November 21, 2008

VIA ALAMEDA COUNTY FTP SITE

Ms. Barbara Jakub
Alameda County Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Re: **Groundwater Monitoring and Remediation Summary Report – Third Quarter 2008**
Douglas Parking Company
1721 Webster Street
Oakland, California
ACEH File No. 129

Dear Ms. Jakub:

On behalf of the Douglas Parking Company, Pangea Environmental Services, Inc. has prepared this *Groundwater Monitoring and Remediation Summary Report – Third Quarter 2008* for the above-referenced site. The report describes groundwater monitoring and sampling, site remediation, and other site activities.

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

Sincerely,
Pangea Environmental Services, Inc.

Bob Clark-Riddell, P.E.
Principal Engineer

Attachment: *Groundwater Monitoring and Remediation Summary Report – Third Quarter 2008*

cc: Mr. Lee Douglas, Douglas Parking Company, 1721 Webster Street, Oakland, California 94612 (2 copies)
SWRCB Geotracker Database (electronic copy)

GROUNDWATER MONITORING AND REMEDIATION SUMMARY REPORT – THIRD QUARTER 2008

Douglas Parking Company
1721 Webster Street
Oakland, California
File No. 4070

November 21, 2008

Prepared for:

Mr. Lee Douglas
1721 Webster Street
Oakland, California 94612

Prepared by:

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

Written by:

Morgan Gillies
Project Manager

Bob Clark-Riddell, P.E.
Principal Engineer

INTRODUCTION

On behalf of the Douglas Parking Company, Pangea Environmental Services, Inc. (Pangea), performed groundwater monitoring and sampling, and remediation system operation and sampling during this quarter at the subject site (Figure 1). Current groundwater analytical results and elevation data are shown on Figure 2. Current and historical groundwater data are summarized on Table 1. Site remediation data are summarized on Table 2.

SITE BACKGROUND

The site is currently being utilized as a parking garage, and is located between 17th and 19th Streets in downtown Oakland, California, approximately five miles east of San Francisco Bay and half a mile west of Lake Merritt (Figure 1). The site is relatively flat with an elevation of approximately 30 feet (ft) above mean sea level (msl).

Several former underground storage tank (UST) sites are located close to the site, including Prentiss Properties to the northeast at 1750 Webster Street, a former gas station to the east at 1700 Webster, and a former Chevron service station which is located approximately 400 feet to the southwest on the corner of 17th Street and Harrison Street.

On August 3 and 6, 1992, Parker Environmental Services removed one 1,000-gallon and two 500-gallon gasoline underground storage tanks (USTs) from the site. Up to 1,500 milligrams per kilogram (mg/kg) total petroleum hydrocarbons as gasoline (TPHg) and up to 12 mg/kg benzene were detected in the soil samples collected from the UST excavation.

Several investigations have been completed at the site. On July 8 and September 8, 1994, Gen Tech/Piers Environmental, Inc. (Gen Tech) of San Jose, California drilled six exploratory borings and installed three groundwater monitoring wells (MW-1 through MW-3). In February and May 1996, Cambria Environmental Technology (Cambria) of Emeryville, California advanced seven geoprobe soil borings and installed two groundwater monitoring wells (MW-4 and MW-5). On June 27, 2003 Cambria installed two additional offsite monitoring wells (MW-6 and MW-7).

Limited site remediation has been conducted at the site. In January 1998, Cambria installed ORC socks in well MW-2 to enhance the natural attenuation of dissolved-phase hydrocarbons. Dissolved oxygen (DO) concentrations temporarily increased in well MW-2 following the ORC sock installation. In February and March 1999, a total of 120 gallons of 7.5% hydrogen peroxide solution was added into monitoring wells MW-2 and MW-3 to oxidize hydrocarbons and also increase DO levels to enhance biodegradation of

dissolved-phase hydrocarbons. The hydrogen peroxide *temporarily* increased groundwater DO levels, but hydrocarbon concentrations remained at elevated levels.

On March 4, 2003, Cambria installed a co-axial air sparging/soil vapor extraction well (SV-1/AS-1) and two angled air sparging wells (AS-2 and AS-3) to approximately 30 ft bgs (Figure 3). The wells were installed to facilitate feasibility testing and future site remediation. Site remediation via soil vapor extraction and air sparging began in October 2007.

GROUNDWATER MONITORING AND SAMPLING

On July 17, 2008, Pangea conducted groundwater monitoring and sampling at the site. Site monitoring wells were gauged for depth to water. Groundwater samples were collected from monitoring wells MW-2 through MW-7.

Before well purging, the dissolved oxygen (DO) concentration was measured in each well. DO was measured by lowering a downwell sensor to the approximate middle of the water column, and allowing the reading to stabilize during gentle height adjustment. Prior to sample collection approximately three casing volumes of water were purged using disposable bailers, an electric submersible pump or new polyethylene tubing with a check valve. During well purging field technicians measured pH, temperature and conductivity. A groundwater sample was collected from each well with a disposable bailer and decanted into the appropriate containers supplied by the analytical laboratory. Groundwater samples were labeled, placed in protective plastic bags, and stored on crushed ice at or below 4° C. All samples were transported under chain-of-custody to the State-certified analytical laboratory. Purge water was stored onsite in DOT-approved 55-gallon drums. Field data sheets are presented as Appendix A.

Monitoring Results

Groundwater elevation and analytical data are described below and summarized on Table 1 and Figure 2. Groundwater samples were analyzed for 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 as Appendix B. Dissolved oxygen concentrations in groundwater monitoring wells ranged from 0.33 mg/L (MW-5) to 0.74 mg/L (MW-6).

Groundwater Flow Direction

Based on depth-to-water measurements collected on July 17, 2008, groundwater beneath the site flowed northwards to north-northeastwards (Figure 2). The groundwater depth measurements and inferred flow direction this quarter are consistent with historical site conditions. Groundwater depths at the site have historically ranged from approximately 14 to 23 ft bgs, equivalent to a groundwater elevation range from 5 to 13 feet above msl over nine years of monitoring (Table 1).

Hydrocarbon and MTBE Distribution in Groundwater

TPHg, benzene and MTBE concentrations in groundwater at the site are shown on Figure 2. The maximum TPHg concentration (22,000 μg/L) detected this quarter was in well MW-2, while the maximum benzene concentration (320 μg/L) was detected in well MW-6. No hydrocarbons were detected in perimeter wells MW-5 or MW-7.

Detected hydrocarbon concentrations in site wells this quarter were within historical ranges. However, the dramatic benzene concentration reductions in key source area well MW-2 (from 3,000 μg/L to 180 μg/L) since the last quarter may be the result of nearby site remediation. In general, TPHg and BTEX concentrations in site monitoring wells exhibit a stable long-term trend.

MTBE was not detected above reporting limits in any of the sampled wells this quarter. The only apparent historical MTBE detection at the site (48 μg/L in well MW-3 by EPA Method 8020) was interpreted to be a false positive, based on the results of confirmation testing using EPA Method 8260 on July 21, 2003. Since the tank was removed in 1992 and because of the lack of confirmed detectable historical MTBE, MTBE is not a compound of concern at this site.

REMEDIATION SYSTEM SUMMARY

Soil Vapor Extraction/Air Sparge System

The soil vapor extraction (SVE) remediation system consists of a blower that extracts soil vapor from well SVE-1. Extracted vapors are routed through a moisture separator then treated by two 2,000-lb canisters of granular activated carbon plumbed in series. The treated vapor is discharged to the atmosphere in accordance with Bay Area Air Quality Management District (BAAQMD) requirements. The air sparging (AS) system consists of a compressor for injecting air into wells AS-1, AS-2 and/or AS-3. Injection into AS wells is controlled by timer-activated solenoid valves. Wells SVE-1 and AS-1 are constructed as vertical co-axial

wells, with angled wells AS-2 and AS-3 located in the same vault. A cross section of the remediation wells is included as Figure 3. The remediation system layout is shown on Figure 4.

Operation and Performance

SVE system operation commenced on October 29, 2007, and AS system operation started on November 12, 2007. During initial SVE system operation, the system was monitored *daily* in accordance with air permit requirements of the *Authority to Construct* issued by the Bay Area Air Quality Management District (BAAQMD). On November 27, 2007, the BAAQMD approved Pangea's request to reduce the monitoring frequency from *daily* to *weekly* to help control costs. System operation and performance data through October 14, 2008 are summarized on Table 2.

The dramatic benzene concentration reductions in key source area well MW-2 (from 3,000 µg/L to 180 µg/L) since the last quarter may be the result of nearby site remediation.

As of October 14, 2008, the SVE/AS system had been in operation for a total of 6,405 hours (approximately 266.9 days). On August 8, 2008, air sparge wells AS-1 and AS-3 were disconnected from the air compressor and air sparging was conducted solely in well AS-2 to target impact in nearby well MW-2. The SVE/AS system was temporarily shut down on September 5, 2008, because analytical results indicated that vapor-phase hydrocarbons sampled from the treatment system effluent port were at concentrations that necessitated carbon changeout for permit compliance. Spent carbon was extracted from the carbon vessels and replaced with new activated carbon on October 4, 2008. The system was restarted on October 6, 2008. Based on laboratory analytical data, the TPHg removal rates observed June 28, 2008 through October 14 2008 ranged from a low of 3.4 pounds per day (lbs/day) (October 6, 2008) to a high of 12.6 lbs/day (July 10, 2008). Benzene removal rates ranged from a low of 0.004 lbs/day (September 5 and October 6, 2008) to a high of 0.03 lbs/day (July 10, 2008). Pangea technicians periodically adjusted the system to optimize hydrocarbon removal and to minimize the noise impact to the tenant. As of October 14, 2008, laboratory analytical data indicates that the system has removed a total of approximately 2,662 lbs TPHg and 5.39 lbs benzene. The laboratory analytical reports for soil vapor are included in Appendix B.

OTHER SITE ACTIVITIES

Remediation System Operation

Pangea has proposed to Bay Area Air Quality Management District (BAAQMD) to conduct monthly monitoring of the remediation system as opposed to weekly monitoring as required in the current air permit. Based on laboratory analytical results and the measured carbon utilization rate observed for more than four

quarters, monthly operations and maintenance visits would provide sufficient monitoring to ensure compliance with the air permit. Pangea will continue weekly monitoring of the remediation system until approval is granted. System operation and performance will be summarized within quarterly monitoring reports.

Groundwater Monitoring

Pangea will continue quarterly groundwater monitoring and sampling at the site in accordance with the approved sampling frequency. Well MW-1 will be sampled annually during the first quarter of each year to help control costs. All other site monitoring wells will be gauged for depth to water and groundwater samples will be analyzed for TPHg, BTEX and MTBE by EPA Method 8015Cm/8021B.

ELECTRONIC REPORTING

This report will be submitted to Alameda County Environmental Health via upload to the County's ftp site. Applicable data, maps, and reports for groundwater monitoring and other activities will be uploaded to the State Water Resource Control Board's Geotracker database. As requested, report hard copies will no longer be provided to local agencies.

