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April 22, 2010

Ms. Barbara Jakub Alameda County Health Care Services Agency 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577

Subject:

Quarterly Summary Report - First Quarter 2010

Site:

76 Station No. 5191/5043 449 Hegenberger Road

Oakland, California

Fuel Leak Case No. RO0000219

Dear Ms. Jakub;

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

If you have any questions or need additional information, please call:

Liz Bermudez

Pacific Convenience & Fuel

2603 Camino Ramon, Suite 350

San Ramon, California 94583

Tel: (925) 884-0860

Fax: (925) 867-4687

lbermudez@pcandf.com

Sincerely,

PACIFIC CONVENIENCE & FUEL

lig Bermudez

LIZ BERMUDEZ

Senior Paralegal

Attachment



## **Quarterly Summary Report – First Quarter 2010**

76 Station No. 5191/5043 449 Hegenberger Road Oakland, California

Alameda County Health Care Services Agency Fuel Leak Case No. RO0000219 San Francisco Bay Regional Water Quality Control Board (Region 2) No. 01-1601

Delta Project No. 142705191

#### Submitted to:

Ms. Barbara Jakub Hazardous Materials Specialist Alameda County Health Care Services Agency 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577

#### Submitted by:

Delta Consultants 11050 White Rock Road, Suite 110 Rancho Cordova, CA 95670 USA +1 800.477.7411



#### **SITE INFORMATION**

Station Number:	76 Station No. 5191/5043
Site Address:	449 Hegenberger Road, Oakland, California, 94621
Contact:	Mr. Dennis Dettloff Senior Project Manager Delta Consultants (Delta) 11050 White Rock Road, Suite 110 Rancho Cordova, California 95670
Consulting Company:	Delta
Delta Project No.:	I42705191
Contact/ Primary Agency:	Ms. Barbara Jakub, Hazardous Materials Specialist Alameda County Health Care Services Agency

#### WORK PERFORMED THIS QUARTER [First Quarter 2010]:

- 1. Blaine Tech Services, Inc. (Blaine Tech) conducted the first quarter 2010 groundwater monitoring and sampling event on March 29, 2010.
- 2. Delta Consultants completed and submitted the *Site Investigation Report*, dated February 15, 2010.
- 3. Delta attempted to gain access to off-site monitoring wells MW-7 and MW-8.
- 4. Delta submitted a work plan to the Alameda County Health Care Services Agency (ACHCSA) on February 19, 2010 proposing the installation of five additional monitoring wells at the site.

#### WORK PROPOSED FOR NEXT QUARTER [Second Quarter 2010]:

- 1. Delta will complete and submit the first quarter 2010 monitoring report contained herein
- 2. Delta will continue to try and gain off-site access to monitoring wells MW-7 and MW-8.
- 3. Blaine Tech will conduct the second quarter 2010 groundwater monitoring and sampling activities.

#### BACKGROUND

The subject site is an operating 76 station located on the southwestern corner of Hegenberger Road and Edgewater Drive in Oakland, California. Station facilities include three underground storage tanks (USTs), two dispenser islands, a station building, and a carwash. A total of six groundwater monitoring wells are located at or near the site (Figures 1 and 2).

Previous investigation information and site history are presented as **Attachment A**. Blaine Tech's procedures for groundwater monitoring and sampling, and equipment decontamination are presented as **Attachment B**. The groundwater monitoring and sampling field data sheets are presented as **Attachment C**. The groundwater sampling certified analytical report and chain-of-custody documentation are all included as **Attachment D**. The waste disposal manifest is presented as **Attachment E**.

Site summary data has been tabled in the following:

- Table 1 summarizes the current groundwater analytical data.
- Table 2 summarizes the historical groundwater monitoring analytical data.

- **Table 3** summarizes the historical groundwater flow direction and gradient information.
- Table 4 summarizes historical well construction detail.

#### SAMPLING AND MONITORING INFORMATION

Current Phase of Project:	Groundwater monitoring
Frequency of Monitoring:	Quarterly (MW-3, 6, 9, and 10)
Frequency of Sampling:	Quarterly (MW-6 and 10) Semi-Annual (2 <sup>nd</sup> and 4 <sup>th</sup> Quarter, MW-3 and 9)
Have Light Non-Aqueous Phase Liquids (LNAPL) Been Measured On-site, Historically?	
Historic Range in Depth to Water (DTW; feet [ft] below top of casing [BTOC] 1Q92 to 1Q10):	0.07 feet (MW-9, 1Q05) to 6.4 feet (MW-6, 3Q96)
Local Water Supply Wells:	See Attachment A

#### **CURRENT QUARTER MONITORING DATA**

Wells Monitored:	MW-3, 6, 9 and 10
Wells Sampled:	MW-6 and 10
Monitoring and Sampling Date:	March 29, 2010
LNAPL Measured This Quarter:	No
Cumulative LNAPL Recovered to Date:	n/a
DTW Range (ft BTOC):	2.21 feet (MW-9) to 3.81 feet (MW-10)
Average Change in Groundwater Elevation Since Last Event (ft above mean sea level):	0.4 Decrease
Groundwater Flow Direction and Gradient (ft/ft):	Southeast at 0.01 ft/ft

#### **CURRENT QUARTER ANALYTICAL DATA**

Constituents	Number of Detections Above LRL of the Samples Collected	Minimum Reported Concentration, in  µg/L (Sample ID)	Maximum Reported Concentration, in µg/L (Sample ID)
TPHg	1	<50 (MW-10)	48,400 (MW-6)
Benzene	2	0.77 (MW-10)	1,980 (MW-6)
MTBE	1	<0.50 (MW-10)	12.1 (MW-6)
DRO	2	82.2 (MW-10)	106,000 (MW-6)

#### Explanations:

μg/L = Micrograms per liter LRL = Laboratory reporting limit

TPHg = Total petroleum hydrocarbons as gasoline

MTBE = Methyl tertiary-butyl ether DRO = Diesel range organics

#### GROUNDWATER MONITORING AND SAMPLING

#### Monitoring and Sampling procedures

Quarterly groundwater monitoring and sampling was conducted at Station No. 5191/5043 on March 29, 2010 by Blaine Tech. Delta is currently attempting to gain access from the neighboring property owner to monitoring wells MW-7 and MW-8. However, at the time of groundwater monitoring activities, access to these two monitoring wells had not yet been obtained. Water levels were gauged in four of the six monitoring wells at the site. Measured depths to groundwater and respective groundwater elevations are summarized in Table 1. Depths to water were measured to within 0.01 feet BTOC in wells MW-3, MW-6, MW-9, and MW-10 using a water level indicator. Historic laboratory analytical results are summarized in Table 2.

All monitoring and sampling activities for this site were performed by Blaine Tech during the first quarter 2010 and reviewed and certified by a California Professional Geologist.

#### **Groundwater Sample Analysis**

Groundwater samples collected from monitoring wells Mw-6 and MW-10 were submitted to Pace Analytical Services (Pace) of Seattle, WA, a California state-certified laboratory (No.01153CA). Samples were analyzed for the presence of TPHg, benzene, toluene, ethylbenzene, total xylenes (collectively BTEX), MTBE, and ethanol by Environmental Protection Agency (EPA) Method 8260, DRO by EPA Method 8015B, nitrite N by Standard Method SM 4500-NO<sub>2</sub> B, Nitrogen, Nitrite and Nitrogen NO<sub>2</sub> plus NO<sub>3</sub> by EPA Method 353.2, sulfate by EPA Method 300.0, and total iron and dissolved iron by EPA Method 6010. Please note that GRO analysis was performed using the method for total purgeable petroleum hydrocarbons analysis.

#### **Quality Assurance/Quality Control**

No significant issues were noted by Pace Analytical during sample analysis that would have an adverse affect on the quality of the data.

#### **Purge and Rinse Water Disposal**

Approximately 12 gallons of generated groundwater during this quarterly groundwater sampling event were temporarily stored by Blaine Tech in a 2000-gallon poly tank. The generated groundwater was transported for proper disposal at Seaport Environmental in Redwood City, CA. The method of containment and disposal is reported in Blaine Tech's procedures for groundwater sampling presented as **Attachment B**. A copy of the waste manifest documentation is presented as **Attachment E**.

#### **DISCUSSION AND CONCLUSION**

This site has four on-site and 2 off-site monitoring wells. At this time the two off-site wells are not monitored and sampled due to access issues. The four on-site wells are monitored on a quarterly basis. Monitoring wells MW-3 and MW-9 are sampled during the 2<sup>nd</sup> and 4<sup>th</sup> quarters while monitoring wells MW-6 and MW-10 are sampled quarterly. The first quarter 2010 groundwater monitoring and sampling event was performed by Blaine Tech on March 29, 2010. The average groundwater elevation decreased 0.4 feet from the December 2009 event. Depth to groundwater in the site monitoring wells ranged from 2.21 feet (MW-9) to 3.81 feet (MW-10) below top of casing (TOC) during the current event. The groundwater flow

direction and gradient were interpreted to be to the southeast at 0.01 foot per foot (ft/ft) during the current event which is consistent with the historical groundwater flow direction and gradient.

#### **Contaminants of Concern:**

**TPHg:** TPHg was above the laboratory's indicated reporting limits in the groundwater sample collected and submitted for analysis from monitoring well MW-6 (48,400  $\mu$ g/L) during the current event.

**DRO**: DRO was above the laboratory's indicated reporting limits in the groundwater samples collected and submitted for analysis from monitoring wells MW-6 (106,000  $\mu$ g/L) and MW-10 (82.2  $\mu$ g/L) during the current event.

**Benzene**: Benzene was above the laboratory's indicated reporting limits in the groundwater samples collected and submitted for analysis from monitoring wells MW-6 (1,980  $\mu$ g/L) and MW-10 (0.77  $\mu$ g/L) during the current event.

MTBE: MTBE was above the laboratory's indicated reporting limits in the groundwater sample collected and submitted for analysis from monitoring well MW-6 (12.1  $\mu$ g/L) during the current event.

Additionally, toluene was above the laboratory's indicated reporting limits in the groundwater sample collected and submitted for analysis from monitoring well MW-6 (208  $\mu$ g/L); ethylbenzene was above the laboratory's indicated reporting limits in the groundwater sample collected and submitted for analysis from monitoring well MW-6 (3,070  $\mu$ g/L); and total xylenes were above the laboratory's indicated reporting limits in the groundwater samples collected and submitted for analysis from monitoring wells MW-6 (8,070  $\mu$ g/L) and MW-10 (3.4  $\mu$ g/L) during the current event.

The first quarter 2010 groundwater elevation contour map is presented as **Figure 3**. Groundwater concentrations are shown on **Figure 4**. A groundwater flow direction rose diagram is presented as **Figure 5**.

#### RECOMMENDATIONS

#### **Characterization Status**

During the first quarter 2010, monitoring well MW-6 groundwater analytical results indicated that benzene and diesel range organics increased in concentration while TPHg and MTBE concentrations decreased. Analytical results from the groundwater sample collected from monitoring well MW-10 indicated a decrease in benzene concentrations and an increase in diesel range organics concentrations. TPHg and MTBE concentrations in monitoring well MW-10 remained below the laboratory's indicated reporting limits, as documented in **Table 2**.

#### **Remediation Activities**

There are currently no active remediation activities taking place at this site.

#### **Recent Correspondence**

Delta submitted the *Site Investigation Report*, dated February 15, 2010, to the Alameda County Health Care Services Agency.

In addition, Delta submitted a work plan proposing the installation of five additional monitoring wells at and down-gradient of the site.

DENNIS SHANNON No. 7480

OF CAL

#### **REMARKS**

The descriptions, conclusions, and recommendations contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. For any reports cited that were not generated by Delta, the data from those reports is used "as is" and is assumed to be accurate. Delta does not guarantee the accuracy of this data for the referenced work performed nor the inferences or conclusions stated in these reports. This report is based upon a specific scope of work requested by the client. The Contract between Delta and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were conducted. This report is intended only for the use of Delta's Client and anyone else specifically listed on this report. Delta will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Delta makes no express or implied warranty as to the contents of this report.

Please contact either of the undersigned at 800-477-7411 if you have questions. DENAL GEO

Sincerely,

**DELTA CONSULTANTS** 

Edward T. Weyrens, G.I.T.

Staff Geologist

Dennis Dettloff, P.G.

Senior Project Manager Professional Geologist No. 7480

**Figures** 

Figure 1 - Site Location Map

Figure 2 - Site Plan

Figure 3 – Groundwater Elevation Contour Map

Figure 4 - Groundwater Concentration Map

Figure 5 – Groundwater Flow Direction Rose Diagram

**Tables** 

Table 1 – Current Ground Water Gauging and Analytical Data

Table 2 - Historical Ground Water Gauging and Analytical Data

Table 2a – Additional Historical Ground Water Gauging and Analytical Data

Table 3 - Groundwater Gradient and Flow Direction Data

Table 4 - Well Construction Details

**Attachments** 

Attachment A – Previous Investigations and Site History Summary

Attachment B – Blaine Tech's Procedures for Groundwater Monitoring and Sampling,

and Equipment Decontamination

Attachment C - Groundwater Monitoring and Sampling Field Data Sheets

Attachment D – Groundwater Sampling Certified Laboratory Analytical Report and

Chain-of-Custody Documentation

Attachment E – Waste Disposal Manifest

#### **REMARKS**

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Sincerely,

#### **DELTA CONSULTANTS**

Edward T. Weyrens, G.I.T. Staff Geologist

Dennis Dettloff, P.G. Senior Project Manager Professional Geologist No. 7480

#### **Figures**

Figure 1 – Site Location Map

Figure 2 – Site Plan

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#### **Attachments**

Attachment A – Previous Investigations and Site History Summary

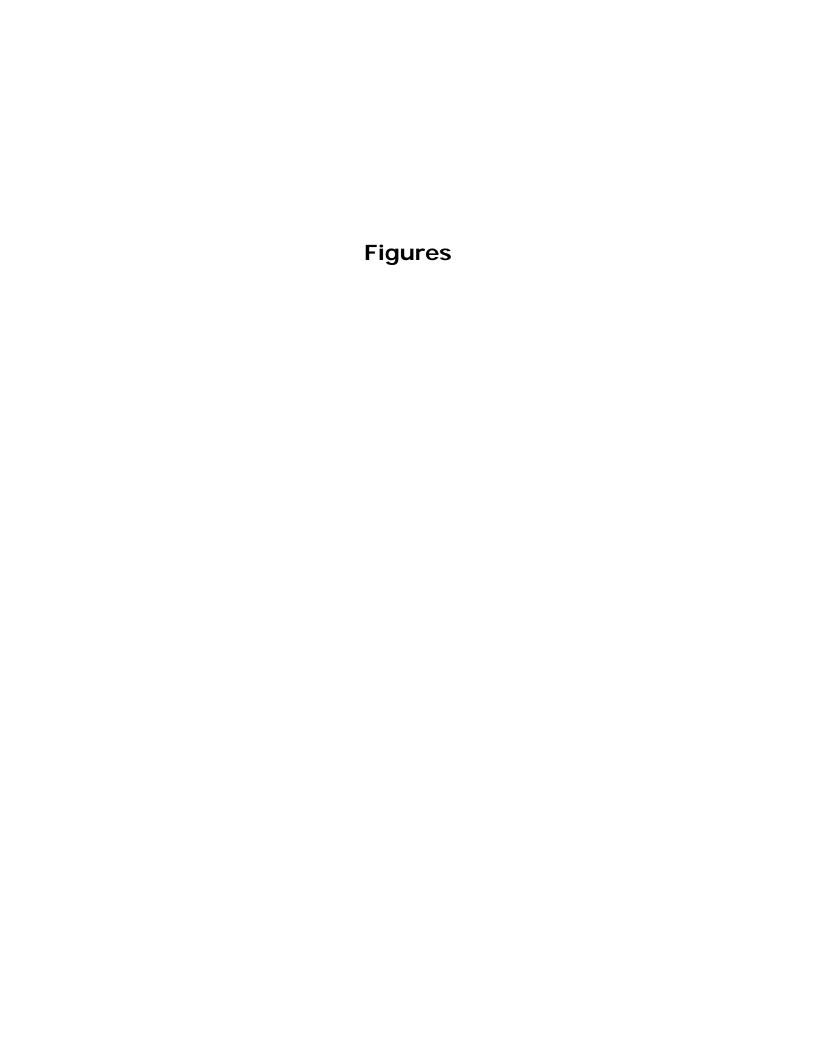
Attachment B – Blaine Tech's Procedures for Groundwater Monitoring and Sampling, and Equipment Decontamination

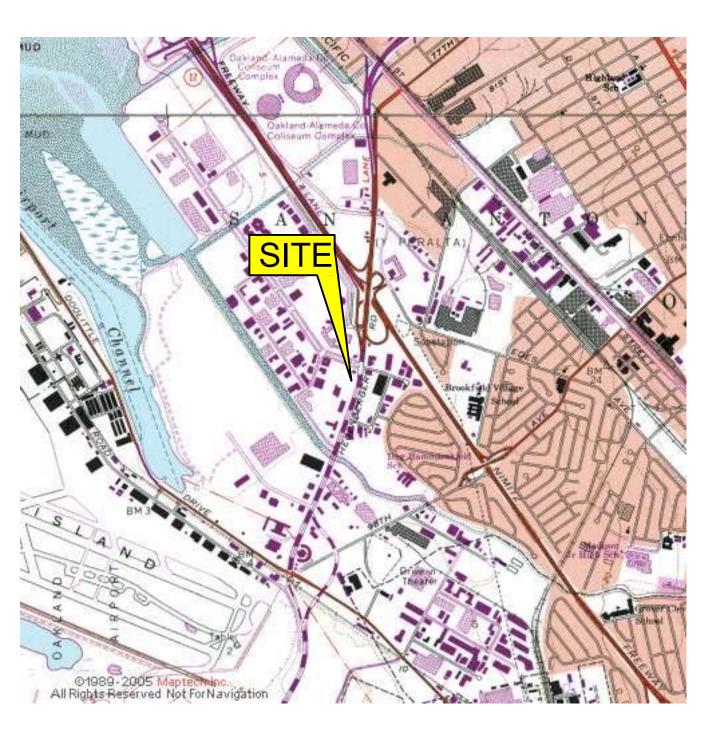
Attachment C – Groundwater Monitoring and Sampling Field Data Sheets

