



Pacific Gas and
Electric Company[®]

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Alameda County
Environmental Health

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January 13, 2010

Mr. Jerry Wickham
Hazardous Materials Specialist
Alameda County Environmental Health Department
Division of Environmental Protection
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502-6577

**Subject: Transmittal of Semiannual Groundwater Monitoring Report, November 2009
Sampling Event,**
Pacific Gas and Electric Company, Oakland General Construction Yard,
4930 Coliseum Way, Oakland, California

Dear Mr. Wickham:

Please find enclosed the *Semiannual Groundwater Monitoring Report, November 2009 Sampling Event, Pacific Gas and Electric Company, Oakland General Construction Yard, 4930 Coliseum Way, Oakland, California*, dated January 13, 2010. Pacific Gas and Electric Company (PG&E) has retained ENTRIX, Inc., and AMEC Geomatrix Consultants, Inc. (AMEC) to perform groundwater monitoring and other technical studies at the subject site (site). The attached report was prepared by Innovative Technical Solutions, Inc. with review by AMEC on behalf of PG&E.

The possibility of discontinuing groundwater monitoring was discussed during the October 27, 2009 meeting among representatives of Alameda County Environmental Health Department (ACEHD), PG&E, and AMEC. As a follow-up to this discussion, a letter will be submitted separately to ACEHD to request discontinuation of the groundwater monitoring program at the site at this time.

Please contact Erin Zavarin of AMEC at (510) 663-4203 with any questions or comments pertaining to this report. For any other questions or requests regarding this site, please contact me at (925) 415-6381.

Sincerely yours,

Anne Conner

SEMIANNUAL GROUNDWATER MONITORING REPORT

November 2009 Sampling Event

**Pacific Gas and Electric Company
Oakland General Construction Yard
4930 Coliseum Way
Oakland, California**

Prepared For:

Pacific Gas and Electric Company
3401 Crow Canyon Road
San Ramon, CA 94583

Prepared By:

Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite 100
Walnut Creek, CA 94598

December 2009

ITSI Project No: 07037.0043



SEMIANNUAL GROUNDWATER MONITORING REPORT

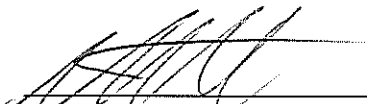
November 2009 Sampling Event

**Pacific Gas and Electric Company
Oakland General Construction Yard
4930 Coliseum Way
Oakland, California**

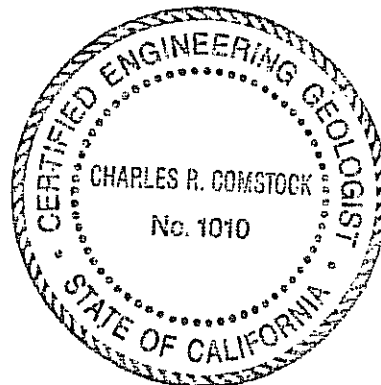
This report was prepared by the staff of Innovative Technical Solutions, Inc., under the supervision of the Geologist(s) and/or Engineer(s) whose seal(s) and signature(s) appear hereon.

The findings, recommendations, specifications, or professional opinions are presented within the limits described by the client, in accordance with generally accepted professional engineering and geologic practice. No warranty is expressed or implied.

Prepared By:



Charles Comstock, P.G., C.E.G.
Senior Geologist



Innovative Technical Solutions, Inc.
2730 Shadelands Drive, Suite 100
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January 2010

ITSI Project No. 07037.0043

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ACRONYMS AND ABBREVIATIONS

AST	above-ground storage tank
bgs	below ground surface
EPA	U.S. Environmental Protection Agency
ITSI	Innovative Technical Solutions, Inc.
µg/l	micrograms per liter
MS/MSD	matrix spike and matrix spike duplicate
PG&E	Pacific Gas and Electric Company
RPD	relative percent difference
TPHd	total petroleum hydrocarbons quantified as diesel
TPHg	total petroleum hydrocarbons quantified as gasoline
TPHmo	total petroleum hydrocarbons quantified as motor oil
UST	underground storage tank
VOC(s)	volatile organic compound(s)

1.0 INTRODUCTION

This report presents the results of semiannual groundwater monitoring completed on November 5, 2009, at the Pacific Gas and Electric Company (PG&E) General Construction Yard located at 4930 Coliseum Way in Oakland, California (the site, Figure 1). The groundwater monitoring program includes the following activities: (1) measuring groundwater elevations; (2) collecting groundwater samples from monitoring wells on site; and (3) performing laboratory analyses of the samples. The program objective is to monitor the distribution of select fuel-related compounds, volatile organic compounds (VOCs), and dissolved lead in shallow groundwater beneath the site. The following sections summarize the site description, site history, groundwater monitoring activities, and analytical results of samples collected on November 5, 2009. Previous analytical results are summarized in Appendix A.

2.0 SITE DESCRIPTION

The site consists of approximately 4 acres and is operated as a storage yard for equipment and vehicles (Figure 2). The surrounding area is primarily commercial and light industrial. The site is bounded by Coliseum Way to the south, 50th Avenue to the southeast, and commercial properties to the north (Figure 1).

3.0 SITE HISTORY

The following summarizes previous environmental activities associated with the site:

- **February 1987** - Soil borings were advanced and soil and groundwater samples were collected in the vicinity of the former waste oil underground storage tank (UST) cluster and the diesel UST (PG&E, 1987).
- **December 1987** - Samples of the contents of five USTs were collected and analyzed (the four USTs in the former waste oil UST cluster and the former diesel UST [PG&E, 1987]).
- **January 1988** - Five USTs and associated piping located in the northern and eastern portions of the site were removed (Figure 2). Four of the former USTs were located in a cluster in the northern portion of the site (former UST cluster). Two of these USTs reportedly contained heavy oil and two contained mineral spirits (PG&E, 1988). The fifth former UST was located near the west corner of the yard and reportedly contained diesel fuel.
- **March and April 1988** –Groundwater monitoring wells OW-1 through OW-4 installed. In addition, soil borings were advanced in the vicinities of the former waste oil UST cluster and the former diesel UST (PG&E, 1988).
- **May 1990** - One natural gas, above ground storage tank (AST) was removed from the central portion of the site (Figure 2). Following demolition of the former natural gas AST, paint chips were reported to have been observed in shallow soil in the vicinity of the former natural gas AST (CSS, 2005).
- **April 1991**—Groundwater monitoring well OW-5 was installed along the northeast property line. A groundwater sample was collected from well OW-5 on April 17, 1991.
- **November and December 1991** - Approximately 2,000 cubic yards of soil were excavated to a depth of approximately 4 to 9 feet below ground surface (bgs) as a remedial action for the petroleum hydrocarbons identified in the soil in the vicinity of the former UST cluster. Groundwater monitoring wells OW-6 and OW-7 were installed, and well OW-3 was abandoned. The concentrations of total petroleum hydrocarbons quantified as diesel (TPHd) and oil and grease in the soil samples collected along the site boundaries during soil excavation activities were greater than soil cleanup target levels, while concentrations of TPHd and oil and grease in each of the remaining confirmatory samples were less than the cleanup target levels. Oil was visible in the soils in the northeast wall of the excavation along the property line, and a pipe that contained a similar petroleum product was also exposed in the northeastern wall of the excavation. The conclusions of the February 1992 *Site Remediation and Closure Report, Former Tank Cluster Area* prepared by Aqua Resources, Inc. suggested that off-site sources of petroleum hydrocarbons may exist in both the northeast and northwest directions.
- **December 1991** – Installation of groundwater monitoring wells OW-6 and OW-7 (Aqua, 1992).

- **September and October 1992** – An asphaltic concrete cap was constructed on lead-affected surface soil in the vicinity of the former natural gas AST. Lead, believed to have originated from lead-based paint chips generated from sandblasting of the former natural gas AST, was found in soil samples collected from this area (CSS, 2005).
- **February 1993** – Groundwater monitoring well OW-8 was installed in the southern area of the yard near the location of the former natural gas AST to monitor lead concentrations in the groundwater.
- **July 1994** – Groundwater sampling frequency reduced from quarterly to a semiannual basis.
- **January through March 2008** - A soil and groundwater investigation was conducted to further define TPHd, total petroleum hydrocarbons quantified as motor oil (TPHmo), and chlorobenzenes impact to groundwater in the northern portion of the site; further assess the potential for chlorobenzenes to be in shallow soil in the northern portion of the site; assess the presence of polyaromatic hydrocarbons, polychlorinated biphenyls, and metals in soil in the vicinity of the former waste oil UST cluster; and further assess the potential presence of TPHd and TPHmo in soil in the vicinity of the former diesel UST and waste oil UST (Geomatrix, 2008).

4.0 GROUNDWATER MONITORING ACTIVITIES

Blaine Tech Services, Inc. performed the groundwater-monitoring event on November 5, 2009. Groundwater sampling was performed using low-flow purging and sampling methods in accordance with the Low-Flow Purging and Sampling Protocol (Appendix B). Depth to groundwater measurements were collected from OW-1, OW-2, OW-4, OW-5, OW-6, OW-7, and OW-8, and were recorded in the Groundwater Purging and Sampling Logs (Appendix C). The groundwater elevation measurements were used to prepare a groundwater elevation map to determine the direction and magnitude of the groundwater gradient. Purge water generated during the groundwater monitoring activities was temporarily stored on site in 55-gallon steel drums pending disposal.

Groundwater samples were collected from OW-1, OW-2, OW-4, OW-5, OW-6, OW-7, and OW-8 in laboratory-supplied containers. The samples were shipped on ice to Creek Environmental Laboratories, Inc., of San Luis Obispo, California, a State of California certified-laboratory, for analysis under chain-of-custody protocol. Groundwater samples collected from site monitoring wells were analyzed for petroleum constituents and dissolved lead as outlined below.

- Wells OW-1 and OW-4 through OW-7: total petroleum hydrocarbons quantified as gasoline (TPHg) using U. S. Environmental Protection Agency (EPA) Method 8015B
- Wells OW-1, OW-2, and OW-4 through OW-8: TPHd and TPHmo using EPA Method 8015B following silica gel cleanup
- Wells OW-2, OW-5, and OW-8: dissolved lead using EPA Method 6010B
- Wells OW-1 and OW-4 through OW-7: VOCs using EPA Method 8260B

Appendix D includes the laboratory analytical reports and chain-of-custody documentation. All analyses were performed within the holding times specified by the EPA. None of the tested analytes were detected in the field blank or laboratory reagent blank. The surrogate recoveries were within the laboratory acceptance limits. Recoveries of matrix spike/matrix spike duplicates (MS/MSDs) were within the laboratory acceptance limits, except for the sample from OW-1 where MS recoveries of 1,3-DCB and 1,4-DCB exceeded QC limits, which the lab report states was due to matrix effects in the source sample. The lab reports that both analytes were found in significant concentrations in the sample, and that the analytical anomaly may be attributed to a

non-homogenous distribution of 1,3-DCB and 1,4-DCB among the different VOA vials presented for analysis, as evidenced by the high RPD (relative percent difference) for MS/MSD. (Appendix D). The RPDs of MS/MSD results were otherwise within the laboratory acceptance limits.

5.0 GROUNDWATER MONITORING RESULTS

Groundwater level measurements collected during the November 5, 2009 monitoring event indicate that depth to water ranged from 2.97 to 5.89 feet below the top of casing. The flow direction and hydraulic gradient varied somewhat across the site. In the northern corner of the site, the flow was toward the south with a hydraulic gradient of approximately 0.043 ft/ft. In the central area of the site, the flow was southeast with an approximate hydraulic gradient of 0.009 ft/ft. Table 1 summarizes the depth to water measurements and groundwater elevation data. Figure 3 shows the groundwater elevation map.

Laboratory analytical results for the groundwater samples collected from the seven monitoring wells sampled during the November 5, 2009 monitoring event indicate the following:

- TPHg was not detected above the reporting limit of 50 micrograms per liter ($\mu\text{g/l}$) in any sample collected from the five wells sampled for this analyte at the site.
- TPHd after silica gel cleanup was not detected above the reporting limit of 50 $\mu\text{g/l}$ in samples collected from the seven wells sampled at the site.
- TPHmo after silica gel cleanup was not detected above the laboratory reporting limit of 100 $\mu\text{g/l}$ in samples collected from the seven wells sampled at the site.
- Dissolved lead was not detected above the laboratory reporting limit of 4 $\mu\text{g/l}$ in any of the three samples collected for this analyte at the site.
- methyl tertiary butyl ether was detected in only one of the five samples (OW-1) at a concentration of 0.8 $\mu\text{g/l}$. Benzene was not detected above the laboratory reporting limit of 0.5 $\mu\text{g/l}$ in any of the five samples collected at the site.
- VOCs were detected in samples collected from wells OW-1, OW-5, OW-6, and OW-7. The highest concentrations of VOCs were found in the sample collected from well OW-7, located in the northern (upgradient) portion of the property.
- DIPE was detected in wells OW-6, and OW-7 at concentrations of 1.1 $\mu\text{g/L}$ and 0.7 $\mu\text{g/L}$, respectively.

Table 2 and Figure 4 present the laboratory analytical results for the November 5, 2009 sampling event.

