ExxonMobil

Environmental Services Company

4096 Piedmont Avenue #194 Oakland, CA 94611 510.547.8196 510.547.8706 FAX jennifer.c.sedlachek@exxonmobil.com

RECEIVED

2:36 pm, Mar 02, 2009

Alameda County
Environmental Health

Jennifer C. Sedlachek

Project Manager



February 25, 2009

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

Subject: Former Mobil Station 04334, 2492 Castro Valley Boulevard, Castro Valley, California

Dear Ms. Jakub:

Attached for your review and comment is a copy of the *Report of Groundwater Monitoring, First Quarter 2009* for the above-referenced site. The report, prepared by ETIC Engineering, Inc. of Pleasant Hill, California, details the results of the January 2009 sampling event.

Upon information and belief, I declare, under penalty of perjury, that the information contained in the attached report is true and correct.

If you have any questions or comments, please contact me at 510.547.8196.

Sincerely,

Jennifer C. Sedlachek

Project Manager

Attachment: ETIC Groundwater Monitoring Report

c: w/ attachment:

Ms. Paula Floeck - Jiffy Lube International

Mr. Joseph D. Phillips – Jiffy Lube Remediation Coordinator

Mr. William Slautterback - Cal Lube Real Estate Limited Partnership

Mr. William Peterson - Owner of Castro Valley Lumber Company

c: w/o attachment:

Mr. Bryan Campbell - ETIC Engineering, Inc.



Report of Groundwater Monitoring First Quarter 2009

Former Mobil Station 04334 2492 Castro Valley Boulevard Castro Valley, California

Prepared for

ExxonMobil Oil Corporation

Prepared by

ETIC Engineering, Inc. 2285 Morello Avenue Pleasant Hill, California 94523 (925) 602-4710

K. Erik Appel, P.G. #8092 Senior Project Geologist

OF CALIFO

Kristopher Erik Appel

No. 8092

February 2009

SITE CONTACTS

Site Name: Former Mobil Station 04334

Site Address: 2492 Castro Valley Boulevard

Castro Valley, California

ExxonMobil Project Manager: Jennifer C. Sedlachek

ExxonMobil Environmental Services Company

4096 Piedmont Avenue #194 Oakland, California 94611

(510) 547-8196

Consultant to ExxonMobil: ETIC Engineering, Inc.

2285 Morello Avenue

Pleasant Hill, California 94523

(925) 602-4710

K. Erik Appel ETIC Project Manager:

Regulatory Oversight: Barbara Jakub

Alameda County Health Care Services Agency 1131 Harbor Bay Parkway, 2nd Floor

Alameda, California 94502

(510) 567-6700

INTRODUCTION

ETIC Engineering, Inc. (ETIC) has prepared this quarterly groundwater monitoring report for ExxonMobil Environmental Services Company on behalf of ExxonMobil Oil Corporation for the former Mobil Station 04334. This report presents the results for the most recent groundwater monitoring conducted at the site and summarizes recent site activities. This report covers site activities from 7 November 2008, the date of the previous monitoring event to 29 January 2009, the date of the most recent monitoring event. Groundwater monitoring results, well construction details, and a groundwater monitoring plan are provided in the attached figures and tables. Groundwater monitoring protocols, field data, and analytical results are provided in the attached appendixes.

GENERAL SITE INFORMATION

Site name: Former Mobil Station 04334

Site address: 2492 Castro Valley Boulevard, Castro Valley, California

Current property owner: Cal Lube Real Estate Limited Partnership

Current site use: Jiffy Lube Oil Change facility

Current phase of project: Groundwater monitoring

Tanks at site: Four former underground storage tanks removed 1983

Number of wells: 4 (3 onsite, 1 offsite)

GROUNDWATER MONITORING SUMMARY

Gauging and sampling date: 29 January 2009
Wells gauged and sampled: MW1-MW4

Wells gauged only:

Groundwater flow direction:

Groundwater gradient:

Well screens submerged:

None

Well screens not submerged: MW1, MW2, MW3, MW4
Liquid-phase hydrocarbons: Not observed or detected

Laboratory: Calscience Environmental Laboratories, Inc., Garden Grove,

California

Analyses performed:

- Total Petroleum Hydrocarbons as gasoline and as diesel by EPA Method 8015B
- Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8021B
- Methyl tertiary butyl ether by EPA Method 8260B

ADDITIONAL ACTIVITIES PERFORMED

On 29 and 30 January 2009, one offsite well was installed. A well installation report will be submitted under separate cover and the well will be added to the groundwater monitoring plan.

WORK PROPOSED FOR NEXT QUARTER

Groundwater will be monitored in accordance with the attached groundwater monitoring plan.

Attachments:

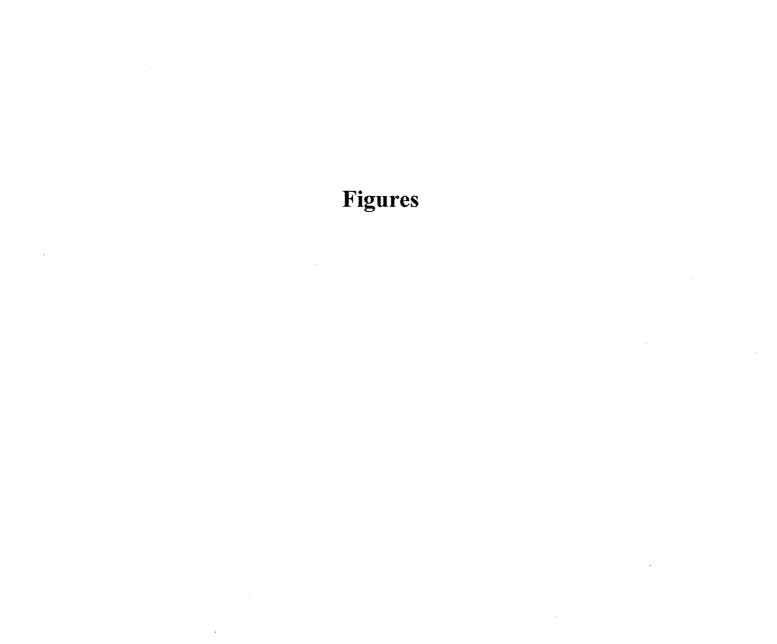
Figure 1: Site Map Showing Groundwater Elevations and Contours