Attachment D - Groundwater Sampling Certified Laboratory Analytical Report and

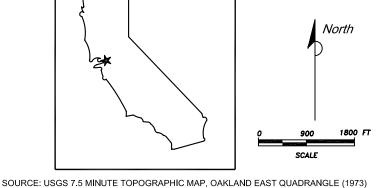
Chain-of-Custody Documentation

Attachment E – Waste Disposal Manifest







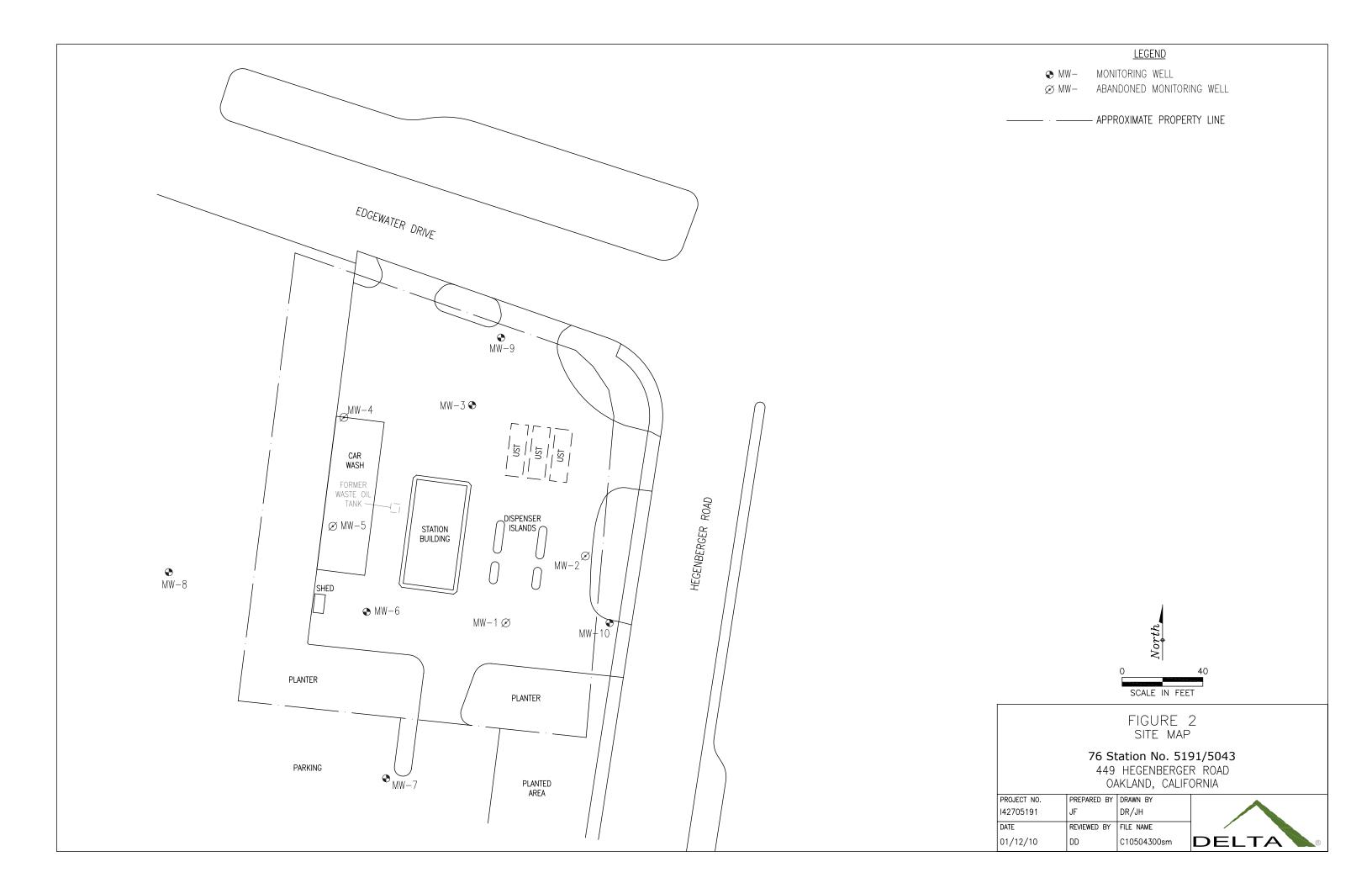


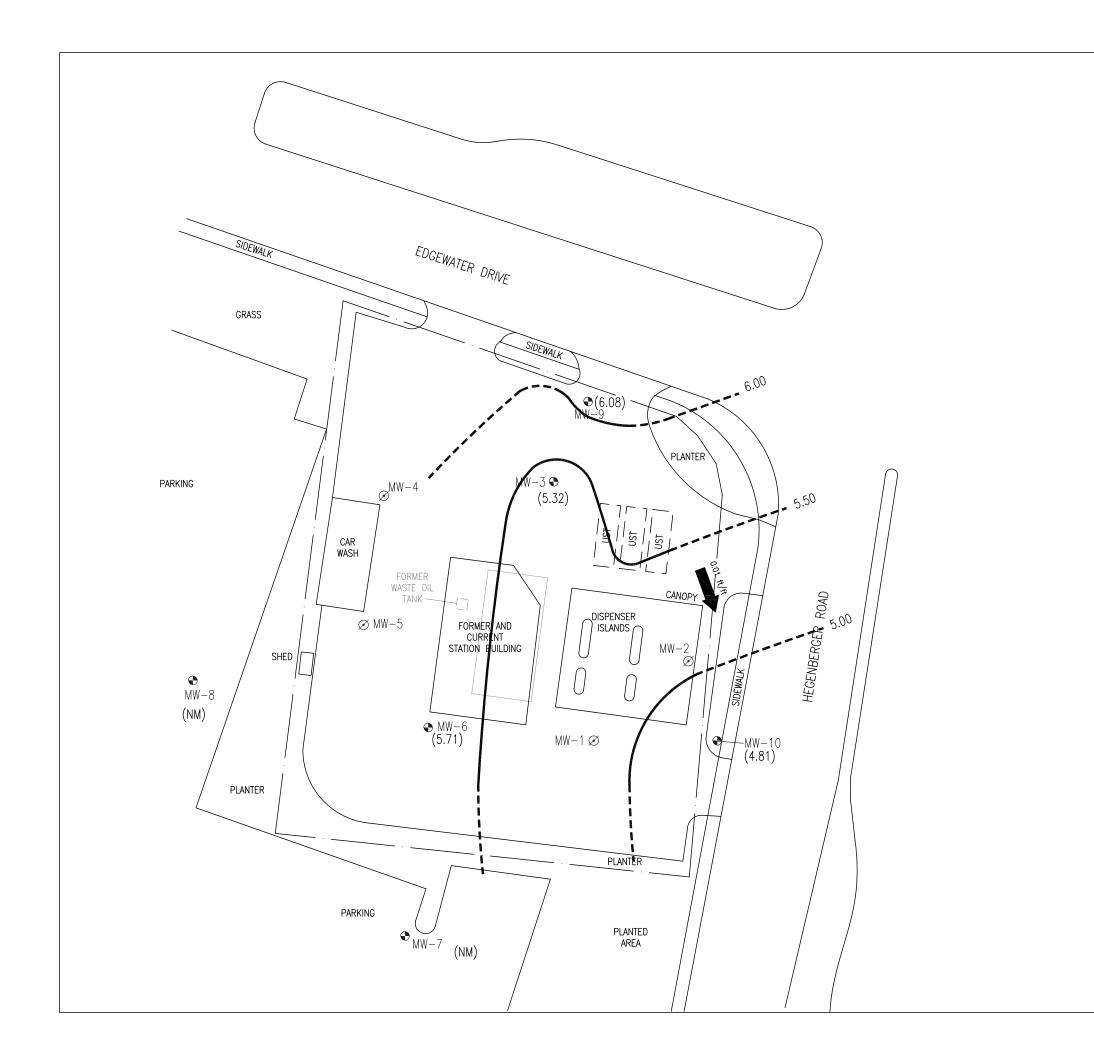
#### FIGURE 1 SITE LOCATION MAP

76 Station No. 5191/5043 449 HEGENBERGER ROAD OAKLAND, CALIFORNIA

PROJECT NO.	DRAWN BY
I42611270	JH 06/02/09
FILE NO.	PREPARED BY
11270-SiteLocator	DD
REVISION NO.	REVIEWED BY
1	







<u>LEGEND</u>

APPROXIMATE PROPERTY LINE

→ MW- MONITORING WELL

Ø MW− ABANDONED MONITORING WELL

6.00 - GROUNDWATER ELEVATION CONTOUR (FEET ABOVE MEAN SEA LEVEL)
-DASHED WHERE INFERRED

(5.32) GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)

(NM) NOT MEASURED

APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT (FT/FT)

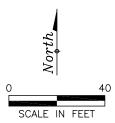


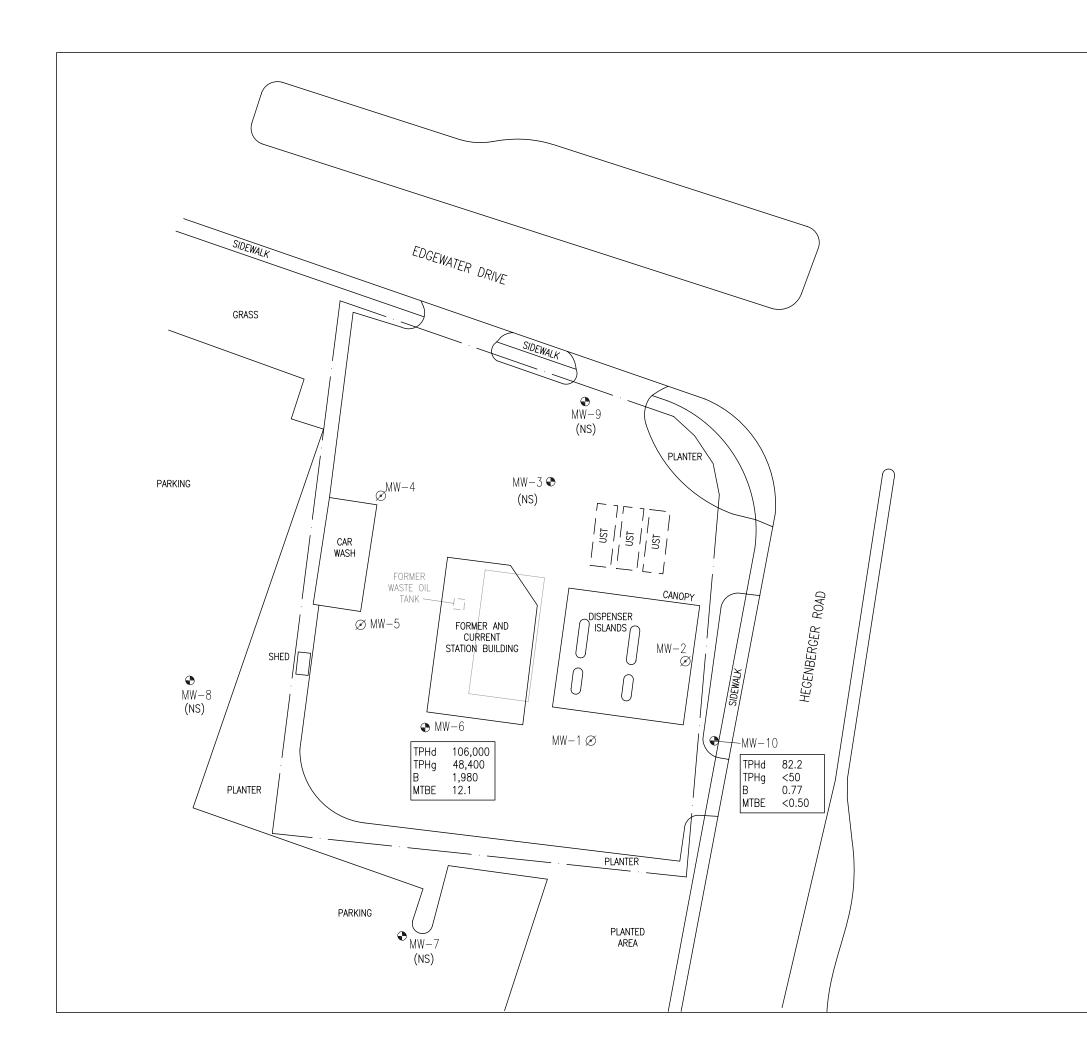
FIGURE 3
GROUNDWATER ELEVATION CONTOUR MAP
MARCH 29, 2010

76 Station No. 5191/5043

449 HEGENBERGER ROAD OAKLAND, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
142705191	ТВ	DR/JH
DATE	REVIEWED BY	FILE NAME
01/26/10	DD	C10504300sm





<u>LEGEND</u>

- APPROXIMATE PROPERTY LINE

→ MW- MONITORING WELL

Ø MW- ABANDONED MONITORING WELL

TPHd TPHg 106,000 48,400 1,980 MTBE 12.1

TOTAL PETROLEUM HYDROCARBONS AS DIESEL TOTAL PETROLEUM HYDROCARBONS AS GASOLINE BENZENE

METHYL TERT BUTYL ETHER

CONCENTRATIONS IN MICROGRAMS PER LITER (ug/L)

NS = NOT SAMPLED

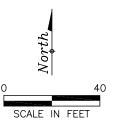


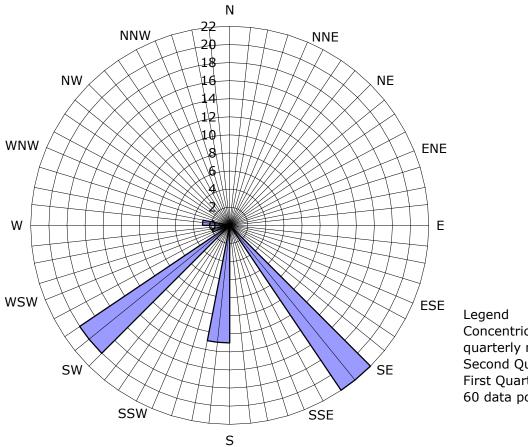
FIGURE 4 GROUNDWATER CONCENTRATION MAP MARCH 29, 2010 76 Station No. 5191/5043 449 HEGENBERGER ROAD OAKLAND, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
142705191	ТВ	DR/JH
DATE	REVIEWED BY	FILE NAME
01/26/10	DD	C10504300sm

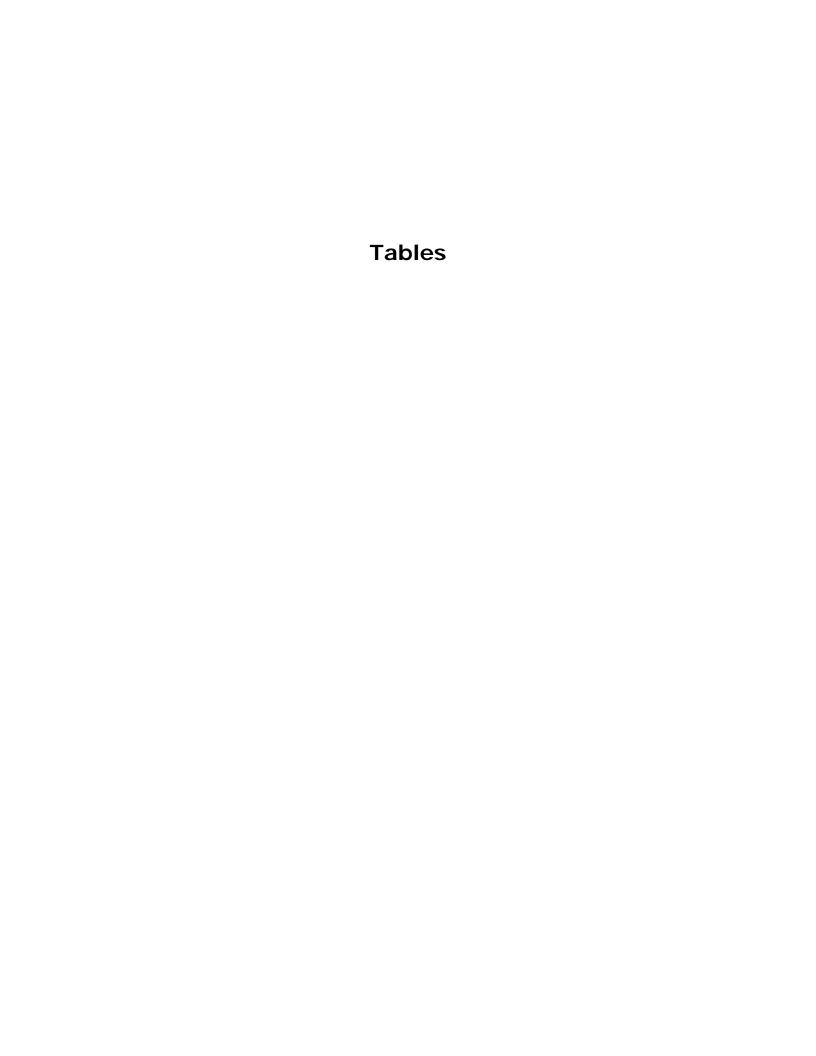


Figure 5
Historic Groundwater Flow Directions
76 Station No. 5191/5043

449 Hegenberger Road Oakland, California



Legend Concentric circles represent quarterly montoring events Second Quarter 1992 through First Quarter 2010 60 data points shown



#### TABLE 1

#### Curent Ground Water Gauging and Analytical Data 76 Station No. 5191/5043 449 Hegenberger Road Oakland, California

		GRO	UND WATE	R GAUGING	DATA						GROUND WA	TER ANA	LYTICAL DATA	1					
Well I.D.	Date	TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation (ft)	TPHg (8260 GC/MS) (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8260B) (ug/L)	Ethanol (ug/L)	Diesel Range Organics (ug/L)	Iron	Dissolved Iron (ug/L)	Sulfate (mg/L)	Nitrate (ug/L)	NO2 plus NO3 (ug/L)	Nitrite as N (ug/L)
MW-3	3/29/2010	8.04	2.22	NP	5.82														
MW-6	3/29/2010	8.87	3.16	NP	5.71	48,400	1,980	208	3070	8,070	12.1	<250	106,000	1,510	1,790	<1.0	<50	54.9	41.3
MW-7	3/29/2010	8.83	WI	WI	WI												-		
MW-8	3/29/2010	8.52	WI	WI	WI														
MW-9	3/29/2010	8.29	2.21	NP	6.08														
MW-10	3/29/2010	8.62	3.81	NP	4.81	<50	0.77	<0.50	<0.50	3.4	<0.50	<250	82.2	2,410	365	73.6	<50	1,970	18.7

Gauging Notes:

TOC - Top of Casing

ft - Feet

NP - LNAPL not present

LNAPL - Light non-aqueous phase liquid

WI - Well Inaccessable

Analytical Notes:

Results in Bold exceed applicable action limits

ug/L - micrograms/liter

-- - No information available

TPHg - total petroleum hydrocarbons as gasoline

MTBE - Methyl tert-butyl ether

TABLE 2
Historical Ground Water Gauging and Analytical Data
76 Station No. 5191/5043
449 Hegenberger Road
Oakland, California