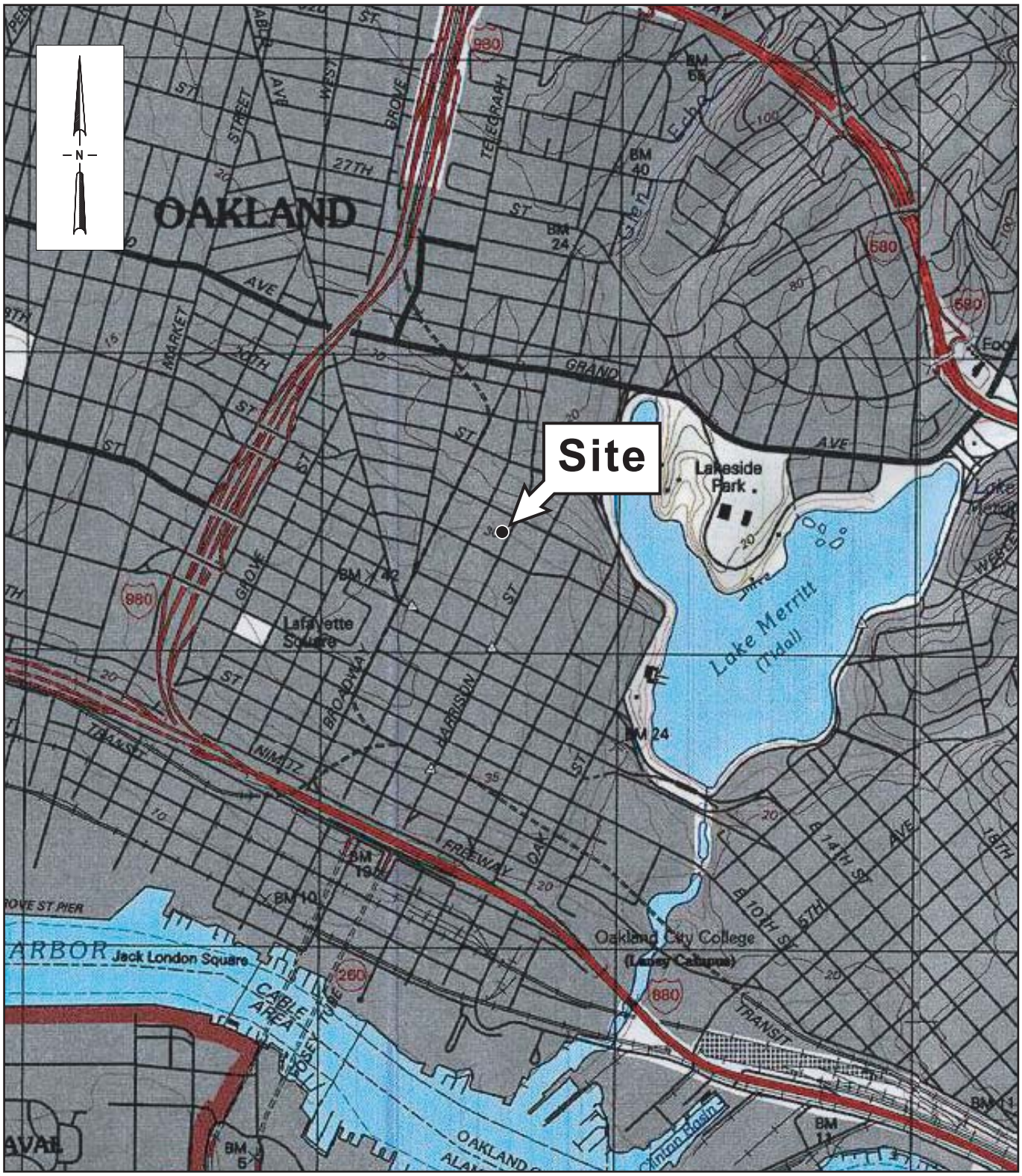
ATTACHMENTS

Figure 1 – Vicinity Map
Figure 2 – Groundwater Elevations and Hydrocarbon Concentration Map
Figure 3 – Cross Section of Remediation Wells
Figure 4 – Remediation System Layout

Table 1 – Groundwater Elevation and Analytical Data
Table 2 – SVE System Performance Summary