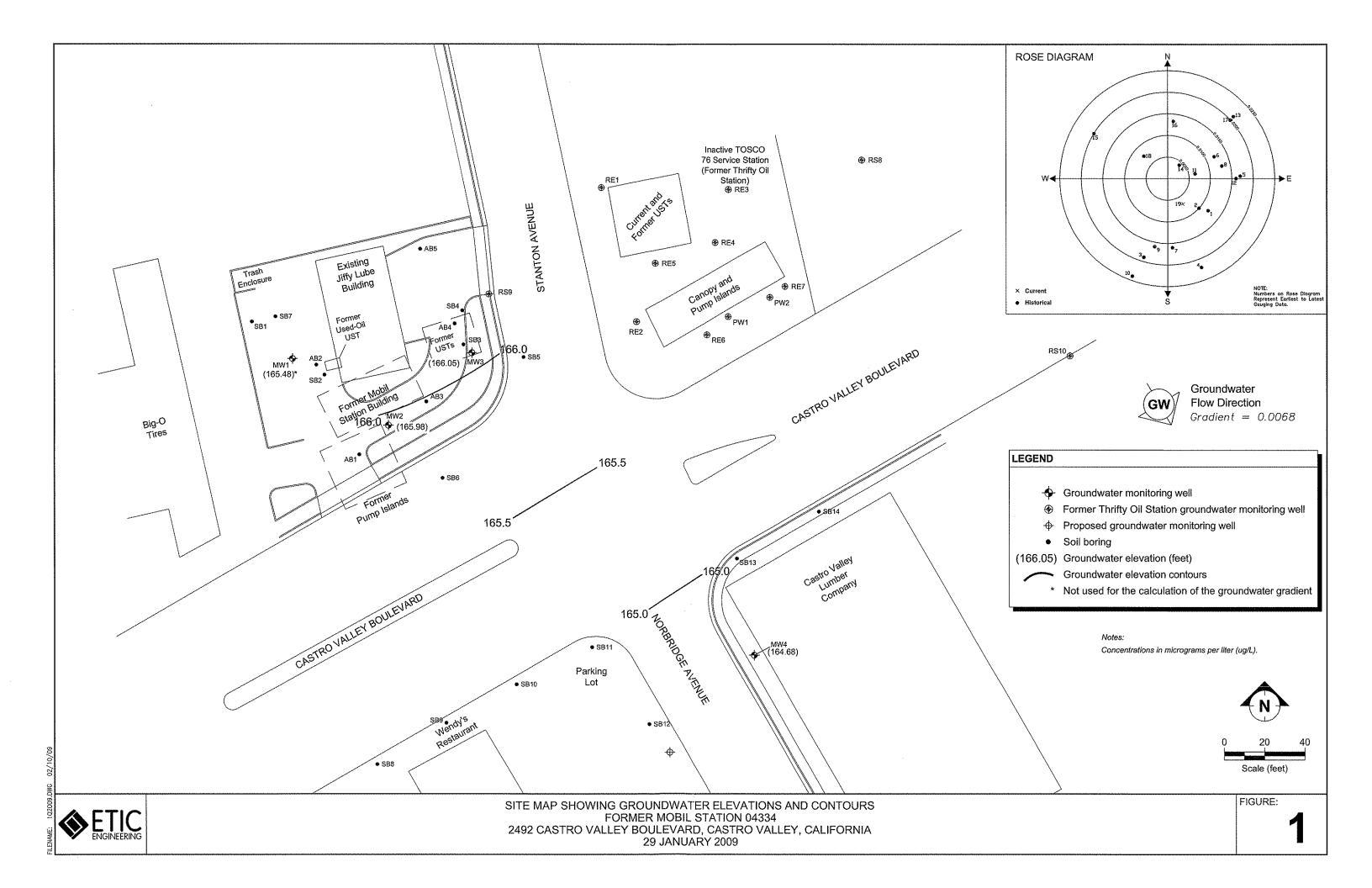
Figure 2: Site Map Showing Analytical Results

Table 1: Well Construction DetailsTable 2: Groundwater Monitoring DataTable 3: Groundwater Monitoring Plan