		(	GROUND WATER	R GAUGING DAT	ГА						GROUND	WATER ANAL	YTICAL DATA	1					
Well I.D.	Date	TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPHg (SW8015M) (ug/L)	TPHg (8260 GC/MS) (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	TBA (ug/L)	Ethanol (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	Diesel Range Organics (ug/L)
MW-1	2/18/1992	NSVD	NG	NG	NG	150000		17000	26000	5200	26000								13000
	5/20/1992	NSVD	NG	NG	NG	-		-	-		-							-	
	8/31/1992	NSVD	NG	NG	NG	64000		13000	12000	2500	22000							-	8900
	11/30/1992	NSVD	NG	NG	NG			-					-	-	-			-	
	2/4/1993	NSVD	NG	NG	NG														
	5/4/1993	8.96	2.13	0.1	6.91	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	8/4/1993	8.96	2.92	0.03	6.06	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	11/3/1993	7.38	3.04	NP	4.34	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	2/7/1994	7.38	2.55	0.03	4.85	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	5/19/1994	7.38	2.23	0.01	5.16	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	6/25/1994	7.38	2.49	0.01	4.9	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	7/27/1994	7.38	3.1	NP	4.28														
	8/15/1994	7.38	2.85	0.11	4.61	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	11/14/1994	7.38	2.97	0.12	4.5	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	2/21/1995	7.38	1.53	0.02	5.87	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	5/18/1995	NSVD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD
MW-2	2/18/1992	NSVD	NG	NG	NG	29000		1000	5300	260	7900								4300
	5/20/1992	NSVD	NG	NG	NG	24000		2200	7600	630	11000								4300
	8/31/1992	NSVD	NG	NG	NG	9000		1800	640	140	2000								1600
	11/30/1992	NSVD	NG	NG	NG	29000		2000	3400	1200	6900								5700
	2/4/1993	NSVD	NG	NG	NG	18000		1600	3000	ND	6900								6100
	5/4/1993	8.96	2.48	NP	6.48	63000		3200	17000	470	17000								7100
	8/4/1993	8.96	3.2	NP	5.76	45000		2100	6600	1400	12000								1800
	11/3/1993	8.58	3.37	NP	5.21	72000		3700	16000	3700	20000								2600
	2/7/1994	8.58	2.4	NP	6.18	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	5/19/1994	8.58	2.13	NP	6.45	42000		2500	1300	2300	13000								3000
	6/25/1994	8.58	2.65	NP	5.93														
	7/27/1994	8.58	3.44	NP	5.14														
	8/15/1994	8.58	3.25	NP	5.33	35000		2400	850	1700	15000								2800
	11/14/1994	8.58	2.13	NP	6.45	43000		2200	6500	1800	14000								10000
	2/21/1995	8.58	1.65	NP	6.93	44000		2200	3200	1300	1500								2000
	5/18/1995	NSVD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD
MW-3	2/18/1992	NSVD	NG	NG	NG	230		4.8	22	1.8	33								ND
	5/20/1992	NSVD	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI
	8/31/1992	NSVD	NG	NG	NG	210		1	ND	ND	ND								92
	11/30/1992	NSVD	NG	NG	NG	790		ND	ND	ND	ND								94
	2/4/1993	NSVD	NG	NG	NG	3300		320	ND	96	6.1								550
	5/4/1993	7.84	4.32	NP	3.52	1800		95	ND	ND	ND				-				250
	8/4/1993	7.84	4.94	NP	2.9	210		ND	ND	ND	ND								100
	11/3/1993	7.42	4.53	NP	2.89	640		ND	ND	ND	ND								160
	2/7/1994	7.42	2.4	NP	5.02	2700		110	ND	17	ND								620
	5/19/1994	7.42	3.6	NP	3.82	1800		83	ND	6.2	9.1				-				480
	6/25/1994	7.42	4.58	NP	2.84														-
	7/27/1994	7.42	4.58	NP NP	2.84	130			0.54	 ND	0.97				-				
	8/15/1994 11/14/1994	7.42 7.42	4.65 3.18	NP NP	2.77 4.24	130		1.1 ND	0.54 ND	ND ND	0.97 ND								110 150
						1600 3800													
	2/21/1995 5/18/1995	7.42 7.42	1.81 4.56	NP NP	5.61 2.86			350	ND ND	130	22 ND								850 150
	5/18/1995 8/17/1995	7.42	4.56 WI	WI	2.86 WI	1300 WI	 WI	42 WI	WI	ND WI	ND WI	 WI	 WI	WI		WI	WI	WI	150 WI
	8/17/1995 7/26/1996	7.42	WI	WI	WI	WI	WI	WI			WI	WI	WI		WI	WI			WI
									WI	WI				WI	WI		WI	WI	
	10/28/1996	7.42	WO	WO	WO	WO	WO	WO	WO	WO	WO	WO	WO	WO	WO	WO	WO	WO	WO
	1/29/1997	7.42	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI
	4/15/1997	7.42	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI
	5/27/1997	7.42	3.45	NP	3.97	670		6.5	ND	ND	ND	250			-				
	6/1/1997	7.42	3.5	NP	3.92														610

TABLE 2
Historical Ground Water Gauging and Analytical Data
76 Station No. 5191/5043
449 Hegenberger Road
Oakland, California

		(	GROUND WATER	R GAUGING DAT	ΓΑ						GROUND	WATER ANAL	YTICAL DATA	4					
Well I.D.	Date	TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPHg (SW8015M) (ug/L)	TPHg (8260 GC/MS) (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	TBA (ug/L)	Ethanol (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	Diesel Range Organics (ug/L)
MW-3	7/15/1997	8.04	3.71	NP	4.33	240		ND	ND	ND	ND	490							240
	10/9/1997	8.04	3.7	NP	4.34	270		1.1	ND	2.4	1.4	910							500
	1/14/1998	8.04	2.16	NP	5.88	310		ND	ND	0.62	0.65	140							340
	4/1/1998	8.04	2.2	NP NP	5.84	370		5.7	ND	ND	ND	93							320
	7/15/1998 10/16/1998	8.04 8.04	3.38 2.3	NP NP	4.66	460 330		ND	ND ND	ND ND	ND ND	230							510 67
	1/25/1999	8.04	2.3	NP NP	5.74 5.62	420	-	4.7 1.5	ND ND	ND ND	ND ND	60 180							120
	4/15/1999	8.04	2.42	NP NP	5.88	290		0.54	ND ND	ND ND	ND ND	160						-	170
	7/14/1999	8.04	2.35	NP	5.69	290		3.2	ND	ND	ND	160							420
	10/21/1999	8.04	2.49	NP	5.55	360		0.77	ND	ND	ND	82							350
	1/20/2000	8.04	2.38	NP	5.66	ND		0.81	ND	ND	ND	54							2060
	4/13/2000	8.04	2.76	NP	5.28	250		0.69	ND	ND	ND	91	150	ND	ND	ND	ND	ND	200
	7/14/2000	8.04	3.26	NP	4.78	345		ND	ND	ND	ND	94.7							423
	10/26/2000	8.04	3.12	NP	4.92	480		6	ND	ND	ND	120							330
	1/3/2001	8.04	3.65	NP	4.39	364	-	1.59	ND	ND	ND	118						-	287
	4/4/2001	8.04	3.98	NP	4.06	417	-	1.24	ND	ND	0.802	237						-	360
	7/17/2001	8.04	3.12	NP	4.92	480		ND	ND	ND	ND	150							270
	10/1/2001	8.04	3.25	NP	4.79	310		1	<0.50	<0.50	< 0.50	53							270
	1/31/2002	8.04	2.27	NP	5.77	250		3.5	<1.0	<1.0	<1.0	110							250
	4/18/2002	8.04 8.04	3.55 2.55	NP NP	4.49 5.49	300	500	<2.0	<2.0	<2.0	<2.0		59						320 310
	7/28/2002 10/9/2002	8.04	2.55	NP NP	5.49		690	<0.50 <5	<0.50 <5	<0.50	<1.0 <10		130 120						700
	1/2/2003	8.04	1.7	NP NP	6.34		310	<0.50	<0.50	<5 <0.50	<1.0		110	<100	<500	<2.0	<2.0	<2.0	210
	4/1/2003	8.04	3.48	NP	4.56	-	250	<1.0	<1.0	<1.0	<2.0		210		<500	<2.0	<2.0	<2.0	200
	7/1/2003	8.04	2.65	NP.	5.39	-	450	<2.5	<2.5	<2.5	<5.0		70		<2500				380
	10/2/2003	8.04	3.12	NP	4.92		<250	<2.5	<2.5	<2.5	<5.0		210		<2500				300
	1/9/2004	8.04	2.39	NP	5.65		300	<0.50	0.53	0.53	1.5		66		<500				200
	4/26/2004	8.04	3.11	NP	4.93		440	2.5	5.5	2.9	9.4		81		<50				160
	7/22/2004	8.04	2.51	NP	5.53		420	<0.5	<0.5	<0.5	<1		72		<1000				330
	10/29/2004	8.04	2	NP	6.04		460	5.6	15	10	46		48		<50				200
	1/10/2005	8.04	1.52	NP	6.52	-	280	< 0.50	0.62	< 0.50	2.4		64		<50			-	250
	6/15/2005	8.04	2	NP	6.04	-	460	< 0.50	0.7	0.56	1.9		110		<50			-	360
	9/27/2005	8.04	1.9	NP	6.14		210	< 0.50	0.6	<0.50	<1.0		100	79	<250	<0.50	< 0.50	< 0.50	<200
	12/13/2005	8.04	2.35	NP	5.69		230	<0.50	<0.50	<0.50	<1.0		92		<250				230
	3/23/2006	8.04	1.84	NP	6.2		290	<0.50	<0.50	<0.50	<1.0		88		<250				260
	6/23/2006	8.04	2.26	NP	5.78		500	<0.50	<0.50	<0.50	<1.0		75		<250				330
	9/26/2006	8.04	2.08	NP	5.96		270	<0.50	<0.50	<0.50	<0.50		73		<250				260
	12/22/2006 3/30/2007	8.04 8.04	1.88 2.47	NP NP	6.16 5.57	-	260 390	<0.50 <0.50	<0.50 <0.50	<0.50 <0.50	1.2 <0.50		71 120		<250 <250				250 210
	6/28/2007	8.04	2.47	NP NP	5.57		390	<0.50	<0.50	<0.50	<0.50		120 55		<250				210
	9/25/2007	8.04	2.54	NP NP	5.48	-	350	<0.50	<0.50	<0.50	<0.50		61		<250				210
I	12/28/2007	8.04	2.29	NP	5.75	-	260	<0.50	<0.50	<0.50	<1.0		66		<250				150
	3/22/2008	8.04	3.26	NP	4.78		390	<0.50	<0.50	<0.50	<1.0		39		<250				230
	6/23/2008	8.04	2.6	NP	5.44		200	<0.50	<0.50	<0.50	<1.0		46		<250				130
	9/19/2008	8.04	3.45	NP	4.59		180	<0.50	<0.50	<0.50	<1.0		120		<250				93
	12/31/2008	8.04	2.55	NP	5.49	-	190	<0.50	<0.50	<0.50	<1.0		38		<250				110
I	3/27/2009	8.04	2.37	NP	5.67	-	150	<0.50	<0.50	<0.50	<1.0		50		<250				130
	5/28/2009	8.04	3.32	NP	4.72	-	190	<0.50	<0.50	<0.50	<1.0		60	-	<250			-	120
	9/17/2009	8.04	2.63	NP	5.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/17/2009	8.04	2.13	NP	5.91	-	300	<0.50	<0.50	0.78	<1.5		43.1		<250			-	338
	3/29/2010	8.04	2.22	NP	5.82		-	-											-
MW-4	8/31/1992	NSVD	NG	NG	NG	240	-	ND	ND	ND	0.54							-	90
	11/30/1992	NSVD	NG	NG	NG	420	-	ND	ND	ND	ND							-	61
	2/4/1993	NSVD	NG	NG	NG	ND	-	ND	ND	ND	ND								ND
	5/4/1993	9	4.09	NP	4.91	110		0.95	ND	ND	ND								ND

TABLE 2
Historical Ground Water Gauging and Analytical Data
76 Station No. 5191/5043
449 Hegenberger Road
Oakland, California

			GROUND WATE	R GAUGING DAT	Α	Ī					GROUND	WATER ANAL	YTICAL DATA	1					
Well I.D.	Date	TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPHg (SW8015M) (ug/L)	TPHg (8260 GC/MS) (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	TBA (ug/L)	Ethanol (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	Diesel Range Organics (ug/L)
MW-4	8/4/1993	9	5.01	NP	3.99	250		ND	3.5	ND	4.1								81
	11/3/1993	8.41	4.23	NP	4.18	130		ND	ND	ND	ND								68
	2/7/1994	8.41	3.35	NP	5.06	56		ND	ND	ND	ND							-	ND
	5/19/1994	8.41	3.92	NP	4.49	140		ND	ND	ND	ND							1	90
	6/25/1994	8.41	4.35	NP	4.06														
	7/27/1994	8.41	4.28	NP	4.13														
	8/15/1994	8.41	4.27	NP	4.14	59		ND	0.6	ND	ND								72
	11/14/1994	8.41 NSVD	4.05 WD	NP WD	4.36 WD	130 WD	WD	ND WD	ND WD	ND WD	ND WD	WD				WD			ND WD
MW-5	2/21/1995 8/31/1992	NSVD	NG NG	NG	NG	78	WD	0.89	ND ND	ND ND	13	WD 	WD 	WD	WD	WD	WD	WD	690
IVIVV-5	11/30/1992	NSVD	NG	NG	NG	930		70	290	0.79	14				-				470
	2/4/1993	NSVD	NG	NG	NG	5700		38	ND	620	170				-				5500
	5/4/1993	8.95	4.37	NP	4.58	7400		41	ND	1000	35								4600
	8/4/1993	8.95	5.81	NP	3.14	1500		130	1	460	11								970
	11/3/1993	8.95	5.68	NP	3.27	13000		350	ND	3500	530								2100
	2/7/1994	8.95	5.11	NP	3.84	2000		87	ND	370	110								830
	5/19/1994	8.95	5.09	NP	3.86	260		44	ND	32	4.1							-	600
	6/25/1994	8.95	4.55	NP	4.4	-			-		-							1	
	7/27/1994	8.95	5.72	NP	3.23														
	8/15/1994	8.95	5.68	NP	3.27	1600		110	ND	340	72								860
	11/14/1994	8.95	5.63	NP	3.32	250		40	ND	ND	5								290
	2/21/1995	NSVD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD
MW-6	8/31/1992	NSVD NSVD	NG	NG	NG	ND 9200		ND	ND ND	ND 740	ND								750 1400
	11/30/1992 2/4/1993	NSVD	NG NG	NG NG	NG NG	3600		550 340	ND ND	740 290	1600 550								1400 890
	5/4/1993	9.12	3.72	NP NP	5.4	4900		360	18	450	430				-				1800
	8/4/1993	9.12	5.15	NP.	3.97	3400		390	ND	440	190				-				1100
	11/3/1993	8.87	5.25	NP	3.62	1400		320	ND	200	7.7								390
	2/7/1994	8.87	4.55	NP	4.32	4900		650	ND	250	35								970
	5/19/1994	8.87	4.62	NP	4.25	3600		300	1.7	210	41								1400
	8/15/1994	8.87	5.08	NP	3.79	1300		130	6.7	54	57								790
	11/14/1994	8.87	5.3	NP	3.57	730		50	ND	ND	39							-	800
	2/21/1995	8.87	5.37	NP	3.5	2000		250	4.6	25	30		-	-					730
	5/18/1995	8.87	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI
	8/17/1995	8.87	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI
	7/26/1996	8.87	6.4	3.33	4.97	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	10/28/1996	8.87 8.87	4.1	0.21	4.93 5.04	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH	LPH	LPH	LPH LPH	LPH LPH
	11/13/1996	8.87 8.87	4.02 4.01	0.25	5.04	LPH LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH LPH	LPH	LPH	LPH	LPH
	12/4/1996	8.87	3.65	0.75	5.42	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	12/19/1996	8.87	4.8	2.2	5.72	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	1/8/1997	8.87	4.84	1.75	5.34	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	1/14/1997	8.87	4.51	1.15	5.22	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	1/27/1997	8.87	4	1.75	6.18	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	1/29/1997	8.87	3.24	0.31	5.86	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	2/11/1997	8.87	4.65	1.2	5.12	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	2/24/1997	8.87	4.81	1.1	4.89	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	3/10/1997	8.87	4.6	0.95	4.98	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	3/17/1997	8.87	4.5	0.89	5.04	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	3/31/1997	8.87	4.65	1	4.97	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	4/15/1997	8.87	4.9	1.03	4.74	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	4/28/1997 5/15/1997	8.87 8.87	4.78 4.6	0.03	4.11 4.46	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH
	5/15/1997	8.87	4.b 4.5	0.25	4.46	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	6/9/1997	8.87	4.5	0.25	4.42	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	0/3/133/	0.07	4.0	0.2	4.42	LFH	LFH	LFH	LFH	LFII	LFH	LFII	LFH	LFH	LFH	LEH	LFH	LFH	LFII

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Historical Ground Water Gauging and Analytical Data
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Oakland, California

		(	SROUND WATER	R GAUGING DAT	Ά						GROUND	WATER ANAL	YTICAL DATA						
Well I.D.	Date	TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPHg (SW8015M) (ug/L)	TPHg (8260 GC/MS) (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	TBA (ug/L)	Ethanol (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	Diesel Range Organics (ug/L)
MW-6	6/24/1997	8.87	4.5	0.25	4.56	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	7/9/1997	8.87	4.8	0.6	4.52	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	7/15/1997	8.87	4.63	0.42	4.56	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	7/21/1997	8.87	4.75	0.25	4.31	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	8/6/1997	8.87	4.5	0.1	4.45	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	8/20/1997	8.87	4.55	0.1	4.4	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	9/2/1997	8.87	4.75	0.05	4.16	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	10/9/1997	8.87	4.84	0.04	4.06	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	1/14/1998	8.87	3.9	0.94	5.68	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	2/12/1998	8.87	3.35	0.64	6	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	3/3/1998	8.87	4.51	0.02	4.38	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	4/1/1998	8.87	3.67	1.6	6.4	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	5/26/1998	8.87	4.11	0.5	5.14	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	6/15/1998	8.87	5.03	0.3	4.07	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	7/15/1998	8.87	4.56	0.05	4.35	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	8/21/1998	8.87	4.77	0.02	4.12	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	9/30/1998	8.87	5.08	0.03	3.81	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	10/16/1998	8.87	4.31	2.4	6.36	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	11/6/1998	8.87	3.98	0.17	5.02	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	11/25/1998	8.87	3.92	0.1	5.03	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	12/28/1998	8.87	3.9	0.2	5.12	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	1/25/1999	8.87	4.18	0.6	5.14	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	2/22/1999	8.87	4.07	0.22	4.97	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	3/22/1999	8.87	4.32	0.15	4.66	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	4/15/1999	8.87	4.23	0.95	5.35	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	5/28/1999	8.87	4.38	0.39	4.78	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	6/29/1999	8.87	4.12	0.02	4.77	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	7/14/1999	8.87	4.2	0.03	4.69 4.54	LPH	LPH	LPH	LPH LPH	LPH LPH	LPH	LPH	LPH LPH	LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH	LPH LPH
	8/23/1999 9/30/1999	8.87 8.87	4.51 4.17	0.24	4.54	LPH LPH	LPH	LPH LPH	LPH	LPH	LPH LPH	LPH LPH	LPH	LPH LPH	LPH	LPH	LPH	LPH	LPH
		8.87			4.83	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH			LPH	LPH	LPH	LPH
	10/21/1999	8.87	4.27 4.18	0.12 NP	4.69	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH
	11/29/1999	8.87	4.16	0.01	4.69	I PH	LPH	LPH	LPH	I PH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	LPH	I PH
	1/20/2000	8.87	4.20	NP	4.56	130000	LPH	2900	8600	2000	16000	ND ND	LPH	LPH	LPH	LPH	LPH	LPH	67600
	2/26/2000	8.87	3.98	NP	4.89		-	2900		2000									
	3/31/2000	8.87	4.14	NP	4.73														-
	4/13/2000	8.87	4.04	NP	4.73	140000	-	5000	14000	3600	27000	7700							8700
	5/26/2000	8.87	4.41	NP	4.46	140000	-	3000	14000	3000	27000								
	6/17/2000	8.87	4.35	NP	4.52						-	-		-				-	-
	7/14/2000	8.87	4.47	NP	4.4	259000		7670	13700	6860	40700	ND	ND	-	-			-	133000
	8/24/2000	8.87	3.71	NP	5.16									-	-			-	
	9/27/2000	8.87	4.33	NP.	4.54						-			-	-			-	-
	10/26/2000	8.87	4.32	NP	4.55	110000	-	7000	6200	3700	12000	670	43		-			-	61000
	1/3/2001	8.87	4.52	NP	4.35	84700	-	3950	4130	3650	11800	ND	ND		-			-	929
	4/4/2001	8.87	4.29	NP NP	4.58	69800		2060	2840	3650	10900	ND ND	47.8	ND.	ND	ND	ND	ND	18000
	7/17/2001	8.87	4.37	NP	4.5	100000		3200	3300	3400	12000	ND							20000
	10/1/2001	8.87	4.45	NP.	4.42	110000		3200	2400	4500	13000	<1000							24000
	1/31/2002	8.87	4.03	NP.	4.84	230000		2400	1800	5400	16000	<2500						-	11000
	4/18/2002	8.87	3.45	NP	5.42	94000		6800	13000	3000	19000	<500							3500
	7/28/2002	8.87	2.24	NP.	6.63	34000	110000	530	170	3200	7300		<100	-	-			-	27000
	10/9/2002	8.87	3.53	NP	5.34		970000	10000	39000	13000	94000	-	<2000	-	-			-	170000
	1/2/2003	8.87	2.34	NP	6.53		270000	6100	15000	5400	37000	-	<200	-				-	66000
	4/1/2003	8.87	3.17	NP	5.7		3000000	8000	39000	37000	260000	-	<2000	-	-			-	35000
	7/1/2003	8.87	3.55	NP.	5.32		38000	2100	990	2700	6500	-	<100		<25000			-	11000
	10/2/2003	8.87	3.82	NP	5.05	-	100000	5600	6900	4700	18000	-	<800		<200000				<50