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

10/7/2006



SOURCE: TOPO! MAPS

0 1/8 1/4 1/2 1

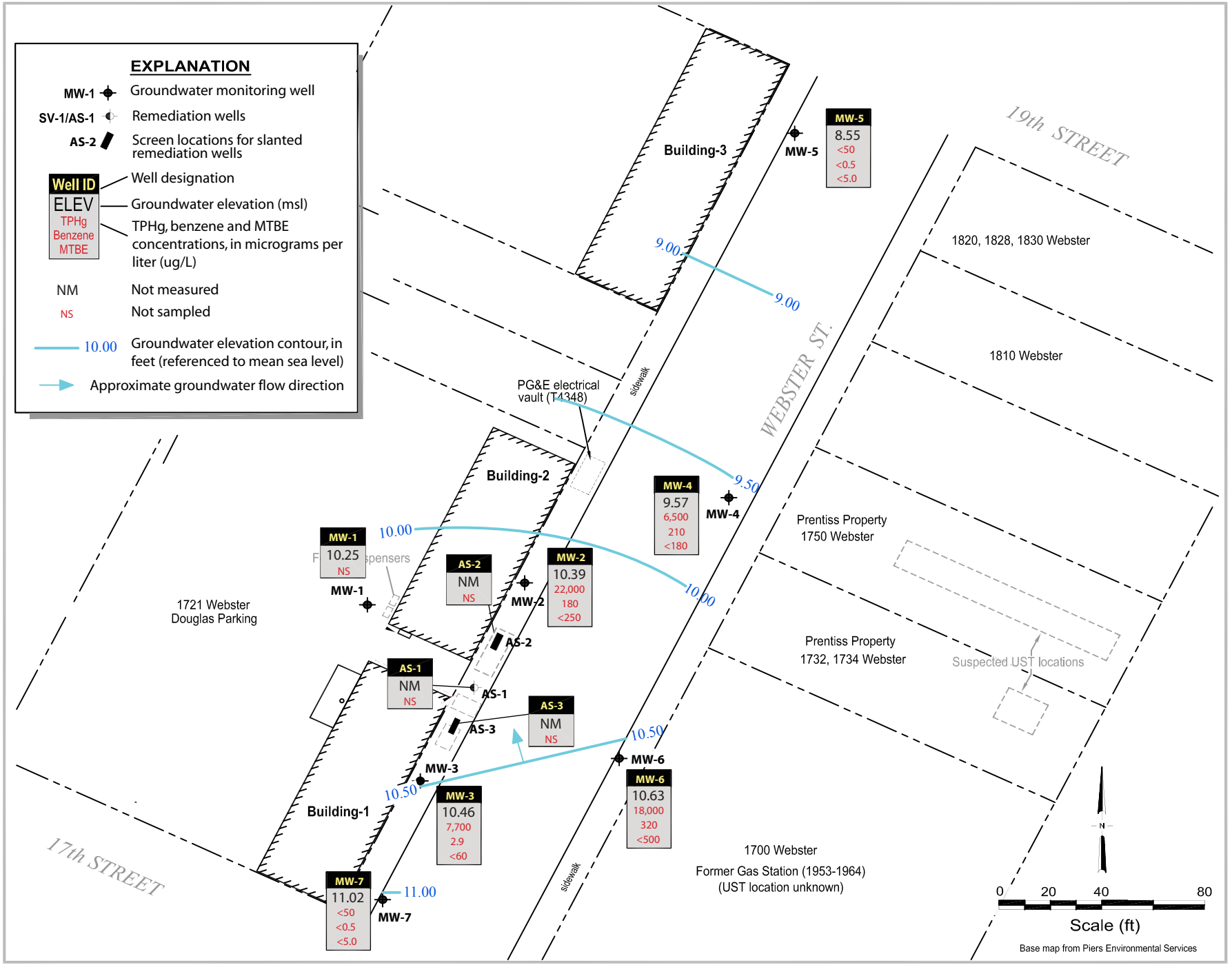
SCALE : 1" = 1/4 MILE

Figure 1

Douglas Parking Vacility
1721 Webster Street
Oakland, California

PANGEA

Vicinity Map



Douglas Parking
1721 Webster Street
Oakland, California

PANGEA

Groundwater Elevations and Hydrocarbon Concentration Map
July 17, 2008

FIGURE
2

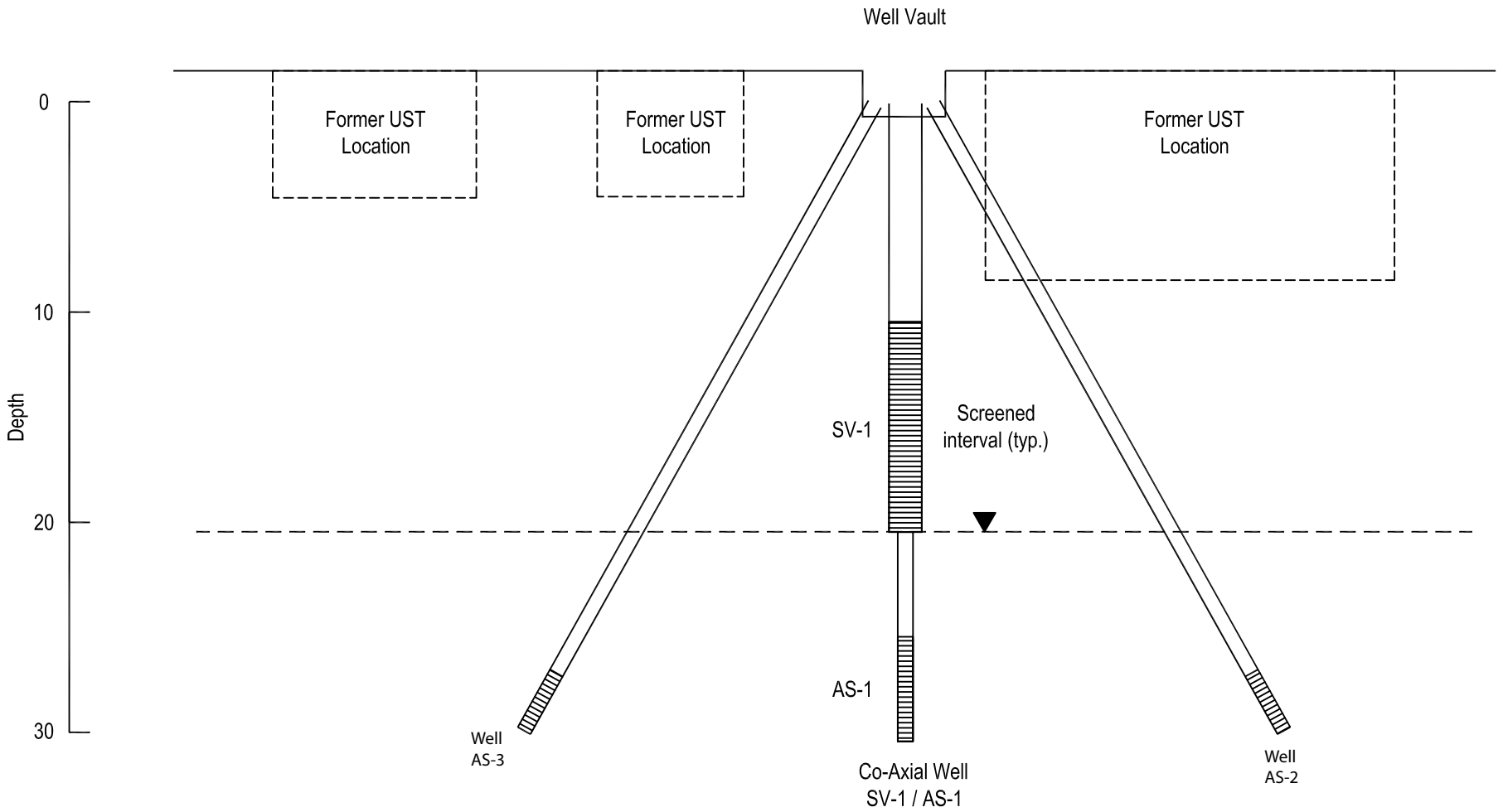


Figure 3

12/1/2006

Douglas Parking
1721 Webster Street
Oakland, California

PANGEA

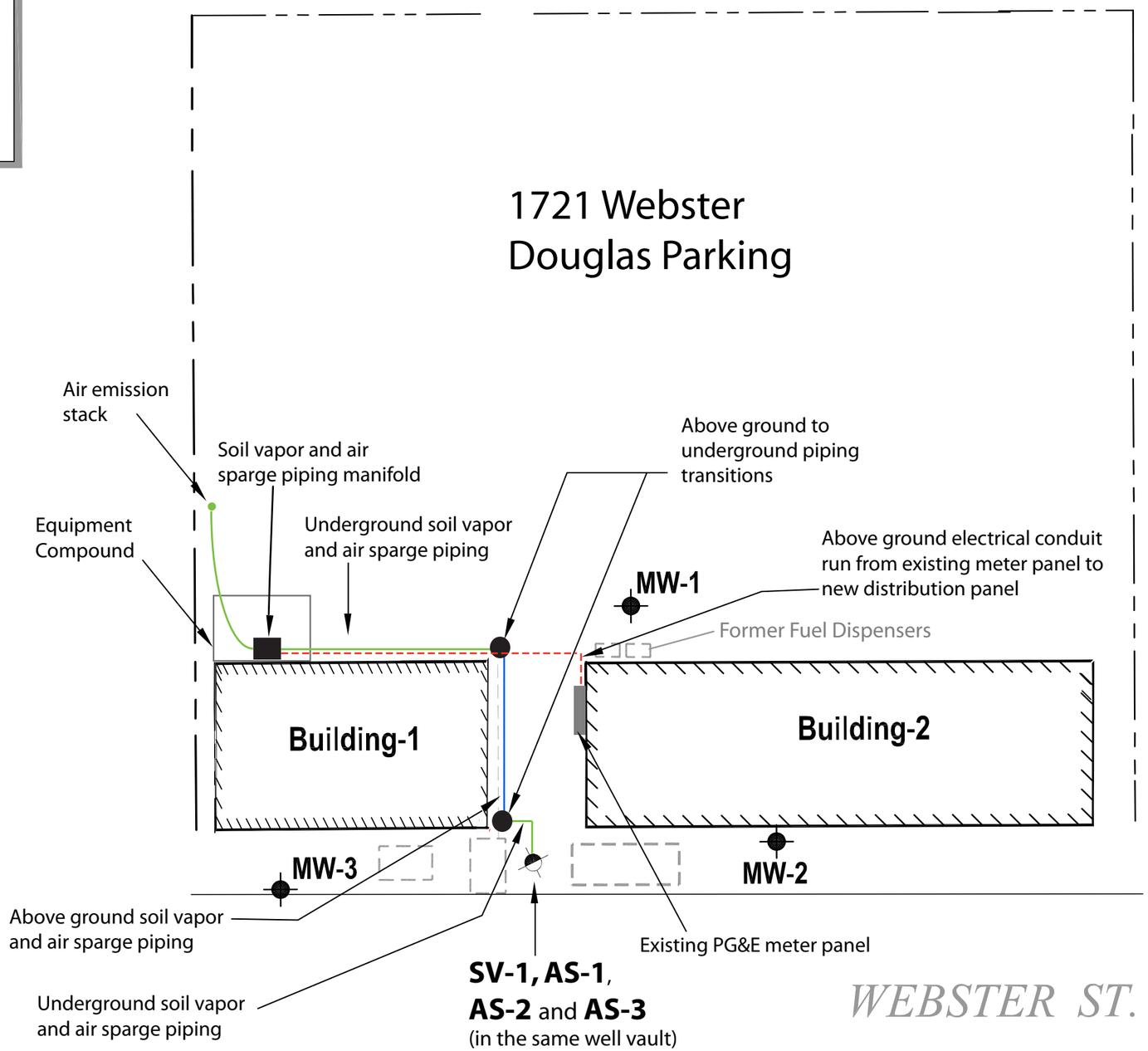
Cross Section of Remediation Wells SV-1/AS-1, AS-2, and AS-3

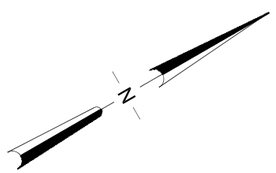
EXPLANATION

MW-1 Groundwater monitoring well

SV-1, AS-1 Remedation Wells

Former Underground Storage Tanks / Dispensers





0 20 40 80

Scale (ft)

Base map from Piers Environmental Services

Figure 4

Douglas Parking
1721 Webster Street
Oakland, California

PANGEA

Remediation System Layout

PANGEA

Table 1 - Groundwater Elevation and Analytical Data.

Douglas Parking Company, 1721 Webster Street, Oakland, California

Boring / Well ID *TOC*	Date	Depth to Water (ft)	Groundwater Elevation (ft amsl)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
				← (µg/L) →					
MW-1	12/2/1994	19.42	9.83	ND	ND	ND	ND	ND	-
29.25	3/6/1995	20.69	9.04	ND	ND	ND	ND	ND	-
29.73	7/11/1995	20.65	9.16	ND	ND	ND	ND	ND	-
29.81	5/10/1996	20.80	9.01	ND	ND	ND	ND	ND	-
	10/2/1996	21.35	8.46	-	-	-	-	-	-
	2/28/1997	20.57	9.24	-	-	-	-	-	-
	9/16/1997	21.50	8.31	-	-	-	-	-	-
	2/5/1998	20.91	8.90	-	-	-	-	-	-
	8/11/1998	20.50	9.31	-	-	-	-	-	-
	2/8/1999	21.42	8.39	-	-	-	-	-	-
	2/24/1999	22.99	6.82	-	-	-	-	-	-
	3/3/1999	20.84	8.97	-	-	-	-	-	-
	3/10/1999	20.89	8.92	-	-	-	-	-	-
	3/17/1999	20.84	8.97	-	-	-	-	-	-
	5/4/1999	20.80	9.01	-	-	-	-	-	-
	7/20/1999	21.25	8.56	-	-	-	-	-	-
	10/5/1999	21.37	8.44	-	-	-	-	-	-
	1/7/2000	21.65	8.16	-	-	-	-	-	-
	4/6/2000	21.05	8.76	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/31/2000	21.13	8.68	-	-	-	-	-	-
	10/3/2000	21.69	8.12	-	-	-	-	-	-
	1/12/2001	22.00	7.81	-	-	-	-	-	-
	4/11/2001	22.16	7.65	-	-	-	-	-	-
	7/6/2001	22.57	7.24	-	-	-	-	-	-
	10/25/2001	22.71	7.10	-	-	-	-	-	-
	3/4/2002	22.53	7.28	-	-	-	-	-	-
	4/18/2002	22.81	7.00	-	-	-	-	-	-
	7/9/2002	22.95	6.86	-	-	-	-	-	-
	10/4/2002	23.13	6.68	-	-	-	-	-	-
	1/12/2003	22.05	7.76	-	-	-	-	-	-
	4/21/2003	21.17	8.64	-	-	-	-	-	-
32.75	7/21/2003	21.39	11.36	-	-	-	-	-	-
	10/2/2003	21.64	11.11	-	-	-	-	-	-
	1/15/2004	21.10	11.65	-	-	-	-	-	-
	4/5/2004	21.20	11.55	-	-	-	-	-	-
	8/9/2004	22.97	9.78	-	-	-	-	-	-
	10/7/2004	23.55	9.20	-	-	-	-	-	-
	2/7/2005	20.90	11.85	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/5/2005	20.60	12.15	-	-	-	-	-	-
	7/6/2005	20.66	12.09	-	-	-	-	-	-
	10/10/2005	21.16	11.59	-	-	-	-	-	-
	1/26/2006	20.73	12.02	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/10/2006	20.05	12.70	-	-	-	-	-	-
	7/6/2006	20.90	11.85	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/26/2006	21.80	10.95	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/19/2007	22.02	10.73	--	--	--	--	--	--
	4/17/2007	22.13	10.62	--	--	--	--	--	--
	7/6/2007	21.83	10.92	--	--	--	--	--	--
	10/15/2007	22.28	10.47	--	--	--	--	--	--
	1/17/2008	22.33	10.42	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/9/2008	22.11	10.64	--	--	--	--	--	--
	7/17/2008	**22.50**	**10.25**	--	--	--	--	--	--

Table 1 - Groundwater Elevation and Analytical Data.