Appendix A: Field Protocols Appendix B: Field Documents

Appendix C: Laboratory Analytical Reports and Chain-of-Custody Documentation





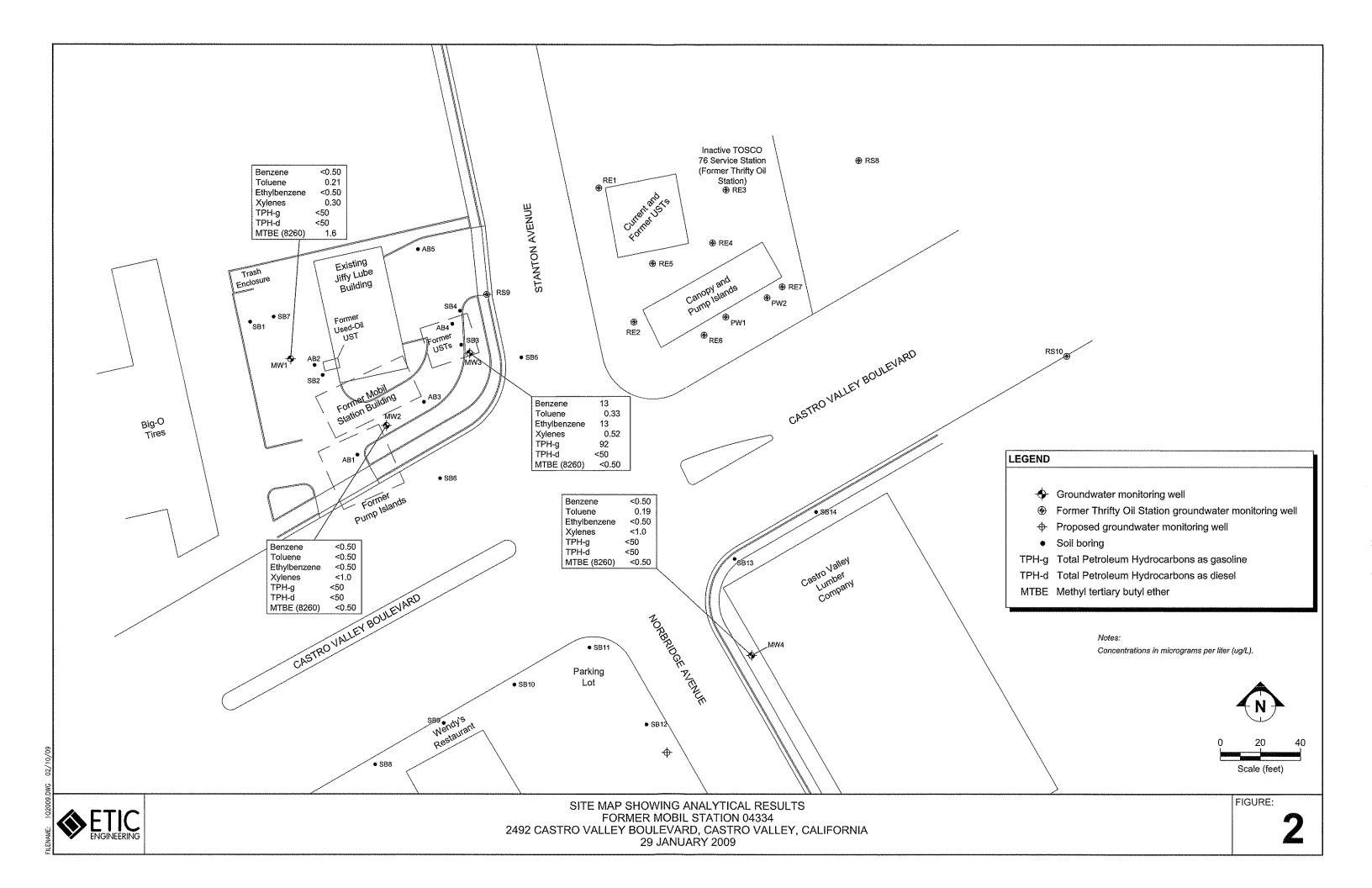




TABLE 1 WELL CONSTRUCTION DETAILS, FORMER MOBIL STATION 04334, 2492 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

Well Number		Well Installation Date	Elevation TOC (feet)	Casing Material	Total Depth (feet)	Well Depth (feet)	Borehole Diameter (inches)	Casing Diameter (inches)	Screened Interval (feet)	Slot Size (inches)	Filter Pack Interval (feet)	Filter Pack Material
MW1	а	06/24/04	173.23	PVC	20	20	8.25	2	5 - 20	0.010	4.5 - 20	#2/12 Sand
MW2	a	06/25/04	173.63	PVC	20	20	8.25	2	5 - 20	0.010	4.5 - 20	#2/12 Sand
MW3	a	06/25/04	171.91	PVC	20	20	8.25	2	5 - 20	0.010	4.5 - 20	#2/12 Sand
MW4	a	06/24/04	170.48	PVC	15	14	8.25	2	4 - 14	0.010	3.5 - 15	#2/12 Sand

Notes:

a Well surveyed on 12 July 2004 by Morrow Surveying.

PVC Polyvinyl chloride.

TOC Top of casing.

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04334, 2492 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

