signature:

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET				Well ID: MW-3C
Project.Task #: 1145.00.227	Project Name: Rockridge Heights			
Address: 5175 Broadway, Oakland, CA				
Date: 6-11-11	Weather: Cloudy			
Well Diameter: 2"	Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47
		2" = 0.16	4" = 0.65	radius^2 * 0.163
Total Depth (TD): 25.02	Depth to Product:			
Depth to Water (DTW): 11.77	Product Thickness:			
Water Column Height: 13.25	1 Casing Volume: 2.12 gallons			
Reference Point: TOC	3 Casing Volumes: 6.5 gallons			
Purging Device: Disposable Bailer				
Sampling Device: Disposable Bailer				

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
0917	17.2	6.86	1299			51	2.5	
0922	17.7	7.03	1342			47	4.5	
0926	17.9	7.11	1358			56	6.5	

Comments:

Sample ID: MW-3C	Sample Time: 0935
Laboratory: McCampbell	Sample Date: 6-11-11
Containers/Preservative: 3 HCL VOAs (HCL), 1 Liter Amber (HCL)	
Analyzed for: TPHg / BTEX / MTBE, TPHg	
Sampler Name: Steve Hunter	Signature:

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET					Well ID: DPE-2
Project.Task #: 1145.00.227			Project Name: Rockridge Heights		
Address: 5175 Broadway, Oakland, CA					
Date: 6-11-11			Weather: Clear		
Well Diameter: 4"		Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47
			2" = 0.16	4" = 0.65	radius^2 * 0.163
Total Depth (TD): 19.58			Depth to Product: -		
Depth to Water (DTW): 12.41			Product Thickness: -		
Water Column Height: 7.17			1 Casing Volume: 3.5 gallons		
Reference Point: TOC 5.24			3 Casing Volumes: 10.5 gallons		
Purging Device: Disposable Bailer					
Sampling Device: Disposable Bailer					

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
1111	17.8	6.77	522			-75	3.5	
1118	17.9	6.93	539			-67	7.0	
1126	18.0	6.97	552			-61	10.5	

Comments:

Sample ID: DPE-2	Sample Time: 1140
Laboratory: McCampbell	Sample Date: 6-11-11
Containers/Preservative: 3 HCL VOAs (HCL), 1 Liter Amber (HCL)	
Analyzed for: TPH/BTEX/MTBE, TPH	
Sampler Name: Steve Hunter	Signature:

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET				Well ID: DPE-3
Project.Task #: 1145.00.227	Project Name: Rockridge Heights			
Address: 5175 Broadway, Oakland, CA				
Date: 6-11-11	Weather: Clear			
Well Diameter: 4"	Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47
		2" = 0.16	4" = 0.65	radius^2 * 0.163
Total Depth (TD): 19.56	Depth to Product:			
Depth to Water (DTW): 15.34	Product Thickness:			
Water Column Height: 4.22	1 Casing Volume: 2.74 gallons			
Reference Point: TOC	3 Casing Volumes: 8.5 gallons			
Purging Device: Disposable Bailer				
Sampling Device: Disposable Bailer				

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
1313	17.4	6.52	1539		~~Pro~~	-92	3	
1319	16.9	6.73	1541			-78	6	
1324	16.7	6.81	1546			-81	8.5	

Comments:

Sample ID: DPE-3	Sample Time: 1337
Laboratory: McCampbell	Sample Date: 6-11-11
Containers/Preservative: 3 HCL VOAs (HCL), 1 Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE, TPHd	
Sampler Name: Steve Hunter	Signature:

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET				Well ID: DPE-4
Project.Task #: 1145.00.227	Project Name: Rockridge Heights			
Address: 5175 Broadway, Oakland, CA				
Date: 6-11-11	Weather: Clear			
Well Diameter: 4"	Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47
		2" = 0.16	4" = 0.65	radius^2 * 0.163
Total Depth (TD): 16.88	Depth to Product:			
Depth to Water (DTW): 11.07	Product Thickness:			
Water Column Height: 5.81	1 Casing Volume: 4 gallons			
Reference Point: TOC	3 Casing Volumes: 12 gallons			
Purging Device: Disposable Bailer				
Sampling Device: Disposable Bailer				

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
0748	18.3	6.87	1236			-62	4	
0756	18.5	6.94	1242			-54	8	
0803	18.5	6.98	1251			-50	12	

Comments:

Sample ID: DPE-4	Sample Time: 0820
Laboratory: McCampbell	Sample Date: 6-11-11
Containers/Preservative: 3 HCL VOAs (HCL), 1 Liter Amber (HCL)	
Analyzed for: TPHg/BTEX/MTBE, TPHd	
Sampler Name: Steve Hunter	Signature:

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET				Well ID: MW-9C
Project.Task #: 1145.00.227			Project Name: Rockridge Heights	
Address: 5175 Broadway, Oakland, CA				
Date: 6-11-11			Weather: Cloudy	
Well Diameter:	Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47
		2" = 0.16	4" = 0.65	radius^2 * 0.163
Total Depth (TD): 20.56			Depth to Product:	
Depth to Water (DTW): 12.46			Product Thickness:	
Water Column Height:			1 Casing Volume:	gallons
Reference Point: TOC			3 Casing Volumes:	gallons
Purging Device: Disposable Bailer				
Sampling Device: Disposable Bailer				

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
1351	17.9	6.93	1393			-11		
1357	18.3	6.72	1372			-7		
1403	18.7	6.71	1378			-3		

Comments:

Sample ID: MW-9C	Sample Time: 1415
Laboratory: McCampbell	Sample Date: 6-11-11
Containers/Preservative: 3 HCL VOAs (HCL), 1 Liter Amber (HCL)	
Analyzed for: TPHg / BTEX / MTBE TPHd	
Sampler Name: Steve Hunter	Signature:

APPENDIX C

Laboratory Analytical Report

McCampbell Analytical, Inc.
"When Quality Counts"

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

Analytical Report

Pangea Environmental Svcs., Inc.	Client Project ID: 5175 Broadway; Rockridge Heights	Date Sampled: 06/11/11
		Date Received: 06/13/11
1710 Franklin Street, Ste. 200	Client Contact: Tina De La Fuente	Date Reported: 06/20/11
Oakland, CA 94612	Client P.O.:	Date Completed: 06/17/11

WorkOrder: 1106429

June 20, 2011

Dear Tina:

Enclosed within are:

1) The results of the **12** analyzed samples from your project: **5175 Broadway; Rockridge Heights,**
2) A QC report for the above samples,
3) A copy of the chain of custody, and
4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.
If you have any questions or concerns, please feel free to give me a call. Thank you for choosing
McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

The analytical results relate only to the items tested.

1106429

McCAMPBELL ANALYTICAL, INC.

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

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

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

Report To: Tina de la Fuenta Bill To: Pangea
Company: Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200, Oakland, CA 94612
E-Mail: tdelafuente@pangeaenv.com
Tele: (510) 836-3702 Fax: (510) 836-3709
Project #: 5175 Broadway Project Name: Rockridge Heights
Project Location: 5175 Broadway, Oakland, CA
Sampler Signature: [signature]

	SAMPLE ID (Field Point Name)	LOCATION	Sampling Date	Sampling Time	# Containers	Type Containers	Matrix: Water	Soil	Air	Sludge	Other	Method Preserved: ICE	HCL	HNO_3	Other	BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH as Diesel (8015) with Silica Gel Cleanup	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010 / 8021	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8081	EPA 608 / 8082 PCB's ONLY	EPA 8140 / 8141	EPA 8150 / 8151	EPA 524.2 / 624 / 8260	EPA 525 / 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals (6010 / 6020)	LUFT 5 Metals (6010 / 6020)	Lead (200.8 / 200.9 / 6010)	5 Oxygenates(TAME, TBA, DIPE, ETBE, MTBE) by 8260.	Other	Other	Comments: Filter Samples for Metals analysis: Yes / No
+	MW-1		6-11-11	1010	4	Voa's	X					X	X			X	X																		
+ •	MW-3A		↓	0655	↓	↓	X					X	X			X	X																		
+	MW-3C			0735			X					X	X			X	X																		
+1	MW-4A			1053			X					X	X			X	X																		
+5	MW-7B			1225			X					X	X			X	X																		
	MW-7C			1255			X					X	X			X	X																		
+	MW-8A			0905			X					X	X			X	X																		
+5 ••	MW-8C			0935			X					X	X			X	X																		
+ •••	MW-9C			1415			X					X	X			X	X																		
+	DPE-2			1140			X					X	X			X	X																		
+	DPE-3			1337			X					X	X			X	X																		
+	DPE-4		↓	0820	↓	↓	X					X	X			X	X																		

Relinquished By:	Date:	Time:	Received By:
[signature]	6-13-11	9:05	ENVIRO-TECH SERVICES AA
Enviro-Tech Svc.	6/13	1930	[struck through]
[struck through]	6/15/11	1500	[signature]

ICE/t° 3.0c ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB

PRESERVATION VOAS ✓ O&G METALS pH<2 OTHER

COMMENTS:

• 1 VOA received broken
•• actually labelled MW-8A (liter amber) ••• liter actually labelled MW-9A

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1106429 **ClientCode: PEO**

☐ WaterTrax ☐ WriteOn ☑ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Tina De La Fuente
Pangea Environmental Svcs., Inc.
1710 Franklin Street, Ste. 200
Oakland, CA 94612
(510) 836-3700 FAX (510) 836-3709

Email: tdelafuente@pangeaenv.com
cc:
PO:
ProjectNo: 5175 Broadway; Rockridge Heights