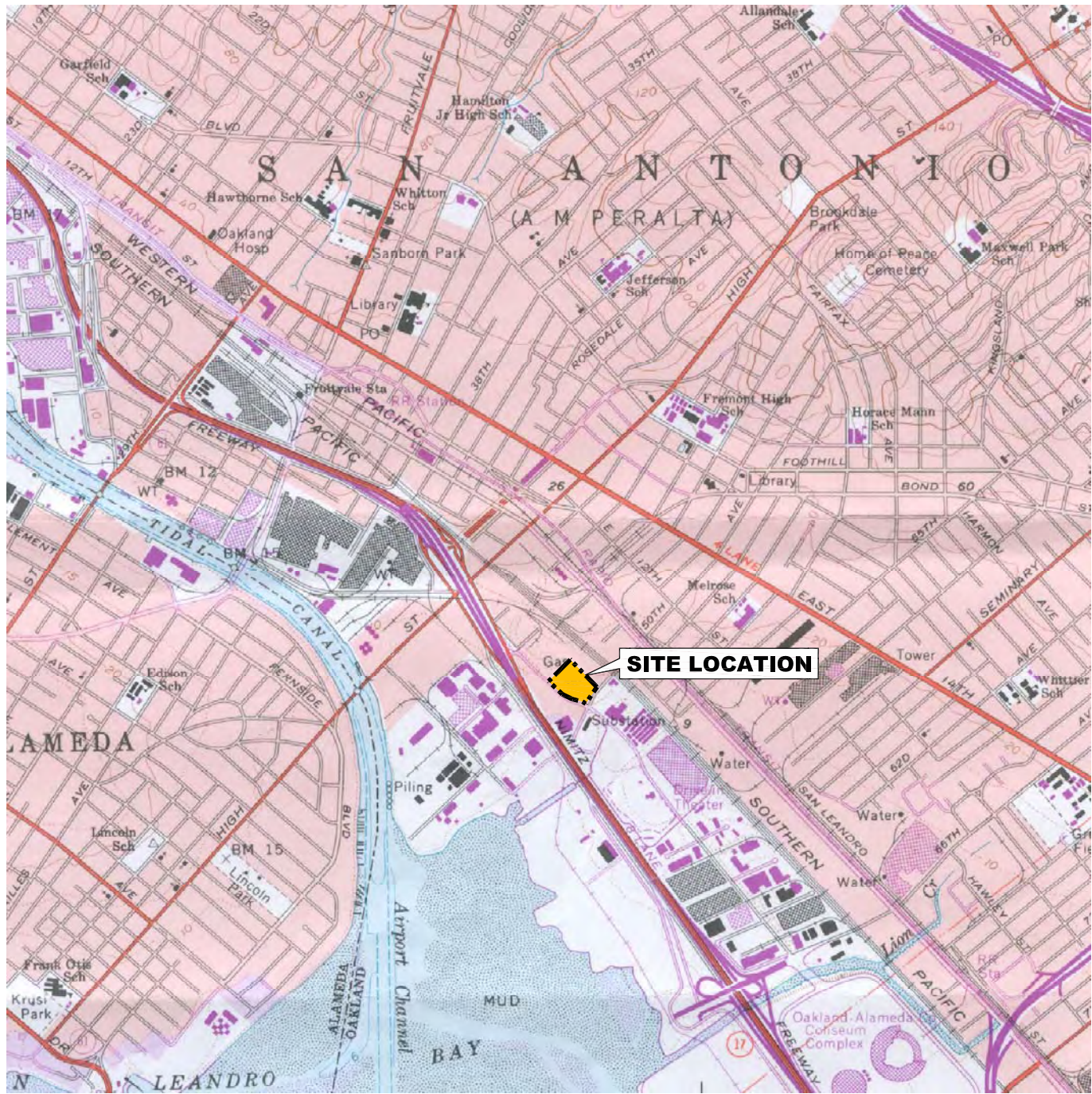
6.0 CONCLUSIONS

The direction and hydraulic gradient of groundwater flow is generally consistent with the results of previous monitoring events, with the exception of the northern corner of the site. In the area approximately bounded by OW-4, OW-5, and OW-7 the hydraulic gradient is steeper than it has been in the last few monitoring events. Overall, the analytical results of the November 5, 2009 groundwater monitoring event are consistent with the results of previous groundwater monitoring events.

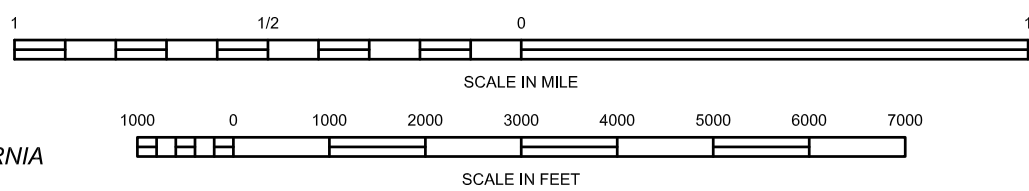
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- Aqua, 1992, Site Remediation and Closure Report – Former Tank Cluster Area, Pacific Gas and Electric General Construction Yard, 4930 Coliseum Way, Oakland, California, February.
- Aqua, 1992, Preliminary Site Assessment and Workplan for Additional Investigation – Former Gas Holder Tank Pacific Gas and Electric General Construction Yard, 4930 Coliseum Way, Oakland, California, March 6.
- CSS Environmental Services, Inc., 2005, Semi-Annual Groundwater Monitoring Report, Pacific Gas and Electric General Construction Yard, 4930 Coliseum Way, Oakland, California, September 2.
- Earth Technology Corporation (ETC), 1992, Site Remediation and Closure Report Former Tank Cluster Area, Pacific Gas and Electric General Construction Yard, 4930 Coliseum Way, Oakland, California, February.
- Geomatrix Consultants, Inc., 2008, Additional Investigation Report for 4930 Coliseum Way, Oakland, California, April 18,
- Innovative Technical Solutions, Inc., 2008, May 2008 Sampling Event for 4930 Coliseum Way, Oakland, California, July 8.
- Pacific Gas and Electric Company (PG&E), 1987, Underground Tanks Investigation, PG&E General Construction Yard, 4930 Coliseum Way, Oakland, California, July.
- PG&E, 1988, Underground Tanks Investigation, PG&E General Construction Yard, 4930 Coliseum Way, Oakland, California, July.
- PG&E, 1992, Summary of Extent Verification Samples and Submittal of Cap Construction Plan for 4930 Coliseum Way, Oakland, California, September 28. PG&E, 1993, Completion of Lead Contamination Cap, 4930 Coliseum Way, Oakland, California, April 12.

FIGURES



CALIFORNIA

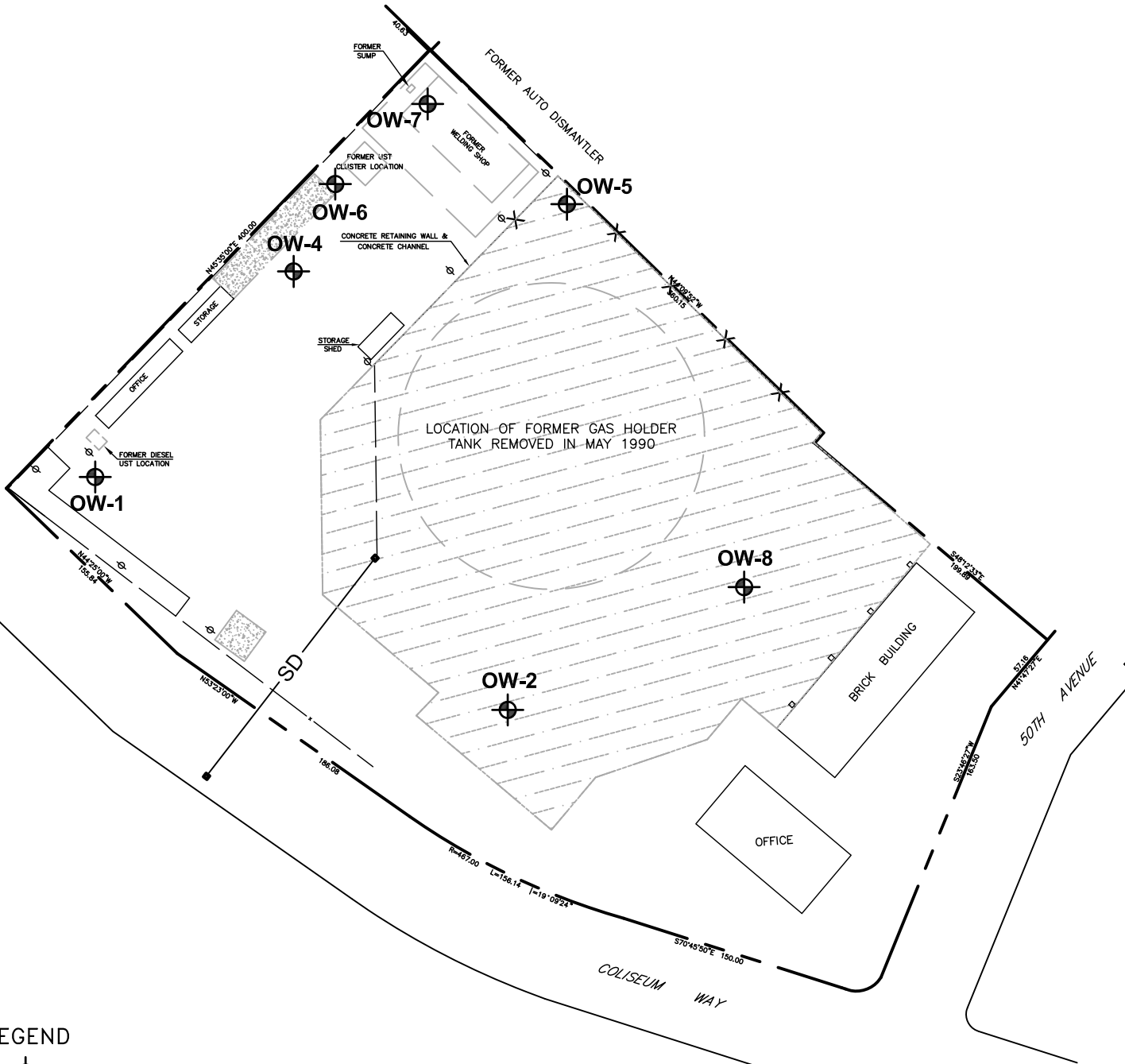


REFERENCE: USGS 7.5 MINUTE QUADRANGLE;
OAKLAND EAST, CALIFORNIA
PHOTOREVISED 1981


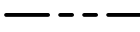






Pacific Gas and Electric
Oakland General Construction Yard
Oakland, California

FIGURE 1
Site Vicinity Map



LEGEND

-  GROUNDWATER MONITORING WELL
-  PROPERTY LINE
-  SD STORM DRAIN
-  EXISTING FENCE
-  EXISTING UTILITY POLE
-  EXTEND OF ASPHALTIC CONCRETE CAP

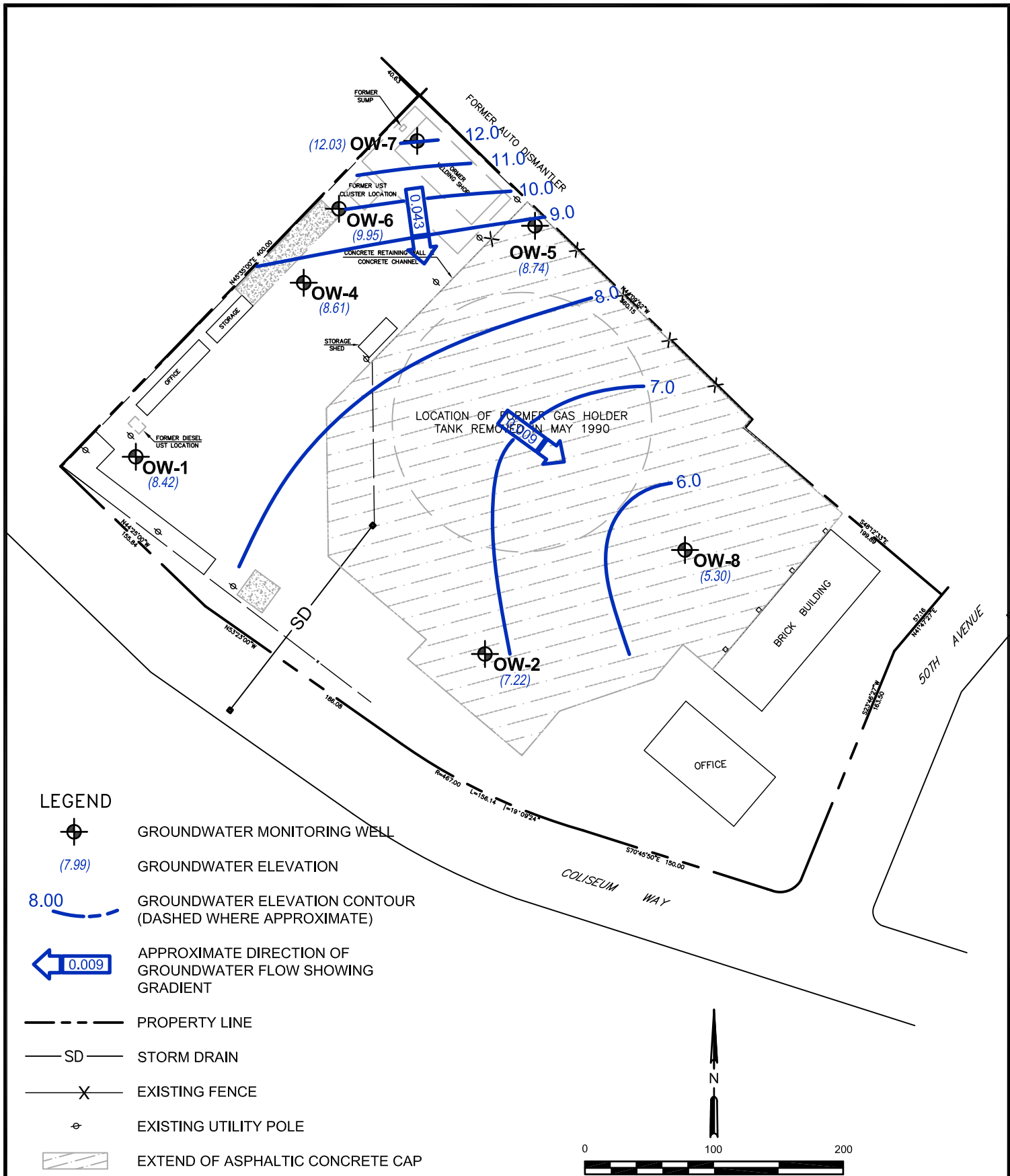
REFERENCE: BASE MAP BY CSS ENVIROMENTAL SERVICES, INC.
 FIGURE 4.1 BY ES DATED 08/2005
 JOB #6118; 01/1999