Douglas Parking Company, 1721 Webster Street, Oakland, California

Boring / Well ID *TOC*	Date	Depth to Water (ft)	Groundwater Elevation (ft amsl)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
				←			(µg/L)		→
MW-2	12/2/1994	19.50	7.60	61,300	3,000	3,900	160	4,500	-
27.10	3/6/1995	18.49	8.61	98,000	8,400	16,000	2,000	2,600	-
27.40	7/11/1995	18.45	8.95	38,000	3,100	7,500	940	3,700	-
	5/10/1996	18.56	8.84	63,000	7,400	16,000	1,500	6,000	-
	10/2/1996	19.15	8.25	21,000	2,200	3,400	430	1,600	-
	2/28/1997	18.43	8.97	39,000	4,700	9,600	950	4,200	ND
	9/16/1997	19.26	8.14	29,000	3,300	5,800	690	2,900	<620
	2/5/1998	18.66	8.74	10,000	1,000	2,000	170	860	<330
	8/11/1998	18.41	8.99	12,000	1,200	2,300	260	1,400	300
	2/8/1999	19.84	7.56	5,500	740	1,200	150	780	60
	2/17/1999	18.94	8.46	-	-	-	-	-	-
	2/24/1999	20.76	6.64	-	-	-	-	-	-
	3/3/1999	18.55	8.85	-	-	-	-	-	-
	3/10/1999	20.74	6.66	-	-	-	-	-	-
	3/17/1999	18.57	8.83	-	-	-	-	-	-
	5/4/1999	18.55	8.85	90,000	9,200	21,000	1,600	10,000	560
	7/20/1999	18.98	8.42	28,000	2,100	3,700	900	4,200	<860
	10/5/1999	19.10	8.30	11,000	870	180	30	1,400	<110
	1/7/2000	19.41	7.99	15,000	1,300	2,100	440	1,800	<14
	4/6/2000	18.80	8.60	17,000	1,800	3,100	500	2,200	<50
	7/31/2000	18.87	8.53	17,000	1,500	2,700	430	2,100	<200
	10/3/2000	19.45	7.95	27,000	2,500	4,000	660	2,900	<50
	1/12/2001	19.80	7.60	25,000	2,700	4,100	670	3,000	<200
	4/11/2001	20.03	7.37	97,000	9,500	21,000	2,200	7,900	<200
	7/6/2001	20.19	7.21	3,500	500	150	11	420	<5.0
	10/25/2001	20.35	7.05	3,800	620	230	70	400	<50
	3/4/2002	20.37	7.03	46,000	7,300	12,000	870	3,200	<500
	4/18/2002	20.15	7.25	68,000	5,100	8,900	1,100	4,000	<1,000
	7/9/2002	21.09	6.31	1,000	200	8.9	0.67	82	<10
	10/4/2002	21.28	6.12	270	100	3.4	0.53	10	<5.0
	1/12/2003	20.59	6.81	67,000	7,600	13,000	1,400	5,600	<500
	4/21/2003	19.98	7.42	78,000	7,700	12,000	1,900	6,900	<500
30.40	7/21/2003	20.08	10.32	1,800	360	16	<5.0	190	<50
	10/2/2003	20.41	9.99	4,000	790	110	60	350	<50
	1/15/2004	19.93	10.47	8,100	6.1	23	44	530	<50
	4/5/2004	18.99	11.41	14,000	1,600	2,100	550	2,500	<500
	8/9/2004	19.79	10.61	1,200	210	16	14	100	<20
	10/7/2004	20.26	10.14	1,100	2.3	9.8	2.9	36	<5.0
	2/7/2005	18.80	11.60	45,000	4,400	4,800	1,400	5,800	<200
	4/5/2005	18.40	12.00	34,000	3,700	3,600	1,200	5,300	<500 (<5.0)
	7/6/2005	18.48	11.92	24,000	1,600	1,700	570	2,800	<500
	10/10/2005	19.00	11.40	25,000	1,700	2,100	710	3,200	<500
	1/26/2006	18.58	11.82	60,000	4,600	7,200	1,600	6,900	<1,000
	4/10/2006	17.84	12.56	56,000	4,900	7,500	1,200	7,400	<500
	7/6/2006	18.76	11.64	28,000	1,900	1,700	720	2,900	<500
	10/26/2006	19.60	10.80	43,000	2,800	2,500	1,700	7,600	<500
	1/19/2007	19.84	10.56	31,000	2,700	2,400	1,400	5,800	<150
	4/17/2007	19.90	10.50	37,000	3,200	2,900	1,600	6,400	<400
	7/6/2007	19.63	10.77	30,000	3,200	2,000	1,500	5,200	<250
	10/15/2007	20.11	10.29	20,000	1,200	990	650	2,300	<500
	1/17/2008	20.10	10.30	38,000	2,900	5,100	1,200	5,000	<210
	4/9/2008	20.12	10.28	51,000	3,000	6,400	1,700	6,500	<250
	7/17/2008	**20.01**	**10.39**	**22,000**	**180**	**500**	**660**	**2,100**	**<250**

Table 1 - Groundwater Elevation and Analytical Data.

Douglas Parking Company, 1721 Webster Street, Oakland, California

Boring / Well ID *TOC*	Date	Depth to Water (ft)	Groundwater Elevation (ft amsl)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
				←			(µg/L)		→
MW-3	12/2/1994	22.15	7.35	394,000	1,200	ND	1,800	4,000	-
29.50	3/6/1995	20.09	9.16	21,000	400	150	24	62	-
29.25	7/11/1995	19.99	9.57	12,000	ND	10	16	99	-
29.56	5/10/1996	20.24	9.32	8,600	ND	7.6	16	84	-
	10/2/1996	20.90	8.66	11,000	ND	7.4	19	92	-
	2/28/1997	20.12	9.44	6,000	ND	4.4	17	88	50
	9/16/1997	20.97	8.59	6,500	<0.5	0.69	1.2	6.7	<5.0
	2/5/1998	20.39	9.17	5,400	<0.5	6.3	15	86	<63
	8/11/1998	19.95	9.61	2,700	<0.5	3.5	3.2	12	<10
	2/8/1999	20.58	8.98	6,100	<0.5	8.1	18	80	<140
	2/17/1999	20.53	9.03	-	-	-	-	-	-
	2/24/1999	22.53	7.03	-	-	-	-	-	-
	3/3/1999	20.28	9.28	-	-	-	-	-	-
	3/10/1999	22.45	7.11	-	-	-	-	-	-
	3/17/1999	20.26	9.30	-	-	-	-	-	-
	5/4/1999	20.24	9.32	11,000	<2	<2	9.8	140	<10
	7/20/1999	20.68	8.88	11,000	<0.5	3.1	13	88	<80
	10/5/1999	20.81	8.75	31,000	62	<0.5	21	170	<90
	1/7/2000	21.09	8.47	13,000	<0.5	<2	21	140	<80
	4/6/2000	20.48	9.08	5,300	1.5	1.4	9.8	60	<30
	7/31/2000	20.62	8.94	7,100	3.5	1.0	12	66	<5.0
	10/3/2000	21.13	8.43	8,000	<0.5	3.3	11	70	<40
	1/12/2001	21.45	8.11	11,000	4.3	6.7	11	73	<70
	4/11/2001	21.69	7.87	10,000	<0.5	<0.5	11	65	<10
	7/6/2001	21.60	7.96	13,000	5.3	1.6	11	58	<5.0
	10/25/2001	21.70	7.86	11,000	<0.5	3.0	15	70	<10
	3/4/2002	21.65	7.91	1,900	1.3	0.8	<0.5	15	<5.0
	4/18/2002	21.77	7.79	1,500	1.0	0.97	1.3	5.8	<5
	7/9/2002	22.03	7.53	13,000	6.8	5.7	13	59	<90
	10/4/2002	22.15	7.41	8,400	<10	<10	<10	42	<100
	1/12/2003	21.13	8.43	9,000	9.5	5.1	8.5	46	<90
	4/21/2003	20.63	8.93	10,000	<5.0	<5.0	8.5	32	<50
32.56	7/21/2003	20.68	11.88	9,600	<2.5	<2.5	7.4	39	48 (<1.0)
	10/2/2003	20.99	11.57	12,000	<5.0	<5.0	10	40	<90
	1/15/2004	20.74	11.82	13,000	37	41	78	930	<50
	4/5/2004	20.59	11.97	4,500	<1.7	<1.7	<1.7	12	<17
	8/9/2004	22.18	10.38	2,100	<1.0	3.7	<1.0	8.1	<10
	10/7/2004	22.79	9.77	2,400	6.5	26	7.5	89	<15
	2/7/2005	20.35	12.21	6,800	2.2	5.6	2.0	12	<30
	4/5/2005	19.95	12.61	6,100	2.3	2.6	1.3	8.3	<45 (<0.5)
	7/6/2005	19.93	12.63	4,500	<1.0	1.5	1.0	8.3	<10
	10/10/2005	20.45	12.11	3,800	0.73	<0.5	0.98	5.7	<15
	1/26/2006	20.05	12.51	5,100	<0.5	1.1	<0.5	6.6	<15
	4/10/2006	19.39	13.17	1,900	0.55	1.6	0.51	4.1	<10
	7/6/2006	20.25	12.31	5,600	<1.0	2.3	<1.0	6.4	<20
	10/26/2006	21.07	11.49	8,000	2.5	1.0	2.3	12	<35
	1/19/2007	21.38	11.18	77,000	19	40	9.5	130	<300
	4/17/2007	21.45	11.11	7,400	2.7	6.6	1.1	12	<40
	7/6/2007	21.29	11.27	7,100	2.4	5.6	0.85	10	<30
	10/15/2007	21.62	10.94	10,000	<5.0	<5.0	<5.0	14	<50
	1/17/2008	21.68	10.88	6,400	1.8	<0.5	1.0	8.4	23
	4/9/2008	21.42	11.14	4,700	1.7	2.2	<0.5	3.8	<18
	7/17/2008	**22.10**	**10.46**	**7,700**	**2.9**	**3.1**	**1.4**	**11**	**<60**

Table 1 - Groundwater Elevation and Analytical Data.

Douglas Parking Company, 1721 Webster Street, Oakland, California

Boring / Well ID *TOC*	Date	Depth to Water (ft)	Groundwater Elevation (ft amsl)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
				← (µg/L) →					
MW-4	5/10/1996	16.98	8.31	14,000	ND	1,200	720	3,100	-
25.29	10/2/1996	17.65	7.64	12,000	ND	650	580	2,200	-
	2/28/1997	16.80	8.49	13,000	ND	1,100	750	2,700	110
	9/17/1997	17.93	7.36	13,000	<2.5	820	750	2,900	<190
	2/5/1998	16.78	8.51	13,000	<1.0	690	690	2,900	<170
	8/11/1998	16.59	8.70	15,000	<5	360	520	1,900	280
	2/8/1999	17.10	8.19	9,800	<5	680	770	2,200	300
	2/24/1999	18.95	6.34	-	-	-	-	-	-
	3/3/1999	16.80	8.49	-	-	-	-	-	-
	3/10/1999	16.86	8.43	-	-	-	-	-	-
	3/17/1999	16.82	8.47	-	-	-	-	-	-
	5/4/1999	16.86	8.43	11,000	46	600	620	1,900	<100
	7/20/1999	17.30	7.99	13,000	<0.5	470	7.0	2,000	<150
	10/5/1999	17.43	7.86	18,000	4.4	720	800	2,100	<120
	1/7/2000	17.78	7.51	18,000	<2	930	990	2,700	<30
	4/6/2000	17.17	8.12	8,000	31	390	530	1,300	<10
	7/31/2000	17.21	8.08	6,200	13	170	460	850	<10
	10/3/2000	18.00	7.29	14,000	42	820	730	2,000	<50
	1/12/2001	18.20	7.09	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/11/2001	18.31	6.98	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/6/2001	18.35	6.94	470	2.3	1.6	0.81	43	<5.0
	10/25/2001	18.47	6.82	110	0.70	<0.5	<0.5	3.3	<5.0
	3/4/2002	18.43	6.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/18/2002	18.61	6.68	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/9/2002	19.50	5.79	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/4/2002	19.83	5.46	310	2.0	2.9	13	16	<0.5
	1/12/2003	19.07	6.22	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/21/2003	18.71	6.58	<50	<0.5	<0.5	<0.5	<0.5	<5.0
28.29	7/21/2003	18.81	9.48	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/2/2003	19.02	9.27	59	0.78	<0.5	1.1	0.91	<5.0
	1/15/2004	18.68	9.61	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/5/2004	17.41	10.88	6,200	29	250	450	730	<100
	8/9/2004	19.07	9.22	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/7/2004	19.65	8.64	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/7/2005	17.21	11.08	8,700	48	340	550	720	<100
	4/5/2005	16.78	11.51	6,900	27	290	520	660	<170 (<0.5)
	7/6/2005	16.98	11.31	5,600	<5.0	130	470	480	<50
	10/10/2005	17.59	10.70	6,300	23	78	530	430	<50
	1/26/2006	17.08	11.21	5,600	41	68	400	290	<120
	4/10/2006	16.27	12.02	2,900	39	32	200	140	<60
	7/6/2006	17.20	11.09	5,400	65	59	340	150	<120
	10/26/2006	18.06	10.23	7,200	72	46	460	200	<150
	1/19/2007	18.29	10.00	7,100	140	35	520	150	<200
	4/17/2007	18.30	9.99	4,900	90	32	290	89	<110
	7/6/2007	18.00	10.29	4,600	91	30	210	55	<90
	10/15/2007	18.52	9.77	8,600	200	62	480	110	<210
	1/17/2008	18.46	9.83	820	15	3.7	25	9.3	<10
	4/9/2008	18.23	10.06	3,600	55	20	160	64	<60
	7/17/2008	**18.72**	**9.57**	**6,500**	**210**	**47**	**510**	**180**	**<180**

Table 1 - Groundwater Elevation and Analytical Data.