TABLE 2
Historical Ground Water Gauging and Analytical Data
76 Station No. 5191/5043
449 Hegenberger Road
Oakland, California

		(	GROUND WATER	R GAUGING DAT	ГА						GROUND	WATER ANAL	YTICAL DATA						
Well I.D.	Date	TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPHg (SW8015M) (ug/L)	TPHg (8260 GC/MS) (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	TBA (ug/L)	Ethanol (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	Diesel Range Organics (ug/L)
MW-6	1/9/2004	8.87	2.8	NP	6.07		170000	2800	3300	4700	16000		<200		<50000				20000
	4/26/2004	8.87	3.4	NP	5.47		97000	5900	9000	5100	23000		<50		<5000				13000
	7/22/2004	8.87	3.54	NP	5.33		110000	4100	5100	4000	16000		<200		<300000				33000
	10/29/2004	8.87	3.03	NP	5.84		100000	5200	6100	4200	15000		<50		<5000				78000
	1/10/2005	8.87	2.35	NP	6.52		71000	1600	3700	2100	9900		<50		<5000				12000
	6/15/2005	8.87	2.47	NP	6.4		130000	800	1800	2200	9300		<50		<5000				16000
	9/27/2005	8.87	2.55	NP	6.32		13000	82	120	430	990		0.56	<10	<250	1.8	<0.50	<0.50	2500
	12/13/2005 3/23/2006	8.87 8.87	3.28 2.87	NP NP	5.59		68000 41000	1500 290	1100 140	2200 1500	7700 2700		<50 <50		<25000 <25000				18000 73000
	6/23/2006	8.87	3.15	NP NP	6 5.72		50000	2200	1400	1900	5700		<50 <12		<25000 <6200				35000
	9/26/2006	8.87	3.15	NP NP	5.72	-	130000	2200	1000	2900	8800		<12 <50		<25000				22000
	12/22/2006	8.87	2.9	NP NP	5.79	-	90000	940	610	1900	4700		<50 <50		<25000				62000
	3/30/2007	8.87	3.26	NP NP	5.61	-	210000	1100	560	3400	12000		<10		<5000				62000
	6/28/2007	8.87	3.46	NP	5.41	-	67000	2200	1300	2700	10000		<25		<12000				71000
	9/25/2007	8.87	3.52	NP	5.35	-	56000	2900	720	2400	9000		<25		<12000				58000
	12/28/2007	8.87	3.27	NP	5.6	-	78000	28000	2700	4000	8100		16000		<12000				18000
	3/22/2008	8.87	2.48	NP	6.39	-	66000	380	150	1500	2400		<25		<12000				68000
	6/23/2008	8.87	3.54	NP	5.33	-	59000	1600	130	1800	4100		25		<12000				68000
	9/19/2008	8.87	4.06	NP	4.81		65000	2000	230	2000	4500	-	<12		<6200				180000
	12/31/2008	8.87	3.45	NP.	5.42		91000	2000	320	5300	13000		<50		<25000				68000
	3/27/2009	8.87	3.09	NP	5.78		150000	1300	240	2800	7200		<50		<25000				170000
	5/28/2009	8.87	3.49	NP	5.38		53000	1700	200	2300	5400		<50		<25000			-	78000
	9/17/2009	8.87	3.64	NP.	5.23	-	77000	2100	1400	2600	8500	-	<12		<6200			-	250000
	12/17/2009	8.87	3.14	NP.	5.73		59100	1730	199	2260	5460	-	20.3		<250				30300
	3/29/2010	8.87	3.14	NP.	5.71		48400	1980	208	3070	8070		12.1		<250			-	106000
MW-7	5/27/1997	8.83	4.5	NP	4.33	68		ND	ND	ND	ND	ND							
10100-7	6/1/1997	8.83	4.54	NP	4.29			140					-						69
	7/15/1997	8.83	4.7	NP	4.13	ND		ND	ND	ND	ND	ND							ND ND
	10/9/1997	8.83	4.3	NP	4.53	ND		ND	ND	ND	ND	ND							190
	1/14/1998	8.83	2.88	NP	5.95	ND		ND	ND	ND	ND	36							65
	4/1/1998	8.83	3.13	NP	5.7	ND		ND	ND	ND	ND	ND							ND
	7/15/1998	8.83	4.45	NP	4.38	ND		ND	ND	ND	ND	ND							74
	10/16/1998	8.83	3.45	NP	5.38	ND		ND	ND	ND	ND	ND							ND
	1/25/1999	8.83	3.22	NP	5.61	ND		ND	ND	ND	ND	ND							ND
	4/15/1999	8.83	3.11	NP	5.72	ND		ND	ND	ND	ND	ND							ND
	7/14/1999	8.83	3.34	NP	5.49	ND		ND	ND	ND	ND	ND							69
	10/21/1999	8.83	3.43	NP	5.4	ND		ND	ND	ND	ND	ND							ND
	1/20/2000	8.83	3.29	NP	5.54	ND		ND	ND	ND	ND	4.2							ND
	4/13/2000	8.83	3.39	NP	5.44	ND		ND	ND	ND	ND	ND							ND
	7/14/2000	8.83	4.42	NP	4.41	ND		ND	ND	ND	ND	7.83							68
	7/17/2001	8.83	5.06	NP	3.77	ND		ND	ND	ND	ND	ND							ND
	10/1/2001	8.83	4.98	NP	3.85	<50		<0.50	<0.50	<0.50	<0.50	<5.0							<51
	1/31/2002	8.83	3.88	NP	4.95	<50		< 0.50	< 0.50	< 0.50	<0.50	<2.5		-				-	90
Ī	4/18/2002	8.83	4.03	NP	4.8	<50		<0.50	<0.50	< 0.50	<0.50	5.7						-	78
Ī	7/28/2002	8.83	3.59	NP	5.24	-	<50	<0.50	<0.50	< 0.50	<1.0		3.9					-	<50
	10/9/2002	8.83	4.53	NP	4.3		<50	<0.50	<0.50	< 0.50	<1.0		3.9						<96
	1/3/2003	8.83	3.36	NP	5.47		<50	<0.50	<0.50	< 0.50	<1.0		<2.0						78
	4/1/2003	8.83	3.94	NP	4.89		71	<0.50	<0.50	0.71	<1.0		3.4						67
	7/1/2003	8.83	4.6	NP	4.23		64	<0.50	<0.50	0.77	2		35		<500				68
	10/2/2003	8.83	5.46	NP	3.37		<50	<0.50	<0.50	< 0.50	<1.0		4.9		<500				82
	1/9/2004	8.83	3.55	NP	5.28		54	<0.50	<0.50	< 0.50	<1.0		2.4		<500				75
	4/26/2004	8.83	4.49	NP	4.34		<50	<0.50	<0.50	< 0.50	1.5		2.3		<50				<50
	7/22/2004	8.83	4.93	NP	3.9		82	0.9	2	3.5	9.9		1.4		<1000				<200
	10/29/2004	8.83	3.71	NP	5.12		210	0.67	1.6	1.7	5.8		<0.50		<50				54
	1/10/2005	8.83	2.77	NP	6.06		74	0.51	2.2	1.7	7		<0.50		<50				<50

TABLE 2
Historical Ground Water Gauging and Analytical Data
76 Station No. 5191/5043
449 Hegenberger Road
Oakland, California

		(	GROUND WATER	R GAUGING DAT	ΓΑ						GROUND	WATER ANAL	YTICAL DATA	4					
Well I.D.	Date	TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPHg (SW8015M) (ug/L)	TPHg (8260 GC/MS) (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	TBA (ug/L)	Ethanol (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	Diesel Range Organics (ug/L)
MW-7	6/15/2005	8.83	3.4	NP	5.43		<50	< 0.50	< 0.50	< 0.50	<1.0		0.88		<50				<50
	9/27/2005	8.83	3.44	NP	5.39		<50	0.59	1.2	< 0.50	<1.0		0.96	<10	<250	< 0.50	< 0.50	< 0.50	<200
	12/13/2005	8.83	3.98	NP	4.85	-	<50	< 0.50	<0.50	< 0.50	<1.0		0.65		<250			-	<200
	3/23/2006	8.83	3.37	NP	5.46	-	<50	< 0.50	<0.50	< 0.50	<1.0		<0.50		<250			-	<200
	6/23/2006	8.83	5.25	NP	3.58		<50	<0.50	< 0.50	< 0.50	<1.0		< 0.50		<250			1	<200
	9/26/2006	8.83	4.13	NP	4.7	-	<50	<0.50	< 0.50	<0.50	< 0.50		0.77		<250			-	<50
	12/22/2006	8.83	3.63	NP	5.2		<50	<0.50	< 0.50	< 0.50	< 0.50		< 0.50		<250			1	630
	3/30/2007	8.83	4.31	NP	4.52		<50	<0.50	<0.50	<0.50	<0.50		<0.50		<250			-	94
	6/28/2007	8.83	4.62	NP	4.21	-	<50	<0.50	<0.50	<0.50	<0.50		0.54		<250			-	<50
	9/25/2007	8.83	4.65	NP	4.18		<50	<0.50	<0.50	< 0.50	<0.50		<0.50		<250				<50
	12/28/2007	8.83	3.99	NP	4.84		<50	<0.50	<0.50	< 0.50	<1.0		< 0.50		<250				75
	3/22/2008	8.83	4.08	NP	4.75		<50	<0.50	<0.50	< 0.50	<1.0		< 0.50		<250				<50
	6/23/2008	8.83	4.1	NP	4.73		<50	<0.50	<0.50	< 0.50	<1.0		< 0.50		<250				<50
	9/19/2008	8.83	4.86	NP	3.97		<50	<0.50	<0.50	< 0.50	<1.0		< 0.50		<250				<50
	12/31/2008	8.83	4.17	NP	4.66		<50	<0.50	<0.50	< 0.50	<1.0		<0.50		<250				<50
	3/27/2009	8.83	4	NP	4.83		<50	<0.50	<0.50	< 0.50	<1.0		<0.50		<250				<50
	5/28/2009	8.83	4.71	NP	4.12		<50	<0.50	<0.50	< 0.50	<1.0		<0.50		<250				<50
	9/17/2009	8.83	4.87	NP	3.96	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/29/2010	8.83	WI	WI	WI														
MW-8	5/27/1997	8.52	3.42	NP	5.1	310		0.88	0.67	15	70	ND							
	6/1/1997	8.52	3.46	NP	5.06														320
	7/15/1997	8.52	3.49	NP	5.03	ND		ND	ND	2.7	3.8	ND							ND
	10/9/1997	8.52	3.73	NP	4.79	590		1.4	ND	32	4.1	ND							390
	1/14/1998	8.52	1.92	NP	6.6	ND		ND	ND	ND	ND	ND							230
	4/1/1998	8.52	2.38	NP	6.14	ND		ND	ND	ND	ND	4.7							510
	7/15/1998	8.52	3.53	NP	4.99	ND		ND	ND	0.56	1.1	ND							140
	10/16/1998	8.52	3.04	NP	5.48	ND		ND	ND	ND	ND	ND							170
	1/25/1999	8.52	2.92	NP	5.6	ND		ND	ND	ND	ND	ND							ND
	4/15/1999	8.52	2.4	NP	6.12	ND		ND	ND	ND	ND	ND							91
	7/14/1999	8.52	3.03	NP	5.49	ND		ND	ND	ND	ND	ND							120
	10/21/1999	8.52	3.11	NP	5.41	ND		ND	ND	ND	ND	ND							110
	1/20/2000	8.52	3.06	NP	5.46	ND		ND	ND	ND	ND	ND							583
	4/13/2000	8.52	2.84	NP	5.68	ND		ND	ND	ND	ND	ND							80
	7/14/2000	8.52	3.39	NP	5.13	ND		ND	ND	ND	ND	ND							113
	7/17/2001	8.52	3.46	NP	5.06	ND		ND	ND	ND	ND	ND							ND
	10/1/2001	8.52	3.51	NP	5.01	<50		<0.50	<0.50	<0.50	<0.50	<5.0							<50
	1/31/2002	8.52	2.75 2.98	NP NP	5.77 5.54	<50 <50		<0.50	<0.50	<0.50	<0.50	<2.5			-			-	260
	4/18/2002	8.52						<0.50	<0.50	<0.50		<2.5							160
	7/28/2002	8.52	2.41	NP	6.11		<50	<0.50	<0.50	<0.50	<1.0		<2.0					-	140
	10/9/2002	8.52 8.52	2.09 1.98	NP NP	6.43 6.54		<50 <50	<0.50 <0.50	<0.50 <0.50	<0.50 <0.50	<1.0 <1.0		<2.0 <2.0		-				120 210
	4/1/2003	8.52	1.98 2.66	NP NP	5.86	-	<50 <50	<0.50	<0.50	<0.50	<1.0		<2.0 <2.0						210
	7/1/2003	8.52	3.08	NP NP	5.86	-	<50 <50	<0.50	<0.50	<0.50			<2.0 <2.0		<500				
	10/2/2003	8.52	3.08	NP NP	4.63	-	<50 540	<0.50 3.9	<0.50 15	<0.50 29	<1.0 80		<2.0 <2.0		<500 <500			-	170 350
	1/9/2004	8.52	2.38	NP NP	6.14		<50	<0.50	<0.50	<0.50	<1.0		<2.0 <2.0	<del>-</del>	<500 <500				180
	4/26/2004	8.52	2.38	NP NP	5.63	-	<50 <50	<0.50	<0.50	<0.50	<1.0		<0.50		<500 <50				100
	7/22/2004	8.52	3.25	NP NP	5.63		<50 <50	<0.50	<0.50	<0.50	<1.0 <1		<0.50		<1000				250
	10/29/2004	8.52	3.25	NP NP	5.27		<50 <50	<0.50	<0.50	<0.5 0.82	2.5		<0.50		<1000				120
	1/10/2005	8.52	1.92	NP NP	6.6		<50 58	<0.50	0.61	1.2	2.5		<0.50		<50 <50				140
	6/15/2005	8.52	2.22	NP NP	6.3	-	<50	<0.50	<0.50	<0.50	<1.0		<0.50		<50 <50			-	140
	9/27/2005	8.52	2.22	NP NP	6.09		<50 <50	<0.50	<0.50	<0.50 1.2	<1.0	-	<0.50	<10	<250	<0.50	<0.50	<0.50	140 <200
	12/13/2005	8.52	2.43	NP NP	5.63		<50 <50	<0.50	<0.50	<0.50	<1.0	-	<0.50	<10	<250	<0.50	<0.50	<0.50	<200
	3/23/2006	8.52	2.89	NP NP	6.4		<50 <50	<0.50	<0.50	<0.50	<1.0		<0.50		<250 <250				<200
	6/23/2006	8.52	2.12	NP NP	5.87		<50 <50	<0.50	<0.50	<0.50	<1.0	-	<0.50	<del>-</del>	<250			-	<200
	9/26/2006	8.52	2.65	NP NP	5.87		<50 <50	<0.50	<0.50	<0.50	<0.50		<0.50		<250				<230 110
	9/26/2006	8.52	2./5	NP	5.//		<50	<0.50	<0.50	<0.50	<0.50		<0.50		<250	L		-	110

TABLE 2
Historical Ground Water Gauging and Analytical Data
76 Station No. 5191/5043
449 Hegenberger Road
Oakland, California