			Top of Casing	Depth to	Groundwater							
			Elevation	Water	Elevation			Ethyl-	Total			
Well ID		Date	(feet)	(feet)	(feet)	Benzene	Toluene	benzene	Xylenes	TPH-g	TPH-d	MTBE
MW1	a	08/13/04	173.23	7.32	165.91	< 0.5	0.7	< 0.5	1.0	<50	71	1.20 ^b
MW1		11/09/04	173.23	6.96	166.27	< 0.5	0.9	< 0.5	0.9	< 50	63	1.50 ^b
MW1		02/16/05	173.23	6.10	167.13	< 0.5	1.0	< 0.5	1.5	< 50	78	1.30 ^b
MW1		05/16/05	173.23	5.81	167.42	< 0.5	< 0.5	< 0.5	< 0.5	<50	<50	1.40 ^b
MW1		08/17/05	173.23	6.70	166.53	< 0.5	< 0.5	< 0.5	< 0.5	< 50	<50	1.19 ^b
MW1		11/15/05	173.23	7.55	165.68	< 0.5	< 0.5	< 0.5	< 0.5	<50	<50	1.13 ^b
MW1		02/06/06	173.23	6.40	166.83	< 0.5	< 0.5	< 0.5	< 0.5	< 50	160	<0.5 ^b
MW1		05/03/06	173.23	6.95	166.28	<1.00	<1.00	<1.00	<3.00	< 50.0	78	<0.50 b
MW1		08/04/06	173.23	7.71	165.52	< 0.50	< 0.50	< 0.50	< 0.50	<50.0	167	<0.500 b
MW1		11/06/06	173.23	7.57	165.66	< 0.50	< 0.50	< 0.50	< 0.50	<50.0	<47.2	0.880 ^b
MW1		02/21/07	173.23	7.19	166.04	< 0.50	< 0.50	< 0.50	< 0.50	<50.0	<46.9	2.42 ^b
MW1		08/01/07	173.23	8.00	165.23	3.02	4.18	0.89	3.96	90.8	<47	1.54 ^b
MW1		10/25/07	173.23	7.90	165.33	< 0.50	< 0.50	< 0.50	< 0.50	<50.0	<47.2	1.63 ^b
MW1		01/31/08	173.23	6.60	166.63	< 0.50	< 0.50	< 0.50	< 0.50	< 50	< 50	1.8 ^b
MWI		05/01/08	173.23	7.80	165.43	<1.00	<1.00	<1.00	<3.00	<50.0	<47.2	1.67 ^b
MWI		07/31/08	173.23	8.15	165.08	< 0.50	< 0.50	< 0.50	< 0.50	<50	<47	1.7 ^b
MW1		11/07/08	173.23	8.11	165.12	< 0.50	< 0.50	< 0.50	< 0.50	<50	<47	1.4 ^b
MW1		01/29/09	173.23	7.75	165.48	< 0.50	0.21 ^{e,f}	< 0.50	$0.30^{e,f}$	< 50	< 50	1.6 ^b
MW2	a	08/13/04	173.63	6.96	166.67	< 0.5	0.8	< 0.5	1.0	<50	57	<0.5 ^b
MW2		11/09/04	173.63	6.44	167.19	< 0.5	1.1	< 0.5	1.2	<50	< 50	<0.5 b
MW2		02/16/05	173.63	5.21	168.42	< 0.5	0.9	< 0.5	1.4	<50	55	<0.5 ^b
MW2		05/16/05	173.63	5.86	167.77	< 0.5	< 0.5	< 0.5	< 0.5	< 50	<50	<0.5 ^b
MW2		08/17/05	173.63	5.72	167.91	< 0.5	< 0.5	< 0.5	< 0.5	< 50	<50	<0.5 ^b
MW2		11/15/05	173.63	7.65	165.98	< 0.5	< 0.5	< 0.5	< 0.5	< 50	< 50	<0.5 ^b
MW2		02/06/06	173.63	6.24	167.39	< 0.5	< 0.5	< 0.5	< 0.5	< 50	<50	<0.5 ^b
MW2		05/03/06	173.63	6.53	167.10	<1.00	<1.00	<1.00	<3.00	<50.0	<50	<0.50 ^b

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04334, 2492 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

		Top of Casing	Depth to	Groundwater							
		Elevation	Water	Elevation	****		Ethyl-	Total			
Well ID	Date	(feet)	(feet)	(feet)	Benzene	Toluene	benzene	Xylenes	TPH-g	TPH-d	MTBE
											1.
MW2	08/04/06	173.63	7.65	165.98	< 0.50	< 0.50	< 0.50	< 0.50	<50.0	<47.2	<0.500 ^b
MW2	11/06/06	173.63	6.98	166.65	< 0.50	< 0.50	< 0.50	< 0.50	<50.0	<46.9	<0.500 ^b
MW2	02/21/07	173.63	6.36	167.27	< 0.50	< 0.50	< 0.50	< 0.50	<50.0	<46.9	1.70 ^b
MW2	05/01/07	173.63	7.51	166.12	< 0.50	< 0.50	< 0.50	< 0.50	<50.0	<46.9	<0.50 ^b
MW2	08/01/07	173.63	8.12	165.51	< 0.50	< 0.50	< 0.50	< 0.50	<50.0	<47	<0.500 ^b
MW2	10/25/07	173.63	7.79	165.84	< 0.50	< 0.50	< 0.50	< 0.50	<50.0	<47.2	<0.500 ^b
MW2	01/31/08	173.63	5.89	167.74	< 0.50	< 0.50	< 0.50	< 0.50	<50	<50	0.82 ^b
MW2	05/01/08	173.63	7.81	165.82	<1.00	<1.00	<1.00	<3.00	<50.0	<47.2	<0.500 ^b
MW2	07/31/08	173.63	8.30	165.33	< 0.50	< 0.50	< 0.50	< 0.50	< 50	<47	<0.50 ^b
MW2	11/07/08	173.63	8.09	165.54	< 0.50	< 0.50	< 0.50	< 0.50	< 50	<47	<0.50 ^b
MW2	01/29/09	173.63	7.65	165.98	< 0.50	< 0.50	< 0.50	<1.0	< 50	< 50	<0.50 ^b
MW3	a 08/13/04	171.91	5.36	166.55	100	2.0	187	59.6	1,440	352	<0.5 ^b
MW3	11/09/04	171.91	4.80	167.11	188	3.6	242	20.0	1,690	461	<0.5 b
MW3	02/16/05	171.91	3.10	168.81	66.2	1.4	61.1	12.6	575	269	<0.5 ^b
MW3	05/16/05	171.91	3.86	168.05	74.2	1.4	61.0	9.0	592	92	<0.5 ^b
MW3	08/17/05	171.91	4.75	167.16	231 ^e	2.35	102	11.4	1,130	416	<0.5 b
MW3	11/15/05	171.91	6.56	165.35	57.4	0.95	62.4	10.5	452	193	<0.5 ^b
MW3	02/06/06	171.91	4.00	167.91	69	< 5.0	64	10	830	165	<0.5 ^b
MW3	05/03/06	171.91	5.44	166.47	52.1	<1.00	37.0	4.81	605	140	<0.50 ^b
MW3	08/04/06	171.91	5.25	166.66	15.2	< 0.50	5.34	1.25	262	108	<0.500 ^b
MW3	11/06/06	171.91	4.11	167.80	60.0	1.04	47.3	3.09	561	106	<0.500 b
MW3	02/21/07	171.91	4.94	166.97	35.1	< 0.50	45.4	1.09	483	125	<0.500 ^b
MW3	05/01/07	171.91	5.86	166.05	32.5	1.63	28.7	1.53	539	120	<0.50 ^b
MW3	08/01/07	171.91	7.54	164.37	1.26	0.60	< 0.50	< 0.50	89.2	<47	<0.500 ^b
MW3	10/25/07	171.91	6.30	165.61	2.94	< 0.50	< 0.50	< 0.50	50.4	<47.2	<0.500 ^b
MW3	01/31/08	171.91	3.75	168.16	10	< 0.50	11	< 0.50	120	51 ^d	<0.50 ^b