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

Requested TAT: 5 days

Date Received: **06/13/2011**
Date Printed: **06/13/2011**

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
1106429-001	MW-1	Water	6/11/2011 10:10	☐	A	A	B									
1106429-002	MW-3A	Water	6/11/2011 6:55	☐	A		B									
1106429-003	MW-3C	Water	6/11/2011 7:35	☐	A		B									
1106429-004	MW-4A	Water	6/11/2011 10:53	☐	A		B									
1106429-005	MW-7B	Water	6/11/2011 12:25	☐	A		B									
1106429-006	MW-7C	Water	6/11/2011 12:55	☐	A		B									
1106429-007	MW-8A	Water	6/11/2011 9:05	☐	A		B									
1106429-008	MW-8C	Water	6/11/2011 9:35	☐	A		B									
1106429-009	MW-9C	Water	6/11/2011 14:15	☐	A		B									
1106429-010	DPE-2	Water	6/11/2011 11:40	☐	A		B									
1106429-011	DPE-3	Water	6/11/2011 13:37	☐	A		B									
1106429-012	DPE-4	Water	6/11/2011 8:20	☐	A		B									

Test Legend:

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

Prepared by: Melissa Valles

Comments:

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

McCampbell Analytical, Inc.
"When Quality Counts"

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

Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**
Date and Time Received: **6/13/2011 4:10:44 PM**

Project Name: **5175 Broadway; Rockridge Heights**
Checklist completed and reviewed by: Melissa Valles

WorkOrder N°: **1106429** Matrix Water
Carrier: Client Drop-In

Chain of Custody (COC) Information

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

Sample Receipt Information

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

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature	Cooler Temp: 3°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☑	No ☐	No VOA vials submitted ☐
Sample labels checked for correct preservation?	Yes ☑	No ☐	
Metal - pH acceptable upon receipt (pH<2)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☑	No ☐	

(Ice Type: WET ICE)

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

Client contacted: Date contacted: Contacted by:

Comments: 1 VOA for MW-3A received broken. The Liter for MW-8C was actually labelled MW-8A and the Liter for MW-9C was labelled MW-9A but had the correct times.

McCampbell Analytical, Inc.
"When Quality Counts"

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

Pangea Environmental Svcs., Inc.	Client Project ID: 5175 Broadway; Rockridge Heights	Date Sampled: 06/11/11
		Date Received: 06/13/11
1710 Franklin Street, Ste. 200	Client Contact: Tina De La Fuente	Date Extracted: 06/15/11-06/16/11
Oakland, CA 94612	Client P.O.:	Date Analyzed: 06/15/11-06/16/11

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 1106429

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	MW-1	W	1500	ND	2.4	ND	0.84	7.9	1	113	d7,d9
002A	MW-3A	W	5100	ND<80	350	140	110	490	10	115	d1
003A	MW-3C	W	780	ND	7.6	3.4	2.7	16	1	107	d1
004A	MW-4A	W	97	ND	1.2	ND	ND	1.7	1	100	d1
005A	MW-7B	W	510	ND	12	5.5	1.4	28	1	105	d1,b1
006A	MW-7C	W	90	ND	0.77	1.1	ND	1.1	1	101	d6,b1
007A	MW-8A	W	4500	ND<50	34	11	42	240	10	103	d1
008A	MW-8C	W	110	ND	ND	ND	ND	ND	1	98	d6,b1
009A	MW-9C	W	ND	ND	ND	ND	ND	ND	1	99	
010A	DPE-2	W	3300	ND<10	24	40	16	340	2	103	d1
011A	DPE-3	W	2300	ND<15	41	19	16	130	1	90	d1
012A	DPE-4	W	280	ND	1.6	4.2	2.5	25	1	106	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 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:
b1) aqueous sample that contains greater than ~1 vol. % sediment
d1) weakly modified or unmodified gasoline is significant
d6) one to a few isolated non-target peaks present in the TPH(g) chromatogram
d7) strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
d9) no recognizable pattern

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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

Pangea Environmental Svcs., Inc.	Client Project ID: 5175 Broadway; Rockridge Heights	Date Sampled: 06/11/11
		Date Received: 06/13/11
1710 Franklin Street, Ste. 200	Client Contact: Tina De La Fuente	Date Extracted 06/13/11
Oakland, CA 94612	Client P.O.:	Date Analyzed 06/14/11-06/18/11

Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up*

Extraction method: SW3510C/3630C Analytical methods: SW8015B Work Order: 1106429

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	DF	% SS	Comments
1106429-001B	MW-1	W	1900	1	100	e11,e2
1106429-002B	MW-3A	W	1400	10	75	e4,e2
1106429-003B	MW-3C	W	530	1	96	e4,e2
1106429-004B	MW-4A	W	110	1	96	e4,e2
1106429-005B	MW-7B	W	780	2	82	e7,e4,e2,b1
1106429-006B	MW-7C	W	190	2	89	e2,b1
1106429-007B	MW-8A	W	5100	20	81	e11,e2,b6
1106429-008B	MW-8C	W	ND	1	99	b1
1106429-009B	MW-9C	W	ND	1	95	
1106429-010B	DPE-2	W	3100	2	100	e7,e4,e2
1106429-011B	DPE-3	W	1100	2	79	e4,e2
1106429-012B	DPE-4	W	280	1	95	e4,e2

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

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

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract/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
e2) diesel range compounds are significant; no recognizable pattern
e4) gasoline range compounds are significant.
e7) oil range compounds are significant
e11) stoddard solvent/mineral spirit (?)