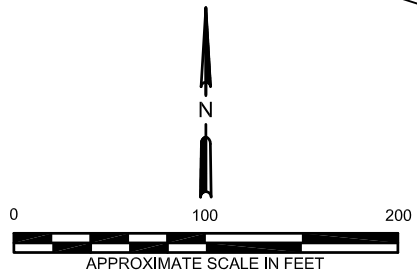
Pacific Gas and Electric
Oakland General Construction Yard
 Oakland, California

FIGURE 2
 Site Plan

FILENAME: C:_PROJ\07037 PG&E-26 Oakland\10.0 CADD Current Drawings\07037.0043 OKLND SC Figure 2-3-4.dwg



REFERENCE: BASE MAP BY CSS ENVIROMENTAL SERVICES, INC.
 FIGURE 4.1 BY ES DATED 08/2005
 JOB #6118; 01/1999



Pacific Gas and Electric
 Oakland General Construction Yard
 Oakland, California

FIGURE 3
 Groundwater Elevation
 Contours
 (November 5, 2009)

OW-1	11/05/09
TPHg	<50
TPHd	<50*
TPHmo	<100*
Benzene	<0.5
Toluene	<0.5
Ethyl-benzene	<0.5
Xylenes	<0.5
MTBE	0.8
CB	1.2
1,2-DCB	1.4
1,3-DCB	5.9
1,4-DCB	16
1,1-DCA	7.1
1,1-DCE	8.1
VOCs	ND

OW-4	11/05/09
TPHg	<50
TPHd	<50*
TPHmo	<100*
Benzene	<0.5
Toluene	<0.5
Ethyl-benzene	<0.5
Xylenes	<0.5
MTBE	<0.5
Other	
VOCs	ND

OW-6	11/05/09
TPHg	<50
TPHd	<50*
TPHmo	<100*
Dissolved Lead	<4
Benzene	<0.5
Toluene	<0.5
Ethyl-benzene	<0.5
Xylenes	<0.5
MTBE	<0.5
DIPE	1.1
1,3-DCB	3.4
1,4-DCB	12
1,1-DCA	8.6
1,1-DCE	5.6
Other	
VOCs	ND

OW-5	11/05/09
TPHg	<50
TPHd	<50*
TPHmo	<100*
Dissolved Lead	<4
Benzene	<0.5
Toluene	<0.5
Ethyl-benzene	<0.5
Xylenes	<0.5
MTBE	<0.5
1,3-DCB	0.9
1,4-DCB	6.6
1,1-DCA	2.2
1,1-DCE	1.3
Other	
VOCs	ND

OW-7	11/05/09
TPHg	<50
TPHd	<50*
TPHmo	<100*
Benzene	<0.5
Toluene	<0.5
Ethyl-benzene	<0.5
Xylenes	<0.5
MTBE	<0.5
DIPE	0.7
CB	86
1,2-DCB	25
1,3-DCB	150
1,4-DCB	580
1,1-DCA	10
1,1-DCE	14
1,2,4-TCB	28
VC	0.9
Other	
VOCs	0.6

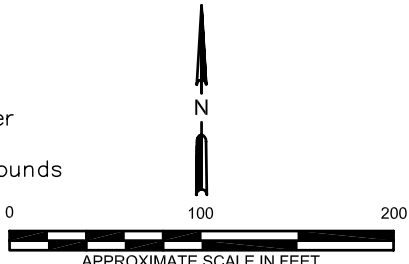
OW-8	11/05/09
TPHg	--
TPHd	<50*
TPHmo	<100*
Dissolved Lead	<4

OW-2	11/05/09
TPHg	--
TPHd	<50*
TPHmo	<100*
Dissolved Lead	<4

LEGEND

- OW-1** MONITORING WELL
- PROPERTY LINE
- SD STORM DRAIN
- EXISTING CHAIN LINK FENCE
- EXISTING UTILITY POLE
- EXTENT OF ASPHALTIC CONCRETE CAP
- SILICON GEL CLEANUP METHOD RESULT

- TPHg Total petroleum hydrocarbons as gasoline
- TPHd Total petroleum hydrocarbons as diesel
- CB Chlorobenzene
- DCB Dichlorobenzene
- DCA Dichloroethane
- DCE Dichloroethene
- MTBE Methyl tert-butyl ether
- TCB Trichlorobenzene
- VOCs Volatile organic compounds
- DIPE Di-isopropyl Ether
- ISP Isopropylbenzene
- Not analyzed
- Bold** Detected at value Shown



REFERENCE: BASE MAP BY CSS ENVIRONMENTAL SERVICES, INC.
 FIGURE 4.1 BY ES DATED 08/2005
 JOB #6118; 01/1999

ALL RESULTS REPORTED IN MICROGRAMS/LITER (µg/l)



Pacific Gas and Electric
Oakland General Construction Yard
 Oakland, California

FIGURE 4
 Groundwater Analytical
 Results
 (November 5, 2009)

FILENAME:

TABLES

TABLE 1
Summary of Groundwater Elevation Data
Pacific Gas and Electric Company
Oakland General Construction Yard
4930 Coliseum Way, Oakland, CA

Well Number	Sample Date	TOC Elevation (feet MSL)	Depth to Groundwater (feet bgs)	Groundwater Elevation (feet above MSL)
OW-1	11/5/2009	11.82	3.40	8.42
OW-2	11/5/2009	11.24	4.02	7.22
OW-4	11/5/2009	12.82	4.21	8.61
OW-5	11/5/2009	13.24	4.50	8.74
OW-6	11/5/2009	13.61	3.66	9.95
OW-7	11/5/2009	15.00	2.97	12.03
OW-8	11/5/2009	11.19	5.89	5.30

Notes:

TOC = top of casing

MSL = Mean Sea Level

bgs = below ground surface

TOC elevation data were referenced from Figure 4.2-Historical Groundwater Elevations, (Semi-Annual Groundwater Monitoring Report, September 2, 2005, CSS Environmental Services, Inc.).

Table 2 Summary of Groundwater Analytical Results (November 5, 2009)

Pacific Gas and Electric Oakland General Construction Yard
Oakland, California

Sample Name	Sample Date	Total Petroleum Hydrocarbons Method 8015M			Dissolved Lead Method 6010B	Volatile Organic Compounds-Method 8260B																			Other VOCs		
		TPHg $\mu\text{g/L}$	TPHd $\mu\text{g/L}$	TPHmo $\mu\text{g/L}$		Benzene $\mu\text{g/L}$	Toluene $\mu\text{g/L}$	Ethyl-benzene $\mu\text{g/L}$	Xylenes $\mu\text{g/L}$	Isopropyl-benzene $\mu\text{g/L}$	Naphthalene $\mu\text{g/L}$	MTBE $\mu\text{g/L}$	1,2,3-TCB $\mu\text{g/L}$	1,2,4-TCB $\mu\text{g/L}$	1,3,5-TMB $\mu\text{g/L}$	1,2-DCA $\mu\text{g/L}$	1,2-DCB $\mu\text{g/L}$	1,3-DCB $\mu\text{g/L}$	1,4-DCB $\mu\text{g/L}$	CB $\mu\text{g/L}$	1,1,1-TCA $\mu\text{g/L}$	1,1-DCA $\mu\text{g/L}$	1,1-DCE $\mu\text{g/L}$	DIPE $\mu\text{g/L}$		VC $\mu\text{g/L}$	
OW-1	11/05/09	<50	<50*	<100*	--	<0.5	<0.5	<0.5	<0.5	<0.5	<5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	5.9	16	1.2	<0.5	7.1	8.1	--	<0.5	ND
OW-2	11/05/09	--	<50*	<100*	<4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-4	11/05/09	<50	<50*	<100*	--	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	ND
OW-5	11/05/09	<50	<50*	<100*	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	6.6	<0.5	<0.5	2.2	1.3	<0.5	<0.5	ND	
OW-6	11/05/09	<50	<50*	<100*	--	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.4	12	<0.5	<0.5	8.6	5.6	1.1	<0.5	ND	
OW-7	11/05/09	<50	<50*	<100*	--	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	25	150	580	86	<0.5	10	14	0.7	ND
OW-8	11/05/09	--	<50*	<100*	<4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
FIELD BLANK	11/05/09	--	--	--	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND

Notes:

$\mu\text{g/L}$ = Micrograms per liter.

< = Not detected at or above the practical quantitation limit.

-- = Not analyzed

ND = Not detected above laboratory reporting limits. See laboratory analytical report for individual reporting limits (Appendix C).

J = Estimated result. Result is less than the laboratory practical quantitation limit.

MTBE = Methyl tertiary-butyl ether

CB = Chlorobenzene

1,2-DCB = 1,2-Dichlorobenzene

1,3-DCB = 1,3-Dichlorobenzene

1,4-DCB = 1,4-Dichlorobenzene

1,2-DCA = 1,2-Dichloroethane

1,1-DCA = 1,1-Dichloroethane

1,1-DCE = 1,1-Dichloroethene

1,1,1-TCA = 1,1,1-Trichloroethane

1,2,3-TCB = 1,2,3-Trichlorobenzene

1,2,4-TCB = 1,2,4-Trichlorobenzene

DIPE = Diisopropyl Ether

TCE = Trichloroethene

1,2,4-TMB = 1,2,4-Trimethylbenzene

1,3,5-TMB = 1,3,5-Trimethylbenzene

VC = Vinyl Chloride

* = TPHd/TPHmo analyzed using silica gel cleanup

APPENDIX A

Historical Groundwater Analytical Results

Table A1 Summary of Historical Groundwater Analytical Results for TPH, Dissolved Lead, and PAHs December 2005 to Present
Pacific Gas and Electric Oakland General Construction Yard
Oakland, California