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04334, 2492 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

		Top of Casing	Depth to	Groundwater			Cor	ncentration (με	g/L)		
		Elevation	Water	Elevation			Ethyl-	Total			
Well ID	Date	(feet)	(feet)	(feet)	Benzene	Toluene	benzene	Xylenes	TPH-g	TPH-d	MTBE
											L
MW3	05/01/08	171.91	6.60	165.31	2.38	<1.00	<1.00	<3.00	<50.0	<47.2	< 0.500 ^b
MW3	07/31/08	171.91	7.77	164.14	< 0.50	< 0.50	< 0.50	< 0.50	<50	<47	<0.50 ^b
MW3	11/07/08	171.91	6.34	165.57	3.6	< 0.50	1.4	< 0.50	<50	<47	<0.50 ^b
MW3	01/29/09	171.91	5.86	166.05	13	0.33 ^e	13	0.52 ^{e,f}	92	<50	<0.50 ^b
MW4	a 08/13/04	170.48	6.10	164.38	<0.5	0.8	<0.5	1.1	<50	72	2.80 ^b
MW4	11/09/04	170.48	5.54	164.94	< 0.5	2.3	0.7	1.5	<50	<50	2.10 b
MW4	02/16/05	170.48	5.11	165.37	< 0.5	1.1	< 0.5	1.7	<50	<50	<0.5 ^b
MW4	05/16/05	170.48	5.44	165.04	< 0.5	< 0.5	< 0.5	< 0.5	<50	<50	<0.5 b
MW4	08/17/05	170.48	5.71	164.77	< 0.5	< 0.5	< 0.5	< 0.5	<50	<50	1.03 b
MW4	11/15/05	170.48	5.80	164.68	< 0.5	< 0.5	< 0.5	< 0.5	<50	<50	0.730 ^b
MW4	02/06/06	170.48	5.10	165.38	< 0.5	< 0.5	< 0.5	< 0.5	<50	85.2	<0.5 b
MW4	05/03/06	170.48	5.54	164.94	<1.00	<1.00	<1.00	<3.00	<50.0	<47	<0.50 b
MW4	08/04/06	170.48	5.75	164.73	< 0.50	< 0.50	< 0.50	< 0.50	<50.0	52.7	<0.500 b
MW4	11/06/06	170.48	5.95	164.53	< 0.50	< 0.50	< 0.50	< 0.50	<50.0	<47.2	<0.500 ^b
MW4	02/21/07	170.48	5.56	164.92	< 0.50	< 0.50	< 0.50	< 0.50	<50.0	<46.9	<0.500 ^b
MW4	05/01/07	170.48	5.66	164.82	< 0.50	< 0.50	< 0.50	< 0.50	<50.0	<46.9	<0.50 b
MW4	08/01/07	170.48	6.06	164.42	0.85	< 0.50	< 0.50	0.97	<50.0	<47	<0.870 ^b
MW4	10/25/07	170.48	5.34	165.14	< 0.50	< 0.50	< 0.50	< 0.50	<50.0	<47.2	<0.500 ^b
MW4	01/31/08	170.48	5.05	165.43	< 0.50	< 0.50	< 0.50	< 0.50	< 50	<47	<0.50 ^b
MW4	05/01/08	170.48	5.86	164.62	<1.00	<1.00	<1.00	<3.00	<50.0	<47.2	< 0.500 ^b
MW4	07/31/08	170.48	6.10	164.38	< 0.50	< 0.50	< 0.50	< 0.50	<50	<47	< 0.50 ^b
MW4	11/07/08	170.48	5.65	164.83	< 0.50	< 0.50	< 0.50	< 0.50	<50	<47	<0.50 ^b
MW4	01/29/09	170.48	5.80	164.68	< 0.50	$0.19^{e,f}$	< 0.50	<1.0	<50	<50	<0.50 ^b

Notes: Depth-to-water-level measurements in feet from top-of-casing.

a Top-of-casing elevation surveyed by Morrow Surveying on 12 July 2004.

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04334, 2492 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