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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

QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water QC Matrix: Water BatchID: 59007 WorkOrder: 1106429

EPA Method: SW8021B/8015Bm **Extraction: SW5030B** **Spiked Sample ID: 1106409-002B**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex)£	ND	60	97.5	100	2.73	96.5	95.2	1.42	70 - 130	20	70 - 130	20
MTBE	ND	10	110	115	4.15	115	117	2.27	70 - 130	20	70 - 130	20
Benzene	ND	10	99.2	98.4	0.838	98.1	99.4	1.31	70 - 130	20	70 - 130	20
Toluene	ND	10	98.9	97.8	1.18	95.7	98.6	2.97	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	97.1	96.2	0.956	95.7	96.5	0.871	70 - 130	20	70 - 130	20
Xylenes	ND	30	100	98.8	1.36	98.3	99.2	0.947	70 - 130	20	70 - 130	20
%SS:	96	10	94	94	0	94	95	0.988	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 59007 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1106429-001A	06/11/11 10:10 AM	06/15/11	06/15/11 10:25 PM	1106429-002A	06/11/11 6:55 AM	06/16/11	06/16/11 7:34 PM
1106429-003A	06/11/11 7:35 AM	06/16/11	06/16/11 8:05 PM	1106429-004A	06/11/11 10:53 AM	06/15/11	06/15/11 3:40 AM
1106429-005A	06/11/11 12:25 PM	06/15/11	06/15/11 5:11 AM	1106429-006A	06/11/11 12:55 PM	06/15/11	06/15/11 7:53 PM
1106429-007A	06/11/11 9:05 AM	06/16/11	06/16/11 4:28 AM	1106429-008A	06/11/11 9:35 AM	06/15/11	06/15/11 8:54 PM
1106429-009A	06/11/11 2:15 PM	06/15/11	06/15/11 6:41 AM	1106429-010A	06/11/11 11:40 AM	06/16/11	06/16/11 9:05 PM
1106429-011A	06/11/11 1:37 PM	06/16/11	06/16/11 10:06 PM				

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.

DHS ELAP Certification 1644

QA/QC Officer

McCampbell Analytical, Inc.
"When Quality Counts"

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

QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water QC Matrix: Water BatchID: 59024 WorkOrder: 1106429

EPA Method: SW8021B/8015Bm **Extraction: SW5030B** **Spiked Sample ID: 1106477-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex)£	ND	60	97.4	93.1	4.54	94.5	92.6	2.01	70 - 130	20	70 - 130	20
MTBE	ND	10	118	110	6.86	112	114	1.58	70 - 130	20	70 - 130	20
Benzene	0.61	10	96.6	92.9	3.68	103	103	0	70 - 130	20	70 - 130	20
Toluene	ND	10	92.8	89.9	3.10	92.8	92.6	0.218	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	93.1	91	2.30	94.7	91.5	3.41	70 - 130	20	70 - 130	20
Xylenes	ND	30	106	104	2.19	109	104	3.86	70 - 130	20	70 - 130	20
%SS:	96	10	97	96	1.51	99	98	0.723	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 59024 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1106429-012A	06/11/11 8:20 AM	06/16/11	06/16/11 6:29 AM				

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.

McCampbell Analytical, Inc.
"When Quality Counts"

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

QC SUMMARY REPORT FOR SW8015B

W.O. Sample Matrix: Water QC Matrix: Water BatchID: 59025 WorkOrder: 1106429

EPA Method: SW8015B **Extraction: SW3510C/3630C** **Spiked Sample ID: N/A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH-Diesel (C10-C23)	N/A	1000	N/A	N/A	N/A	102	104	1.65	N/A	N/A	70 - 130	30
%SS:	N/A	625	N/A	N/A	N/A	99	101	1.08	N/A	N/A	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 59025 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1106429-001B	06/11/11 10:10 AM	06/13/11	06/14/11 7:24 PM	1106429-002B	06/11/11 6:55 AM	06/13/11	06/14/11 8:40 PM
1106429-003B	06/11/11 7:35 AM	06/13/11	06/14/11 9:55 PM	1106429-004B	06/11/11 10:53 AM	06/13/11	06/15/11 12:21 AM
1106429-005B	06/11/11 12:25 PM	06/13/11	06/14/11 11:08 PM	1106429-006B	06/11/11 12:55 PM	06/13/11	06/15/11 6:17 AM
1106429-007B	06/11/11 9:05 AM	06/13/11	06/15/11 7:28 AM	1106429-008B	06/11/11 9:35 AM	06/13/11	06/18/11 8:22 PM
1106429-009B	06/11/11 2:15 PM	06/13/11	06/15/11 8:38 AM	1106429-010B	06/11/11 11:40 AM	06/13/11	06/15/11 12:35 AM
1106429-011B	06/11/11 1:37 PM	06/13/11	06/15/11 5:07 AM	1106429-012B	06/11/11 8:20 AM	06/13/11	06/15/11 3:56 AM