Sample Name	Sample Date	Total Petroleum Hydrocarbons Method 8015M			Dissolved Lead Method 6010B µg/l	Polynuclear Aromatic Hydrocarbons-Method 8270C - SIM										
		TPHg µg/l	TPHd µg/l	TPHmo µg/l		2-Methyl Naphthalene µg/L	Acenaphthene µg/L	Acenaphthylene µg/L	Anthracene µg/L	Fluoranthene µg/L	Fluorene µg/L	Naphthalene µg/L	Phenanthrene µg/L	Pyrene µg/L	Other PAHs µg/L	
OW-1	12/20/05	53 ¹	390 ²	470J	--	--	--	--	--	--	--	--	--	--	--	--
OW-1	12/20/06	<50	200	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-1	04/12/07	<50	110	200	<4	--	--	--	--	--	--	--	--	--	--	--
OW-1	11/06/07	80	140/<50*	<100/<100*	<8	--	--	--	--	--	--	--	--	--	--	--
OW-1	05/06/08	<50	260/<50*	200/<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-1	11/04/08	<50	150/90*	200/<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-1	05/26/09	<50	<50*	<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-1	11/05/09	<50	<50*	<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-2	12/20/05	<20	200 ²	610	<3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	ND
OW-2	12/20/06	--	--	--	<20	--	--	--	--	--	--	--	--	--	--	--
OW-2	04/12/07	<50	120	300	<4	--	--	--	--	--	--	--	--	--	--	--
OW-2	11/06/07	--	210/<50*	<100/<100*	<8	--	--	--	--	--	--	--	--	--	--	--
OW-2	05/06/08	--	350/<50*	400/<100*	<4	--	--	--	--	--	--	--	--	--	--	--
OW-2	11/04/08	--	260/70*	400/140*	<4	--	--	--	--	--	--	--	--	--	--	--
OW-2	05/26/09	--	<50*	<100*	<20	--	--	--	--	--	--	--	--	--	--	--
OW-2	11/05/09	--	<50*	<100*	<4	--	--	--	--	--	--	--	--	--	--	--
OW-4	11/06/07	<50	310/<50*	100/<100*	<8	--	--	--	--	--	--	--	--	--	--	--
OW-4	05/06/08	<50	640/<50*	700/<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-4	11/04/08	<50	100/90*	200/<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-4	05/26/09	<50	<50*	<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-4	11/05/09	<50	<50*	<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-5	12/20/05	33 ³	300 ²	610	<3	0.96	0.31	0.26	0.24	0.70	0.67	13	0.13J	1.4	1.4	ND
OW-5	12/20/06	90	300	--	<20	--	--	--	--	--	--	--	--	--	--	--
OW-5	04/12/07	<50	180	500	<4	--	--	--	--	--	--	--	--	--	--	--
OW-5	11/06/07	50	360/<50*	200/<100*	<8	--	--	--	--	--	--	--	--	--	--	--
OW-5	05/06/08	<50	610/<50*	600/<100*	<4	--	--	--	--	--	--	--	--	--	--	--
OW-5	11/04/08	<50	240/190*	300/<100*	<4	--	--	--	--	--	--	--	--	--	--	--
OW-5	05/26/09	<50	<50*	<100*	<20	--	--	--	--	--	--	--	--	--	--	--
OW-5	11/05/09	<50	<50*	<100*	<4	--	--	--	--	--	--	--	--	--	--	--
OW-6	12/20/05	<20	440 ²	760	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	ND
OW-6	12/20/06	<50	<100	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-6	04/12/07	<50	160	400	<4	--	--	--	--	--	--	--	--	--	--	--
OW-6	11/06/07	<50	220/<50*	100/<100*	<8	--	--	--	--	--	--	--	--	--	--	--
OW-6	05/06/08	50	460/<50*	400/<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-6	11/04/08	<50	240/110*	300/<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-6	05/26/09	<50	<50*	<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-6	11/05/09	<50	<50*	<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-7	12/20/05	330 ¹	510 ^{2,4}	860	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	ND
OW-7	12/20/06	<50	400	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-7	04/12/07	<50	210	400	<4	--	--	--	--	--	--	--	--	--	--	--
OW-7	11/06/07	250	400/<50*	200/<100*	<8	--	--	--	--	--	--	--	--	--	--	--
OW-7	05/06/08	560	610/<50*	600/<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-7	11/04/08	<50	320/130*	300/<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-7	05/26/09	<50	<50*	<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-7	11/05/09	<50	<50*	<100*	--	--	--	--	--	--	--	--	--	--	--	--
OW-8	12/20/05	<20	250 ²	690	<3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	ND
OW-8	12/20/06	--	--	--	<20	--	--	--	--	--	--	--	--	--	--	--
OW-8	04/12/07	<50	150	400	<4	--	--	--	--	--	--	--	--	--	--	--
OW-8	11/06/07	--	280/<50*	100/<100*	<8	--	--	--	--	--	--	--	--	--	--	--
OW-8	05/06/08	--	390/<50*	400/<100*	<4	--	--	--	--	--	--	--	--	--	--	--
OW-8	11/04/08	--	230/100*	300/<100*	<4	--	--	--	--	--	--	--	--	--	--	--

Table A1 Summary of Historical Groundwater Analytical Results for TPH, Dissolved Lead, and PAHs December 2005 to Present
 Pacific Gas and Electric Oakland General Construction Yard
 Oakland, California

Sample Name	Sample Date	Total Petroleum Hydrocarbons Method 8015M			Dissolved Lead Method 6010B µg/l	Polynuclear Aromatic Hydrocarbons-Method 8270C - SIM									
		TPHg µg/l	TPHd µg/l	TPHmo µg/l		2-Methyl Naphthalene µg/L	Acenaphthene µg/L	Acenaphthylene µg/L	Anthracene µg/L	Fluoranthene µg/L	Fluorene µg/L	Naphthalene µg/L	Phenanthrene µg/L	Pyrene µg/L	Other PAHs µg/L
OW-8	05/26/09	--	<50*	<100*	<20	--	--	--	--	--	--	--	--	--	--
OW-8	11/05/09	--	<50*	<100*	<4	--	--	--	--	--	--	--	--	--	--
FIELD BLANK	12/20/05	<20	<50	<500	<3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	ND
FIELD BLANK	12/20/06	--	--	--	<20	--	--	--	--	--	--	--	--	--	--
FIELD BLANK	04/12/07	--	--	--	<4	--	--	--	--	--	--	--	--	--	--
FIELD BLANK	11/06/07	--	--	--	<8	--	--	--	--	--	--	--	--	--	--
FIELD BLANK	05/06/08	--	--	--	<4	--	--	--	--	--	--	--	--	--	--
FIELD BLANK	11/04/08	--	--	--	<4	--	--	--	--	--	--	--	--	--	--
FIELD BLANK	05/26/09	--	--	--	<20	--	--	--	--	--	--	--	--	--	--
FIELD BLANK	11/05/09	--	--	--	<4	--	--	--	--	--	--	--	--	--	--

Notes:

OW-4 could not be sampled because a shipping container is located on the well.

TPH = Total petroleum hydrocarbons

TPHg = Total petroleum hydrocarbons quantified as gasoline

TPHd = Total petroleum hydrocarbons quantified as diesel

TPHmo = Total petroleum hydrocarbons quantified as motor oil

PAH = Polynuclear aromatic hydrocarbons

µg/l = Micrograms per liter.

< = Not detected at or above the practical quantitation limit.

-- = Not analyzed

ND = Not detected

J = Estimated result. Result is less than the practical quantitation limit.

(1) = The laboratory notes that the chromatogram is mainly a dominant peak(s) which is not indicative of petroleum hydrocarbons.

(2) = The laboratory notes that the chromatogram is mainly higher boiling hydrocarbons such as asphaltene, waste oil, motor oil, weathered diesel, and hydraulic fluid.

(3) = The laboratory notes that the chromatogram includes higher boiling hydrocarbons such as diesel

(4) = The laboratory notes that the chromatogram contains a recognizable contaminant peak(s) that has been removed from quantitation.

Table A2 Summary of Historical Groundwater Analytical Results for VOCs December 2005 to Present
Pacific Gas and Electric Oakland General Construction Yard
Oakland, California

		Volatile Organic Compounds-Method 8260B																				Other VOCs	
Sample Name	Sample Date	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2,4-TMB	1,3,5-TMB	4-Isopropyl-benzene	Naphthalene	MTBE	1,2,3-TCB	1,2,4-TCB	1,2-DCB	1,3-DCB	1,4-DCB	CB	1,1,1-TCA	TCE	1,1-DCA	1,1-DCE	DIPE	VC	Other VOCs
		µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
OW-1	12/20/05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	0.96	<0.5	<0.5	4.6	37	110	8.8	0.66	<0.5	7.6	8.3	<0.5	<0.5	ND
OW-1	12/20/06	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-1	04/12/07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	1.0	<0.5	1.6	1.8	19	64	4.6	0.8	<0.5	10	11	<0.5	<0.5	ND
OW-1	11/06/07	<0.5	<0.5	<0.5	<0.5	1.6	<0.5	<0.5	<0.5	<5	1.0	<0.5	1.6	2.2	21	68	4.2	<0.5	<0.5	5.1	<0.5	6.0	ND
OW-1	05/06/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	1.1	1.7	15	45	2.9	<0.5	<0.5	4.5	6.8	<0.5	<0.5	ND
OW-1	11/04/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	0.8	<0.5	1.8	3.3	25	42	4.1	<0.5	<0.5	7.3	8.0	--	<0.5	ND
OW-1	05/26/09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	0.7	2.4	22	58	3.5	<0.5	<0.5	9.2	10.0	--	<0.5	ND
OW-1	11/05/09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	0.8	<0.5	<0.5	1.4	5.9	16	1.2	<0.5	<0.5	7.1	8.1	--	<0.5	ND
OW-2	12/20/05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	ND
OW-2	12/20/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-2	04/12/07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
OW-2	11/06/07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-2	05/06/08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-2	11/04/08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-2	05/26/09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-2	11/05/09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-4	11/06/07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
OW-4	05/06/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
OW-4	11/04/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
OW-4	05/26/09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
OW-4	11/05/09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
OW-5	12/20/05	4.4	<0.5	<0.5	0.56	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	1.0	3.9	0.63	<0.5	0.33J	2.2	0.49J	<0.5	0.6	ND
OW-5	12/20/06	0.7	<0.5	<0.5	<0.5	3.2	1.9	0.8	50	<0.5	<0.5	<0.5	<0.5	1.0	4.3	<0.5	<0.5	<0.5	2.2	0.6	<0.5	<0.5	ND
OW-5	04/12/07	4.7	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	5.3	<0.5	<0.5	<0.5	<0.5	0.8	5.0	<0.5	<0.5	<0.5	1.6	0.6	<0.5	<0.5	ND
OW-5	11/06/07	6.8	<0.5	<0.5	<0.5	1.2	1.4	<0.5	1.6	32	<0.5	<0.5	<0.5	<0.5	0.8	3.9	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	ND
OW-5	05/06/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	1.3	8.4	<0.5	<0.5	<0.5	2.8	1.0	<0.5	<0.5	ND
OW-5	11/04/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	0.6	3.8	<0.5	<0.5	<0.5	1.6	0.7	--	<0.5	1.5 ^(a)
OW-5	05/26/09	1.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.3	8.3	<0.5	<0.5	<0.5	2.0	1.0	0.7	<0.5	0.5 ^(b)
OW-5	11/05/09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	6.6	<0.5	<0.5	<0.5	2.2	1.3	<0.5	<0.5	ND
OW-6	12/20/05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	0.53	<0.5	<0.5	1.4	8.6	25	5.8	<0.5	<0.5	7.0	3.1	<0.5	<0.5	ND
OW-6	12/20/06	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	1.2	11	44	3.4	<0.5	<0.5	8.1	4	<0.5	<0.5	ND
OW-6	04/12/07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	0.6	6.6	22	8.1	<0.5	<0.5	12.0	9.6	<0.5	<0.5	ND
OW-6	11/06/07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	0.6	8.1	28	3.2	<0.5	<0.5	8.4	<0.5	5.2	ND
OW-6	05/06/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	1.3	11	30	12	<0.5	<0.5	15	18.0	5.0	0.9	⁽²⁾
OW-6	11/04/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	0.9	11	34	4.6	<0.5	<0.5	9	5.6	--	0.9	⁽²⁾
OW-6	05/26/09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	7.1	19	1.7	<0.5	<0.5	7.5	6.9	3.6	<0.5	ND
OW-6	11/05/09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.4	12	<0.5	<0.5	<0.5	8.6	5.6	1.1	<0.5	ND
OW-7	12/20/05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	0.26J	<0.5	<0.5	26	190	490	84	<0.5	0.53	7.0	6.3	<0.5	0.39J	ND
OW-7	12/20/06	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.8	<0.5	0.8	25	21	120	330	51	<0.5	<0.5	3.6	3.1	<0.5	<0.5	ND
OW-7	04/12/07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	32	16	130	460	70	<0.5	<0.5	6.5	6.8	<0.5	<0.5	⁽¹⁾
OW-7	11/06/07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	22	12	56	200	40	<0.5	<0.5	5.5	<0.5	3.3	ND
OW-7	05/06/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	34	21	170	820	76	<0.5	<0.5	10	14.0	0.6	0.6	ND
OW-7	11/04/08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	50	37	190	620	77	<0.5	<0.5	11	13.0	--	0.5	ND
OW-7	05/26/09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	45	18	120	340	48	<0.5	<0.5	7.2	7.4	0.6	<0.5	ND
OW-7	11/05/09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	28	25	150	580	86	<0.5	<0.5	10	14.0	0.7	0.9	0.6
OW-8	12/20/05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.55	<0.5	<0.5	<0.5	ND
OW-8	12/20/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-8	04/12/07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND
OW-8	11/06/07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-8	05/06/08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-8	11/04/08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-8	05/26/09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table A2 Summary of Historical Groundwater Analytical Results for VOCs December 2005 to Present
 Pacific Gas and Electric Oakland General Construction Yard
 Oakland, California

		Volatile Organic Compounds-Method 8260B																					
Sample Name	Sample Date	Benzene µg/l	Toluene µg/l	Ethyl- benzene µg/l	Xylenes µg/l	1,2,4-TMB µg/l	1,3,5-TMB µg/l	4-Isopropyl- benzene µg/l	Naph- thalene µg/l	MTBE µg/l	1,2,3-TCB µg/l	1,2,4-TCB µg/l	1,2-DCB µg/l	1,3-DCB µg/l	1,4-DCB µg/l	CB µg/l	1,1,1-TCA µg/l	TCE µg/l	1,1-DCA µg/l	1,1-DCE µg/l	DIPE µg/l	VC µg/l	Other VOCs µg/l
OW-8	11/05/09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

OW-4 could not be sampled because a shipping container is located on the well.

µg/l = Micrograms per liter.

< = Not detected at or above the practical quantitation limit.

-- = Not analyzed

ND = Not detected above laboratory reporting limits. See laboratory analytical report for individual reporting limits (Appendix C).