Douglas Parking Company, 1721 Webster Street, Oakland, California

Boring / Well ID *TOC*	Date	Depth to Water (ft)	Groundwater Elevation (ft amsl)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
				←			(µg/L)		→
MW-5	5/10/1996	14.60	7.37	ND	ND	ND	ND	ND	-
21.97	10/2/1996	15.25	6.72	ND	ND	ND	ND	ND	-
	2/28/1997	14.31	7.66	ND	ND	ND	ND	ND	ND
	9/17/1997	15.18	6.79	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0
	2/5/1998	13.64	8.33	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	8/11/1998	13.92	8.05	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/8/1999	14.19	7.78	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/24/1999	16.18	5.79	-	-	-	-	-	-
	3/3/1999	14.23	7.74	-	-	-	-	-	-
	3/10/1999	14.32	7.65	-	-	-	-	-	-
	3/17/1999	14.25	7.72	-	-	-	-	-	-
	5/4/1999	14.41	7.56	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/20/1999	14.44	7.53	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/5/1999	14.79	7.18	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/7/2000*	15.23	6.74	-	-	-	-	-	-
	4/6/2000	14.74	7.23	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/31/2000	14.52	7.45	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/3/2000	15.37	6.60	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/12/2001	15.70	6.27	6,400	13	290	450	1,100	<40
	4/11/2001	15.78	6.19	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/6/2001	15.97	6.00	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/25/2001	16.05	5.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	3/4/2002	16.21	5.76	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/18/2002	16.59	5.38	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/9/2002	16.94	5.03	170	1.0	0.65	2.1	4.0	<15
	10/4/2002	17.14	4.83	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/12/2003	16.58	5.39	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/21/2003	15.90	6.07	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/21/2003	16.03	8.96	<50	<0.5	<0.5	<0.5	<0.5	<5.0
24.99	10/2/2003	16.33	8.66	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/15/2004	16.21	8.78	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/5/2004	15.01	9.98	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	8/9/2004	16.85	8.14	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/7/2004	17.48	7.51	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/7/2005	16.52	8.47	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/5/2005	14.45	10.54	<50	<0.5	<0.5	<0.5	<0.5	<5.0 (<0.5)
	7/6/2005	14.85	10.14	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/10/2005	15.44	9.55	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/26/2006	14.96	10.03	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/10/2006	14.01	10.98	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/6/2006	15.17	9.82	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/26/2006	15.94	9.05	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/19/2007	16.05	8.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/17/2007	15.99	9.00	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/6/2007	15.50	9.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/15/2007	16.27	8.72	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/17/2008	15.10	9.89	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/9/2008	15.96	9.03	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/17/2008	**16.44**	**8.55**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**

Table 1 - Groundwater Elevation and Analytical Data.

Douglas Parking Company, 1721 Webster Street, Oakland, California

Boring / Well ID *TOC*	Date	Depth to Water (ft)	Groundwater Elevation (ft amsl)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
				← (µg/L) →					
MW-6	6/30/2003	19.60	11.39	68,000	950	6,000	2,400	10,000	<1,000
30.99	7/21/2003	19.67	11.32	120,000	170	1,400	1,100	10,000	<1,000
	10/2/2003	19.97	11.02	16,000	7.6	200	38	1,800	<100
	1/15/2004	19.55	11.44	14,000	48	51	94	1,100	<50
	4/5/2004	19.17	11.82	24,000	180	900	430	1,800	<500
	8/9/2004	20.98	10.01	5,300	6.4	25	5.3	69	<17 (<0.5)
	10/7/2004	21.52	9.47	5,600	11	58	18	210	<50 (<0.5)
	2/7/2005	19.00	11.99	31,000	120	620	310	1,200	<500
	4/5/2005	18.60	12.39	21,000	170	1,100	350	1,300	<500 (<5.0)
	7/6/2005	18.56	12.43	26,000	130	920	320	1,200	<500
	10/10/2005	19.99	11.00	19,000	140	840	250	980	<500
	1/26/2006	18.70	12.29	10,000	140	1,100	270	1,200	<170
	4/10/2006	18.04	12.95	13,000	140	1,000	280	1,000	<250
	7/6/2006	18.80	12.19	17,000	150	1,000	290	1,000	<250
	10/26/2006	19.62	11.37	23,000	230	660	470	1,500	<500
	1/19/2007	19.92	11.07	18,000	190	620	350	1,100	<150
	4/17/2007	19.97	11.02	23,000	380	1,400	590	2,000	<450
	7/6/2007	19.81	11.18	28,000	600	3,000	900	2,700	<500
	10/15/2007	20.15	10.84	25,000	290	680	410	1,100	<250
	10/15/2007	20.15	10.84	25,000	290	680	410	1,100	<250
	1/17/2007	20.22	10.77	16,000	200	130	130	460	<150
	4/9/2008	19.86	11.13	18,000	320	870	480	1,500	<250
	7/17/2008	**20.36**	**10.63**	**18,000**	**320**	**510**	**420**	**1,200**	**<500**
MW-7	6/30/2003	21.40	11.71	170	<0.5	2.1	2.0	8.7	<5.0
33.11	7/21/2003	21.44	11.67	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/2/2003	21.73	11.38	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/15/2004	21.57	11.54	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/5/2004	20.84	12.27	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	8/9/2004	22.68	10.43	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/7/2004	23.27	9.84	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	2/7/2005	20.60	12.51	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/5/2005	20.22	12.89	<50	<0.5	0.75	<0.5	<0.5	<5.0 (<0.5)
	7/6/2005	20.25	12.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/10/2005	20.70	12.41	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/26/2006	20.32	12.79	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/10/2006	19.62	13.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/6/2006	20.47	12.64	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/26/2006	21.30	11.81	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/19/2007	21.62	11.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/17/2007		#VALUE!	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/6/2007	21.59	11.52	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/15/2007	21.85	11.26	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/17/2007	21.90	11.21	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/9/2008	21.61	11.50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/17/2008	**22.09**	**11.02**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**
AS-1	7/6/2006	19.53	--	18,000	2,700	570	700	1,900	<500
	10/26/2006	20.33	--	15,000	1,900	340	360	1,400	<250
	1/19/2007	20.64	--	5,700	1,100	110	88	630	<50
	1/19/2007	20.64	--	5,700	1,100	110	88	630	<50
	4/17/2007	20.71	--	--	--	--	--	--	--
	7/16/2007	--	--	--	--	--	--	--	--
	10/15/2007	--	--	--	--	--	--	--	--
	1/17/2008	--	--	--	--	--	--	--	--

Table 1 - Groundwater Elevation and Analytical Data.

Douglas Parking Company, 1721 Webster Street, Oakland, California

Boring / Well ID *TOC*	Date	Depth to Water (ft)	Groundwater Elevation (ft amsl)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
				← (µg/L) →					
AS-1*(cont'd)*	4/9/2008	--	--	--	--	--	--	--	--
AS-2	7/6/2006	22.26	--	2,100	6.1	<0.5	33	200	<20
	10/26/2006	23.25	--	280	1.1	<0.5	<0.5	6.0	<15
	1/19/2007	23.61	--	2,100	2.3	<0.5	96	310	<35
	4/17/2007	23.70	--	--	--	--	--	--	--
	7/16/2007	--	--	--	--	--	--	--	--
	10/15/2007	--	--	--	--	--	--	--	--
	1/17/2008	--	--	--	--	--	--	--	--
	4/9/2008	--	--	--	--	--	--	--	--
AS-3	7/6/2006	21.77	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/26/2006	22.66	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	1/19/2007	22.97	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/17/2007	23.06	--	--	--	--	--	--	--
	7/16/2007	--	--	--	--	--	--	--	--
	10/15/2007	--	--	--	--	--	--	--	--
	1/17/2008	--	--	--	--	--	--	--	--
	4/9/2008	--	--	--	--	--	--	--	--
Trip Blank	01/12/01	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	4/11/2001	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	7/6/2001	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	3/4/2002	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/2/2003	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0
	10/15/2007	--	--	--	--	--	--	--	--

Notes and Abbreviations:

TOC = Top of casing elevations in feet above mean sea level.
ft amsl = Measured in feet above mean sea level
µg/L = Micrograms per liter.
TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015C.
BTEX = Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8021B.
MTBE = Methyl tertiary butyl ether by EPA Method 8021B, and by EPA Method 8260 in parenthesis.
<0.5 = Concentration not detected above specific laboratory reporting limit.
-- = Not analyzed, not sampled, or not applicable.
ND = Not detected.
Data prior to 7/11/95 from Gen Tech and Piers Environmental Quarterly Groundwater Monitoring Reports dated December 2, 1994 and March 6, 1995, respectively.

On July 31, 2003, Virgil Chavez Land Surveying of Vallejo, California surveyed monitoring wells using a benchmark in the top of the curb near the SW return of the NW corner of 34th and Broadway.

Table 2. SVE/AS System Performance Summary - 1721 Webster Street, Oakland, California

Date	Sample ID	FIELD MEASUREMENTS				ANALYTICAL RESULTS		REMOVAL				Air Sparge Unit on? (yes/no)	Comments
		Hour Meter Reading (hours)	System Vapor Flow Rate (cfm)	Applied Vacuum ("H20)	FID Reading (ppm)	TPHg Lab Data (ppmv)	Benzene Lab Data (ppmv)	SVE TPHg Removal Rate (lbs/day)	Cumulative SVE TPHg Removal (lbs)	SVE Benzene Removal Rate (lbs/day)	Cumulative SVE Benzene Removal (lbs)		
10/29/07	N/A	1.0	0	0	0	0	0	0	0	0	0	no	System start up
10/29/07	SYS-INF	1.5	104	68	3,400	9,600	76	320.3	6.7	2.30	0.14	no	
	SYS-MID				8	23	ND<0.077						
	SYS-EFF				0	27	0.15						
10/30/07	SYS-INF	24.3	50	27	37,000	9,000	74	144.4	143.8	1.08	1.17	no	Readings upon arrival
	SYS-MID				635	ND<7.0	ND<0.077						
	SYS-EFF				700	60	0.29						
10/30/07	SYS-INF	25.2	45	27	3,200	1,500	11	21.7	144.6	0.14	1.17	no	Readings after dilution air introduced to reduce noise and limit hydrocarocarbon loading on carbon (prevent thermal
	SYS-MID				620	ND<7.0	ND<0.077						
	SYS-EFF				530	ND<7.0	ND<0.077						
10/31/07	SYS-INF	48.8	40	27	922*	880	8.6	11.3	155.7	0.10	1.27	no	Dilution airflow set at ~25% of total
	SYS-MID				0*	ND<7.0	ND<0.077						
	SYS-EFF				0*	ND<7.0	ND<0.077						
11/01/07	SYS-INF	78.8	39	27	1,475	---	---	11.0	169.5	0.10	1.39	no	
	SYS-MID				14	---	---						
	SYS-EFF				9	---	---						
11/02/07	SYS-INF	100.2	40	27	736	---	---	11.3	179.6	0.10	1.48	no	Shut system down at 100.5 hours for weekend
	SYS-MID				19	---	---						
	SYS-EFF				10	---	---						
11/05/07	SYS-INF	100.9	38	27	1,546	---	---	10.7	179.9	0.10	1.48	no	Restart system at 100.5 hours on 11/5/07
	SYS-MID				30	---	---						
	SYS-EFF				4	---	---						
11/06/07	SYS-INF	126.7	38	27	213	---	---	10.7	191.4	0.10	1.59	no	
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						
11/07/07	SYS-INF	154.7	45	27	170	---	---	12.7	206.2	0.11	1.72	no	
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						
11/08/07	SYS-INF	178.2	47	27	160	---	---	13.3	219.2	0.12	1.83	no	Lab analysis performed for methane; 2.4 ul/L detected in SYS EFF
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						