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

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

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

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

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

DHS ELAP Certification 1644

QA/QC Officer

McCampbell Analytical, Inc.
"When Quality Counts"

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

Pangea Environmental Svcs., Inc.	Client Project ID: 5175 Broadway; Rockridge Heights	Date Sampled: 04/12/11
		Date Received: 04/13/11
1710 Franklin Street, Ste. 200	Client Contact: Morgan Gillies	Date Reported: 04/18/11
Oakland, CA 94612	Client P.O.:	Date Completed: 04/15/11

WorkOrder: 1104366

April 19, 2011

Dear Morgan:

Enclosed within are:

1) The results of the **3** analyzed samples from your project: **5175 Broadway; Rockridge Heights,**
2) A QC report for the above samples,
3) A copy of the chain of custody, and
4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

1104366

McCAMPBELL ANALYTICAL, INC.

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

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

EDF Required? 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 #: 5175 Broadway Project Name: Rockridge Heights

Project Location: 5175 Broadway, Oakland, CA

Sampler Signature: Stan Hoff

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED ICE	HCL	HNO_3	Other
INF-W	INF	4-12-11	1420	3	Voas	X					X	X		
MID-W	MID	"	1410	3	"	X					X	X		
EFF-W	EFF	"	1400	3	"	X					X	X		

Analysis Request

BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH as Diesel (8015) with Silica Gel Cleanup	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010 / 8021	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8081	EPA 608 / 8082 PCB's ONLY	EPA 8140 / 8141	EPA 8150 / 8151	EPA 524.2 / 624 / 8260	EPA 525 / 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals (6010 / 6020)	LUFT 5 Metals (6010 / 6020)	Lead (200.8 / 200.9 / 6010)
X															
X															
X															

Other: 5 Oxygenates(TAME, TBA, DIPE, ETBE, MTBE) by 8260.

Comments: Filter Samples for Metals analysis: Yes / No

Relinquished By:	Date:	Time:	Received By:
Stan Hoff	4-12-11	2254	
	4/13/11	1515	

ICE/t° 6.0

COMMENTS:

GOOD CONDITION ✓

HEAD SPACE ABSENT

DECHLORINATED IN LAB

APPROPRIATE CONTAINERS ✓

PRESERVED IN LAB

PRESERVATION	VOAS	O&G	METALS	OTHER
	✓		pH<2	

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1104366 **ClientCode: PEO**

☐ 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: 5175 Broadway; Rockridge Heights

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

Requested TAT: 5 days

Date Received: **04/13/2011**
Date Printed: **04/19/2011**

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
1104366-001	INF-W	Water	4/12/2011 14:20	☐	A	A										
1104366-002	MID-W	Water	4/12/2011 14:10	☐	A											
1104366-003	EFF-W	Water	4/12/2011 14:00	☐	A											

Test Legend:

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

Prepared by: Maria Venegas

Comments:

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

McCampbell Analytical, Inc.
"When Quality Counts"

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

Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**
Date and Time Received: **4/13/2011 3:18:03 PM**

Project Name: **#5175 Broadway; Rockridge Height**
Checklist completed and reviewed by: Maria Venegas

WorkOrder N°: **1104366** Matrix Water
Carrier: Rob Pringle (MAI Courier)

Chain of Custody (COC) Information

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

Sample Receipt Information

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

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature	Cooler Temp: 6°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☑	No ☐	No VOA vials submitted ☐
Sample labels checked for correct preservation?	Yes ☑	No ☐	
Metal - pH acceptable upon receipt (pH<2)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☑	No ☐	

(Ice Type: WET ICE)

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

Client contacted: Date contacted: Contacted by:

Comments:

McCampbell Analytical, Inc.
"When Quality Counts"

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

Pangea Environmental Svcs., Inc.	Client Project ID: 5175 Broadway; Rockridge Heights	Date Sampled: 04/12/11
		Date Received: 04/13/11
1710 Franklin Street, Ste. 200	Client Contact: Morgan Gillies	Date Extracted: 04/14/11
Oakland, CA 94612	Client P.O.:	Date Analyzed: 04/14/11

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 1104366

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	INF-W	W	ND	ND	ND	ND	ND	ND	1	99	
002A	MID-W	W	240	ND	4.8	2.7	0.87	11	1	96	d1
003A	EFF-W	W	ND	ND	ND	ND	ND	ND	1	98	

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

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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

QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water QC Matrix: Water BatchID: 57638 WorkOrder 1104366

EPA Method SW8021B/8015Bm **Extraction SW5030B** **Spiked Sample ID: 1104333-002A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex)£	ND	60	113	110	2.70	109	114	4.61	70 - 130	20	70 - 130	20
MTBE	ND	10	98.7	94.8	3.96	90.5	90.9	0.464	70 - 130	20	70 - 130	20
Benzene	ND	10	91.4	83.6	8.94	92.7	91.2	1.61	70 - 130	20	70 - 130	20
Toluene	ND	10	89.4	81.6	9.18	89.8	90	0.213	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	90.4	81.9	9.83	90	90.6	0.628	70 - 130	20	70 - 130	20
Xylenes	ND	30	90.7	81.8	10.3	89.4	91.4	2.16	70 - 130	20	70 - 130	20
%SS:	104	10	94	94	0	102	96	6.27	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 57638 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1104366-001A	04/12/11 2:20 PM	04/14/11	04/14/11 7:05 PM	1104366-002A	04/12/11 2:10 PM	04/14/11	04/14/11 7:37 PM
1104366-003A	04/12/11 2:00 PM	04/14/11	04/14/11 8:09 PM				

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.