J = Estimated result. Result is less than the laboratory practical quantitation limit.

MTBE = Methyl tertiary-butyl ether

CB = Chlorobenzene

1,2-DCB = 1,2-Dichlorobenzene

1,3-DCB = 1,3-Dichlorobenzene

1,4-DCB = 1,4-Dichlorobenzene

DIPE = Diisopropyl Ether

1,1-DCA = 1,1-Dichloroethane

1,1-DCE = 1,1-Dichloroethene

1,1,1-TCA = 1,1,1-Trichloroethane

1,2,3-TCB = 1,2,3-Trichlorobenzene

1,2,4-TCB = 1,2,4-Trichlorobenzene

TCE = Trichloroethene

1,2,4-TMB = 1,2,4-Trimethylbenzene

1,3,5-TMB = 1,3,5-Trimethylbenzene

VC = Vinyl Chloride

(1) = 1,2-Dichloroethane was detected at 0.5 µg/l

(2) = 1,2-Dichloroethane was detected at 0.5

(a) = Isopropylbenzene was detected at 1.5 ug/L

(b) = Isopropylbenzene was detected at 0.5 ug/L

APPENDIX B

Field Procedures for Low-Flow Purging and Sampling

FIELD PROCEDURES FOR LOW-FLOW PURGING AND SAMPLING

The following sections describe field procedures followed during groundwater monitoring at the site.

EQUIPMENT CALIBRATION

At the beginning of each sampling day, water quality meters for pH, specific electrical conductance (SEC), dissolved oxygen (DO), oxidation reduction potential (ORP), and turbidity are calibrated. Calibration data are recorded on the first Well Sampling Record. A CHEMetrics, or other appropriate, field test kit is used if there is a problem with DO meter calibration.

DOWNHOLE PARAMETER AND GROUNDWATER LEVEL MEASUREMENTS

After opening the wells and allowing time for equilibration to atmospheric conditions, and prior to purging and sampling activities, a complete round of downhole parameter and depth to groundwater measurements are collected from all monitoring wells. Downhole DO and ORP are measured first using a Horiba U-22, or other appropriate, water quality meter. Depth to water is then measured using an electric water level sounder to the nearest 0.01 foot from the top of casing.

FREE PRODUCT MEASUREMENT

The wells are inspected for free product, and if free product is observed, the depths to top and bottom of free product is measured using an interface probe to the nearest 0.01 foot from the top of casing.

SAMPLING ORDER

To minimize potential cross-contamination between wells, the wells are sampled in reverse order of target analyte concentration as measured during the previous sampling event.

GROUNDWATER PURGING AND SAMPLING

Groundwater sampling is performed following EPA low-flow purging and sampling procedures¹. A minimum of three equipment volumes are purged at each well using an electric pump. Typical pump types may include peristaltic, 2-inch stainless steel submersible and/or bladder pumps.

Dedicated tubing and, where necessary, submersible pumps are used to minimize disturbance. When dedicated equipment cannot be used, sufficient time is allowed after equipment installation to allow groundwater conditions to return to equilibrium. The pump inlet is placed in the center of the screened interval. Each well is purged at a flow rate of approximately 200 milliliters per minute (ml/min); flow rate is not to exceed 500 ml/min at any time during purging or sampling. Drawdown in the well is not to exceed 0.3 ft. During purging, temperature, pH, SEC, turbidity, DO, and ORP are monitored using a Horbia U-22, or other appropriate, water quality meter approximately every one equipment volume purged, or every 3 to 5 minutes. Each well is purged until the field parameters are relatively stable for three successive readings. Three successive readings should be within:

- 0.1 for pH
- 3% for SEC
- 10% for temperature
- 10 mV for ORP if practical
- 10% for DO if practical
- 10% for turbidity if practical

If applicable, the ferrous ion concentration is measured using a CHEMetrics, or other appropriate, test kit during the last reading of the field parameters. Immediately after purging, a groundwater sample is collected directly through the pump discharge tubing. Depth to water after sample collection is measured and recorded on the Well Sampling Record.

EQUIPMENT CLEANING

All downhole equipment is cleaned with an Alconox-water solution and double-rinsed with deionized water before use at each well and at the end of each sampling day.

WASTE WATER CONTAINMENT

Waste water including purged groundwater and equipment cleaning water is contained in labeled, DOT-approved, 55-gallon steel drums, or other appropriate containers, and placed at a designated on-site location for future offsite disposal or recycling.

¹ Puls, R.W. and Barcelona, M.J., 1996, Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedure, U.S. Environmental Protection Agency, Office of Research and Development, Publication #EPA/540/5-95/504.

APPENDIX C

Groundwater Purging and Sampling Logs

WELL GAUGING DATA

Project # 091105-DRI Date 11/5/09 Client Geomatrix

Site 4930 Coliseum Wy. Oakland Ca.

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	SPIT ✓ Notes		
OW-1	0951	2	No SPIT				3.40	18.07	↓	✓		
OW-4	0955	2	↓				4.02	19.49	↓	✓		
OW-5	0959	2					4.21	19.02		✓		
OW-6	1004	2					4.50	17.22		✓		
OW-2	1009	2					3.66	20.31		✓		
OW-8	1013	2					2.97	17.91		✓		
OW-7	1018	2		↓				5.89		18.22	↓	✓
				* Opened caps 15 min. prior to gauging.								

WELLHEAD INSPECTION CHECKLIST

Date 11/5/09 Client Geomatrix
 Site Address 4930 Coliseum Wy. Oakland Ca.
 Job Number 091105-DRI Technician DR

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Debris Removed From Wellbox	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)
OW-1							X	
OW-4				X			X	
OW-5	X							
OW-6							X	
OW-2							X	
OW-8	X							
OW-7							X	

NOTES: OW-7 Cap broken - No lock. OW-6 No lock. OW-4 In storage locker. No h.t holes. Not secureable if locker is open. OW-1 PVC slip cap. OW-2 PVC slip cap. OW-5 Stand pipe.

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091105-DRI	Client: Geomatrix
Sampler: DR	Date: 11/5/09
Well I.D.: OW-1	Well Diameter: <u>(2)</u> 3 4 6 8 _____
Total Well Depth: 18.07	Depth to Water Pre: 3.40 Post: 3.51
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YS1 556</u>

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Flow Rate: ~ 300 ml/min. Pump Depth: 10.5'

Time	Temp. (°C or °F)	pH	Cond. (mS or <u>µS</u>)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>ML</u>)	Observations	DTW
1035	23.36	6.67	759	9	1.55	140.41	—	clear	3.43
1038	23.41	6.65	759	8	1.16	125.7	900	"	3.47
1041	23.60	6.63	758	9	1.09	95.0	1800	"	3.49
1044	23.65	6.62	759	8	0.83	92.5	2700	"	3.50
1047	23.67	6.61	758	7	0.79	91.2	3600	"	3.51
1050	23.68	6.61	757	7	0.77	90.4	4500	"	3.53

Did well dewater? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Amount actually evacuated: 4500 mL
Sampling Time: 1055	Sampling Date: 11/5/09
Sample I.D.: OW-1-H052009	Laboratory: <u>Creek Laboratory</u>
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: <u>See Col</u>
Equipment Blank I.D.: @ _____	Duplicate I.D.: _____

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091105-DRI	Client: Geomatrix
Sampler: DR	Date: 11/5/09
Well I.D.: OW-2	Well Diameter: (2) 3 4 6 8
Total Well Depth: 20.31	Depth to Water Pre: 3.66 Post: 3.72
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Flow Rate: ~ 300 ml/min. Pump Depth: 10.5'

Time	Temp. (°C or °F)	pH	Cond. (mS or <u>µS</u>)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or <u>ml</u>)	DTL Observations	DTL
1310	23.84	6.74	2496	22	2.56	100.1	—	clear	3.69
1313	23.82	6.73	2978	18	1.15	84.4	900	"	3.71
1316	23.84	6.73	3106	15	0.98	80.9	1800	"	3.72
1319	23.80	6.74	3235	12	0.75	75.5	2700	"	3.74
1322	23.77	6.76	3291	11	0.73	74.9	3600	"	3.75
1325	23.78	6.75	3308	10	0.73	74.2	4500	"	3.75

Did well dewater? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Amount actually evacuated: 4500 mL
Sampling Time: 1330	Sampling Date: 11/5/09
Sample I.D.: OW-2-11052009	Laboratory: <u>Crack Laboratory</u>
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: <u>See CoC</u>
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091105-DRI	Client: Geomatrix
Sampler: DR	Date: 11/5/09
Well I.D.: OW-4	Well Diameter: (2) 3 4 6 8
Total Well Depth: 19.49	Depth to Water Pre: 4.02 Post: 4.09
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Flow Rate: ~ 300 ml/min. Pump Depth: 15'

Time	Temp. (°C or °F)	pH	Cond. (mS or μS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mb)	Observations	DR#
1110	21.11	6.57	1330	83	1.60	118.4	-	light cloudy	4.05
1113	21.14	6.55	1348	77	1.211	109.9	900	"	4.10
1116	21.17	6.53	1378	68	1.00	93.1	1800	"	4.13
1119	20.97	6.52	1388	63	0.85	90.5	2700	"	4.16
1122	20.85	6.51	1391	60	0.72	88.2	3600	"	4.18
1125	20.85	6.51	1391	58	0.71	87.9	4500	"	4.19
1128	20.86	6.51	1393	59	0.69	87.4	5400	"	4.19

Did well dewater? Yes No Amount actually evacuated: 5400 mL

Sampling Time: 1135 Sampling Date: 11/5/09

Sample I.D.: OW-4-11052009 Laboratory: Creek Laboratory

Analyzed for: TPH-G BTEX MTBE TPH-D Other: See CoC

Equipment Blank I.D.: @ Time Duplicate I.D.:

Field blank FB-1-11052009 e 1105

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091105-DA1	Client: Geomatrix
Sampler: DR	Date: 11/5/09
Well I.D.: OW-S	Well Diameter: (2) 3 4 6 8
Total Well Depth: 19.02	Depth to Water Pre: 4.21 Post: 4.28
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Flow Rate: ~ 300 ml/min. Pump Depth: 11.5'

Time	Temp. (°C or °F)	pH	Cond. (mS or μ S)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations	DTW
1157	21.48	6.51	796	19	3.27	27.1	—	clear	4.23
1200	21.59	6.47	782	14	1.05	8.1	900	"	4.27
1203	21.57	6.46	779	11	0.91	4.2	1800	"	4.29
1206	21.54	6.45	777	10	0.88	3.9	2700	"	4.30
1209	21.86	6.45	773	10	0.87	3.7	3600	"	4.30
1212	21.57	6.45	772	8	0.85	3.6	4500	"	4.31

Did well dewater? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Amount actually evacuated: 4500 mL
Sampling Time: 1220	Sampling Date: 11/5/09
Sample I.D.: OW-S-11052009	Laboratory: Creek Laboratory
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: See CoC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091105-DRI	Client: Geomatrix
Sampler: DR	Date: 11/5/09
Well I.D.: OW-6	Well Diameter: (2) 3 4 6 8
Total Well Depth: 17.22	Depth to Water Pre: 4.50 Post: 4.55
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Flow Rate: ~ 300 ml/min. Pump Depth: 12.5

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations	DTW
1235	21.08	7.20	1056	209	3.83	23.5	—	cloudy	4.54
1238	20.82	7.21	1091	126	1.40	12.7	400	light cloudy	4.56
1241	20.68	7.20	1107	108	1.04	15.6	1800	"	4.58
1244	20.70	7.19	1108	89	0.94	18.1	2700	clear	4.59
1247	20.69	7.18	1108	85	0.93	18.5	3600	"	4.60
1250	20.69	7.17	1109	83	0.91	18.9	4500	"	4.60

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Amount actually evacuated: 4500 mL
Sampling Time: 1255	Sampling Date: 11/5/09
Sample I.D.: OW-6-20091105	Laboratory: Creek Laboratory
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: See CoC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091105-DRI	Client: Geomatrix
Sampler: DR	Date: 11/5/09
Well I.D.: OW-7	Well Diameter: (2) 3 4 6 8
Total Well Depth: 18.22	Depth to Water Pre: 5.89 Post: 5.97
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Flow Rate: ~ 300 ml/min. Pump Depth: 12.5'

Time	Temp. (°C or °F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations	DTW
1413	21.72	6.67	824	7	1.36	47.1	—	clear	5.92
1416	21.78	6.65	824	5	0.63	34.1	900	"	5.96
1419	21.79	6.65	822	5	0.59	28.6	1800	"	5.99
1422	21.79	6.65	819	4	0.56	22.9	2700	"	6.00
1425	21.81	6.65	819	4	0.55	22.1	3600		6.00
1428	21.80	6.64	817	4	0.55	21.8	4500		6.01

Did well dewater? Yes No Amount actually evacuated: 4500 mL

Sampling Time: 1435 Sampling Date: 11/5/09

Sample I.D.: OW-7-11052009 Laboratory: Creek Laboratory

Analyzed for: TPH-G BTEX MTBE TPH-D Other: See CoC

Equipment Blank I.D.: @ Time Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 091105-DRI	Client: Geomatrix
Sampler: DR	Date: 11/5/09
Well I.D.: 0W-8	Well Diameter: <input checked="" type="radio"/> 2 3 4 6 8
Total Well Depth: 17.91	Depth to Water Pre: 2.97 Post: 3.03
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <input checked="" type="radio"/> PVC Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Flow Rate: ~ 300 ml/min. Pump Depth: 13'