			GROUND WATE	R GAUGING DAT	Α						GROUND	WATER ANAL	YTICAL DATA	4					
Well I.D.	Date	TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPHg (SW8015M) (ug/L)	TPHg (8260 GC/MS) (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	TBA (ug/L)	Ethanol (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	Diesel Range Organics (ug/L)
MW-8	12/22/2006	8.52	2.58	NP	5.94		<50	<0.50	<0.50	< 0.50	<0.50		<0.50		<250			-	100
	3/30/2007	8.52	2.74	NP	5.78		<50	<0.50	< 0.50	< 0.50	< 0.50		<0.50		<250			-	120
	6/28/2007	8.52	2.9	NP	5.62	-	<50	<0.50	< 0.50	< 0.50	<0.50		<0.50		<250				140
	9/25/2007	8.52	3.26	NP	5.26		<50	<0.50	< 0.50	< 0.50	< 0.50		<0.50		<250			-	110
	12/28/2007	8.52	2.64	NP	5.88	-	<50	<0.50	< 0.50	< 0.50	<1.0		<0.50		<250				110
	3/22/2008	8.52	2.31	NP	6.21	-	<50	<0.50	< 0.50	< 0.50	<1.0		<0.50		<250				<50
	6/23/2008	8.52	3.13	NP	5.39		<50	<0.50	<0.50	<0.50	<1.0		<0.50		<250				<58
	9/19/2008	8.52	3.72	NP	4.8		<50	< 0.50	<0.50	<0.50	<1.0		<0.50		<250				79
	12/31/2008	8.52	2.98	NP	5.54		<50	<0.50	<0.50	<0.50	<1.0		<0.50		<250				110
	3/27/2009	8.52	2.49	NP	6.03		<50	< 0.50	<0.50	<0.50	<1.0		<0.50		<250				89
	5/28/2009	8.52	3.12	NP	5.4	-	<50	< 0.50	<0.50	<0.50	<1.0		<0.50		<250				91
	9/17/2009	8.52	3.63	NP	4.89	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/29/2010	8.52	WI	WI	WI														
MW-9	2/21/1995	8.29	1.98	NP	6.31	70		ND	ND	ND	ND								71
	5/18/1995	8.29	3.47	NP	4.82	52		ND	1.1	ND	1.9								ND
	8/17/1995	8.29	1.49	NP	6.8	ND		ND	ND	ND	ND								ND
	7/26/1996	8.29	0.28	NP	8.01	ND		ND	ND	ND	ND	ND							98
	10/28/1996	8.29	1.15	NP	7.14	ND		ND	ND	ND	ND	7.6							99
	1/29/1997	8.29	1.05	NP	7.24	ND		ND	ND	ND	ND	5.4							54
	4/15/1997	8.29	1.88	NP	6.41	ND		ND	ND	ND	ND	5.4							94
	5/27/1997	8.29	1.05	NP	7.24														
	7/15/1997	8.29	1.9	NP	6.39	ND		ND	ND	ND	ND	ND							ND
	10/9/1997	8.29	1.76	NP	6.53	ND		ND	ND	ND	ND	ND							160
	1/14/1998	8.29	1.26	NP	7.03	ND		ND	ND	ND	ND	3							110
	4/1/1998	8.29	0.85	NP	7.44	ND		ND	ND	ND	ND	ND							110
	7/15/1998	8.29	1.52	NP	6.77	ND		ND	ND	ND	ND	ND							200
	10/16/1998	8.29	0.81	NP	7.48	ND		ND	ND	ND	ND	ND							ND
	1/25/1999	8.29	0.92	NP	7.37	ND		ND	ND	ND	ND	ND							ND
	4/15/1999	8.29	0.9	NP	7.39	75 NB		21	ND	ND	1.1	680							ND
	7/14/1999	8.29	1.04	NP	7.25	ND		1.9	ND	ND	ND	260							140
	10/21/1999	8.29	1.23	NP	7.06	ND		ND	ND	ND	ND	170							210
	1/20/2000	8.29	1.18	NP	7.11	ND 400		1.1	ND	ND	ND	35							519
	4/13/2000 7/14/2000	8.29 8.29	1.08	NP NP	7.21 6.86	160 ND		0.64 ND	ND ND	ND	ND ND	53 20.2						-	81
										ND									107
	10/26/2000	8.29	1.38	NP NP	6.91	240		2.9	ND	ND	ND 1.00	56						-	240
	1/3/2001	8.29 8.29	1.66	NP NP	6.63 7.02	166 296		0.763	0.776 ND	ND	1.28	50.2							164 240
	4/4/2001	8.29	1.27	NP NP	6.91	296 ND		0.738 ND	ND ND	ND ND	0.907 ND	135						-	ND ND
	7/17/2001 10/1/2001	8.29 8.29	1.38	NP NP	6.91	ND 51		ND <0.50	<0.50	ND <0.50	<0.50	13 5						-	ND <52
	1/31/2001	8.29	2.08	NP NP	6.21	<50		<0.50	<0.50	<0.50	<0.50	5.8						-	<52 200
	4/18/2002	8.29	1.76	NP NP	6.53	<50 <50		<0.50	<0.50	<0.50	<0.50	5.8						-	<50
	7/28/2002	8.29	1.76	NP NP	6.72	<50	<50	<0.50	<0.50	<0.50	<1.0	5.1	3.5					-	<50 <50
	10/9/2002	8.29	1.45	NP NP	6.84	-	<50 <50	<0.50	<0.50	<0.50	<1.0		17		-			-	100
	1/2/2003	8.29	1.45	NP NP	7.11	-	<50 <50	<0.50	<0.50	<0.50	<1.0		8.6					-	<50
	4/1/2003	8.29	2.04	NP NP	6.25	-	<50 <50	<0.50	<0.50	<0.50	<1.0		9.4		-				<50 56
	7/1/2003	8.29	2.04	NP NP	5.49	-	<50 <50	<0.50	<0.50	<0.50	<1.0		3.2		<500			-	<50
	10/2/2003	8.29	2.7	NP NP	5.49	-	<50 <50	<0.50	<0.50	<0.50	<1.0		<2.0		<500			-	<50 <50
	1/9/2004	8.29	1.9	NP NP	6.39		74	<0.50	0.98	2.3	6.2		<2.0		<500			-	91
	4/26/2004	8.29	1.62	NP	6.67		51	<0.50	<0.50	<0.50	<1.0		0.51		<50				<50
	7/22/2004	8.29	1.88	NP	6.41		<50	<0.50	<0.5	<0.50	<1.0	-	0.78		<1000				<200
	10/29/2004	8.29	1.00	NP NP	7.01	-	<50 <50	<0.50	<0.50	<0.50	1		<0.50		<50			-	76
	1/10/2005	8.29	0.07	NP NP	8.22	-	93	0.6	2.3	2.4	9		<0.50		<50 <50			-	77
	6/15/2005	8.29	1.7	NP NP	6.59	-	<50	<0.50	<0.50	<0.50	<1.0		6.6		<50 <50			-	67
	9/27/2005	8.29	1.7	NP	6.31		<50 <50	<0.50	0.73	<0.50	<1.0		2.3	<10	<250	<0.50	<0.50	<0.50	<200
	12/13/2005	8.29	2.26	NP NP	6.03	-	<50 <50	<0.50	<0.50	<0.50	<1.0		2.3	<10	<250	<0.50	<0.50	<0.50	<200
	12/13/2005	0.29	2.20	INP	0.03		<00	<0.00	<0.50	<0.00	<1.0	-	2.9		<200			-	<200

TABLE 2
Historical Ground Water Gauging and Analytical Data
76 Station No. 5191/5043
449 Hegenberger Road
Oakland, California

		(	GROUND WATER	R GAUGING DAT	ГА						GROUND	WATER ANAL	YTICAL DATA	1					
Well I.D.	Date	TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPHg (SW8015M) (ug/L)	TPHg (8260 GC/MS) (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	TBA (ug/L)	Ethanol (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	Diesel Range Organics (ug/L)
MW-9	3/23/2006	8.29	1.32	NP	6.97		<50	<0.50	<0.50	<0.50	<1.0		2.7		<250				<200
	6/23/2006	8.29	1.98	NP	6.31		<50	<0.50	<0.50	<0.50	<1.0		1.9		<250				<200
	9/26/2006	8.29	2.52	NP	5.77		<50	<0.50	<0.50	<0.50	<0.50		<0.50		<250				<50
	12/22/2006	8.29	1.98	NP	6.31		<50	<0.50	0.57	1.8	4.6		1.6		<250				150
	3/30/2007	8.29	2.01	NP	6.28		<50	<0.50	<0.50	<0.50	<0.50		3.4		<250				72
	6/28/2007	8.29	1.9	NP	6.39		<50	<0.50	<0.50	<0.50	<0.50		4.9		<250				1000
	9/25/2007	8.29	1.57	NP	6.72		<50	<0.50	<0.50	<0.50	<0.50		<0.50		<250				100
	12/28/2007 3/22/2008	8.29 8.29	1.98 0.8	NP NP	6.31 7.49		<50 <50	<0.50	<0.50	<0.50 <0.50	<1.0 <1.0		<0.50 0.61		<250 <250				56 <50
	6/23/2008	8.29	1.8	NP NP	6.49		<50 <50	<0.50	<0.50	<0.50	<1.0		<0.50		<250				<50 <50
	9/19/2008	8.29	2.43	NP NP	5.86	-	<50 <50	<0.50	<0.50	<0.50	<1.0		3.9		<250				56
	12/31/2008	8.29	2.43	NP NP	5.63	-	<50 <50	<0.50	<0.50	<0.50	<1.0		<0.50		<250				<50
	3/27/2009	8.29	2.00	NP NP	6.28	-	<50 <50	<0.50	<0.50	<0.50	<1.0	-	<0.50		<250				<50 <50
	5/28/2009	8.29	2.01	NP	6.09	-	<50	<0.50	<0.50	<0.50	<1.0		<0.50		<250				<50
	9/17/2009	8.29	1.83	NP	6.46	NS	NS NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS NS
	12/17/2009	8.29	1.52	NP	6.77		<50.0	<0.50	<0.50	<0.50	<1.5		<0.50		<250				105
	3/29/2010	8.29	2.21	NP NP	6.08	-	<50.0	<0.50	<0.50	<0.50	<1.5		<0.50		<250				105
MW-10	2/21/1995	8.62	4.69	NP NP	3.93	1500		250	26	9.1	160	-			-			-	270
IVIVV-10	5/18/1995	8.62	4.09	NP	3.7	810		520	ND	18	23				-				75
	8/17/1995	8.62	4.05	NP	4.57	67		25	ND	2.4	ND								ND
	7/26/1996	8.62	4.08	NP	4.54	ND		3.7	ND	ND	ND ND	ND			-				ND ND
	10/28/1996	8.62	4.09	NP	4.54	ND ND		1.1	ND	ND	ND ND	ND			-				ND ND
	1/29/1997	8.62	2.94	NP	5.68	210		41	0.67	7.2	4.8	11			-				ND ND
	4/15/1997	8.62	4.07	NP	4.55	110		12	ND	0.77	ND	9.7			-				ND ND
	5/27/1997	8.62	4.07	NP	4.22				IND	0.77		9.7			-				ND
	7/15/1997	8.62	4.19	NP	4.43	ND		2.1	ND	0.67	0.73	ND	-		-			-	ND
	10/9/1997	8.62	4.75	NP	3.87	190		38	0.92	6.6	7.6	ND	-		-				ND
	1/14/1998	8.62	2.66	NP	5.96	59		9.5	0.85	1.2	1.7	4.5							
	4/1/1998	8.62	3.45	NP	5.17	230		66	1.7	12	17	6.4							62
	7/15/1998	8.62	4.21	NP	4.41	290		98	45	21	38	21							78
	10/16/1998	8.62	4.11	NP	4.51	160		44	0.96	2.5	10	17							ND
	1/25/1999	8.62	3.26	NP	5.36	140	-	27	ND	2.8	6.8	23							ND
	4/15/1999	8.62	3.63	NP	4.99	120	-	18	ND	1.8	5.1	14							ND
	7/14/1999	8.62	3.89	NP	4.73	280	-	55	3.2	11	31	6.1							180
	10/21/1999	8.62	4.09	NP	4.53	140		22	0.59	1.7	7.7	5.3							96
	1/20/2000	8.62	3.92	NP	4.7	ND		0.73	0.86	ND	ND	5.2							252
	4/13/2000	8.62	3.85	NP	4.77	67		54	ND	2.6	ND	3.8							69
	7/14/2000	8.62	4.18	NP	4.44	ND		0.547	ND	ND	ND	ND							149
	10/26/2000	8.62	3.96	NP	4.66	ND		3.3	ND	0.83	1.5	ND							83
	1/3/2001	8.62	4.14	NP	4.48	52.7	-	5.15	ND	0.823	1.57	ND							126
	4/4/2001	8.62	3.88	NP	4.74	129	-	28.1	1.67	4.97	10.1	ND							75
	7/17/2001	8.62	4.08	NP	4.54	ND		4.1	ND	1	1.8	ND							ND
	10/1/2001	8.62	4.22	NP	4.4	140	-	30	0.51	4	12	<5.0						-	100
	1/31/2002	8.62	3.68	NP	4.94	110	-	16	<0.50	2.3	5.6	<2.5						-	170
	4/18/2002	8.62	4.01	NP	4.61	<50	-	11	<0.50	1.4	4.5	<2.5						-	130
	7/28/2002	8.62	4.11	NP	4.51		67	15	<0.50	0.94	7.3		<2.0						58
	10/9/2002	8.62	3.97	NP	4.65		<50	0.67	<0.50	<0.50	<1.0		<2.0						<94
	1/2/2003	8.62	3.03	NP	5.59		<50	<0.50	<0.50	<0.50	<1.0		<2.0						64
	4/1/2003	8.62	3.83	NP	4.79		<50	11	<0.50	<0.50	<1.0		<2.0						76
	7/1/2003	8.62	4.13	NP	4.49		<50	<0.50	<0.50	<0.50	<1.0		<2.0		<500				87
	10/2/2003	8.62	4.05	NP	4.57		77	9.9	0.78	2.3	4.9		<2.0		<500				160
	1/9/2004	8.62	3.4	NP	5.22		53	1.2	<0.50	0.7	1.6		<2.0		<500				74
	4/26/2004	8.62	3.89	NP	4.73		<50	2.8	1.3	1	2.9		<0.50		<50				<50
	7/22/2004	8.62	3.73	NP	4.89		<50	<0.5	<0.5	<0.5	<1		<0.5		<1000				<200
I	10/29/2004	8.62	3.41	NP	5.21		100	2	1.2	1.1	3.6		<0.50		<50				<50

#### TABLE 2

#### Historical Ground Water Gauging and Analytical Data 76 Station No. 5191/5043 449 Hegenberger Road Oakland, California

			GROUND WATER	GAUGING DAT	A						GROUND	WATER ANAL	YTICAL DATA						
Well I.D.	Date	TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPHg (SW8015M) (ug/L)	TPHg (8260 GC/MS) (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (SW8021B) (ug/L)	MTBE (SW8260B) (ug/L)	TBA (ug/L)	Ethanol (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	Diesel Range Organics (ug/L)
MW-10	1/10/2005	8.62	2.68	NP	5.94		84	7.8	2.7	2.2	8.9		<0.50		<50				94
	6/15/2005	8.62	4.63	NP	3.99		<50	< 0.50	< 0.50	<0.50	<1.0		<0.50		<50				62
	9/27/2005	8.62	3.96	NP	4.66		<50	<0.50	<0.50	< 0.50	<1.0	-	<0.50	<10	<250	< 0.50	<0.50	< 0.50	<200
	12/13/2005	8.62	3.75	NP	4.87		<50	< 0.50	<0.50	< 0.50	<1.0	-	< 0.50	-	<250	1		-	<200
	3/23/2006	8.62	3.13	NP	5.49		50	13	<0.50	< 0.50	<1.0	-	< 0.50	-	<250	1		-	<200
	6/23/2006	8.62	3.9	NP	4.72		<50	< 0.50	<0.50	< 0.50	<1.0	-	< 0.50	-	<250	1		-	<200
	9/26/2006	8.62	3.66	NP	4.96		<50	< 0.50	<0.50	< 0.50	< 0.50	-	< 0.50	-	<250	1		-	<50
	12/22/2006	8.62	3.56	NP	5.06		<50	<0.50	<0.50	< 0.50	1.8	-	< 0.50	-	<250	-		-	81
	3/30/2007	8.62	3.93	NP	4.69	-	<50	<0.50	<0.50	< 0.50	<0.50	-	<0.50		<250	-			82
	6/28/2007	8.62	4.03	NP	4.59		<50	< 0.50	<0.50	< 0.50	<0.50		< 0.50		<250				57
	9/25/2007	8.62	3.91	NP	4.71		<50	< 0.50	<0.50	< 0.50	<0.50		< 0.50		<250				82
	12/28/2007	8.62	3.64	NP	4.98		<50	2.1	<0.50	< 0.50	<1.0		< 0.50		<250				62
	3/22/2008	8.62	4	NP	4.62		64	13	<0.50	< 0.50	<1.0		< 0.50		<250				<50
	6/23/2008	8.62	3.9	NP	4.72		94	30	0.53	3.4	3.5		< 0.50		<250				<50
	9/19/2008	8.62	3.85	NP	4.77		130	15	1.7	5.7	11		< 0.50		<250				<50
	12/31/2008	8.62	3.69	NP	4.93		82	11	<0.50	0.81	1.7		< 0.50		<250				<50
	3/27/2009	8.62	3.75	NP	4.87	-	210	28	1.4	1.2	3.9		< 0.50		<250				730
	5/28/2009	8.62	3.66	NP	4.96	-	<50	0.91	<0.50	< 0.50	<1.0		< 0.50		<250				<50
	9/17/2009	8.62	3.85	NP	4.77		<50	<0.50	<0.50	< 0.50	<1.0		<0.50		<250				65
	12/17/2009	8.62	3	NP	5.62		<50.0	1.2	<0.50	< 0.50	<1.5		<0.50		<250				57.7
	3/29/2010	8.62	3.81	NP	4.81		<50	0.77	< 0.50	< 0.50	3.4		< 0.50		<250				82.2

Gauging Notes:

TOC - Top of Casing

ft - Feet

NP - LNAPL not present

LNAPL - Light non-aqueous phase liquid

\* - Corrected for LNAPL if present (assumes LNAPL specific gravity = 0.75)

NG - Not gauged

WD - Well Destroyed

WI - Well Inaccessable

WO - Well Obstruction NSVD - Not surveyed

-- - No information available

Analytical Notes:

-- - No information available

< - Not detected at or above indicated laboratory reporting limit

ABD - Well Abandoned

DRY - Well was Dry; sample could not be taken

IW - Insufficient Water

LPH - Liquid Phase Hydrocarbons

ND - Not detected, and detection limit is not known

NL - Well Not Located

NS - Well not sampled. ug/L - micrograms/liter

WI - Well Inaccessable WO - Well Obstruction

TPHg- Total petroleum hydrocarbons as gasoline

MTBE - Methyl tert-butyl ether TBA - Tertiary butyl alcohol

DIPE - Di-isopropyl ether ETBE - Ethyl tertiary butyl ether

TAME - Tertiary amyl methyl ether

#### TABLE 2a

#### Additional Historical Ground Water Gauging and Analytical Data 76 Station No. 5191/5043 449 Hegenberger Road Oakland, California

			GROUND WATER	R GAUGING DATA	A			GRO	UND WATE	R ANALYTICA	AL DATA		
Well I.D.	Date	TOC Elevation (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation (ft)	EDB (ug/L)	1,2-DCA (ug/L)	Iron SW6010 T (ug/L)	Dissolved Iron (ug/L)		Nitrite as N (ug/L)	Nitrogen, NO2 plus NO3 (ug/L)	Sulfate (ug/L)
MW-3	1/2/2003	8.04	1.7	NP	6.34	<2.0	<2.0						
IVIVV-3	12/17/2009	8.04	2.13	NP	5.91			12300		<50.0	<50.0	<50.0	
	4/4/2001	8.87	4.29	NP	4.58	ND	ND						
MW-6	9/17/2009	8.87	3.64	NP	5.23			1500		<0.44			<1.0
IVIVV-O	12/17/2009	8.87	3.14	NP	5.73			2460		<50.0	<50.0	<50.0	
	3/29/2010	8.87	3.16	NP	5.71			1510	1790	<50	41.3	54.9	<1.0
MW-9	12/17/2009	8.29	1.52	NP	6.77			2270		<50.0	<50.0	<50.0	
	9/17/2009	8.62	3.85	NP	4.77			9800		12			84
MW-10	12/17/2009	8.62	3	NP	5.62			3410		1970	60.3	2030	
	3/29/2010	8.62	3.81	NP	4.81			2410	365	<50	18.7	1970	73.6