DHS ELAP Certification 1644

QA/QC Officer

McCampbell Analytical, Inc.
"When Quality Counts"

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

Pangea Environmental Svcs., Inc.	Client Project ID: 5175 Broadway, Rockridge	Date Sampled: 04/26/11
		Date Received: 04/27/11
1710 Franklin Street, Ste. 200	Client Contact: Morgan Gillies	Date Reported: 05/02/11
Oakland, CA 94612	Client P.O.:	Date Completed: 04/29/11

WorkOrder: 1104783

May 02, 2011

Dear Morgan:

Enclosed within are:

1) The results of the **1** analyzed sample from your project: **5175 Broadway, Rockridge,**
2) A QC report for the above sample,
3) A copy of the chain of custody, and
4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

1104783

McCAMPBELL ANALYTICAL, INC.

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

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

EDF Required? 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 #: 5175 Broadway Project Name: Rockridge Heights

Project Location: 5175 Broadway, Oakland, CA

Sampler Signature:

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other
INF-V	INF	4/26/11	1250	1	Tedlar			X						

Analysis Request	Other	Comments
BTEX & TPH as Gas (602/8020 + 8015)/MTBE	5 Oxygenates(TAME, TBA, DIPE, ETBE, MTBE) by 8260.	Filter Samples for Metals analysis: Yes / No
TPH as Diesel (8015) with Silica Gel Cleanup		
Total Petroleum Oil & Grease (5520 E&F/B&F)		
Total Petroleum Hydrocarbons (418.1)		
EPA 601 / 8010 / 8021		
BTEX ONLY (EPA 602 / 8020)		
EPA 608 / 8081		
EPA 608 / 8082 PCB's ONLY		
EPA 8140 / 8141		
EPA 8150 / 8151		
EPA 524.2 / 624 / 8260		
EPA 525 / 625 / 8270		
PAH's / PNA's by EPA 625 / 8270 / 8310		
CAM-17 Metals (6010 / 6020)		
LUFT 5 Metals (6010 / 6020)		
Lead (200.8 / 200.9 / 6010)		
X		

Relinquished By:	Date:	Time:	Received By:
	4/27/11	1540	
Relinquished By:	Date:	Time:	Received By:
	4/27/11	1630	
Relinquished By:	Date:	Time:	Received By:

ICE/t° _____ COMMENTS:
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

WorkOrder: 1104783 **ClientCode: PEO**

☐ 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: 5175 Broadway, Rockridge

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

Requested TAT: 5 days

Date Received: **04/27/2011**
Date Printed: **04/28/2011**

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
1104783-001	INF-V	Air	4/26/2011 12:50	☐	A	A										

Test Legend:

1	G-MBTEX_AIR	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

The following SampID: 001A contains testgroup.

Prepared by: Ana 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.

McCampbell Analytical, Inc.
"When Quality Counts"

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

Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**
Date and Time Received: **4/27/2011 6:42:58 PM**

Project Name: **5175 Broadway, Rockridge**
Checklist completed and reviewed by: Ana Venegas

WorkOrder N°: **1104783** Matrix Air
Carrier: Rob Pringle (MAI Courier)

Chain of Custody (COC) Information

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

Sample Receipt Information

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

Sample Preservation and Hold Time (HT) Information

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

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

Client contacted: Date contacted: Contacted by:

Comments:

McCampbell Analytical, Inc.
"When Quality Counts"

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

Pangea Environmental Svcs., Inc.	Client Project ID: 5175 Broadway, Rockridge	Date Sampled: 04/26/11
		Date Received: 04/27/11
1710 Franklin Street, Ste. 200	Client Contact: Morgan Gillies	Date Extracted: 04/28/11
Oakland, CA 94612	Client P.O.:	Date Analyzed: 04/28/11

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 1104783

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	INF-V	A	870	ND<10	8.1	7.1	1.4	9.8	2	117	d1

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	25	2.5	0.25	0.25	0.25	0.25	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak; %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

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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

Pangea Environmental Svcs., Inc.	Client Project ID: 5175 Broadway, Rockridge	Date Sampled: 04/26/11
		Date Received: 04/27/11
1710 Franklin Street, Ste. 200	Client Contact: Morgan Gillies	Date Extracted: 04/28/11
Oakland, CA 94612	Client P.O.:	Date Analyzed: 04/28/11