Time	Temp. (°C or °F)	pH	Cond. (mS or μ S)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Observations	DTW
1343	23.02	6.54	1378	9	1.74	111.0	-	clear	3.00
1346	23.07	6.52	1294	7	0.81	108.0	900	"	3.03
1349	23.13	6.50	1223	7	0.77	103.3	1800	"	3.05
1352	23.12	6.48	1202	6	0.82	100.0	2700	"	3.06
1355	23.12	6.48	1198	6	0.79	99.2	3600	"	3.07
1358	23.11	6.47	1194	5	0.77	98.9	4500	"	3.07

Did well dewater? Yes <input checked="" type="radio"/> No	Amount actually evacuated: 4500 mL
Sampling Time: 1405	Sampling Date: 11/5/09
Sample I.D.: 0W-8-11052009	Laboratory: Creek Laboratory
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: See CoC
Equipment Blank I.D.: @ Time	Duplicate I.D.:

APPENDIX D

Laboratory Analytical Reports and Chain-of-Custody Documentation

BLAINE

TECH SERVICES, INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

Q5952

CHAIN OF CUSTODY

BTS # **091105-DR1**

CLIENT **AMEC Geomatrix**

SITE **PG&E**

4930 Coliseum Way

Oakland, CA

C = COMPOSITE ALL CONTAINERS

CONDUCT ANALYSIS TO DETECT

VOCs (8260B)	TPH-D & TPHMO (8015m) (Silica gel cleanup required prior to analyzing)	TPH-D (8015M)	TPH-Motor Oil (8015)	TPH-Gas (8015M)	Diss. Lead (6010) Field Filtered	MS/MSD
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LAB **Creek** DHS # _____

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND

EPA RWQCB REGION _____

LIA

OTHER

SPECIAL INSTRUCTIONS

Temp 2.0

Invoice to : AMEC Geomatrix

Report to : AMEC Geomatrix Attn: Yemia Hashimot

cc: ITSI Attn: Kim Tom Global ID# T0600100258

Project: **PG&E Coliseum Way**

SAMPLE I.D.	DATE	TIME	S=SOIL W=H ₂ O	TOTAL	MATRIX	CONTAINERS	VOCs (8260B)	TPH-D & TPHMO (8015m) (Silica gel cleanup required prior to analyzing)	TPH-D (8015M)	TPH-Motor Oil (8015)	TPH-Gas (8015M)	Diss. Lead (6010) Field Filtered	MS/MSD	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
OW-1-11052009	11/5/09	1055	W	7	AG/amp/liter A 6x VOA w/HCL B	6	X	X	X	X	X						16186
OW-4-11052009		1135	W	7	11		X	X	X	X	X						16187
FB-1-11052009		1105	W	4	P/H003/250 A 3x VOA w/HCL B	C	X					X		Field blank not field filtered			16188
OW-5-11052009		1220	W	8	AG/amp/liter A P/H003/250 B 6x VOA w/HCL C	H	X	X	X	X	X	X					16189
OW-6-11052009		1255	W	7	AG/amp/liter A 6x VOA w/HCL B	B	X	X	X	X	X						16190
OW-2-11052009		1330	W	2	AG/amp/liter A P/H003/250 B			X	X	X		X					16191
OW-8-11052009		1405	W	2	11			X	X	X		X					16192
OW-7-11052009		1435	W	12	3x AG/amp/liter A-C 4x VOA w/HCL D	L	X	X	X	X	X		X				16193

SAMPLING COMPLETED	DATE	TIME	SAMPLING PERFORMED BY	RESULTS NEEDED	
DR	11/5/09	1600	Devin Raynal	NO LATER THAN Standard TAT	
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
<i>[Signature]</i>	11/5/09	1600	Kathy Wensloff	11-6-09	0940
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
<i>[Signature]</i>			<i>[Signature]</i>	11-6-09	10:20
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
SHIPPED VIA	DATE SENT	TIME SENT	COOLER #		
Fed Ex	11/5/09	1600			



Date: November 20, 2009

CASE NARRATIVE Q5952

Client: AMEC Geomatrix
Project: PG&E Coliseum Way
Sample(s): 09-C16186 to 09-C16193
Sampled: 11/05/09

Received: 11/06/09

Aqueous samples 09-C16186 to 09-C16193 were received at the laboratory at 2.0 °C. All samples were intact and there was no anomaly in sample receipt.

VOCs were analyzed by PAT/GC/MS method (EPA 5030B/8260B). TPH-gasoline was analyzed by PAT/GC/FID method (EPA 5030B/8015M). TPH-diesel was extracted with liquid-liquid extraction method (EPA 3510C), treated with silica gel (EPA 3630C), and analyzed by GC/FID (EPA 8015M). Dissolved Lead on the field-filtered samples was analyzed directly by ICP-MS method (EPA 6020).

All samples were extracted and analyzed within holding time. All analytical quality control parameters were within acceptable limits except for the following remarks:

- MS recoveries of 1,3-DCB and 1,4-DCB in VOC batch 3975 exceeded QC limits due to matrix effects in the source sample 09-C16186. Both 1,3-DCB and 1,4-DCB were found in significant concentrations in sample 09-C16186. The analytical anomaly may be attributed to a non-homogenous distribution of 1,3-DCB and 1,4-DCB among the different VOA vials presented for analysis, as evidenced by the high RPD for MS/MSD.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng

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Yemia Hashimoto
AMEC Geomatrix
2101 Webster St., 12th Floor
Oakland, CA 94612

Log Number: 09-C16186
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled		Matrix				
		Date	@ Time					
OW-1-11052009	Davin Raynal	11/05/09	10:55	Aqueous				
Analyte	Result	DLR	Dilution	Units	Method	Date	Date	Batch
			Factor			Analyzed	Prepared	
TPH as Diesel, SGT	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	11/16/09	11/12/09	4053
TPH as Motor Oil, SGT	Not Detected	0.1	1	mg/L	EPA 8015/LUFT	11/16/09	11/12/09	4053
TPH as Gasoline	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	11/12/09		3957
Benzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Toluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Ethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
m,p-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
o-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Methyl t-Butyl Ether (MTBE)	0.8	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Amyl Methyl Ether (TAME)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Butyl Alcohol (TBA)	Not Detected	2	1	ug/L	EPA 8260	11/16/09		3975
Diisopropyl Ether (DIPE)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Ethyl t-Butyl Ether (ETBE)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chlorobenzene	1.2	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichlorobenzene	1.4	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3-Dichlorobenzene	5.9	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,4-Dichlorobenzene	16	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichloroethane (EDC)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dibromoethane (EDB)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromodichloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromoform	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromomethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
n-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
sec-Butyl Benzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Carbon Tetrachloride	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975



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2101 Webster St., 12th Floor
Oakland, CA 94612

Log Number: 09-C16186
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled			Matrix			
		Date	@	Time				
OW-1-11052009	Davin Raynal	11/05/09	@	10:55	Aqueous			
Analyte	Result	DLR	Dilution	Units	Method	Date	Date	Batch
			Factor			Analyzed	Prepared	
2-Chloroethylvinyl ether	Not Detected	20	1	ug/L	EPA 8260	11/16/09		3975
Chloroform	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
2-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
4-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dibromo-3-Chloropropane	Not Detected	1	1	ug/L	EPA 8260	11/16/09		3975
Dibromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Dibromomethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Dichlorodifluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloroethane	7.1	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloroethene	8.1	0.5	1	ug/L	EPA 8260	11/16/09		3975
cis-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
trans-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
2,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
cis-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
trans-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Hexachlorobutadiene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Isopropylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
4-Isopropyltoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Methylene Chloride	Not Detected	5	1	ug/L	EPA 8260	11/16/09		3975
Naphthalene	Not Detected	5	1	ug/L	EPA 8260	11/16/09		3975
n-Propylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Styrene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,1,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,1,2,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Tetrachloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975



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AMEC Geomatrix
2101 Webster St., 12th Floor
Oakland, CA 94612

Log Number: 09-C16186
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time		Matrix				
OW-1-11052009	Davin Raynal	11/05/09@10:55		Aqueous				
Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2,3-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,4-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,1-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,2-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Trichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Trichlorofluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,3-Trichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,4-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3,5-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Vinyl Chloride	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng



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Page 4

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Log Number: 09-C16187
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Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time		Matrix				
OW-4-11052009	Davin Raynal	11/05/09@11:35		Aqueous				
Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
TPH as Diesel, SGT	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	11/16/09	11/12/09	4053
TPH as Motor Oil, SGT	Not Detected	0.1	1	mg/L	EPA 8015/LUFT	11/16/09	11/12/09	4053
TPH as Gasoline	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	11/12/09		3957
Benzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Toluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Ethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
m,p-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
o-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Methyl t-Butyl Ether (MTBE)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Amyl Methyl Ether (TAME)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Butyl Alcohol (TBA)	Not Detected	2	1	ug/L	EPA 8260	11/16/09		3975
Diisopropyl Ether (DIPE)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Ethyl t-Butyl Ether (ETBE)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,4-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichloroethane (EDC)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dibromoethane (EDB)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromodichloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromoform	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromomethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
n-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
sec-Butyl Benzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Carbon Tetrachloride	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975



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Log Number: 09-C16187
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time		Matrix				
OW-4-11052009	Davin Raynal	11/05/09@11:35		Aqueous				
Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
2-Chloroethylvinyl ether	Not Detected	20	1	ug/L	EPA 8260	11/16/09		3975
Chloroform	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
2-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
4-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dibromo-3-Chloropropane	Not Detected	1	1	ug/L	EPA 8260	11/16/09		3975
Dibromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Dibromomethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Dichlorodifluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
cis-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
trans-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
2,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
cis-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
trans-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Hexachlorobutadiene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Isopropylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
4-Isopropyltoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Methylene Chloride	Not Detected	5	1	ug/L	EPA 8260	11/16/09		3975
Naphthalene	Not Detected	5	1	ug/L	EPA 8260	11/16/09		3975
n-Propylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Styrene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,1,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,2,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Tetrachloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975



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Log Number: 09-C16187
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time		Matrix				
OW-4-11052009	Davin Raynal	11/05/09@11:35		Aqueous				
Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2,3-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,4-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,1-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,2-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Trichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Trichlorofluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,3-Trichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,4-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3,5-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Vinyl Chloride	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng



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Log Number: 09-C16188
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled		Matrix				
		Date	@ Time					
FB-1-11052009	Davin Raynal	11/05/09	11:05	Aqueous				
Analyte	Result	DLR	Dilution	Units	Method	Date	Date	Batch
			Factor			Analyzed	Prepared	
Benzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Toluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Ethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
m,p-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
o-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Methyl t-Butyl Ether (MTBE)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Amyl Methyl Ether (TAME)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Butyl Alcohol (TBA)	Not Detected	2	1	ug/L	EPA 8260	11/16/09		3975
Diisopropyl Ether (DIPE)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Ethyl t-Butyl Ether (ETBE)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,4-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichloroethane (EDC)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dibromoethane (EDB)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromodichloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromoform	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromomethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
n-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
sec-Butyl Benzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Carbon Tetrachloride	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
2-Chloroethylvinyl ether	Not Detected	20	1	ug/L	EPA 8260	11/16/09		3975
Chloroform	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975



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Yemia Hashimoto
AMEC Geomatrix
2101 Webster St., 12th Floor
Oakland, CA 94612

Log Number: 09-C16188
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time		Matrix				
FB-1-11052009	Davin Raynal	11/05/09@11:05		Aqueous				
Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
2-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
4-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dibromo-3-Chloropropane	Not Detected	1	1	ug/L	EPA 8260	11/16/09		3975
Dibromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Dibromomethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Dichlorodifluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
cis-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
trans-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
2,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
cis-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
trans-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Hexachlorobutadiene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Isopropylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
4-Isopropyltoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Methylene Chloride	Not Detected	5	1	ug/L	EPA 8260	11/16/09		3975
Naphthalene	Not Detected	5	1	ug/L	EPA 8260	11/16/09		3975
n-Propylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Styrene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,1,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,2,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Tetrachloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,3-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,4-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,1-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975



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Log Number: 09-C16188
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time		Matrix				
FB-1-11052009	Davin Raynal	11/05/09@11:05		Aqueous				
Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,1,2-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Trichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Trichlorofluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,3-Trichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,4-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3,5-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Vinyl Chloride	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Lead, Dissolved	Not Detected	0.004	1	mg/L	EPA 6020	11/12/09		3860