		Top of Casing	Depth to	Groundwater			Cor	ncentration (µg	g/L)			
		Elevation	Water	Elevation			Ethyl-	Total				
Well ID	Date	(feet)	(feet)	(feet)	Benzene	Toluene	benzene	Xylenes	TPH-g	TPH-d	MTBE	
L.	A malaurad h	r EDA Mothod 92	60									
b		y EPA Method 82		d calibration rand	ro Poonoliusia	not norforme	ad dua to boldi	na tima raauir	amanto			
c		on estimated. Ana	*	a canoration rang	ge. Realialysis	s not periorine	ed due to notal	ng ume requi	cincins.			
d	Does not match typical pattern. Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.											
e	•						ory method de	tection limit. I	Reported value	e is estimated.		
f	Analyte pre	sence was not con	firmed by se	cond column or C	C/MS analys	is.						
MTBE	Methyl terti	ary butyl ether.										
TPH-d	-	eum Hydrocarbon	s as diesel.									
TPH-g		eum Hydrocarbon		<u>.</u>								
~~~~ &	10.001		<i></i>	•								
μg/L	Micrograms	s per liter.										

TABLE 3 GROUNDWATER MONITORING PLAN, FORMER MOBIL STATION 04334, 2492 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

Well	Groundwater Gauging	Groundwater Sampling and	Analysis Frequency
Number	Frequency	BTEX, TPH-g, and TPH-d	MTBE
MW1	Q	Q	Q
MW2	Q	Ò	ò
MW3	Q	Q	Q
MW4	Q	Q	Q
Notes:			<u> </u>
BTEX	Benzene, toluene, ethylbenzene,	and xylenes.	
MTBE	Methyl tertiary butyl ether.	•	
Q	Quarterly.		
TPH-d	Total Petroleum Hydrocarbons a	as diesel.	
TPH-g	Total Petroleum Hydrocarbons a	as gasoline.	

Appendix A

**Field Protocols** 

#### PROTOCOLS FOR QUARTERLY GROUNDWATER MONITORING

#### GROUNDWATER GAUGING

Wells are opened prior to gauging to allow the groundwater level in the wells to equilibrate with atmospheric pressure. The depth to groundwater and depth to liquid-phase hydrocarbons, if present, are then measured to the nearest 0.01 feet using an electronic water level meter or optical interface probe. The measurements are made from a permanent reference point at the top of the well casing. If less than 1 foot of water is measured in a well, the water is bailed from the well and, if the well does not recover, the well is considered "functionally dry." Wells with a sheen or measurable liquid-phase hydrocarbons are generally not purged or sampled.

#### WELL PURGING

After the wells are gauged, each well is purged of approximately 3 well casing volumes of water to provide representative groundwater samples for analysis. Field parameters of pH, temperature, and electrical conductance are measured during purging to ensure that these parameters have stabilized before groundwater in a well is sampled. Groundwater in each well is purged using an inertial pump (WaTerra), an electric submersible pump, or a bailer. After the well is purged, the water level is checked to ensure that the well has recharged to at least 80 percent of its original water level.

#### **GROUNDWATER SAMPLING**

After purging, groundwater in each well is sampled using dedicated tubing and an inertial pump (WaTerra) or a factory-cleaned disposable bailer. Samples from extraction wells are typically collected from sample ports associated with the groundwater remediation system. Samples collected for volatile organic analysis are placed in Teflon septum-sealed 40-milliliter glass vials. Samples collected for diesel analysis are placed in 1-liter amber glass bottles. Each sample bottle is labeled with the site name, well number, date, sampler's initials, and preservative. The samples are placed in a cooler with ice for delivery to a state-certified laboratory. The information for each sample is entered on a chain-of-custody form prior to transport to the laboratory.

# Appendix B Field Documents



## MONITORING WELL DATA FORM

Client: Former	Exxon 04334				Date: 01/07/07			
Project Number:	UP04334.1.6			į	Station Number	: 04334		
Site Location:	2492	Castro Valle	y Boulevard, ey, California		Samplers:	swlow?		
MONITORING WELL NUMBER	DEPTH TO WATER (TOC)FT.	DEPTH TO PRODUCT (TOC)FT.	APPARENT PRODUCT THICKNESS (FT.)	AMOUNT OF PRODUCT REMOVED(L)	MONITORING WELL INTEGRITY	DEPTH TO BOTTOM (TOC)	WELL CASING DIAMETER	
MW1	7.75					19.70	2"	
MW2	7,65					20.06	2"	
MW3	5.86					19.96	2"	
MW4	5.80			P		14.00	2"	



### **GROUNDWATER PURGE AND SAMPLE FORM**

Project Name:	Exxon 04334	· · · · · · · · · · · · · · · · · · ·		Well No:	MWL	Date:	0//29	109
	UP04-334.1.6			Personnel:	-	BINDER	, .	
						1		
GAUGING DATA Water Level Mea	<b>\</b> asuring Method: <i>(</i>	WLM / IP		Measuring P	oint De	scription: TOC		
WELL PURGE	Total Depth (feet)	ON A BERCONA ZAG DESMONOS E MARGANDA I C	Water Column (feet)	Multiplier Casing Dia		Casing Volume (gal)	Total F Volume	
CALCULATION	19.70	7.75	) 11.95	1 (2) 4 0.04 0.16 0.6		1.91	§ 5·7	3
PURGING DATA Purge Method:	WATERRA /BAI	LER / SUB			Purg	e Rate:	GPM	
Time	0758	0801	0804					
Volume Purge (gal)	2.80	4.00	6.00					
Temperature ( C)	18.3	19.0	19.7		······································			
pH	6.85	6.92	6.99	<b></b>				
Spec.Cond.(umhos)	975	981	972					
Turbidity/Color	SILLIAM	SILLE	- Stary Leave					
Odor (Y/N)	M	VI	N					