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 1104783

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	INF-V	A	240	ND<2.0	2.5	1.8	0.32	2.2	2	117	d1

ppm (mg/L) to ppmv (ul/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	7.0	0.68	0.077	0.065	0.057	0.057	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak; %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

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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

QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Air QC Matrix: Water BatchID: 57976 WorkOrder 1104783

EPA Method SW8021B/8015Bm **Extraction SW5030B** **Spiked Sample ID: 1104791-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex)£	ND	60	96.1	90.1	6.44	96.3	94.4	2.02	70 - 130	20	70 - 130	20
MTBE	ND	10	116	108	7.58	114	128	11.4	70 - 130	20	70 - 130	20
Benzene	ND	10	108	102	5.52	106	108	2.18	70 - 130	20	70 - 130	20
Toluene	ND	10	92.4	87.1	5.74	93	96.1	3.30	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	94.3	90.9	3.67	94.5	97.2	2.86	70 - 130	20	70 - 130	20
Xylenes	ND	30	107	103	3.86	108	111	2.96	70 - 130	20	70 - 130	20
%SS:	118	10	97	96	0.504	97	97	0	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 57976 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1104783-001A	04/26/11 12:50 PM	04/28/11	04/28/11 12:11 PM				

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

NR = 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.

DHS ELAP Certification 1644 QA/QC Officer

McCampbell Analytical, Inc.
"When Quality Counts"

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

Pangea Environmental Svcs., Inc.	Client Project ID: #5175 Broadway; Rockridge Height	Date Sampled: 05/24/11
		Date Received: 05/26/11
1710 Franklin Street, Ste. 200	Client Contact: Morgan Gillies	Date Reported: 06/02/11
Oakland, CA 94612	Client P.O.:	Date Completed: 05/31/11

WorkOrder: 1105806

June 02, 2011

Dear Morgan:

Enclosed within are:

1) The results of the **5** analyzed samples from your project: **#5175 Broadway; Rockridge Height,**
2) A QC report for the above samples,
3) A copy of the chain of custody, and
4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

1105806

McCAMPBELL ANALYTICAL, INC.

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

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

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

Report To: Mórgan 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 #: 5175 Broadway	Project Name: Rockridge Heights
Project Location: 5175 Broadway, Oakland, CA	
Sampler Signature: Stefan Hoot	

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED ICE	HCL	HNO_3	Other	BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH as Diesel (8015) with Silica Gel Cleanup	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010 / 8021	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8081	EPA 608 / 8082 PCB's ONLY	EPA 8140 / 8141	EPA 8150 / 8151	EPA 524.2 / 624 / 8260	EPA 525 / 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals (6010 / 6020)	LUFT 5 Metals (6010 / 6020)	Lead (200.8 / 200.9 / 6010)	5 Oxygenates(TAME, TBA, DIPE, ETBE, MTBE) by 8260.	Other	Other	Comments
EFF-W	EFF	5-24-11	1450	3	Voas	4					X	X			X																				Filter Samples for Metals analysis: Yes / No
MID-W	MID		1500	3		X					X	X			X																				
INF-W	INF		1510	3		X					X	X			X																				
EFF-V	EFF		1530	1	Tedlar			X			X				X																				
INF-V	INF		1545	1				X			X				X																				

Relinquished By:	Date:	Time:	Received By:
Stefan Hoot	5-25-11	0930	
Relinquished By:	Date: 5/26/11	Time: 16:57	Received By:
Relinquished By:	Date: 5/26/11	Time: 16:20	Received By:

ICE/t° 7.6
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB

PRESERVATION ✓ VOAS O&G METALS OTHER pH<2

COMMENTS:

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1105806 **ClientCode: PEO**

☐ 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: #5175 Broadway; Rockridge Height

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

Requested TAT: 5 days

Date Received: **05/26/2011**
Date Printed: **05/26/2011**

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
1105806-001	EFF-W	Water	5/24/2011 14:50	☐		A										
1105806-002	MID-W	Water	5/24/2011 15:00	☐		A										
1105806-003	INF-W	Water	5/24/2011 15:10	☐		A										
1105806-004	EFF-V	Air	5/24/2011 15:30	☐	A											
1105806-005	INF-V	Air	5/24/2011 15:45	☐	A											

Test Legend:

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

The following SampIDs: 004A, 005A contain testgroup.

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.