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng



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REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time		Matrix				
OW-5-11052009	Davin Raynal	11/05/09@12:20		Aqueous				
Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
TPH as Diesel, SGT	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	11/16/09	11/12/09	4053
TPH as Motor Oil, SGT	Not Detected	0.1	1	mg/L	EPA 8015/LUFT	11/16/09	11/12/09	4053
TPH as Gasoline	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	11/12/09		3957
Benzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Toluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Ethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
m,p-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
o-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Methyl t-Butyl Ether (MTBE)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Amyl Methyl Ether (TAME)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Butyl Alcohol (TBA)	Not Detected	2	1	ug/L	EPA 8260	11/16/09		3975
Diisopropyl Ether (DIPE)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Ethyl t-Butyl Ether (ETBE)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3-Dichlorobenzene	0.9	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,4-Dichlorobenzene	6.6	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichloroethane (EDC)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dibromoethane (EDB)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromodichloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromoform	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromomethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
n-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
sec-Butyl Benzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Carbon Tetrachloride	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975



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Log Number: 09-C16189
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time		Matrix				
OW-5-11052009	Davin Raynal	11/05/09@12:20		Aqueous				
Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
2-Chloroethylvinyl ether	Not Detected	20	1	ug/L	EPA 8260	11/16/09		3975
Chloroform	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
2-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
4-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dibromo-3-Chloropropane	Not Detected	1	1	ug/L	EPA 8260	11/16/09		3975
Dibromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Dibromomethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Dichlorodifluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloroethane	2.2	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloroethene	1.3	0.5	1	ug/L	EPA 8260	11/16/09		3975
cis-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
trans-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
2,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
cis-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
trans-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Hexachlorobutadiene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Isopropylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
4-Isopropyltoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Methylene Chloride	Not Detected	5	1	ug/L	EPA 8260	11/16/09		3975
Naphthalene	Not Detected	5	1	ug/L	EPA 8260	11/16/09		3975
n-Propylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Styrene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,1,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,2,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Tetrachloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975



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Log Number: 09-C16189
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Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
OW-5-11052009	Davin Raynal	11/05/09@12:20	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2,3-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,4-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,1-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,2-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Trichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Trichlorofluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,3-Trichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,4-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3,5-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Vinyl Chloride	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Lead, Dissolved	Not Detected	0.004	1	mg/L	EPA 6020	11/12/09		3860

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng



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REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time		Matrix				
OW-6-11052009	Davin Raynal	11/05/09@12:55		Aqueous				
Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
TPH as Diesel, SGT	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	11/16/09	11/12/09	4053
TPH as Motor Oil, SGT	Not Detected	0.1	1	mg/L	EPA 8015/LUFT	11/16/09	11/12/09	4053
TPH as Gasoline	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	11/12/09		3957
Benzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Toluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Ethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
m,p-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
o-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Methyl t-Butyl Ether (MTBE)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Amyl Methyl Ether (TAME)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Butyl Alcohol (TBA)	Not Detected	2	1	ug/L	EPA 8260	11/16/09		3975
Diisopropyl Ether (DIPE)	1.1	0.5	1	ug/L	EPA 8260	11/16/09		3975
Ethyl t-Butyl Ether (ETBE)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3-Dichlorobenzene	3.4	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,4-Dichlorobenzene	12	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichloroethane (EDC)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dibromoethane (EDB)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromodichloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromoform	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromomethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
n-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
sec-Butyl Benzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Carbon Tetrachloride	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975



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Log Number: 09-C16190
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
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REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix					
OW-6-11052009	Davin Raynal	11/05/09@12:55	Aqueous					
Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
2-Chloroethylvinyl ether	Not Detected	20	1	ug/L	EPA 8260	11/16/09		3975
Chloroform	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
2-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
4-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dibromo-3-Chloropropane	Not Detected	1	1	ug/L	EPA 8260	11/16/09		3975
Dibromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Dibromomethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Dichlorodifluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloroethane	8.6	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloroethene	5.6	0.5	1	ug/L	EPA 8260	11/16/09		3975
cis-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
trans-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
2,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
cis-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
trans-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Hexachlorobutadiene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Isopropylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
4-Isopropyltoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Methylene Chloride	Not Detected	5	1	ug/L	EPA 8260	11/16/09		3975
Naphthalene	Not Detected	5	1	ug/L	EPA 8260	11/16/09		3975
n-Propylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Styrene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,1,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,2,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Tetrachloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975



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Yemia Hashimoto
AMEC Geomatrix
2101 Webster St., 12th Floor
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Log Number: 09-C16190
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time		Matrix				
OW-6-11052009	Davin Raynal	11/05/09@12:55		Aqueous				
Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2,3-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,4-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,1-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,2-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Trichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Trichlorofluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,3-Trichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,4-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3,5-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Vinyl Chloride	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

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Lab Director, Michael Ng



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Log Number: 09-C16191
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time	Matrix
OW-2-11052009	Davin Raynal	11/05/09@13:30	Aqueous

Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
TPH as Diesel, SGT	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	11/17/09	11/12/09	4053
TPH as Motor Oil, SGT	Not Detected	0.1	1	mg/L	EPA 8015/LUFT	11/17/09	11/12/09	4053
Lead, Dissolved	Not Detected	0.004	1	mg/L	EPA 6020	11/12/09		3860

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

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Log Number: 09-C16192
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time		Matrix				
OW-8-11052009	Davin Raynal	11/05/09@14:05		Aqueous				
Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
TPH as Diesel, SGT	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	11/17/09	11/12/09	4053
TPH as Motor Oil, SGT	Not Detected	0.1	1	mg/L	EPA 8015/LUFT	11/17/09	11/12/09	4053
Lead, Dissolved	Not Detected	0.004	1	mg/L	EPA 6020	11/12/09		3860

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng



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Log Number: 09-C16193
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time		Matrix				
OW-7-11052009	Davin Raynal	11/05/09@14:35		Aqueous				
Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
TPH as Diesel, SGT	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	11/17/09	11/12/09	4053
TPH as Motor Oil, SGT	Not Detected	0.1	1	mg/L	EPA 8015/LUFT	11/17/09	11/12/09	4053
TPH as Gasoline	Not Detected	0.05	1	mg/L	EPA 8015/LUFT	11/12/09		3957
Benzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Toluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Ethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
m,p-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
o-Xylene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Methyl t-Butyl Ether (MTBE)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Amyl Methyl Ether (TAME)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Butyl Alcohol (TBA)	Not Detected	2	1	ug/L	EPA 8260	11/16/09		3975
Diisopropyl Ether (DIPE)	0.7	0.5	1	ug/L	EPA 8260	11/16/09		3975
Ethyl t-Butyl Ether (ETBE)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chlorobenzene	86	20	50	ug/L	EPA 8260	11/17/09		3997
1,2-Dichlorobenzene	25	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3-Dichlorobenzene	150	20	50	ug/L	EPA 8260	11/17/09		3997
1,4-Dichlorobenzene	580	20	50	ug/L	EPA 8260	11/17/09		3997
1,2-Dichloroethane (EDC)	0.6	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dibromoethane (EDB)	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromodichloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromoform	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Bromomethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
n-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
sec-Butyl Benzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
t-Butylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Carbon Tetrachloride	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975



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2101 Webster St., 12th Floor
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Log Number: 09-C16193
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time		Matrix				
OW-7-11052009	Davin Raynal	11/05/09@14:35		Aqueous				
Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
2-Chloroethylvinyl ether	Not Detected	20	1	ug/L	EPA 8260	11/16/09		3975
Chloroform	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Chloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
2-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
4-Chlorotoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dibromo-3-Chloropropane	Not Detected	1	1	ug/L	EPA 8260	11/16/09		3975
Dibromochloromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Dibromomethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Dichlorodifluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloroethane	10	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloroethene	14	0.5	1	ug/L	EPA 8260	11/16/09		3975
cis-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
trans-1,2-Dichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
2,2-Dichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
cis-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
trans-1,3-Dichloropropene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Hexachlorobutadiene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Isopropylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
4-Isopropyltoluene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Methylene Chloride	Not Detected	5	1	ug/L	EPA 8260	11/16/09		3975
Naphthalene	Not Detected	5	1	ug/L	EPA 8260	11/16/09		3975
n-Propylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Styrene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,1,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,2,2-Tetrachloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Tetrachloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975



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2101 Webster St., 12th Floor
Oakland, CA 94612

Log Number: 09-C16193
Order: Q5952
Project: PG&E Coliseum Way
Received: 11/06/09
Printed: 11/20/09

REPORT OF ANALYTICAL RESULTS

Sample Description	Sampled By	Sampled Date @ Time		Matrix				
OW-7-11052009	Davin Raynal	11/05/09@14:35		Aqueous				
Analyte	Result	DLR	Dilution Factor	Units	Method	Date Analyzed	Date Prepared	Batch
1,2,3-Trichlorobenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,4-Trichlorobenzene	28	20	50	ug/L	EPA 8260	11/17/09		3997
1,1,1-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,1,2-Trichloroethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Trichloroethene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Trichlorofluoromethane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,3-Trichloropropane	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,2,4-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
1,3,5-Trimethylbenzene	Not Detected	0.5	1	ug/L	EPA 8260	11/16/09		3975
Vinyl Chloride	0.9	0.5	1	ug/L	EPA 8260	11/16/09		3975

DLR = Detection Limit for Reporting. Results of "Not Detected" are below DLR.

CREEK ENVIRONMENTAL LABORATORIES

Lab Director, Michael Ng



CREEK ENVIRONMENTAL LABORATORIES, INC.

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Quality Control Results

Page 1

Order No.: Q5952

Laboratory Reagent Blank

Analyte	Method	Results	Units	Batch
TPH as Diesel, SGT	EPA 8015/LUFT	< 0.05	mg/L	4053
TPH as Motor Oil, SGT	EPA 8015/LUFT	< 0.1	mg/L	4053
TPH as Gasoline	EPA 8015/LUFT	< 0.05	mg/L	3957
Benzene	EPA 8260	< 0.5	ug/L	3975
Toluene	EPA 8260	< 0.5	ug/L	3975
Ethylbenzene	EPA 8260	< 0.5	ug/L	3975
m,p-Xylene	EPA 8260	< 0.5	ug/L	3975
o-Xylene	EPA 8260	< 0.5	ug/L	3975
Methyl t-Butyl Ether (MTBE)	EPA 8260	< 0.5	ug/L	3975
t-Amyl Methyl Ether (TAME)	EPA 8260	< 0.5	ug/L	3975
t-Butyl Alcohol (TBA)	EPA 8260	< 2	ug/L	3975
Diisopropyl Ether (DIPE)	EPA 8260	< 0.5	ug/L	3975
Ethyl t-Butyl Ether (ETBE)	EPA 8260	< 0.5	ug/L	3975
Chlorobenzene	EPA 8260	< 0.5	ug/L	3975
Chlorobenzene	EPA 8260	< 0.5	ug/L	3997
1,2-Dichlorobenzene	EPA 8260	< 0.5	ug/L	3975
1,3-Dichlorobenzene	EPA 8260	< 0.5	ug/L	3975
1,3-Dichlorobenzene	EPA 8260	< 0.5	ug/L	3997
1,4-Dichlorobenzene	EPA 8260	< 0.5	ug/L	3975
1,4-Dichlorobenzene	EPA 8260	< 0.5	ug/L	3997
1,2-Dichloroethane (EDC)	EPA 8260	< 0.5	ug/L	3975
1,2-Dibromoethane (EDB)	EPA 8260	< 0.5	ug/L	3975
Bromobenzene	EPA 8260	< 0.5	ug/L	3975
Bromochloromethane	EPA 8260	< 0.5	ug/L	3975
Bromodichloromethane	EPA 8260	< 0.5	ug/L	3975
Bromoform	EPA 8260	< 0.5	ug/L	3975
Bromomethane	EPA 8260	< 0.5	ug/L	3975
n-Butylbenzene	EPA 8260	< 0.5	ug/L	3975
sec-Butyl Benzene	EPA 8260	< 0.5	ug/L	3975
t-Butylbenzene	EPA 8260	< 0.5	ug/L	3975
Carbon Tetrachloride	EPA 8260	< 0.5	ug/L	3975
Chloroethane	EPA 8260	< 0.5	ug/L	3975
2-Chloroethylvinyl ether	EPA 8260	< 20	ug/L	3975
Chloroform	EPA 8260	< 0.5	ug/L	3975
Chloromethane	EPA 8260	< 0.5	ug/L	3975
2-Chlorotoluene	EPA 8260	< 0.5	ug/L	3975
4-Chlorotoluene	EPA 8260	< 0.5	ug/L	3975
1,2-Dibromo-3-Chloropropane	EPA 8260	< 1	ug/L	3975
Dibromochloromethane	EPA 8260	< 0.5	ug/L	3975
Dibromomethane	EPA 8260	< 0.5	ug/L	3975
Dichlorodifluoromethane	EPA 8260	< 0.5	ug/L	3975
1,1-Dichloroethane	EPA 8260	< 0.5	ug/L	3975
1,1-Dichloroethene	EPA 8260	< 0.5	ug/L	3975
cis-1,2-Dichloroethene	EPA 8260	< 0.5	ug/L	3975
trans-1,2-Dichloroethene	EPA 8260	< 0.5	ug/L	3975



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Quality Control Results

Page 2

Order No.: Q5952

Laboratory Reagent Blank (continued)