#### Gauging Notes:

TOC - Top of Casing

ft - Feet

NP - LNAPL not present

LNAPL - Light non-aqueous phase liquid

#### **Analytical Notes:**

- -- No information available
- < Not detected at or above indicated laboratory reporting limit
- ND Not detected, and detection limit is not known

ug/L - micrograms/liter

EDB - Ethylene di-bromide

1,2-DCA - 1,2-Dichloroethane

## TABLE 3 Groundwater Gradient and Flow Direction 76 Station No. 5191/5043 449 Hegenberger Road Oakland, California

Site	Monitoring	Groundwater	Oakland, California  Groundwater Flow Direction															
Site	Date	Gradient																
	0.4/0.0/0.0	(feet per foot)	N	NNE	NE	ENE	Е	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
	04/22/92	0.05	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
	08/31/92	0.05	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
	11/30/92	0.04	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
	02/07/94	0.00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
	11/14/94	0.03 0.08	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
	02/21/95 05/18/95	0.08	0	0	0	0	0	0	<b>1</b> 0	0	0	0	0 <b>1</b>	0	0	0	0	0
	03/16/93	0.07	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	10/28/96	0.02	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	01/29/97	0.02	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	04/15/97	0.01	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	07/15/97	0.10	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	10/09/97	0.10	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	01/14/98	0.02	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	04/01/98	0.05	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	07/15/98	0.04	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	09/30/98	0.05	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	01/25/99	0.05	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	04/15/99	0.04	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	10/21/99	0.03	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	07/14/99	0.04	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	04/13/00	0.050	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	07/14/00	0.033	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	10/26/00	0.060	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	01/03/01	0.070	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	07/17/01	0.040	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	10/01/01	0.030	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	01/31/02	0.010	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	07/28/02	0.020	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	10/09/02	0.016	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	01/02/03	0.010	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	04/01/03	0.008	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	07/29/09	0.010	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	10/02/03	0.010	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	01/09/04	0.010	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	04/26/04	0.010	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	07/22/04	0.010	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	10/29/04	0.010	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	01/10/05	0.010	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	06/15/05	0.020	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	09/27/05	0.010	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	12/13/05	0.005	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	03/23/06	0.010	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	06/23/06	0.010	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	09/26/06 12/22/06	0.010	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
		0.010	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	03/30/07	0.010	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	09/25/07	0.010	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	12/28/07 06/28/07	0.010 0.010	_	-	-	-	-		-	_	_	_		_			-	
	06/28/07	0.010	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	03/22/08	0.020	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	06/23/08	0.010	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	12/31/08	0.005	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	03/27/09	0.005	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	05/28/09	0.008	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	09/17/09	0.010	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
	12/17/09	0.008	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	03/29/10	0.010	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	30/20/10	0.046 Average	0	0	0	0	0	0	22	0		0	20	2	3	0	0	0
		U.U40 Average	U	U	U	U	U	U	22	U	13	U	20		3	U	U	U

#### Explanation

NA = Not available Number of Events = 56

## Table 4 Well Construction Details

76 Station No. 5191/5043 449 Hegenberger Road Oakland, CA

		W	ell	Scr	een	Screen	
Well	Drill	Depth	Diameter	Тор	Bottom	Length	Comments
I.D.	Date	(feet bgs)	(inches)	(feet bgs)	(feet bgs)	(feet)	
<b>Monitoring W</b>	/ells						
MW-1	02/05/91	13.5	8	2.0	13.0	11.0	Abandoned
MW-2	02/05/91	15.0	8	3.0	15.0	12.0	Abandoned
MW-3	02/05/91	14.0	8	2.0	14.0	12.0	
MW-4	08/21/92	13.5	8	2.5	13.5	11.0	Abandoned
MW-5	08/21/92	13.5	8	2.5	13.5	11.0	Abandoned
MW-6	08/21/92	13.5	8	2.5	13.5	11.0	
MW-7	04/21/97	13.0	8	3.0	13.0	10.0	
MW-8	04/21/97	15.0	8	3.0	15.0	12.0	
MW-9	01/25/95	13.0	8	3.0	13.0	10.0	
MW-10	01/25/95	13.0	8	3.0	13.0	10.0	

#### Explanation

Wells are of poly-vinyl-chloride (PVC) construction

bgs = Below ground surface

## Attachment A

Previous Investigations and Site History Summary

#### **Attachment A: Previous Investigations and Site History Summary**

76 Station No.5191/5043 449 Hegenberger Road Oakland, CA

#### PREVIOUS INVESTIGATIONS AND SITE HISTORY SUMMARY

October 1991 - Four soil samples were collected from the product pipe trenches at depths of approximately 3 feet below ground surface (bgs) during a dispenser island modification. The product pipe trenches were subsequently excavated to the groundwater depth at 4 to 4.5 bgs.

<u>February 1992</u> - Three monitoring wells, MW-1 through MW-3, were installed at the site to depths ranging from 13.5 to 15 feet bgs.

<u>August 1992</u> - Three additional monitoring wells, MW-4 through MW-6, were installed at the site to a depth of 13.5 feet bgs.

<u>September 1994</u> - One 280-gallon waste oil UST was removed from the site. The tank was made of steel, and no apparent holes or cracks were observed in the tank. One soil sample was collected from beneath the former tank at a depth of approximately 9 feet bgs. No petroleum hydrocarbons were reported.

<u>January 1995</u> - Two additional monitoring wells, MW-7 and MW-8, were installed at the site to a depth of 13 feet bgs. In addition, two existing monitoring wells were destroyed in order to accommodate the construction of a car wash at the subject site. Monitoring wells MW-4 and MW-5 were fully drilled out and backfilled with neat cement.

March 1995 - Two 10,000-gallon gasoline USTs and one 10,000-gallon diesel UST were removed from the site. Groundwater was encountered in the tank cavity at a depth of approximately 8.5 feet bgs. Soil samples contained low levels of total petroleum hydrocarbons as diesel (TPHd) and benzene, and moderate levels of total petroleum hydrocarbons as gasoline (TPHg). Approximately 125,000 gallons of groundwater were pumped from the site for remediation and properly disposed off-site. Four dispenser islands and associated product piping were also removed. Based on the results of the confirmation samples, the product dispenser islands were over excavated to approximately 6 feet bgs.

<u>March and April 1995</u> - During demolition activities of the former station building, soil samples were collected from two excavations, which were subsequently over excavated. Confirmation samples contained low levels of petroleum hydrocarbons. An additional area on the south side of the former station building was excavated based on photoionization detector (PID) readings. Two monitoring wells, MW-1 and MW-2, were destroyed in order to allow for over excavation activities to extend to an area adjacent to the dispenser islands in the southeastern quadrant of the site. The excavated areas were subsequently backfilled with clean-engineered fill.

<u>April 1997</u> - Two additional monitoring wells, MW-9 and MW-10, were installed in the vicinity of the site to depths of 13 to 15 feet bgs. In addition, monitoring well MW-3, which was damaged during the UST cavity over excavation in 1995, was fully drilled out and reconstructed in the same borehole.

October 2003 - Site environmental consulting responsibilities were transferred to TRC.

April 8 and 9, 2005 - TRC conducted a 24-hour dual phase extraction (DPE) event at the site using monitoring well MW-6. The 24-hour DPE event was moderately successful at

#### Attachment A: Previous Investigations and Site History Summary

76 Station No.5191/5043 449 Hegenberger Road Oakland, CA

removing vapor-phase petroleum hydrocarbons from the subsurface; therefore, TRC recommended DPE no longer be considered a viable remedial alternative for the site.

October 2007 - Site environmental consulting responsibilities were transferred to Delta Consultants.

#### **SENSITIVE RECEPTORS**

April 24, 2006 TRC completed a sensitive receptor survey for the site. According to the Department of Water Resources (DWR) records, three water supply wells are located within a one-half mile of the site. In addition, two surface water bodies were observed within a one-half mile radius of the site. San Leandro Creek is located approximately 1,400 feet southwest of the site and flows into San Leandro Bay. Elmhurst Creek is located approximately 2,220 feet north of the site and also flows into San Leandro Bay.

Current Consultant: Delta Consultants

### **Attachment B**

Blaine Tech's Procedures for Groundwater Monitoring and Sampling, and Equipment Decontamination

# BLAINE TECH SERVICES, INC. METHODS AND PROCEDURES FOR THE ROUTINE MONITORING OF GROUNDWATER WELLS

#### SAMPLING PROCEDURES OVERVIEW

#### SAFETY

All groundwater monitoring assignments performed for DELTA comply with safety guidelines, 29 CFR 1910.120 and SB-198 Injury and Illness Prevention Program (IIPP). All Field Technicians receive the full 40 hour 29CFR 1910.120 OSHA SARA HAZWOPER course, medical clearance and on-the-job training prior to commencing any work on any DELTA COP/ELT site.

#### INSPECTION AND GAUGING

Wells are inspected prior to evacuation and sampling. The condition of the wellhead is checked and noted according to a wellhead inspection checklist.

Standard measurements include the depth to water (DTW) and the total well depth (TD) obtained with industry standard electronic sounders which are graduated in increments of hundredths of a foot

The water in each well is inspected for the presence of Immiscibles or sheen and when free product is suspected, it is confirmed using an electronic interface probe (e.g. MMC). No samples are collected from a well containing free product.

#### **EVACUATION**

Depth to water measurements are collected by our personnel prior to purging and minimum purge volumes are calculated anew for each well based on the height of the water column and the diameter of the well. Expected purge volumes are never less than three case volumes and are set at no less than four case volumes in some jurisdictions.

Well purging devices are selected on the basis of the well diameter and the total volume to be evacuated. In most cases the well will be purged using an electric submersible pump (i.e. Grundfos) suspended near (but not touching) the bottom of the well. Small volumes of purgewater are often removed by hand bailing with a disposable bailer.

#### PARAMETER STABILIZATION

Well purging completion standards include minimum purge volumes, but additionally require stabilization of specific groundwater parameters prior to sample collection. Typical groundwater parameters used to measure stability are electrical conductivity, pH, and temperature. Instrument readings are obtained at regular intervals during the evacuation process (no less

than once per case volume).

Stabilization standards for routine quarterly monitoring of fuel sites include the following: Temperature is considered to have stabilized when successive readings do not fluctuate more than +/- 1 degree Celsius. Electrical conductivity is considered stable when successive readings are within 10%. pH is considered to be stable when successive readings remain constant or vary no more than 0.2 of a pH unit.

#### **DEWATERED WELLS**

Normal evacuation removes no less than three case volumes of water from the well. However, less water may be removed in cases where the well dewaters and does not recharge.

Wells known to dewater are evacuated as early as possible during each site visit in order to allow for the greatest amount of recovering. Any well that does not recharge to 80% of its original volume will be sampled prior to the departure of our personnel from the site in order to eliminate the need of a return visit.

In jurisdictions where a certain percentage of recovery is included in the local completion standard, our personnel follow the regulatory expectation.

#### PURGEWATER CONTAINMENT

All non-hazardous purgewater evacuated from each groundwater monitoring well is captured and contained in on-board storage tanks on the Sampling Vehicle and/or special water hauling trailers. Effluent from the decontamination of reusable apparatus (sounders, electric pumps and hoses etc.), consisting of groundwater combined with deionized water and non-phosphate soap, is also captured and pumped into effluent tanks.

Non hazardous purgewater is transported under standard Bill of Lading or Non-Hazardous manifest to a Blaine Tech Services, Inc. facility before being transported to an approved disposal facility.

#### SAMPLE COLLECTION DEVICES

All samples are collected using disposable bailers.

#### SAMPLE CONTAINERS

Sample material is decanted directly from the sampling bailer into sample containers provided by the laboratory which will analyze the samples. The type of sample container, material of construction, method of closure and filling requirements are specific to the intended analysis. Chemicals needed to preserve the sample material are commonly placed inside the sample containers by the laboratory or glassware vendor prior to delivery of the bottle to our personnel. The laboratory sets the number of replicate containers.

#### TRIP BLANKS

Upon request, a Trip Blank is carried to each site and is kept inside the cooler for the duration of the sampling event. It is turned over to the laboratory for analysis with the samples from that site.

#### **DUPLICATES**

Upon request, one Duplicate sample is collected at each site. It is up to the Field Technician to choose the well at which the Duplicate is collected. Typically, a duplicate is collected from one of the most contaminated wells. The Duplicate sample is labeled DUP thus rendering the sample blind.

#### SAMPLE STORAGE

All sample containers are promptly placed in food grade ice chests for storage in the field and transport (direct or via our facility) to the analytical laboratory that will perform the intended analytical procedures. These ice chests contain quantities of restaurant grade ice as a refrigerant material. The samples are maintained in either an ice chest or a refrigerator until relinquished into the custody of the laboratory or laboratory courier.

#### **DOCUMENTATION CONVENTIONS**

Each and every sample container has a label affixed to it. In most cases these labels are generated by our office personnel and are partially preprinted. Labels can also be hand written by our field personnel. The site is identified with the store number and site address, as is the particular groundwater well from which the sample is drawn (e.g. MW-1, MW-2, S-1 etc.). The time at which the sample was collected and the initials of the person collecting the sample are handwritten onto the label.

Chain of Custody records are created using client specific preprinted forms following USEPA specifications.

Bill of Lading records are contemporaneous records created in the field at the site where the non-hazardous purgewater is generated. Field Technicians use preprinted Bill of Lading forms.

#### **DECONTAMINATION**

All equipment is brought to the site in clean and serviceable condition and is cleaned after use in each well and before subsequent use in any other well. Equipment is decontaminated before leaving the site.

The primary decontamination device is a commercial steam cleaner. The steam cleaner is detuned to function as a hot pressure washer which is then operated with high quality deionized water which is produced at our facility and stored onboard our sampling vehicle. Cleaning is facilitated by the use of proprietary fixtures and devices included in the patented workstation that is incorporated in each sampling vehicle. The steam cleaner is used to decon reels, pumps

and bailers.

Any sensitive equipment or parts (i.e. Dissolved Oxygen sensor membrane, sounder etc.) that cannot be washed using the hot high pressure water, will be sprayed with a non-phosphate soap and deionized water solution and rinsed with deionized water.

EXAMPLE: The sounder is cleaned between wells using the non-phosphate soap and deionized water solution followed by deionized water rinses. The sounder is then washed with the steam cleaner between sites or as necessitated by use in a particularly contaminated well.

### DISSOLVED OXYGEN READINGS

All Dissolved Oxygen readings are taken using YSI meters (e.g. YSI Model 550 meter). These meters are equipped with membrane probe that enables them to collect accurate in-situ readings.

The probe and reel is decontaminated between wells as described above. The meter is calibrated as per the instructions in the operating manual. The probe is lowered into the water column allowed to stabilize before use.

### OXYIDATON REDUCTION POTENTIAL READINGS

All readings are obtained with either Corning or Myron-L meters (e.g. Corning ORP-65 or a Myron-L Ultrameter GP). The meter is cleaned between wells as described above. The meter is calibrated at the start of each day according to the instruction manual. In use the probe is placed in a cup of freshly obtained monitoring well water and allowed to stabilize.

# **Attachment C**

Groundwater Monitoring and Sampling Field Data Sheets

				C	COP	-EL	T W	/ell-	Head In	spection	ı & Well	Gaugin	g Form	
Proj	ect No: 2705191							Site A	ddress: 44	1 HEGENE	olger R	Ð		
Field	Technician: J. PAR	UZE	•							Date: 3	la/10			Weather: OVERCAST
	W	ell Co	nditio	on	Gauging Information									
Sample Order	Field Point	Bolts	Seal	Lid Secure	Lock	Expanding Cap	Water in Well Box	Well Casing Dia.	Time	Depth to Water (Feet)	Depth to Bottom (Feet)	Depth to LNAPL (Feet)	LNAPL Thickness (Feet)	Comments
	ми-3	Р	P	P	4	G	4	2	0850	2.22	14.00	_		#2 TABS STRIPPED.
	MW-6	Ca	G	a	a	9	4	2	00100	3.16	12.70	_	-	
	P-UM	P	P	P	4	4	4	2	0843	2.21	12.67	Metrin-	_	3/3 TABS STRIPPED. 3/3 BOUTS
	MW-10	P	P	P	4	4	7	$\sim$	0855	3.81	12.70			el3TABS BROWN, 2/3 BOOKS MISSING
	MW-7								April 1					NO ACCESS AGGEMENT
	MW-8	-				S SELECTAR SELECTION SEC			A STATE OF THE STA				4///	NO ACCESS PARGEMENT
														::
				-										
				-										
Note	es:												January	
				]		··								
				-							WIE			
ACTION NAME OF STREET						The second		and the second second	Control of the Contro				n	



Page / of /

	COI	P-ELT Gr	oundwa	ter Samı	oling Fo	m			
Site Address:	449 456	ENBERGER	2 PD.		MARKANIA CARILO COMPANIA MARKANIA COMPANIA	CONTRACTOR AND			
Project No:		Control of the Control		eld Technician:	J. PARKETE				
Field Point:	MW-6			Date:	3/29/10				
Depth to Water (DTW) (ft bgs):	3.16		Well	Diameter (in):	0	4 6 8			
Depth to LNAPL (ft bgs):			Thickness	of LNAPL (ft):					
Total Depth of Well (ft bgs):	12.70			nn Height (ft):	0 - 1				
Total Dept. of Well (12 Bgo).		Pur	ging Info an	d Calculations	;:	· .			
Purge Method:		Purge Ec	juipment:			Sample Colle	ction Method	l:	
Low-Flow  X 3 casing volumes  Other:	Peristal	ubmersible tic Pump er Pump		Ot	X Disposable Bailer – w BED Extraction Port Dedicated Tubing Disposable Tubing Other:				
Water Column Height (ft):	9.54 .b	X Conversion X Specified Ve	Factor (gal/ft	3	= Casir	ng Volume (ga Purge (gal):	4.8		
Conversion Factors (		= 0.17 4"		= 1.5 8" =		$= radius^2 * 0.$			
	Time: 1914	- 0.17			Stop Time:	0925			
Time	Temp (°C)	рΗ	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)	
Pre-Purge	· · ·			-45		0.32			
0118	16.5	6.56	1746	مسي	126	_	1.6		
0921	16.8	6.65	2289	accusion	M.	e-control	3.2		
0925	16.9	6.69	2271		1736	سبن	48		
								pro-1 9.02	
	· · · · · · · · · · · · · · · · · · ·		,2						
Post-Purge				-103		1.05			
Did Well dewater?	Yes 🚺	D	Total	Purge volume (	(gal): <b>4.8</b>				
Other Comments:	8070 C.S.	07 ; DTW	J: 6.20		<u> </u>				
Sample Info:				The second secon	29.33 m. rocc (1900) (1902) (1902) (1902) (1902)	THE STATE OF THE S			
Sample ID:	mw-,b_z	100331		Sample Date	and Time:	3/29/10	@ 1125		
Selected Analysis:	SEE COC								
Signature:	DAMESTIC TRANSPORTED TO THE CONTRACT OF THE CO	ALL PROPERTY OF THE PROPERTY O	(MART) Hotel any among the delication conducts that the trade	Date:	3/29/10				
DELTA Consultants 1-800-477-7411		! NAPI = light non	-aguenus nhase li	auids	gal = gallon/s				

bgs = below ground surface
ORP = Oxidation-Reduction Potential
D.O.= dissolved oxygen

temp = temperature NTU = Nephelometric Turbidity Units mV = millivolts



	CO	P-ELT Gr	oundwa	ter Samı	oling For	m			
Site Address:		ienberget							
	2705191		·	eld Technician:	J. PARKER				
Field Point:	<u> </u>			Date:	l .				
Depth to Water (DTW) (ft bgs):			Weil	Diameter (in):		4 6 8			
Depth to LNAPL (ft bgs):		***	Thickness	s of LNAPL (ft):	<u></u>				
Total Depth of Well (ft bgs):	12.70			mn Height (ft):					
Total Depth of Well (it bgs).		Pur	ging Info and	d Calculations		·		<del></del>	
Purge Method:		Purge Ed	quipment:	#206.001.00000000000000000000000000000000	5	Sample Colle	ection Method		
Low-Flow  X 3 casing volumes  Other:	X 3 casing volumes Électr  ■ Control				X Disposable Bailer – w BED Extraction Port Dedicated Tubing Disposable Tubing Other:				
Water Column Height (ft):	B.89	X Conversion	Factor (gal/ft)	): 0.17	= Casir	ng Volume (ga	ai): 1.6		
Casing Volume (gal):									
Conversion Factors (		= 0.17 4"		= 1.5 8" =				•	
Purge: Start T	80.				Stop Time:	0949			
Time	Temp (°C)	рН	Conductivity (µS/cm)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)	Volume Purged (gal)	Water Level (for Low-Flow only)	
Pre-Purge				-42		0.13			
0941	16.5	6-93	2634	ana a	59	esterning.	1.5		
0945	16-9	691	2575	_	75		3.0		
0949	17.0	6.91	2537		65		4.5		
					į				
				· ·					
Post-Purge				-54		0.73		***************************************	
Did Well dewater?	Yes 🏻 🏗	(a)	Total	Purge volume (	(gal): 4.5	<u> </u>			
Other Comments:	80° 0 5	.59 ; DTV	J: 3.83						
Sample Info:									
Sample ID:	MW-10_2	0100331		Sample Date	and Time:	3/29/10	@ 0955		
Selected Analysis:	SEE COC								
Signature:				Date:	3/29/10				
G I								A CONTRACTOR OF THE PARTY OF TH	