Table 2. SVE/AS System Performance Summary - 1721 Webster Street, Oakland, California

Date	Sample ID	FIELD MEASUREMENTS				ANALYTICAL RESULTS		REMOVAL				Air Sparge Unit on? (yes/no)	Comments
		Hour Meter Reading (hours)	System Vapor Flow Rate (cfm)	Applied Vacuum ("H20)	FID Reading (ppm)	TPHg Lab Data (ppmv)	Benzene Lab Data (ppmv)	SVE TPHg Removal Rate (lbs/day)	Cumulative SVE TPHg Removal (lbs)	SVE Benzene Removal Rate (lbs/day)	Cumulative SVE Benzene Removal (lbs)		
11/09/07	SYS-INF	200.3	45	31	163	---	---	12.7	106.0	0.11	0.94	no	Shut system down at 200.3 hours for weekend
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						
11/12/07	SYS-INF	206.3	42	28	211	---	---	11.9	109.0	0.11	0.97	yes	Restart system at 200.3 hours on 11/12/07; start air sparge system
	SYS-MID				0	---	---						
	SYS-EFF				2	---	---						
11/13/07	SYS-INF	225.6	46	28	2,937	---	---	13.0	119.4	0.12	1.06	yes	
	SYS-MID				0	---	---						
	SYS-EFF				4	---	---						
11/14/07	SYS-INF	253.0	45	28	4,113	---	---	12.7	133.9	0.11	1.19	yes	
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						
11/15/07	SYS-INF	278.4	45	28	2,810	---	---	12.7	147.4	0.11	1.31	yes	
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						
11/16/07	SYS-INF	301.4	43	28	2,570	---	---	12.1	159.0	0.11	1.41	yes	
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						
11/17/07	SYS-INF	327.1	42	41	11	---	---	11.9	171.7	0.11	1.52	yes	
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						
11/18/07	SYS-INF	352.1	44	41	530	---	---	12.4	184.6	0.11	1.64	yes	
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						
11/19/07	SYS-INF	375.2	42	41	24	22	<0.077	0.3	188.7	0.00	1.64	yes	
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						
11/20/07	SYS-INF	398.8	49	68	660	---	---	0.3	193.3	0.00	1.64	yes	Increased system vacuum by closing off recirculation valve on blower.
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						
11/26/07	SYS-INF	NM	49	68	1,800	---	---	0.3	193.3	0.00	1.64	yes	Received verbal approval from BAAQMD to decrease monitoring from daily to weekly.
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						
12/03/07	SYS-INF	593.5	48	61	1,300	---	---	0.3	200.2	0.00	1.64	yes	
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						

Table 2. SVE/AS System Performance Summary - 1721 Webster Street, Oakland, California

Date	Sample ID	FIELD MEASUREMENTS				ANALYTICAL RESULTS		REMOVAL				Air Sparge Unit on? (yes/no)	Comments
		Hour Meter Reading (hours)	System Vapor Flow Rate (cfm)	Applied Vacuum ("H20)	FID Reading (ppm)	TPHg Lab Data (ppmv)	Benzene Lab Data (ppmv)	SVE TPHg Removal Rate (lbs/day)	Cumulative SVE TPHg Removal (lbs)	SVE Benzene Removal Rate (lbs/day)	Cumulative SVE Benzene Removal (lbs)		
12/14/07	SYS-INF	853.0	52	54	280	280	0.17	4.7	293.2	0.003	1.69	yes	
	SYS-MID				0	<7.0	<0.077						
	SYS-EFF				0	<7.0	<0.077						
12/21/07	SYS-INF	1,021.5	58	54	0	170	0.14	3.2	315.5	0.00	1.70	yes	SVE shutdown after reading, restarted
	SYS-MID				0	<7.0	<0.077						
	SYS-EFF				0	<7.0	<0.077						
12/27/07	SYS-INF	1,163.5	--	--	--	---	---	NM	315.5	NM	1.70	yes	SVE shutdown on arrival, restart and monitor
	SYS-MID					---	---						
	SYS-EFF					---	---						
12/28/07	SYS-INF	1,188.5	50	54	14	14	<0.077	0.2	317.0	0.00	1.70	yes	
	SYS-MID				0	<7.0	<0.077						
	SYS-EFF				0	<7.0	<0.077						
01/03/08	SYS-INF	1,329.5	51	54	50	50	<0.077	0.8	321.8	0.00	1.70	yes	
	SYS-MID				0	15	<0.077						
	SYS-EFF				0	<7.0	<0.077						
01/10/08	SYS-INF	1,430.2	50	54	0	16	<0.077	0.3	322.9	0.00	1.70	no	AS system off while sampling
	SYS-MID				0	13	<0.077						
	SYS-EFF				0	<7.0	<0.077						
1/15/2008*	SYS-INF	1,546.0	50	81	--	1,200	2.1	19.2	415.8	0.03	1.85	yes	
	SYS-MID					7.7	<0.077						
	SYS-EFF					<7.0	<0.077						
1/23/2008*	SYS-INF	1,694.5	50	95	--	1,300	1.6	20.9	544.8	0.02	2.00	yes	
	SYS-MID					11	<0.077						
	SYS-EFF					<7.0	<0.077						
01/30/08	SYS-INF	1,864.6	49	81	--	2,300	2.6	36.2	801.1	0.04	2.49	yes	
	SYS-MID					24	<0.077						
	SYS-EFF					<7.0	<0.077						
02/06/08	SYS-INF	2,027.5	50	81	--	1,700	2.9	27.3	986.2	0.04	2.77	yes	
	SYS-MID					43	<0.077						
	SYS-EFF					<7.0	<0.077						
02/12/08	SYS-INF	2,173.3	60	95	--	1,500	1.7	28.9	1,161.6	0.03	2.95	yes	
	SYS-MID					520	1.1						
	SYS-EFF					28	<0.077						

Table 2. SVE/AS System Performance Summary - 1721 Webster Street, Oakland, California

Date	Sample ID	FIELD MEASUREMENTS				ANALYTICAL RESULTS		REMOVAL				Air Sparge Unit on? (yes/no)	Comments
		Hour Meter Reading (hours)	System Vapor Flow Rate (cfm)	Applied Vacuum ("H20)	FID Reading (ppm)	TPHg Lab Data (ppmv)	Benzene Lab Data (ppmv)	SVE TPHg Removal Rate (lbs/day)	Cumulative SVE TPHg Removal (lbs)	SVE Benzene Removal Rate (lbs/day)	Cumulative SVE Benzene Removal (lbs)		
02/21/08	SYS-INF	2,394.1	65	95	--	---	---	31.3	1,449.4	0.03	3.25	yes	Samples not picked up by the laboratory courier before hold time expired.
	SYS-MID					---	---						
	SYS-EFF					---	---						
02/29/08	SYS-INF	2,580.5	27	95	--	1,100	1.4	9.5	1,523.4	0.01	3.34	yes	System shut down for future changeout of carbon in first vessel.
	SYS-MID					890	5.3						
	SYS-EFF					<7.0	<0.077						
04/07/08	SYS-INF	2,581.4	44	7.5	--	1,100	1.4	15.5	1,524.0	0.02	3.34	yes	Restart system after carbon changeout
	SYS-MID					---	---						
	SYS-EFF					---	---						
04/10/08	SYS-INF	2,650.3	26	7	--	1,200	3.6	10.0	1,552.7	0.03	3.41	yes	
	SYS-MID					<7.0	<0.077						
	SYS-EFF					<7.0	<0.077						
04/17/08	SYS-INF	2,826.1	28	8	962	---	---	10.8	1,631.7	0.03	3.63	yes	
	SYS-MID				3	---	---						
	SYS-EFF				3	---	---						
04/23/08	SYS-INF	2,969.4	26	7.5	--	1,100	1.5	9.2	1,686.4	0.01	3.70	yes	
	SYS-MID					<7.0	<0.077						
	SYS-EFF					<7.0	<0.077						
04/30/08	SYS-INF	3,136.8	23	7.5	--	780	1.4	5.8	1,726.6	0.01	3.76	yes	
	SYS-MID					<7.0	<0.077						
	SYS-EFF					<7.0	<0.077						
05/07/08	SYS-INF	3,304.6	28	8	378	---	---	7.0	1,775.6	0.01	3.84	yes	
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						
05/14/08	SYS-INF	3,472.2	26	8	523	---	---	6.5	1,821.0	0.01	3.92	yes	
	SYS-MID				6	---	---						
	SYS-EFF				0	---	---						
05/23/08	SYS-INF	3,690.2	28	7	264	---	---	7.0	1,884.7	0.01	4.02	yes	
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						
05/30/08	SYS-INF	3,859.2	36	7	317	---	---	9.0	1,948.1	0.01	4.12	yes	
	SYS-MID				1	---	---						
	SYS-EFF				0	---	---						
06/05/08	SYS-INF	3,999.6	38	7	350	---	---	9.5	2,003.7	0.02	4.21	yes	
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						
06/13/08	SYS-INF	4,193.1	38	7	--	700	1.6	8.5	2,072.5	0.02	4.36	yes	
	SYS-MID					<7.0	<0.077						
	SYS-EFF					<7.0	<0.077						
06/19/08	SYS-INF	4336.7	25	7	349	---	---	5.6	2,106.1	0.01	4.43	yes	
	SYS-MID				--	---	---						
	SYS-EFF				0	---	---						

Table 2. SVE/AS System Performance Summary - 1721 Webster Street, Oakland, California