Analyte	Method	Result	Units	Batch
1,2-Dichloropropane	EPA 8260	< 0.5	ug/L	3975
1,3-Dichloropropane	EPA 8260	< 0.5	ug/L	3975
2,2-Dichloropropane	EPA 8260	< 0.5	ug/L	3975
1,1-Dichloropropene	EPA 8260	< 0.5	ug/L	3975
cis-1,3-Dichloropropene	EPA 8260	< 0.5	ug/L	3975
trans-1,3-Dichloropropene	EPA 8260	< 0.5	ug/L	3975
Hexachlorobutadiene	EPA 8260	< 0.5	ug/L	3975
Isopropylbenzene	EPA 8260	< 0.5	ug/L	3975
4-Isopropyltoluene	EPA 8260	< 0.5	ug/L	3975
Methylene Chloride	EPA 8260	< 5	ug/L	3975
Naphthalene	EPA 8260	< 5	ug/L	3975
n-Propylbenzene	EPA 8260	< 0.5	ug/L	3975
Styrene	EPA 8260	< 0.5	ug/L	3975
1,1,1,2-Tetrachloroethane	EPA 8260	< 0.5	ug/L	3975
1,1,2,2-Tetrachloroethane	EPA 8260	< 0.5	ug/L	3975
Tetrachloroethene	EPA 8260	< 0.5	ug/L	3975
1,2,3-Trichlorobenzene	EPA 8260	< 0.5	ug/L	3975
1,2,4-Trichlorobenzene	EPA 8260	< 0.5	ug/L	3975
1,2,4-Trichlorobenzene	EPA 8260	< 0.5	ug/L	3997
1,1,1-Trichloroethane	EPA 8260	< 0.5	ug/L	3975
1,1,2-Trichloroethane	EPA 8260	< 0.5	ug/L	3975
Trichloroethene	EPA 8260	< 0.5	ug/L	3975
Trichlorofluoromethane	EPA 8260	< 0.5	ug/L	3975
1,2,3-Trichloropropane	EPA 8260	< 0.5	ug/L	3975
1,2,4-Trimethylbenzene	EPA 8260	< 0.5	ug/L	3975
1,3,5-Trimethylbenzene	EPA 8260	< 0.5	ug/L	3975
Vinyl Chloride	EPA 8260	< 0.5	ug/L	3975
Lead, Dissolved	EPA 6020	< 0.004	mg/L	3860

Laboratory Known Analysis (LCS)

Analyte	Method	Recovery	Spike Amount	Units	Recovery Limits	Batch
TPH as Diesel, SGT	EPA 8015/LUFT	62%	5.0	mg/L	50 - 150	4053
TPH as Gasoline	EPA 8015/LUFT	112%	0.5	mg/L	60 - 140	3957
Benzene	EPA 8260	109%	10	ug/L	80 - 120	3975
Toluene	EPA 8260	109%	10	ug/L	80 - 120	3975
Ethylbenzene	EPA 8260	114%	10	ug/L	80 - 120	3975
m,p-Xylene	EPA 8260	114%	20	ug/L	80 - 120	3975
o-Xylene	EPA 8260	117%	10	ug/L	80 - 120	3975
Methyl t-Butyl Ether (MTBE)	EPA 8260	103%	10	ug/L	70 - 130	3975
Chlorobenzene	EPA 8260	106%	10	ug/L	81 - 115	3975
Chlorobenzene	EPA 8260	108%	10	ug/L	81 - 115	3997
1,3-Dichlorobenzene	EPA 8260	110%	10	ug/L	80 - 120	3975



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Quality Control Results

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Order No.: Q5952

Laboratory Known Analysis (LCS)

Analyte	Method	Recovery	Spike Amount	Units	Recovery Limits	Batch
1,4-Dichlorobenzene	EPA 8260	109%	10	ug/L	80 - 120	3975
1,2-Dichloroethane (EDC)	EPA 8260	110%	10	ug/L	75 - 125	3975
1,1-Dichloroethane	EPA 8260	108%	10	ug/L	75 - 130	3975
1,1-Dichloroethene	EPA 8260	112%	10	ug/L	63 - 129	3975
Lead, Dissolved	EPA 6020	103%	1.0	mg/L	75 - 125	3860

Matrix Spike/Matrix Spike Duplicates

Analyte	Method	MS	MSD	Matrix		Spike	Units	Recovery Limits	RPD	
		Rec.	Rec.	RPD	Sample	Amount			Limit	Batch
TPH as Diesel, SGT	EPA 8015/LUFT	67%	50%	29	09-C16193	5.0	mg/L	50 - 150	30	4053
TPH as Gasoline	EPA 8015/LUFT	96%	94%	2	09-C16187	0.5	mg/L	60 - 140	30	3957
Benzene	EPA 8260	106%	105%	1	09-C16186	10	ug/L	80 - 120	20	3975
Toluene	EPA 8260	103%	102%	1	09-C16186	10	ug/L	80 - 120	20	3975
Ethylbenzene	EPA 8260	110%	107%	3	09-C16186	10	ug/L	80 - 120	20	3975
m,p-Xylene	EPA 8260	110%	108%	2	09-C16186	20	ug/L	80 - 120	20	3975
o-Xylene	EPA 8260	110%	110%	0	09-C16186	10	ug/L	80 - 120	20	3975
Methyl t-Butyl Ether (MTBE)	EPA 8260	105%	104%	1	09-C16186	10	ug/L	70 - 130	30	3975
Chlorobenzene	EPA 8260	110%	103%	6	09-C16186	10	ug/L	74 - 131	20	3975
Chlorobenzene	EPA 8260	107%	110%	3	09-C16485	10	ug/L	74 - 131	20	3997
1,3-Dichlorobenzene	EPA 8260	126%	106%	11	09-C16186	10	ug/L	80 - 120	20	3975
1,4-Dichlorobenzene	EPA 8260	175%	93%	28	09-C16186	10	ug/L	80 - 120	20	3975
1,2-Dichloroethane (EDC)	EPA 8260	109%	104%	4	09-C16186	10	ug/L	75 - 125	20	3975
1,1-Dichloroethane	EPA 8260	103%	103%	0	09-C16186	10	ug/L	75 - 130	20	3975
1,1-Dichloroethene	EPA 8260	112%	112%	0	09-C16186	10	ug/L	59 - 145	20	3975
Lead, Dissolved	EPA 6020	102%	106%	3	09-C16192	1.0	mg/L	75 - 125	20	3860



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Surrogate Report

Sample Number	Batch	Method	Surrogate	% Recovery	QC Limits
09-C16186	3975	EPA 8260	Dibromofluoromethane	101.	81-123
09-C16186	3975	EPA 8260	Toluene-d8	97.	78-116
09-C16186	3975	EPA 8260	4-BFB	95.	60-116
09-C16186	3957	EPA 8015M/LUFT GRO	a,a,a-Trifluorotoluene	107.	50-150
09-C16186	3975	EPA 8260	1,2-Dichloroethane-d4	102.	79-124
09-C16186	4053	EPA 8015M/LUFT DRO	Hexacosane.Silica Gel	87.	50-150
09-C16187	3975	EPA 8260	Dibromofluoromethane	102.	81-123
09-C16187	3975	EPA 8260	Toluene-d8	99.	78-116
09-C16187	3975	EPA 8260	4-BFB	99.	60-116
09-C16187	3957	EPA 8015M/LUFT GRO	a,a,a-Trifluorotoluene	105.	50-150
09-C16187	3975	EPA 8260	1,2-Dichloroethane-d4	106.	79-124
09-C16187	4053	EPA 8015M/LUFT DRO	Hexacosane.Silica Gel	83.	50-150
09-C16188	3975	EPA 8260	Dibromofluoromethane	99.	81-123
09-C16188	3975	EPA 8260	Toluene-d8	98.	78-116
09-C16188	3975	EPA 8260	4-BFB	99.	60-116
09-C16188	3975	EPA 8260	1,2-Dichloroethane-d4	99.	79-124
09-C16189	3975	EPA 8260	Dibromofluoromethane	101.	81-123
09-C16189	3975	EPA 8260	Toluene-d8	96.	78-116
09-C16189	3975	EPA 8260	4-BFB	100.	60-116
09-C16189	3957	EPA 8015M/LUFT GRO	a,a,a-Trifluorotoluene	111.	50-150
09-C16189	3975	EPA 8260	1,2-Dichloroethane-d4	105.	79-124
09-C16189	4053	EPA 8015M/LUFT DRO	Hexacosane.Silica Gel	92.	50-150
09-C16190	3975	EPA 8260	Dibromofluoromethane	101.	81-123
09-C16190	3975	EPA 8260	Toluene-d8	98.	78-116
09-C16190	3975	EPA 8260	4-BFB	97.	60-116
09-C16190	3957	EPA 8015M/LUFT GRO	a,a,a-Trifluorotoluene	108.	50-150
09-C16190	3975	EPA 8260	1,2-Dichloroethane-d4	102.	79-124
09-C16190	4053	EPA 8015M/LUFT DRO	Hexacosane.Silica Gel	101.	50-150
09-C16191	4053	EPA 8015M/LUFT DRO	Hexacosane.Silica Gel	83.	50-150
09-C16192	4053	EPA 8015M/LUFT DRO	Hexacosane.Silica Gel	79.	50-150
09-C16193	3997	EPA 8260	Dibromofluoromethane	100.	81-123
09-C16193	3997	EPA 8260	Toluene-d8	98.	78-116
09-C16193	3997	EPA 8260	4-BFB	96.	60-116
09-C16193	3957	EPA 8015M/LUFT GRO	a,a,a-Trifluorotoluene	99.	50-150
09-C16193	3997	EPA 8260	1,2-Dichloroethane-d4	102.	79-124
09-C16193	4053	EPA 8015M/LUFT DRO	Hexacosane.Silica Gel	64.	50-150
blank	3975	EPA 8260	Dibromofluoromethane	104.	81-123
blank	3997	EPA 8260	Dibromofluoromethane	100.	81-123
LCS	3975	EPA 8260	Dibromofluoromethane	99.	81-123
LCS	3997	EPA 8260	Dibromofluoromethane	101.	81-123
09-C16186 MS	3975	EPA 8260	Dibromofluoromethane	100.	81-123
09C16186 MSD	3975	EPA 8260	Dibromofluoromethane	98.	81-123
09-C16485 MS	3997	EPA 8260	Dibromofluoromethane	101.	81-123
09C16485 MSD	3997	EPA 8260	Dibromofluoromethane	99.	81-123
blank	3975	EPA 8260	Toluene-d8	96.	78-116
blank	3997	EPA 8260	Toluene-d8	99.	78-116



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Surrogate Report

Sample Number	Batch	Method	Surrogate	% Recovery	QC Limits
LCS	3975	EPA 8260	Toluene-d8	100.	78-116
LCS	3997	EPA 8260	Toluene-d8	100.	78-116
09-C16186 MS	3975	EPA 8260	Toluene-d8	101.	78-116
09C16186 MSD	3975	EPA 8260	Toluene-d8	101.	78-116
09-C16485 MS	3997	EPA 8260	Toluene-d8	101.	78-116
09C16485 MSD	3997	EPA 8260	Toluene-d8	100.	78-116
blank	3975	EPA 8260	4-BFB	102.	60-116
blank	3997	EPA 8260	4-BFB	99.	60-116
LCS	3975	EPA 8260	4-BFB	100.	60-116
LCS	3997	EPA 8260	4-BFB	97.	60-116
09-C16186 MS	3975	EPA 8260	4-BFB	96.	60-116
09C16186 MSD	3975	EPA 8260	4-BFB	98.	60-116
09-C16485 MS	3997	EPA 8260	4-BFB	93.	60-116
09C16485 MSD	3997	EPA 8260	4-BFB	95.	60-116
blank	3957	EPA 8015M/LUFT GRO	a,a,a-Trifluorotoluene	109.	50-150
LCS	3957	EPA 8015M/LUFT GRO	a,a,a-Trifluorotoluene	113.	50-150
09-C16187 MS	3957	EPA 8015M/LUFT GRO	a,a,a-Trifluorotoluene	111.	50-150
09C16187 MSD	3957	EPA 8015M/LUFT GRO	a,a,a-Trifluorotoluene	97.	50-150
blank	3975	EPA 8260	1,2-Dichloroethane-d4	103.	79-124
blank	3997	EPA 8260	1,2-Dichloroethane-d4	100.	79-124
LCS	3975	EPA 8260	1,2-Dichloroethane-d4	96.	79-124
LCS	3997	EPA 8260	1,2-Dichloroethane-d4	100.	79-124
09-C16186 MS	3975	EPA 8260	1,2-Dichloroethane-d4	100.	79-124
09C16186 MSD	3975	EPA 8260	1,2-Dichloroethane-d4	99.	79-124
09-C16485 MS	3997	EPA 8260	1,2-Dichloroethane-d4	106.	79-124
09C16485 MSD	3997	EPA 8260	1,2-Dichloroethane-d4	96.	79-124
blank	4053	EPA 8015M/LUFT DRO	Hexacosane.Silica Gel	96.	50-150
LCS	4053	EPA 8015M/LUFT DRO	Hexacosane.Silica Gel	97.	50-150
09-C16193 MS	4053	EPA 8015M/LUFT DRO	Hexacosane.Silica Gel	81.	50-150
09C16193 MSD	4053	EPA 8015M/LUFT DRO	Hexacosane.Silica Gel	78.	50-150