McCampbell Analytical, Inc.
"When Quality Counts"

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

Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.** Date and Time Received: **5/26/2011 4:25:47 PM**

Project Name: **#5175 Broadway; Rockridge Height** Checklist completed and reviewed by: Maria Venegas

WorkOrder N°: **1105806** Matrix Air/Water Carrier: Derik Cartan (MAI Courier)

Chain of Custody (COC) Information

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

Sample Receipt Information

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

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature	Cooler Temp: 7.6°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☑	No ☐	No VOA vials submitted ☐
Sample labels checked for correct preservation?	Yes ☑	No ☐	
Metal - pH acceptable upon receipt (pH<2)?	Yes ☐	No ☐	NA ☑
Samples Received on Ice?	Yes ☑	No ☐	

(Ice Type: WET ICE)

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

Client contacted: Date contacted: Contacted by:

Comments:

McCampbell Analytical, Inc.
"When Quality Counts"

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

Pangea Environmental Svcs., Inc.	Client Project ID: #5175 Broadway; Rockridge Height	Date Sampled: 05/24/11
		Date Received: 05/26/11
1710 Franklin Street, Ste. 200	Client Contact: Morgan Gillies	Date Extracted: 05/26/11-05/27/11
Oakland, CA 94612	Client P.O.:	Date Analyzed: 05/26/11-05/27/11

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 1105806

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
004A	EFF-V	A	ND	ND	ND	ND	ND	ND	1	97	
005A	INF-V	A	570	ND<10	3.2	1.7	ND	3.0	1	111	d1

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	25	2.5	0.25	0.25	0.25	0.25	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak; %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

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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

Pangea Environmental Svcs., Inc.	Client Project ID: #5175 Broadway; Rockridge Height	Date Sampled: 05/24/11
		Date Received: 05/26/11
1710 Franklin Street, Ste. 200	Client Contact: Morgan Gillies	Date Extracted: 05/26/11-05/27/11
Oakland, CA 94612	Client P.O.:	Date Analyzed: 05/26/11-05/27/11

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 1105806

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
004A	EFF-V	A	ND	ND	ND	ND	ND	ND	1	97	
005A	INF-V	A	160	ND<3.0	0.97	0.44	ND	0.69	1	111	d1

ppm (mg/L) to ppmv (ul/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	7.0	0.68	0.077	0.065	0.057	0.057	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak; %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

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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

Pangea Environmental Svcs., Inc.	Client Project ID: #5175 Broadway; Rockridge Height	Date Sampled: 05/24/11
		Date Received: 05/26/11
1710 Franklin Street, Ste. 200	Client Contact: Morgan Gillies	Date Extracted: 05/27/11-05/31/11
Oakland, CA 94612	Client P.O.:	Date Analyzed: 05/27/11-05/31/11

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Bm Work Order: 1105806

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	EFF-W	W	ND	ND	ND	ND	ND	ND	1	102	
002A	MID-W	W	ND	ND	ND	ND	ND	ND	1	99	
003A	INF-W	W	66	ND	0.92	0.72	ND	2.6	1	98	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 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

DHS ELAP Certification 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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

QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Air QC Matrix: Water BatchID: 58585 WorkOrder 1105806

EPA Method SW8021B/8015Bm **Extraction SW5030B** **Spiked Sample ID: 1105714-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex)£	ND	60	82.9	85.1	2.69	88.9	87.5	1.63	70 - 130	20	70 - 130	20
MTBE	ND	10	112	91.8	19.7	106	111	4.15	70 - 130	20	70 - 130	20
Benzene	ND	10	103	101	1.81	101	98.2	3.28	70 - 130	20	70 - 130	20
Toluene	ND	10	102	99.6	2.34	98.2	97.6	0.581	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	99.8	97.7	2.11	98.9	96.3	2.62	70 - 130	20	70 - 130	20
Xylenes	ND	30	102	99.4	2.59	101	98.9	1.96	70 - 130	20	70 - 130	20
%SS:	102	10	101	104	2.95	100	98	2.46	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 58585 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1105806-004A	05/24/11 3:30 PM	05/26/11	05/26/11 8:40 PM	1105806-005A	05/24/11 3:45 PM	05/27/11	05/27/11 5:57 PM

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

NR = 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.

DHS ELAP Certification 1644

QA/QC Officer

McCampbell Analytical, Inc.
"When Quality Counts"

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

QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water QC Matrix: Water BatchID: 58585 WorkOrder 1105806

EPA Method SW8021B/8015Bm **Extraction SW5030B** **Spiked Sample ID: 1105714-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex)£	ND	60	82.9	85.1	2.69	88.9	87.5	1.63	70 - 130	20	70 - 130	20
MTBE	ND	10	112	91.8	19.7	106	111	4.15	70 - 130	20	70 - 130	20
Benzene	ND	10	103	101	1.81	101	98.2	3.28	70 - 130	20	70 - 130	20
Toluene	ND	10	102	99.6	2.34	98.2	97.6	0.581	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	99.8	97.7	2.11	98.9	96.3	2.62	70 - 130	20	70 - 130	20
Xylenes	ND	30	102	99.4	2.59	101	98.9	1.96	70 - 130	20	70 - 130	20
%SS:	102	10	101	104	2.95	100	98	2.46	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 58585 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1105806-001A	05/24/11 2:50 PM	05/31/11	05/31/11 5:53 PM	1105806-002A	05/24/11 3:00 PM	05/31/11	05/31/11 6:25 PM
1105806-003A	05/24/11 3:10 PM	05/27/11	05/27/11 6:55 PM				

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.

DHS ELAP Certification 1644

QA/QC Officer