Date	Sample ID	FIELD MEASUREMENTS: Hour Meter Reading (hours)	FIELD MEASUREMENTS: System Vapor Flow Rate (cfm)	FIELD MEASUREMENTS: Applied Vacuum ("H20)	FIELD MEASUREMENTS: FID Reading (ppm)	ANALYTICAL RESULTS: TPHg Lab Data (ppmv)	ANALYTICAL RESULTS: Benzene Lab Data (ppmv)	REMOVAL: SVE TPHg Removal Rate (lbs/day)	REMOVAL: Cumulative SVE TPHg Removal (lbs)	REMOVAL: SVE Benzene Removal Rate (lbs/day)	REMOVAL: Cumulative SVE Benzene Removal (lbs)	Air Sparge Unit on? (yes/no)	Comments
06/27/08	SYS-INF	4,529.7	25	7	335	---	---	5.6	2,151.3	0.01	4.52	yes	
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						
07/10/08	SYS-INF	4,839.0	56	8	256	---	---	12.6	2,313.4	0.03	4.86	yes	
	SYS-MID				40	---	---						
	SYS-EFF				0	---	---						
07/18/08	SYS-INF	5,032.0	33	8	330	---	---	7.4	2,373.0	0.02	4.98	yes	
	SYS-MID				174	---	---						
	SYS-EFF				0	---	---						
7/24/2008**	SYS-INF	5,178.0	33	8	360	---	---	7.4	2,418.0	0.02	5.07	yes	
	SYS-MID				187	---	---						
	SYS-EFF				0	---	---						
8/1/2008**	SYS-INF	5,368.0	33	8	248	---	---	7.4	2,476.7	0.01	5.16	yes	Lowered motor speed of blower to reduce noise within garage per client
	SYS-MID				193	---	---						
	SYS-EFF				0	---	---						
8/8/2008**	SYS-INF	5,536.7	17	4.5	146	---	---	4.6	2,508.9	0.01	5.19	yes	Stopped air sparging to wells AS-1 & AS-3. Sparging in well AS-2 full time.
	SYS-MID				153	---	---						
	SYS-EFF				0	---	---						
8/18/2008**	SYS-INF	5,774.1	17	4.5	365	840	1.1	4.6	2,554.2	0.01	5.25	yes	
	SYS-MID				170	140	<0.077						
	SYS-EFF				0	<7.0	<0.077						
08/22/08	SYS-INF	5,873.9	17	4	325	---	---	4.6	2,573.3	0.01	5.27	yes	
	SYS-MID				207	---	---						
	SYS-EFF				0	---	---						
09/05/08	SYS-INF	6,208.4	14	5	385	---	---	3.6	2,624.0	0.004	5.33	yes	System shutdown for carbon changeout
	SYS-MID				219	---	---						
	SYS-EFF				23	---	---						
10/06/08	SYS-INF	6,211.0	13	5	443	1,000	2	3.4	2,624.4	0.004	5.33	yes	System restarted; samples collected after system ran for approximately 1 hour
	SYS-MID				23	---	---						
	SYS-EFF				0	<7.0	<0.077						
10/14/08	SYS-INF	6,405.0	15	5	215	---	---	4.7	2,662.0	0.01	5.39	yes	
	SYS-MID				0	---	---						
	SYS-EFF				0	---	---						

Notes:
NM = not measured
cfm = cubic feet per minute.
ppmv = Parts per million by volume
lbs = Pounds
"H2O = Inches of water
SVE/AS = Soil vapor extraction and air sparge
FID = Flame Ionization Detector.
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 = vapor analytical concentration (ppmv) x system flowrate (scfm) x (1lb-mole/386 ft³) x molecular weight (86 lb/lb-mole for TPH-Gas hexane) x 1440 min/day x 1/1,000,000.
* = Subtracted carbon tip readings of 28, 17, and 10, respectively, from influent, midpoint and effluent readings without carbon tip to account for methane.
(--) = not sampled
*Soil vapor flow rates were not measured on 1/15/08 and 1/23/08 due to equipment breakage. For hydrocarbon mass removal calculation purposes, the flow rate recorded during the 1/10/08 visit was used.
**Vapor flow meter being serviced from 7-24-2008 through 8-18-2008. Flow rates assumed from previous data, field observations, and adjustments made to system.

APPENDIX A

Groundwater Monitoring Field Data Sheets

Pangea
ENVIRONMENTAL SERVICES, INC.

Well Gauging Data Sheet

Project.Task #: 1135.001 216				Project Name: Douglas Parking			
Address: 1721 Webster Street, Oakland, Ca						Date:7/17/08	
Name: Sanjiv Gill				Signature:			
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"	6:35			22.50	26.65	TOC
MW-2	2"	3:40			20.01	25.95	
MW-3	2"	3:31			22.10	26.90	
MW-4	2"	3:27			18.72	29.42	
MW-5	2"	3:20			16.44	24.50	
MW-6	2"	3:35			20.36	25.79	
MW-7	2"	3:24			22.09	28.46	X

Comments: MW-1 DO = 0.65 mg/L

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET

Well ID: MW-2

Project.Task #: 1135.001 216	Project Name: Douglas Parking
Address: 1721 Webster Street, Oakland, CA	
Date: 7/17/08	Weather: Cloudy
Well Diameter: 2"	Volume/ft. 1" = 0.04 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 | 6" = 1.47 | radius^2 * 0.163
Total Depth (TD): 25.95	Depth to Product:
Depth to Water (DTW): 20.01	Product Thickness:
Water Column Height: 5.94	1 Casing Volume: 0.95 gallons
Reference Point: TOC	3 Casing Volumes: 2.85 gallons

Purging Device: (Disposable Bailer) 3" PVC Bailer, 3" Disposable Bailer, Whal Pump

Sampling Device: Disposable Bailer

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
6:00	19.2	7.10	453				1	
6:03	19.4	7.04	438				2	
6:05	19.5	7.01	434				3	

Comments: YSI 550A DO meter — pre purge DO = 0.62 mg/l

post purge DO = mg/l

very turbid, silty, odor

Sample ID: MW-2	Sample Time: 6:10
Laboratory: McCampbell Analytical, INC.	Sample Date: 7/17/08
Containers/Preservative: Voa/HCl	
Analyzed for: 8015, 8021	
Sampler Name: Sanjiv Gill	Signature:

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET

Well ID: MW-3

Project.Task #: 1135.001 216	Project Name: Douglas Parking
Address: 1721 Webster Street, Oakland, CA	
Date: 7/17/08	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): 26.90	Depth to Product:
Depth to Water (DTW): 22.10	Product Thickness:
Water Column Height: 4.80	1 Casing Volume: 0.76 gallons
Reference Point: TOC	3 Casing Volumes: 2.30 gallons
Purging Device: Disposable Bailer, 3" PVC Bailer, 3" Disposable Bailer, Whal Pump	
Sampling Device: Disposable Bailer	

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
5:10	18.8	7.13	412				1	
5:13	19.1	7.05	399				1.5	
5:15	19.4	7.09	396				2.0	

Comments: YSI 550A DO meter pre purge DO = 0.70 mg/l

post purge DO = mg/l

very turbid, silty

Sample ID: MW-3	Sample Time: 5:20
Laboratory: McCampbell Analytical, INC.	Sample Date: 7/17/08
Containers/Preservative: Voa/HCl	
Analyzed for: 8015, 8021	
Sampler Name: Sanjiv Gill	Signature:

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET

Well ID: MW-4

Project.Task #: 1135.001 216	Project Name: Douglas Parking
Address: 1721 Webster Street, Oakland, CA	
Date: 7/17/08	Weather: Cloudy
Well Diameter: 2"	Volume/ft. 1" = 0.04 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 | 6" = 1.47 | radius^2 * 0.163
Total Depth (TD): 29.42	Depth to Product:
Depth to Water (DTW): 18.72	Product Thickness:
Water Column Height: 10.70	1 Casing Volume: 1.71 gallons
Reference Point: TOC	3 Casing Volumes: 5.13 gallons

Purging Device: Disposable Bailer, 3" PVC Bailer, 3" Disposable Bailer, Whal Pump

Sampling Device: Disposable Bailer

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
4:45	19.1	6.74	550				1.5	
4:48	19.2	6.81	558				3	
4:50	19.0	6.80	558				5	

Comments: YSI 550A DO meter

pre purge DO = 0.68 mg/l

post purge DO = mg/l

very turbid, silty

Sample ID: MW-4	Sample Time: 4:55
Laboratory: McCampbell Analytical, INC.	Sample Date: 7/17/08
Containers/Preservative: Voa/HCl	
Analyzed for: 8015, 8021	
Sampler Name: Sanjiv Gill	Signature:

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET

Well ID: MW-5

Project.Task #: 1135.001 216	Project Name: Douglas Parking
Address: 1721 Webster Street, Oakland, CA	
Date: 7/17/08	Weather: Cloudy
Well Diameter: 2"	Volume/ft. 1" = 0.04 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 | 6" = 1.47 | radius^2 * 0.163
Total Depth (TD): 24.50	Depth to Product:
Depth to Water (DTW): 16.44	Product Thickness:
Water Column Height: 8.06	1 Casing Volume: 1.28 gallons
Reference Point: TOC	3 Casing Volumes: 3.84 gallons

Purging Device: (Disposable Bailer), 3" PVC Bailer, 3" Disposable Bailer, Whal Pump

Sampling Device: Disposable Bailer

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
4:00	19.3	7.21	556				1.5	
4:03	19.6	7.21	557				3	
4:05	19.3	7.19	557				4	

Comments: YSI 550A DO meter — pre purge DO = 0.33 mg/l

post purge DO = mg/l

very turbid

Sample ID: MW-5	Sample Time: 4:10
Laboratory: McCampbell Analytical, INC.	Sample Date: 7/17/08
Containers/Preservative: Voa/HCl	
Analyzed for: 8015, 8021	
Sampler Name: Sanjiv Gill	Signature:

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET

Well ID: MW-6

Project.Task #: 1135.001 216	Project Name: Douglas Parking
Address: 1721 Webster Street, Oakland, CA	
Date: 7/17/08	Weather: Cloudy
Well Diameter: 2"	Volume/ft. 1" = 0.04 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 | 6" = 1.47 | radius^2 * 0.163
Total Depth (TD): 25.79	Depth to Product:
Depth to Water (DTW): 20.36	Product Thickness:
Water Column Height: 5.43	1 Casing Volume: 0.86 gallons
Reference Point: TOC	3 Casing Volumes: 2.58 gallons

Purging Device: (Disposable Bailer), 3" PVC Bailer, 3" Disposable Bailer, Whal Pump

Sampling Device: Disposable Bailer

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
5:35	19.1	6.75	738				1.0	
5:38	19.3	6.81	740				2.0	
5:40	19.4	6.81	739				2.5	

Comments: YSI 550A DO meter — pre purge DO = 0.74 mg/l

post purge DO = mg/l

very turbid, very silty

Sample ID: MW-6	Sample Time: 5:45
Laboratory: McCampbell Analytical, INC.	Sample Date: 7/17/08
Containers/Preservative: Voa/HCl	
Analyzed for: 8015, 8021	
Sampler Name: Sanjiv Gill	Signature:

Pangea
ENVIRONMENTAL SERVICES, INC.

MONITORING FIELD DATA SHEET

Well ID: MW-7

Project.Task #: 1135.001 216	Project Name: Douglas Parking
Address: 1721 Webster Street, Oakland, CA	
Date: 7/17/08	Weather: Cloudy
Well Diameter: 2"	Volume/ft. 1" = 0.04 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 | 6" = 1.47 | radius^2 * 0.163
Total Depth (TD): 28.46	Depth to Product:
Depth to Water (DTW): 22.09	Product Thickness:
Water Column Height: 6.37	1 Casing Volume: 1.01 gallons
Reference Point: TOC	3 Casing Volumes: 3.03 gallons

Purging Device: Disposable Bailer, 3" PVC Bailer, 3" Disposable Bailer, Whal Pump

Sampling Device: Disposable Bailer

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
4:25	19.2	7.03	356				1	
4:28	19.4	6.95	342				2	
4:30	19.3	6.95	348				3	

Comments: YSI 550A DO meter

pre purge DO = 0.61 mg/l

post purge DO = mg/l

very turbid, silty

Sample ID: MW-7	Sample Time: 4:35
Laboratory: McCampbell Analytical, INC.	Sample Date: 7/17/08
Containers/Preservative: Voa/HCl	
Analyzed for: 8015, 8021	
Sampler Name: Sanjiv Gill	Signature:

APPENDIX B

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

Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: #1135.001; Douglas Parking 1721 Webster Street	Date Sampled: 07/17/08
		Date Received: 07/17/08
	Client Contact: Celia Costarella	Date Reported: 07/23/08
	Client P.O.:	Date Completed: 07/22/08

WorkOrder: 0807398

July 23, 2008

Dear Celia:

Enclosed within are:

1) The results of the **6** analyzed samples from your project: **#1135.001; Douglas Parking 1721**
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.