DELTA Consultants, 1-800-477-7411

LNAPL= light non-aqueous phase liquids bgs = below ground surface

ORP = Oxidation-Reduction Potential D.O.= dissolved oxygen

gal = gallon/s temp = temperature NTU = Nephelometric Turbidity Units mV = millivolts



Page \_\_\_\_\_\_ of \_\_\_\_



# COP ELT CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate.

Page: 1 of Cooler# of

Inogen Inviernmental Albanic

Required	Lab Information:	Required Project Information:		Required Invoice In	nformation:										,		
Lab Name	: Pace-Seattle	Site ID #: 2705191 Task:	WG_Q_201002	Send Invoice to:	David Sowle						1						
Address:		Delta project #	<u> </u>	Address: 11050 W	I/hite Rock Road, Su	ite 110	<u> </u>				Turn ar	ound time	e (days)	10			
940 S. Ha	rney Street Seattle WA 98108	Site Address 449 Hegenberge	Г	City/State	Rancho Cordova C	A 95670 F	Phone #:	1-800-47	77-7411		QC lev	el Require	ed: Standard		Special		Mark one
Lab PM:	Regina Ste. Marie	City Oakland Sta	rte CA 94621	Reimbursement pro	ject?	Non-reimb	ursement pr	oject?	v	Mark one	NJ Rec	luced Del	iverable Pac	kage?		1	
Phone/Fa	P: 206-957-2433 F: 206-767-5063	Delta PM Name Dennis I	Dettloff	Send EDD to	copeltdata@intellig	entabe co	n		'		MA MC	P Cert?	CT R	CP Ce	ert?	1	Mark One
Lab PM e	mail Regina.SteMarie@pacelabs.com		11 F: 916-638-8385	CC Hardcopy re						•	Lab Pr	oject ID (	lab use)		<u> </u>		
Applicable	Lab Quote #:	Delta PM Email: ddettloff@de	eltaenv.com	CC Hardcopy re	eport to					<del></del>	Requ		7777	//	77	//	- 1
ITEM#	SAMPLE ID  One Character per box. (A-Z, 0-9 /,-)  Samples IDs MUST BE UNIQUE	Valid Maltrix Codes  MATRIX  DINNING WATER WP  GROAD WATER WW  WASTE WATER WW  FREE PRODUCT UF  SOR. SD RHSEATE WH  OL CU OTHER OT  WIPE SW  AMBERT AR AS  SOL QAS  SS	MATRIX CODE SAMPLE TYPE G=GRAB C=COMP	SAMPLE DATE	SAMPLE TIME	#OF CONTAINERS	FIELD FILTERED? (Y/N) Jnpreserved	4.SO4	reserva HOep	Va <sub>2</sub> S <sub>2</sub> O <sub>3</sub> soft	Analy	/		Payloss	7	Comments	
1 N	/VV-10_20100331		wg G	3/29/10	0955	21	Y 8	12	10			x x x	x x x		i		
2 N	1W-6 20100331	:	wg ,		1125	13	4 4	1 2	b				x x x				
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6		1			-												
7									-	35	<b>*</b>				*** Sili	a gel on TP	
8		)													i .	samples	
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	al Comments/Special Instructions:		RELINCUISHED BY	/ AFFILIATION	DATE	TIME	ACCEPTE	DBY/A		ОИ		DATE	TIME S	ample	Recei	pt Conditi	ons
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		-	1/2/	3	7-7							<del></del>			Y/N	Y/N	Y/N
			/				······································								Y/N	Y/N	Y/N
GLOB/	AL ID: T0600101476														Y/N	Y/N	Y/N
			SHIPPING METHOL	D: (most accessed	to) SAMEL		AND SIGN	ATUBE						ATTENDED OF A VANCOUS P.	Y/N	Y/N	Y/N
			UPS COURIER					AIUKE						in °C	es 5	ple ct?	lank
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			100 MAIL					<u> </u>			3129/10	Time/600			ं ठ		<del> -</del>

Minogen

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# NON-HAZARDOUS WASTE

# NOT YAZARDOUS WASTE MANIFEST

Pleas	non-HAZARDOUS	1. Generator's US EPA ID No.	1	Manifest Document No	2705791-6310	2. Page 1
	WASTE MANIFEST  3. Generator's Name and Mailing Address	PCIT Armen MKAT	VIÁGIO	She	# 270519	
		320210 62 10065	SUR-			Wed.
	4. Generator's Phone (28 ) 399-322				William de	494621
	5. Transporter 1 Company Name PCUNETLCV Se	6. US EPA ID Numbe	er	A. State Trans  B. Transporter		74455
	7. Transporter 2 Company Name	8. US EPA ID Numbe	er	C. State Trans	sporter's ID	
	Designated Facility Name and Site Address	10. US EPA ID Numb	er	D. Transporter E. State Facilit		
	seaport environ	arrival more	e-75			
		7 940631 (00013		F. Facility's Ph	<u> 50-364-</u>	<del></del>
	11. WASTE DESCRIPTION		12. Co No.	ntainers Type	13. Total Quantity	14. Unit Wt./Vol.
	alon Hazardois	I wound water		7	17_	
					B production	
GEZ	b.					
E R					the same to the same of the sa	
A	c.					
TOR	d.					
l i	u.					T SPACE TO THE PARTY OF THE PAR
	G. Additional Descriptions for Materials Listed Above			H. Handling Co	odes for Wastes Listed Above	
. t						
					C	
	15. Special Handling Instructions and Additional Info	mation				
			y Ngaray astan	i pilitai sii		
	16. GENERATOR'S CERTIFICATION: I hereby certi in proper condition for transport. The materials de	fy that the contents of this shipment are fully and accurately scribed on this manifest are not subject to federal hazardo	y described and are in us waste regulations.	all respects	a glada ita a mara da karanga a kalanga a mara da la 1914 ka kalanga a mara da la 1914 ka kalanga a mara da la	
					4711100	Date
	Printed/Typed Name	on benatt Signature	2480	邓L	Month	Day Year
H	17. Transporter 1 Acknowledgement of Receipt of Ma	aterials	A A			Date
RAZ	Printed/Typed Name	Signature			Month 3	Day Year
00.0	18. Transporter 2 Acknowledgement of Receipt of Ma	uterials	T		9,	Date Date
-UC 4ZOO OCHUC	Printed/Typed Name	Signature	T.	THE RESERVE THE PROPERTY OF THE PARTY OF THE	Month	Day Year
FA	19. Discrepancy Indication Space				ministrative de la companya de la c	ข้องสมาธารณแบบสมาธาชากับสมาชากา vi-t-
C						
- Ind	20. Facility Owner or Operator; Certification of receipt	of the waste materials covered by this manifest, except as	noted in item 19.		-	Date
T Y	Printed/Typed Name	Signature	**************************************		Month	Day Year



# TEST EQUIPMENT CALIBRATION LOG

PROJECT NAI	ME COP@			PROJECT NUI	MBER 100329-JP1		
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
MARON	6218304	3/29/10	7/10/4 B900 w	7.05 19.99 14:09	YES	16.5	<b>S</b>
10 68 50	08B100751	4	10070	019.1	√E5	,	<b>%</b>
							energy have an in-

# **Attachment D**

Groundwater Sampling Certified Laboratory Analytical Report and Chain-of-Custody Documentation





April 22, 2010

Dennis Dettloff ELT\_Delta Consultants Sacramen 11050 White Rock Rd. #110 Rancho Cordova, CA 95670

RE: Project: 2705191 449 Hegenberger

Pace Project No.: 253372

### Dear Dennis Dettloff:

Enclosed are the analytical results for sample(s) received by the laboratory on March 30, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Revised Report - Nitrate result calculations not performed correctly for sample 001 on original report. Results have been corrected on this report revision.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Regina SteMarie

Regina Ste. Marie

regina.stemarie@pacelabs.com Project Manager

**Enclosures** 

cc: Tara Bosch, ELT\_Delta Consultants Sacramento Jonathon Fillingame, ELT\_Delta Consultants Sacramento Lia Holden, ELT-Delta Consultants Josh Mahoney, ELT\_Delta Consultants San Jose Tony Perini, ELT\_Delta Consultants San Jose Nicole Persaud, ELT-Delta Consultants

Don Pinkerton, ELT\_Delta Consultants Sacramento David Sowle, Delta Consultants Doug Umland, ELT\_Delta Consultants San Jose Ed Weyrens, ELT\_Delta Consultants San Jose



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### **CERTIFICATIONS**

Project: 2705191 449 Hegenberger

Pace Project No.: 253372

Washington Certification IDs 940 South Harney Street Seattle, WA 98108 Washington Certification #: C1229 Oregon Certification #: WA200007 Alaska CS Certification #: UST-025

California Certification #: 01153CA

Alaska Drinking Water Micro Certification #: WA01230
Alaska Drinking Water VOC Certification #: WA01-09
Florida/NELAP Certification #: E87617





### **SAMPLE ANALYTE COUNT**

Project: 2705191 449 Hegenberger

Pace Project No.: 253372

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
253372001	MW-10_20100331	EPA 8015B	ERB	3	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8260	LNH	9	PASI-S
		CA LUFT	LNH	2	PASI-S
		EPA 300.0	CMS	1	PASI-S
		EPA 353.2	CMS	2	PASI-S
		SM 4500-NO2 B	BPR	1	PASI-S
253372002	MW-6_20100331	EPA 8015B	ERB	3	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 6010	BGA	1	PASI-S
		EPA 8260	LNH	9	PASI-S
		CA LUFT	LPM	2	PASI-S
		EPA 300.0	CMS	1	PASI-S
		EPA 353.2	CMS	2	PASI-S
		SM 4500-NO2 B	BPR	1	PASI-S
253372003	TB1_20100331	EPA 8260	LNH	9	PASI-S
		CA LUFT	LNH	2	PASI-S





Project: 2705191 449 Hegenberger

Pace Project No.: 253372

Method: EPA 8015B

Description: 8015B CA TPH DRO
Client: ELT-Delta Consultants
Date: April 22, 2010

### **General Information:**

2 samples were analyzed for EPA 8015B. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 3510 Modified with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/2058

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

• MW-6\_20100331 (Lab ID: 253372002)

• o-Terphenyl (S)

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

## Additional Comments:





Project: 2705191 449 Hegenberger

Pace Project No.: 253372

Method: **EPA 6010** Description: 6010 MET ICP Client: **ELT-Delta Consultants** Date: April 22, 2010

**General Information:** 

2 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### **Additional Comments:**





Project: 2705191 449 Hegenberger

Pace Project No.: 253372

Method: EPA 6010

Description: 6010 MET ICP, Dissolved
Client: ELT-Delta Consultants
Date: April 22, 2010

### **General Information:**

2 samples were analyzed for EPA 6010. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### **Additional Comments:**

Analyte Comments:

QC Batch: MPRP/1520

1n: Reanalysis, direct injection from each bottle, and re-digestion (all performed on 4/5/10) confirmed the dissolved fraction being slightly (<5x RDL) higher than the total fraction.

- MW-6\_20100331 (Lab ID: 253372002)
  - Iron, Dissolved



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Project: 2705191 449 Hegenberger

Pace Project No.: 253372

Method: EPA 8260

Description: 8260 MSV GRO and Oxygenates

Client: ELT-Delta Consultants

**Date:** April 22, 2010

### **General Information:**

3 samples were analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: MSV/2234

S5: Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

- MW-6\_20100331 (Lab ID: 253372002)
  - 1,2-Dichloroethane-d4 (S)

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/2234

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 253361001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 25128)
  - Ethanol

### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### **Additional Comments:**

### **REPORT OF LABORATORY ANALYSIS**





Project: 2705191 449 Hegenberger

Pace Project No.: 253372

Method: CA LUFT

Description: CA LUFT MSV GRO
Client: ELT-Delta Consultants
Date: April 22, 2010

### **General Information:**

3 samples were analyzed for CA LUFT. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### **Additional Comments:**





Project: 2705191 449 Hegenberger

Pace Project No.: 253372

Method: EPA 300.0

Description: 300.0 IC Anions 28 Days
Client: ELT-Delta Consultants
Date: April 22, 2010

### **General Information:**

2 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/1465

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 253372001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 25343)
  - Sulfate

M3: Matrix spike recovery was outside laboratory control limits due to matrix interferences.

- MS (Lab ID: 25342)
  - Fluoride
- MSD (Lab ID: 25343)
  - Fluoride

### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### **Additional Comments:**

Analyte Comments:

QC Batch: WETA/1465

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 25342)
  - Sulfate
- MSD (Lab ID: 25343)
  - Sulfate

### **REPORT OF LABORATORY ANALYSIS**

Page 9 of 25





Project: 2705191 449 Hegenberger

Pace Project No.: 253372

Method: EPA 353.2

Description: 353.2 Nitrogen, NO2/NO3 pres.

Client: ELT-Delta Consultants

**Date:** April 22, 2010

### **General Information:**

2 samples were analyzed for EPA 353.2. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/1454

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 253349001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 24937)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 24938)
  - Nitrogen, NO2 plus NO3

### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### **Additional Comments:**





Project: 2705191 449 Hegenberger

Pace Project No.: 253372

Method: SM 4500-NO2 B

Description: SM4500NO2-B, Nitrite, unpres

Client: ELT-Delta Consultants

**Date:** April 22, 2010

### **General Information:**

2 samples were analyzed for SM 4500-NO2 B. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

H1: Analysis conducted outside the EPA method holding time.

• MW-10\_20100331 (Lab ID: 253372001)

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/1455

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 253372001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 25006)
  - Nitrite as N
- MSD (Lab ID: 25007)
  - Nitrite as N

### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### **Additional Comments:**

**Analyte Comments:** 

QC Batch: WETA/1455

- MW-6 20100331 (Lab ID: 253372002)
  - Nitrite as N

This data package has been reviewed for quality and completeness and is approved for release.

### REPORT OF LABORATORY ANALYSIS

Page 11 of 25





### **ANALYTICAL RESULTS**

Project: 2705191 449 Hegenberger

Pace Project No.: 253372

Sample: MW-10_20100331	Lab ID: 2533	72001	Collected: 03/29/1	0 09:55	Received: 03	3/30/10 10:05 M	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015B CA TPH DRO	Analytical Meth	od: EPA 80°	15B Preparation Me	thod: Ef	PA 3510 Modified	I		
ГРН-DRO (C10-C24)	<b>82.2</b> ug/	L	38.1	1	03/30/10 15:50	03/31/10 21:05		
o-Terphenyl (S)	85 %		50-150	1		03/31/10 21:05		
n-Octacosane (S)	96 %		26-152	1	03/30/10 15:50	03/31/10 21:05	630-02-4	
6010 MET ICP	Analytical Meth	od: EPA 60°	10 Preparation Meth	nod: EPA	A 3010			
ron	<b>2410</b> ug/	L	100	1	03/31/10 10:10	03/31/10 16:09	7439-89-6	
6010 MET ICP, Dissolved	Analytical Meth	od: EPA 60°	10 Preparation Meth	nod: EPA	A 3010			
ron, Dissolved	<b>365</b> ug/	L	100	1	03/31/10 10:10	03/31/10 16:30	7439-89-6	
3260 MSV GRO and Oxygenates	Analytical Meth	od: EPA 826	60					
Benzene	<b>0.77</b> ug/	L	0.50	1		04/01/10 16:08	71-43-2	
Ethanol	ND ug/	L	250	1		04/01/10 16:08	64-17-5	
Ethylbenzene	ND ug/	L	0.50	1		04/01/10 16:08	100-41-4	
Methyl-tert-butyl ether	ND ug/	L	0.50	1		04/01/10 16:08	1634-04-4	
Toluene Toluene	ND ug/	L	0.50	1		04/01/10 16:08	108-88-3	
(ylene (Total)	<b>3.4</b> ug/	L	1.5	1		04/01/10 16:08	1330-20-7	
oluene-d8 (S)	88 %		80-123	1		04/01/10 16:08	2037-26-5	
I-Bromofluorobenzene (S)	91 %		80-120	1		04/01/10 16:08	460-00-4	
1,2-Dichloroethane-d4 (S)	99 %		80-124	1		04/01/10 16:08	17060-07-0	
CA LUFT MSV GRO	Analytical Meth	od: CA LUF	Т					
TPH-Gasoline (C05-C12)	ND ug/	L	50.0	1		04/01/10 16:08		
4-Bromofluorobenzene (S)	91 %		82-116	1		04/01/10 16:08	460-00-4	
300.0 IC Anions 28 Days	Analytical Meth	od: EPA 300	0.0					
Sulfate	<b>73.6</b> mg	/L	10.0	10		04/09/10 14:12	14808-79-8	
53.2 Nitrogen, NO2/NO3 pres.	Analytical Meth	od: EPA 353	3.2					
Nitrogen, Nitrate	<b>1960</b> ug/	L	50.0	1		04/05/10 14:52		
Nitrogen, NO2 plus NO3	<b>1970</b> ug/	L	50.0	1		04/05/10 14:52		
SM4500NO2-B, Nitrite, unpres	Analytical Meth	od: SM 450	0-NO2 B					
Nitrite as N	<b>18.7</b> ug/	L	10.0	1		03/31/10 10:45	14797-65-0	H1
Sample: MW-6_20100331	Lab ID: 2533	72002	Collected: 03/29/1	0 11:25	Received: 03	30/10 10:05 M	latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015B CA TPH DRO	Analytical Meth	od. EDV 80.		thod: F	PA 3510 Modified		-	
	•		·					
TPH-DRO (C10-C24)	<b>106000</b> ug/	L	762	20		04/01/10 14:17		
o-Terphenyl (S)	83 %		50-150	20		04/01/10 14:17		S4
n-Octacosane (S)	147 %		26-152	1	03/30/10 15:50	03/31/10 21:53	630-02-4	