Casing Volumes	1	2	3					
Dewatered (Y/N)	N	N						
Comments/Obse	rvations:							
SAMPLING DA	TΛ					- INCOMPANY		
Time Sampled:	0810		Approximate Dept	th to Water Du	ıring Saı	mpling: &.	(feet)	
Comments:								
Total Service Commonweal Conference	n tra - web no to re Coucel Japan, no see the Coucel Japan	e I maje de contravo das Galegos (Alexandras Carlos)	## American series and the control of the control o	a geography (August (1989))	and the second		e vedice at the	ingli Primire
Sample Number	Number of Society Containers	Container Type	Preservative	Volume I (mL or	Cartier and the same and the formation	Turbidity/ Color		lysis hod
MWI	6	Voa	HCL	40 m	nl .		TPH-g, BTE	EX, MTBE
MNI	2	AMBERS	HCL	1L	wnw		TP	H-D
Total Purge Vo	lume: 6	(gallons)		Disposal:	······································	SYSTEN	<u>1</u>	
Weather Condi			- Landing Company			BOLTS		N
		g at Time of Sam				CAP & LOCK (	<u> </u>	N
	ditions Requiring		NONE		••••	GROUT	<u> </u>	N
	ountered During P	urging and Sampl	ling: NM/F			WELL BOX. SECURED	<del>\</del>	N N
Comments: G:\Projects\ExxonMobil\Sir	tes\04334\Public\QM Pre-Field I	Folder\[04334 QAQC.xls]Sheet1				GLOUNED	1 /	1.4



#### **GROUNDWATER PURGE AND SAMPLE FORM**

MWZ Well No: Project Name: Exxon 04334 Personnel: TSINDER UP04-334.1.6 Project No: **GAUGING DATA** Measuring Point Description: TOC WLM 1 Water Level Measuring Methody Total Purge Casing Volume Depth to Water Water Column Multiplier for Total Depth WELL PURGE Volume (gal). Casing Diameter (gal) (feet) (feet) (feet) VOLUME CALCULATION 12.35 6 5.98 765 1.97 20.00 0.04 0.16 0.64 **PURGING DATA** Purge Rate: **GPM** WATERRA / BAILER / SUB Purge Method:/ 0833 0829 0835 Time 6.00 2.00 4.00 Volume Purge (gal) 19.1 186 19.5 Temperature (C) 6.95 7.03 7.01 pΗ 853 866 847 Spec.Cond (umhos) SUL CLEAR SITY ELEAR Turbidity/Color Odor (Y/N) Λ N Casing Volumes 2 3 1 Δŧ Ν Dewatered (Y/N) Comments/Observations: **SAMPLING DATA** Time Sampled: 0840 Approximate Depth to Water During Sampling: (feet) Comments: Volume Filled Analysis Number of Turbidity/ Color Sample Number Container Type Preservative Method (mL or L) Containers HCL. TPH-g, BTEX, MTBE Voa 40 ml 6 **AMBERS** HCL 1L TPH-D 2 Total Purge Volume: 6, Disposal: SYSTEM (gallons) **BOLTS** Ν Weather Conditions: d CAP & LOCK Ν Condition of Well Box and Casing at Time of Sampling: (V) **GROUT** Ν Well Head Conditions Requiring Correction: P) WELL BOX. Ν Problems Encountered During Purging and Sampling: SECURED Ν Comments:

G:\Projects\ExxonMobil\Sites\04334\Public\QM Pre-Field Folder\[04334 QAQC.xls]Sheet1



## GROUNDWATER PURGE AND SAMPLE FORM

Engineering, the.	- 04004			Nell No:	MW3	Date:	01/29/	09					
	Exxon 04334						0//						
Project No:	UP04-334.1.6			Personne	!:	TISIN DUR							
GAUGING DATA Water Level Mea		WLM / IP		Measurin	g Point Des	scription: TOC		CONTRACT OF THE PROPERTY OF TH					
WELL PURGE VOLUME	Total Depth (feet)	Depth to Water (feet)	Water Column (feet)		lier for Diameter	Casing Volume (gal)	Total Purg Volume (ga	al)					
CALCULATION	19.90	5.86	) 14.04		0.64 1.44	2.24	6.73	3					
PURGING DATA Purge Method:	WATERRA / BAI	LER / SUB			Purge	e Rate:	GPM						
Time													
Volume Purge (gal)	2,50	5.00	ブジ										
Temperature ( C)	18.6	18.7	18.9										
pH	7.17	6.93	7.00										
Spec.Cond.(umhos	1061	1057	10 11										
Turbidity/Color	SILVE	SIGNAP	SUTTLEAR										
Odor (Y/N)	N	Ň	N										
Casing Volumes	1	2	3										
Dewatered (Y/N)	N	^/	N										
Comments/Obse	ervations:												
	·												
SAMPLING DA	\TA												
Time Sampled:			Approximate Dep	th to Wate	r During Sar	npling: 💪 .	(feet)						
Comments:													
2006. ph/95000001000002440000004240000	7a (1984) 1984 1984 1984 1984 1984 1			I SAVALIE	ne Filled	S. D. Company	- Analysi	is					
Sample Numbe	Number of Containers	Container Type	Preservative		L or L)	Turbidity/ Color	Metho						
MW3	6	Voa	HCL	4	10 ml		TPH-g, BTEX, N	√TBE_					
MNB	2	AMBERS	HCL		1L		TPH-0	)					
								~~···					
		<u> </u>		1									
Total Purge Vo		(gallons)		Disposa	al:	SYSTEM							
Weather Cond						BOLTS	(P) / N						
	/ell Box and Casir					CAP & LOCK (	/Y) / N						
	nditions Requiring		NINE -			GROUT WELL BOX.	(Ý) / N						
	ountered During F	urging and Samp	oling: NoNE			SECURED	(A) / N						
Comments: G:\Projects\ExxonMobil\S	Comments: SECURED CY / N  G:Vrojects/Exxon/MobiRSites/04334/PublicQM Pre-Field Folder/[04334 QAQC.xls]Sheet1												

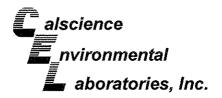
# **ETIC**ENGINEERING

## GROUNDWATER PURGE AND SAMPLE FORM

Project Name:	Exxon 04334			Well No: M/	<i>U9</i> Date:	01/29/09
Project No:	UP04-334.1.6			Personnel:	TOINDER	, I
GAUGING DAT	A					
	asuring Method: (	WLM / IP		Measuring Point	Description: TOC	
WELL PURGE	Total Depth (feet)	Depth to Water (feet)	Water Column (feet)	Multiplier for Casing Diamete	Casing Volume er (gal)	Total Purge Volume (gal)
CALCULATION	14.00	) 5.80	) g. <i>2</i> 0 ( <b>x</b>	1 2 4 0.04 0.16 0.64 1	6 1.31	<b>3</b> 3 9 3
PURGING DAT		),		· ·		