0807398

Pangea Environmental Services, Inc.

1710 Franklin Street
Oakland, CA 94612
Website: www.pangeaenv.com
Telephone: (510) 836-3700 Fax: (510) 836-3709

CHAIN OF CUSTODY RECORD

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

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

Report To: Celia Costarella Bill To: Pangea

Company: Pangea Environmental Technology, Inc.

1710 Franklin Street, Suite 200, Oakland, CA 94612

E-Mail: ccostarella@pangeaenv.com

Tele: (510) 735-1751 Fax: (510) 836-3709

Project #: 1135.001 Project Name: Douglas Parking 1721 Webster Street

Project Location: 1721 Webster St, Oakland, CA

Sampler Signature: Muskan Environmental Sampling

SAMPLE ID (Field Point Name)	LOCATION (1721 Webster / Douglas Parking)	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED ICE	HCL	HNO_3	Other
MW-2		7-17-08	6:10	3	VOA	X					X	X		
MW-3			5:20											
MW-4			4:55											
MW-5			4:10											
MW-6			5:45											
MW-7			4:35											

Analysis Request	Other	Comments
BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TO3 / TO15	Filter Samples for Metals analysis: Yes / No
TPH as Diesel (8015)		
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)		

Relinquished By:	Date:	Time:	Received By:
	7/17/08	8:08am	
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

ICE/T 15.8°c
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: 0807398 **ClientCode: PEO**

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

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

Email: ccostarella@pangeaenv.com
cc:
PO:
ProjectNo: #1135.001; Douglas Parking 1721 Webster Street

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

Requested TAT: 5 days

Date Received: **07/17/2008**
Date Printed: **07/17/2008**

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
0807398-001	MW-2	Water	7/17/2008 6:10	☐	A	A										
0807398-002	MW-3	Water	7/17/2008 5:20	☐	A											
0807398-003	MW-4	Water	7/17/2008 4:55	☐	A											
0807398-004	MW-5	Water	7/17/2008 4:10	☐	A											
0807398-005	MW-6	Water	7/17/2008 5:45	☐	A											
0807398-006	MW-7	Water	7/17/2008 4:35	☐	A											

Test Legend:

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

Prepared by: Melissa Valles

Comments:

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

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: **07/17/08 11:03:15 AM**

Project Name: **#1135.001; Douglas Parking 1721 Webster Street** Checklist completed and reviewed by: Melissa Valles

WorkOrder N°: **0807398** 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: 15.8°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☑	No ☐	No VOA vials submitted ☐
Sample labels checked for correct preservation?	Yes ☑	No ☐	
TTLC Metal - pH acceptable upon receipt (pH<2)?	Yes ☐	No ☐	NA ☑

** 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: #1135.001; Douglas Parking 1721 Webster Street	Date Sampled: 07/17/08
		Date Received: 07/17/08
1710 Franklin Street, Ste. 200	Client Contact: Celia Costarella	Date Extracted: 07/19/08-07/21/08
Oakland, CA 94612	Client P.O.:	Date Analyzed 07/19/08-07/21/08

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

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0807398

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-2	W	22,000,d1	ND<250	180	500	660	2100	50	107
002A	MW-3	W	7700,d1	ND<60	2.9	3.1	1.4	11	1	117
003A	MW-4	W	6500,d1	ND<180	210	47	510	180	10	110
004A	MW-5	W	ND	ND	ND	ND	ND	ND	1	103
005A	MW-6	W	18,000,d1	ND<500	320	510	420	1200	100	98
006A	MW-7	W	ND	ND	ND	ND	ND	ND	1	105

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

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/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water BatchID: 36979 WorkOrder 0807398

EPA Method SW8021B/8015Cm **Extraction SW5030B** **Spiked Sample ID: 0807428-005**

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	103	100	2.42	103	103	0	70 - 130	20	70 - 130	20
MTBE	ND	10	104	103	0.749	90	90.4	0.508	70 - 130	20	70 - 130	20
Benzene	ND	10	96.3	95.6	0.729	91.1	94.1	3.25	70 - 130	20	70 - 130	20
Toluene	ND	10	95.6	93.9	1.74	88.7	91.7	3.30	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	104	100	3.77	91.1	91.7	0.641	70 - 130	20	70 - 130	20
Xylenes	ND	30	114	112	1.44	86.7	87.7	1.17	70 - 130	20	70 - 130	20
%SS:	93	10	91	92	1.12	103	103	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 36979 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0807398-001A	07/17/08 6:10 AM	07/19/08	07/19/08 10:28 AM	0807398-002A	07/17/08 5:20 AM	07/19/08	07/19/08 7:30 AM
0807398-003A	07/17/08 4:55 AM	07/21/08	07/21/08 7:44 PM	0807398-004A	07/17/08 4:10 AM	07/19/08	07/19/08 3:32 PM
0807398-005A	07/17/08 5:45 AM	07/19/08	07/19/08 11:53 PM	0807398-006A	07/17/08 4:35 AM	07/19/08	07/19/08 8:27 AM

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

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

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

£ 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

Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: #1135.001.520; Douglas Parking, 1721 Webster St	Date Sampled: 08/18/08
		Date Received: 08/18/08
	Client Contact: Bryce Taylor	Date Reported: 08/21/08
	Client P.O.:	Date Completed: 08/20/08

WorkOrder: 0808506

August 21, 2008

Dear Bryce:

Enclosed within are:

1) The results of the **3** analyzed samples from your project: **#1135.001.520; Douglas Parking, 1**
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.

0808506

McCAMPBELL ANALYTICAL, INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 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: Bryce Taylor	**Bill To:** Pangea Environmental
Company: Pangea Environmental Services, Inc.	
1710 Franklin Street, Suite 200	
Oakland, CA 94612	**E-Mail:** btaylor@pangeaenv.com
Tele: (510) 836-3702	**Fax:** (510) 836-3709
Project #: 1135.001.520	**Project Name:** Douglas Parking
Project Location: 1721 Webster Street, Oakland, CA	
Sampler Signature: B	

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	BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH as Diesel (8015)	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)	Other				Comments
Influent		8-18	1245	1	bag			X							X																			report
Midpoint		2008	1245	1	↓			X							X																			results
Effluent		↓	1245	1	↓			X							X																			in PPMV

Relinquished By:	Date:	Time:	Received By:
	8-18	1300	
	8/18	345	

ICE/t° N/A
GOOD CONDITION
HEAD SPACE ABSENT
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS
PRESERVED IN LAB

COMMENTS:

PRESERVATION	VOAS	O&G	METALS pH<2	OTHER

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0808506 **ClientCode: PEO**

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

Report to:
Bryce Taylor
Pangea Environmental Svcs., Inc.
1710 Franklin Street, Ste. 200
Oakland, CA 94612

(510) 836-3702 FAX (510) 836-3709

Email: btaylor@pangeaenv.com
cc:
PO:
ProjectNo: #1135.001.520; Douglas Parking, 1721 Webster St

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

Requested TAT: 5 days

Date Received: **08/18/2008**
Date Printed: **08/18/2008**

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
0808506-001	Influent	Air	8/18/2008 12:45	☐	A	A										
0808506-002	Midpoint	Air	8/18/2008	☐	A											
0808506-003	Effluent	Air	8/18/2008	☐	A											

Test Legend:

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

The following SampIDs: 001A, 002A, 003A contain 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: **08/18/08 6:37:59 PM**

Project Name: **#1135.001.520; Douglas Parking, 1721 Webster St** Checklist completed and reviewed by: Ana Venegas

WorkOrder N°: **0808506** 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 ☐	
TTLC 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: #1135.001.520; Douglas Parking, 1721 Webster St	Date Sampled: 08/18/08
		Date Received: 08/18/08
1710 Franklin Street, Ste. 200	Client Contact: Bryce Taylor	Date Extracted: 08/18/08-08/20/08
Oakland, CA 94612	Client P.O.:	Date Analyzed 08/18/08-08/20/08

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

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0808506

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	Influent	A	3000,d2,d9	ND<5.0	3.6	13	4.6	69	2	113
002A	Midpoint	A	510,d3	ND	ND	ND	ND	ND	1	98
003A	Effluent	A	ND	ND	ND	ND	ND	ND	1	95

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	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 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.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

d2) heavier gasoline range compounds are significant (aged gasoline?)
d3) lighter gasoline range compounds (the most mobile fraction) are significant
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: #1135.001.520; Douglas Parking, 1721 Webster St	Date Sampled: 08/18/08
		Date Received: 08/18/08
1710 Franklin Street, Ste. 200	Client Contact: Bryce Taylor	Date Extracted: 08/18/08-08/20/08
Oakland, CA 94612	Client P.O.:	Date Analyzed 08/18/08-08/20/08

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

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0808506

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	Influent	A	840,d2,d9	ND<1.4	1.1	3.3	1.1	16	2	113
002A	Midpoint	A	140,d3	ND	ND	ND	ND	ND	1	98
003A	Effluent	A	ND	ND	ND	ND	ND	ND	1	95

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.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation:

d2) heavier gasoline range compounds are significant (aged gasoline?)
d3) lighter gasoline range compounds (the most mobile fraction) are significant
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

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Air QC Matrix: Water BatchID: 37651 WorkOrder 0808506

EPA Method SW8021B/8015Cm **Extraction SW5030B** **Spiked Sample ID: 0808472-004**

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	93.4	89.9	3.82	97.4	87.9	10.2	70 - 130	20	70 - 130	20
MTBE	ND	10	103	91.2	12.1	97.7	98.9	1.24	70 - 130	20	70 - 130	20
Benzene	ND	10	95.6	88.1	8.21	96.3	93.1	3.42	70 - 130	20	70 - 130	20
Toluene	ND	10	86.2	79.7	7.79	87	84.1	3.40	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	96.3	88.6	8.27	96.4	94	2.50	70 - 130	20	70 - 130	20
Xylenes	ND	30	94.9	84.2	12.0	91.6	91.7	0.109	70 - 130	20	70 - 130	20
%SS:	97	10	109	107	2.41	99	96	2.91	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 37651 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0808506-001A	08/18/08 12:45 PM	08/20/08	08/20/08 4:27 AM	0808506-001A	08/18/08 12:45 PM	08/20/08	08/20/08 4:27 AM
0808506-002A	08/18/08	08/20/08	08/20/08 4:57 AM	0808506-002A	08/18/08	08/20/08	08/20/08 4:57 AM
0808506-003A	08/18/08	08/18/08	08/18/08 9:59 PM	0808506-003A	08/18/08	08/18/08	08/18/08 9:59 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