Date: 04/22/2010 11:11 AM

### **REPORT OF LABORATORY ANALYSIS**

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### **ANALYTICAL RESULTS**

Project: 2705191 449 Hegenberger

Pace Project No.: 253372

Sample: MW-6_20100331	Lab ID: 2533	372002	Collected: 03/29/1	0 11:25	Received: 03	3/30/10 10:05	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
6010 MET ICP	Analytical Meth	od: EPA 60	010 Preparation Met	nod: EPA	A 3010			
Iron	<b>1510</b> ug/	L	100	1	03/31/10 10:10	03/31/10 16:22	2 7439-89-6	
6010 MET ICP, Dissolved	Analytical Meth	od: EPA 60	010 Preparation Met	nod: EPA	A 3010			
Iron, Dissolved	<b>1790</b> ug/	L	100	1	03/31/10 10:10	03/31/10 16:38	3 7439-89-6	1n
8260 MSV GRO and Oxygenates	Analytical Meth	od: EPA 82	260					
Benzene	<b>1980</b> ug/	L	25.0	50		04/06/10 15:33	3 71-43-2	
Ethanol	ND ug/	L	250	1		04/01/10 18:02	2 64-17-5	
Ethylbenzene	<b>3070</b> ug/		25.0	50		04/06/10 15:33	3 100-41-4	
Methyl-tert-butyl ether	<b>12.1</b> ug/		0.50	1		04/01/10 18:02		
Toluene	<b>208</b> ug/		25.0	50		04/06/10 15:33		
Xylene (Total)	<b>8070</b> ug/		75.0	50		04/06/10 15:33		
Toluene-d8 (S)	97 %	L	80-123	1		04/01/10 18:02		
` ,								
4-Bromofluorobenzene (S)	95 %		80-120	1		04/01/10 18:02		0.5
1,2-Dichloroethane-d4 (S)	171 %		80-124	1		04/01/10 18:02	2 17060-07-0	S5
CA LUFT MSV GRO	Analytical Meth	od: CA LUF	FT					
TPH-Gasoline (C05-C12)	<b>48400</b> ug/	L	2500	50		04/06/10 15:33	3	
4-Bromofluorobenzene (S)	104 %		82-116	50		04/06/10 15:33	3 460-00-4	
300.0 IC Anions 28 Days	Analytical Meth	od: EPA 30	0.00					
Sulfate	ND mg	/L	1.0	1		04/08/10 02:5	1 14808-79-8	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Meth	od: EPA 35	53.2					
Nitrogen, Nitrate	ND ug/	L	50.0	1		04/05/10 14:04	1	
Nitrogen, NO2 plus NO3	<b>54.9</b> ug/		50.0	1		04/05/10 14:04		
SM4500NO2-B, Nitrite, unpres	Analytical Meth							
Nitrite as N	<b>41.3</b> ug/		10.0	1		03/31/10 10:4	5 14797-65-0	
Willia de IV	<b>41.5</b> ug/	_	10.0			03/31/10 10.40	7 14757 05 0	
Sample: TB1_20100331	Lab ID: 2533	372003	Collected: 03/29/1	0 08:00	Received: 03	3/30/10 10:05	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV GRO and Oxygenates	Analytical Meth	od: EPA 82	260				•	
Benzene	ND ug/	L	0.50	1		04/01/10 11:53	3 71-43-2	
Ethanol	ND ug/		250	1		04/01/10 11:53	8 64-17-5	
Ethylbenzene	ND ug/		0.50	1		04/01/10 11:53	3 100-41-4	
Methyl-tert-butyl ether	ND ug/		0.50	1		04/01/10 11:53		
Toluene	ND ug/		0.50	1		04/01/10 11:53		
Xylene (Total)	ND ug/		1.5	1		04/01/10 11:53		
	97 %	_				04/01/10 11:53		
Toluene-d8 (S)			80-123	1				
4-Bromofluorobenzene (S)	100 %		80-120	1		04/01/10 11:53		
1,2-Dichloroethane-d4 (S)	97 %		80-124	1		04/01/10 11:53	3 17060-07-0	

Date: 04/22/2010 11:11 AM

### **REPORT OF LABORATORY ANALYSIS**

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### **ANALYTICAL RESULTS**

Project: 2705191 449 Hegenberger

Pace Project No.: 253372

Sample: TB1_20100331	Lab ID: 25	3372003	Collected: 03/29/1	00:80	Received: 03	/30/10 10:05 N	/latrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
CA LUFT MSV GRO	Analytical Me	thod: CA LUF	т					
TPH-Gasoline (C05-C12) 4-Bromofluorobenzene (S)	ND u 100 %	•	50.0 82-116	1 1		04/01/10 11:53 04/01/10 11:53		

Date: 04/22/2010 11:11 AM

**REPORT OF LABORATORY ANALYSIS** 

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Project: 2705191 449 Hegenberger

Pace Project No.: 253372

QC Batch: OEXT/2058 Analysis Method: EPA 8015B
QC Batch Method: EPA 3510 Modified Analysis Description: EPA 8015B

Associated Lab Samples: 253372001, 253372002

METHOD BLANK: 24955 Matrix: Water

Associated Lab Samples: 253372001, 253372002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO (C10-C24)	ug/L	ND	40.0	03/31/10 20:33	
n-Octacosane (S)	%	104	26-152	03/31/10 20:33	
o-Terphenyl (S)	%	92	50-150	03/31/10 20:33	

LABORATORY CONTROL SAMPLE:	24956					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
TPH-DRO (C10-C24)	ug/L	2500	1830	73	51-147	
n-Octacosane (S)	%			96	26-152	
o-Terphenyl (S)	%			86	50-150	

MATRIX SPIKE & MATRIX S	24958										
			MS	MSD							
		253372001	Spike	Spike	MS	MSD	MS	MSD	% Rec		
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	Qual
TPH-DRO (C10-C24)	ug/L	82.2	2380	2400	1720	1620	69	64	51-147	6	
n-Octacosane (S)	%						90	91	26-152		
o-Terphenyl (S)	%						83	83	50-150		





Project: 2705191 449 Hegenberger

Pace Project No.: 253372

QC Batch: MPRP/1519
QC Batch Method: EPA 3010

Analysis Method: EPA 6010
Analysis Description: 6010 MET

Associated Lab Samples: 253372001, 253372002

METHOD BLANK: 25009 Matrix: Water

Associated Lab Samples: 253372001, 253372002

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Iron ug/L ND 100 03/31/10 16:04

LABORATORY CONTROL SAMPLE: 25010

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Iron ug/L 10000 10000 100 80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 25011 25012

MS MSD 253372001 Spike Spike MS MSD MS MSD % Rec Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual 2410 10000 10000 75-125 .5 Iron ug/L 11900 12000 95 96





Project: 2705191 449 Hegenberger

Pace Project No.: 253372

QC Batch: MPRP/1520

QC Batch Method: EPA 3010 Analysis Method:

EPA 6010

Analysis Description:

6010 MET Dissolved

Associated Lab Samples: 253372001, 253372002

METHOD BLANK: 25013

Matrix: Water

Associated Lab Samples:

253372001, 253372002

Blank Result Reporting

Parameter

Units

Limit Analyzed

Qualifiers

Iron, Dissolved

Iron, Dissolved

ug/L

Units

ug/L

ND

100 03/31/10 16:25

100

LABORATORY CONTROL SAMPLE: 25014

Parameter

Parameter

Spike Conc.

LCS Result

LCS % Rec % Rec Limits

80-120

Qualifiers

Iron, Dissolved ug/L

Units

9950

25016

10000

MS 253372001

365

MSD Spike

MS MSD Result Result

MS % Rec

MSD % Rec

% Rec Limits RPD

4

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

25015

Spike Result Conc.

Conc. 10000 10000

10500 10200 102

98

75-125

Qual





Project: 2705191 449 Hegenberger

Pace Project No.: 253372

QC Batch: MSV/2234 Analysis Method: EPA 8260

QC Batch Method: EPA 8260 Analysis Description: 8260 MSV MO GRO Oxygenates

Associated Lab Samples: 253372001, 253372002, 253372003

METHOD BLANK: 25122 Matrix: Water

Associated Lab Samples: 253372001, 253372002, 253372003

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Benzene	ug/L	ND ND	0.50	04/01/10 11:07	
Ethanol	ug/L	ND	250	04/01/10 11:07	
Ethylbenzene	ug/L	ND	0.50	04/01/10 11:07	
Methyl-tert-butyl ether	ug/L	ND	0.50	04/01/10 11:07	
Toluene	ug/L	ND	0.50	04/01/10 11:07	
Xylene (Total)	ug/L	ND	1.5	04/01/10 11:07	
1,2-Dichloroethane-d4 (S)	%	96	80-124	04/01/10 11:07	
4-Bromofluorobenzene (S)	%	100	80-120	04/01/10 11:07	
Toluene-d8 (S)	%	97	80-123	04/01/10 11:07	

LABORATORY CONTROL SAMPLE: 25123

Date: 04/22/2010 11:11 AM

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Benzene	ug/L	20	20.4	102	75-124	
Ethanol	ug/L	400	516	129	60-140	
Ethylbenzene	ug/L	20	20.0	100	76-124	
Methyl-tert-butyl ether	ug/L	20	18.8	94	72-130	
Toluene	ug/L	20	18.1	91	75-124	
Xylene (Total)	ug/L	60	58.1	97	76-123	
1,2-Dichloroethane-d4 (S)	%			97	80-124	
4-Bromofluorobenzene (S)	%			110	80-120	
Toluene-d8 (S)	%			86	80-123	

MATRIX SPIKE & MATRIX SP	IKE DUPLICAT	E: 25128			25129		·				
			MS	MSD							
	2	253361001	Spike	Spike	MS	MSD	MS	MSD	% Rec		
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	Qual
Benzene	ug/L	ND	20	20	23.4	22.1	117	111	75-124	6	
Ethanol	ug/L	ND	400	400	562	532	141	133	60-140	6	M0
Ethylbenzene	ug/L	ND	20	20	22.1	22.6	110	113	76-124	3	
Methyl-tert-butyl ether	ug/L	1.8	20	20	19.0	19.3	86	87	72-130	2	
Toluene	ug/L	ND	20	20	23.3	20.7	116	103	75-124	12	
Xylene (Total)	ug/L	ND	60	60	60.1	62.5	100	104	76-123	4	
1,2-Dichloroethane-d4 (S)	%						108	98	80-124		
4-Bromofluorobenzene (S)	%						98	93	80-120		
Toluene-d8 (S)	%						99	93	80-123		

**REPORT OF LABORATORY ANALYSIS** 

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Project: 2705191 449 Hegenberger

Pace Project No.: 253372

QC Batch: MSV/2235 Analysis Method: CA LUFT

QC Batch Method: CA LUFT Analysis Description: CA LUFT MSV GRO

Associated Lab Samples: 253372001, 253372003

METHOD BLANK: 25124 Matrix: Water

Associated Lab Samples: 253372001, 253372003

ParameterUnitsBlank ResultReporting LimitAnalyzedQualifiersTPH-Gasoline (C05-C12)ug/LND50.004/01/10 11:07

4-Bromofluorobenzene (S) % 100 82-116 04/01/10 11:07

LABORATORY CONTROL SAMPLE: 25125

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers TPH-Gasoline (C05-C12) ug/L 500 423 85 60-140 4-Bromofluorobenzene (S) % 94 82-116

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 25126 25127

MSD MS 253361001 Spike Spike MS MSD MS MSD % Rec Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** Qual ND TPH-Gasoline (C05-C12) ug/L 500 500 531 484 105 95 60-140 9 4-Bromofluorobenzene (S) % 107 98 82-116





Project: 2705191 449 Hegenberger

Pace Project No.: 253372

QC Batch: MSV/2249 Analysis Method: CA LUFT

QC Batch Method: CA LUFT Analysis Description: CA LUFT MSV GRO

Associated Lab Samples: 253372002

METHOD BLANK: 25361 Matrix: Water

Associated Lab Samples: 253372002

ParameterUnitsBlank Reporting ResultReporting LimitAnalyzedQualifiersTPH-Gasoline (C05-C12)ug/LND50.004/06/10 12:49

4-Bromofluorobenzene (S) % 102 82-116 04/06/10 12:49

LABORATORY CONTROL SAMPLE: 25362

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers TPH-Gasoline (C05-C12) ug/L 500 461 92 60-140 4-Bromofluorobenzene (S) % 104 82-116

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 25467 25468

MSD MS 253420001 Spike Spike MS MSD MS MSD % Rec Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits **RPD** Qual ND TPH-Gasoline (C05-C12) ug/L 500 500 438 389 87 77 60-140 12 4-Bromofluorobenzene (S) % 102 101 82-116





2705191 449 Hegenberger Project:

Pace Project No.: 253372

Date: 04/22/2010 11:11 AM

QC Batch: WETA/1465 Analysis Method: QC Batch Method: EPA 300.0

Analysis Description:

EPA 300.0 300.0 IC Anions

Associated Lab Samples: 253372001, 253372002

METHOD BLANK: 25340 Matrix: Water

Associated Lab Samples: 253372001, 253372002

> Blank Reporting

Parameter Limit Qualifiers Units Result Analyzed

Sulfate ND 1.0 04/08/10 01:16 mg/L

LABORATORY CONTROL SAMPLE: 25341

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Sulfate mg/L 14.9 90-110

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 25342 25343

MS MSD 253372001 Spike Spike MS MSD MS MSD % Rec Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD

Sulfate 73.6 150 8 E,M1 mg/L 150 229 248 103 116 90-110

Qual



REPORT OF LABORATORY ANALYSIS



Project: 2705191 449 Hegenberger

Pace Project No.: 253372

QC Batch: WETA/1454 Analysis Method: EPA 353.2

QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, preserved

Associated Lab Samples: 253372001, 253372002

METHOD BLANK: 24935 Matrix: Water

Associated Lab Samples: 253372001, 253372002

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Nitrogen, NO2 plus NO3 ug/L ND 50.0 04/05/10 13:53

LABORATORY CONTROL SAMPLE: 24936

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Nitrogen, NO2 plus NO3 ug/L 1000 1060 106 90-110

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 24937 24938

MSD MS 253349001 Spike Spike MS MSD MS MSD % Rec Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual Nitrogen, NO2 plus NO3 0.15 1000 90-110 3 M1 ug/L 1000 358 346 21 20 mg/L





Project: 2705191 449 Hegenberger

Pace Project No.: 253372

Date: 04/22/2010 11:11 AM

QC Batch: WETA/1455 Analysis Method: SM 4500-NO2 B

QC Batch Method: SM 4500-NO2 B Analysis Description: SM4500NO2-B, Nitrite, unpres

Associated Lab Samples: 253372001, 253372002

METHOD BLANK: 25004 Matrix: Water

Associated Lab Samples: 253372001, 253372002

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Nitrite as N ug/L ND 10.0 03/31/10 10:45

LABORATORY CONTROL SAMPLE: 25005

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Nitrite as N ug/L 49.1 98 90-110

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 25006 25007

MS MSD 253372001 Spike Spike MS MSD MS MSD % Rec Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual 18.7 71-109 2 H1,M1

Nitrite as N ug/L 18.7 50 50 48.2 49.0 59 61 71-109 2 H1,M1





### **QUALIFIERS**

Project: 2705191 449 Hegenberger

Pace Project No.: 253372

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

### **LABORATORIES**

PASI-S Pace Analytical Services - Seattle

### **ANALYTE QUALIFIERS**

	· · · · · · · · · ·-
1n	Reanalysis, direct injection from each bottle, and re-digestion (all performed on 4/5/10) confirmed the dissolved fraction being slightly (<5x RDL) higher than the total fraction.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H1	Analysis conducted outside the EPA method holding time.
MO	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.
S5	Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).





### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 2705191 449 Hegenberger

Pace Project No.: 253372

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
253372001 253372002	MW-10_20100331 MW-6_20100331	EPA 3510 Modified EPA 3510 Modified	OEXT/2058 OEXT/2058	EPA 8015B EPA 8015B	GCSV/1550 GCSV/1550
253372001 253372002	MW-10_20100331 MW-6_20100331	EPA 3010 EPA 3010	MPRP/1519 MPRP/1519	EPA 6010 EPA 6010	ICP/1443 ICP/1443
253372001 253372002	MW-10_20100331 MW-6_20100331	EPA 3010 EPA 3010	MPRP/1520 MPRP/1520	EPA 6010 EPA 6010	ICP/1444 ICP/1444
253372001 253372002 253372003	MW-10_20100331 MW-6_20100331 TB1_20100331	EPA 8260 EPA 8260 EPA 8260	MSV/2234 MSV/2234 MSV/2234		
253372001	MW-10_20100331	CA LUFT	MSV/2235		
253372002 253372003	MW-6_20100331 TB1_20100331	CA LUFT CA LUFT	MSV/2249 MSV/2235		
253372001 253372002	MW-10_20100331 MW-6_20100331	EPA 300.0 EPA 300.0	WETA/1465 WETA/1465		
253372001 253372002	MW-10_20100331 MW-6_20100331	EPA 353.2 EPA 353.2	WETA/1454 WETA/1454		
253372001 253372002	MW-10_20100331 MW-6_20100331	SM 4500-NO2 B SM 4500-NO2 B	WETA/1455 WETA/1455		



# Attachment E

Waste Disposal Manifest

# NOT YAZARDOUS WASTE MANIFEST

	Pleas	e print or type (Form designed for use on elite (1	2 pitch (ypewriter)	· ·····	<u> </u>						
		NON-HAZARDOUS WASTE MANIFEST	Generator's US EPA ID No.	na		Manifest Document No	150-1912054	2. P	Page 1		
		3. Generator's Name and Mailing Address	PCLF AYM	nen murtida 687 mue sout MA 98023	$\bigcirc$	Six # 2705191					
	33	At 200 232	39000	681-14062000		449	449 Hesenbersuled				
		4. Generator's Phone (618 ) 399 - 392	R KONH	CKOAL HANY			illiand,	<u>/C/14</u>	94621		
		5. Transporter 1 Company Name  5. CUVE LCW SE	٠.	US EPA ID Number		A. State Trans	• • • • • • • • • • • • • • • • • • • •				
		7. Transporter 2 Company Name		Land of the Land		B. Transporter		882-	7472		
		7. Transporter 2 Company Name	8. 1	US EPA ID Number		C. State Trans	·				
		Designated Facility Name and Site Address	10.	US EPA ID Number		D. Transporter		<del></del>	•		
		SPADEA ENVIOR	artal ""	O3 EAN ID NOMBE		E. State Facilii	y's ID				
		Scapet Environm 700 Scapot Blvo	<b>1</b> ·	10001357	)_	F. Facility's Ph	one .		· · · · · · · · · · · · · · · · · · ·		
		Bedwood Coby, CE	2940631	0" 100		C.	\$\$O-36€	<i>∮/</i> ≀	024		
		11, WASTE DESCRIPTION	<del>/   -             -     -     -   -   -     -  </del>		12. Co	nlainers	13.	<del>' '</del>	14.		
	. A 2				No.	Туре	Total Quantity		Unit Wt./Vol.		
		а.	-								
		alon Hazardons	Swandwate	,	į,	TT	12		9		
	G	b.	-								
	E								•		
÷	E	c.									
	R A	C.		_							
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		G. Additional Descriptions for Materials Listed Above				H. Handling Co	odes for Wasles Listed A	bove			
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Ą	翠	15. Special Handling Instructions and Additional Infor	mation								
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	2.30	<ol> <li>GENERATOR'S CERTIFICATION: I hereby certi- in proper condition for transport. The materials de</li> </ol>	ly that the contents of this shipmen scribed on this manifest are not so	nt are fully and accurately described a	and are in a	ıli respecis					
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	1-R	17. Transporter 1 Acknowledgement of Receipt of Ma	iterials		A			n	ate		
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	1	20. Facility Owner or Operator, Certification of receipt	of the waste materials covered by	y this manifest, except as noted in iter	n 19.						
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