Purge Method:	WATERRA (BAI			Р	urge Rate:	GPM
Time	0950	0952	0955			
Volume Purge (gal)	i ' .	73.00	4.50			
Temperature ( C)	16.2	16.1	16			
pH	7.81	7.64	7.52			
Spec Cond.(umhos	1 / *	750	741			
Turbidity/Color	SIFT	SINT BROWN	SITTEROUN			
Odor (Y/N)	N	N	<b>N</b>			
Casing Volumes	1	2	3			
Dewatered (Y/N)	N1	Λ/	N			
Comments/Obse	rvations:					
	· · · · · · · · · · · · · · · · · · ·					
SAMPLING DA	TA					
Time Sampled:	1000		Approximate Dept	h to Water During	Sampling: 6	(feet)
Comments:	-					
vieriestrii oosii kurelii maat 2004 sa	or ratio reveniententia esera ese				Le de la companya de	Analysis
Sample Number	Number of Containers	Container Type	Preservative	Volume Filler (mL or L)	Turbidity/ Color	Method
MNY	6	Voa	HCL	40 ml		TPH-g, BTEX, MTBE
MWY	2	AMBERS	HCL	1L		TPH-D
,						
Total Purge Vo		(gallons)		Disposal:	SYSTEN	72
Weather Condi					BOLTS	(X) / N
	ell Box and Casin				CAP & LOCK (	XO/ / N
	ditions Requiring		NINE		GROUT	(X) / N
	ountered During P	urging and Sampl	ing: NINB		WELL BOX. ( SECURED	YOU N
Comments: G:\Projects\ExxonMobit\Si	tes\04334\Public\QM Pre-Field f	Folder\[04334 QAQC.xls]Sheet1			SECURED	1-/ 14

# Appendix C

**Laboratory Analytical Reports and Chain-of-Custody Documentation** 





February 09, 2009

Erik Appel ETIC Engineering, Inc. 2285 Morello Avenue Pleasant Hill. CA 94523-1850

Subject: Calscience Work Order No.: 09-01-2683

Client Reference: ExxonMobil 04334

#### Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 1/31/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

Note that the Chain-of-Custody Record and Sample Receipt Form are integral parts of this report.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Cecile & se Sovia

Calscience Environmental Laboratories, Inc. Cecile deGuia Project Manager





ETIC Engineering, Inc. 2285 Morello Avenue

Pleasant Hill, CA 94523-1850

Date Received:

Work Order No:

Preparation: Method:

01/31/09

09-01-2683 EPA 3510C

EPA 8015B (M)

Project: ExxonMobil 04334

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW1		08:10	Aqueous	GC 43	02/02/09	02/04/09 18:55	090202B16

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

<u>Parameter</u> Result RL **MDL** DF Qual <u>Units</u> ND 50 ug/L TPH as Diesel 47 1 REC (%) Control Limits Qual Surrogates:

Decachlorobiphenyl 85 68-140

MW2 09-01-2683-2-G 01/29/09 Aqueous GC 43 02/02/09 02/06/09 090202B16 08:40

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

 Parameter
 Result
 RL
 MDL
 DF
 Qual
 Units

 TPH as Diesel
 ND
 50
 47
 1
 ug/L

Surrogates: REC (%) Control Limits Qual

Decachlorobiphenyl 95 68-140

I MW3			.09-01	I-2683-3-G 01	29/09 Aqueo	ous GC 43	02/02/09 02/	06/09 0902021316
						DUS GC 43		
					09:15			5:34

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

 Parameter
 Result
 RL
 MDL
 DF
 Qual
 Units

 TPH as Diesel
 ND
 50
 47
 1
 ug/L

Surrogates: REC (%) Control Limits Qual

Decachlorobiphenyl 93 68-140

	09.01.2683_A.G. 01/29/09 Adulphus GC.43 02/02/09 09/202846
	09-01-2683-4-G 01/29/09 Agueous GC 43 02/02/09 UZ/04/09 090202B16
MW4	09-01-2683-4-G 01/29/09 Aqueous GC 43 02/02/09 ^{UZ/04/09} 090202B16
	10:00
	10:00

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

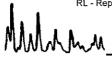
<u>Parameter</u> Result RL MDL. DF Qual <u>Units</u> TPH as Diesel ND 47 1 ug/L Surrogates: Control Limits Qual **REC (%)** 

Decachlorobiphenyl 97 68-140

RL - Reporting Limit

DF - Dilution Factor

Qual - Qualifiers







ETIC Engineering, Inc. 2285 Morello Avenue

Pleasant Hill, CA 94523-1850

Date Received:

Work Order No:

Preparation: Method:

01/31/09

09-01-2683

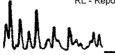
EPA 3510C

EPA 8015B (M)

Project: ExxonMobil 04334

Page 2 of 2

Client Sample Number		Lab Sampi Number	е	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
				NA	Aqueous		02/02/09	02/04/09 14:15	090202B16
Comment(s): -Results were evalu	ated to the MDL,	concentrations >	= to the	MDL but < Rt	_, if found, ar	e qualified with	n a "J" flag.	***************************************	
<u>Parameter</u>	Result	<u>RL</u>	MDL	į	DF	Qual	<u>Units</u>		
TPH as Diesel	ND	50	47	1			ug/L		
Surrogates:	REC (%)	Control Limits				Qual			
Decachlorobiphenyl	95	68-140							







ETIC Engineering, Inc. 2285 Morello Avenue

Pleasant Hill, CA 94523-1850

Date Received: Work Order No:

Preparation: Method: 01/31/09

09-01-2683 EPA 5030B EPA 8015B (M)

Project: ExxonMobil 04334

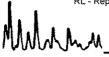
Page 1 of 2

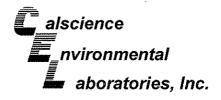
		Lab Sampl	le	Date/Time			Date	Date/Time	
Client Sample Number  MW1		Number 09-01-26	83-1-F	Onlected 01/29/09 08:10	Matrix Aqueous	Instrument GC 1	Prepared <b>02/04/09</b>	Analyzed 02/05/09 04:20	QC Batch ID 090204B02
Comment(s): -Results were ev	raluated to the MDL.	concentrations >	= to the		if found, ar	e qualified with	a "J" flag.	04.20	The second secon
Parameter	Result	RL	MDL		<u>DF</u>	Qual	Units		
TPH as Gasoline Surrogates:	ND REC (%)	50 Control Limits	48	1		<u>Qual</u>	ug/L		
1,4-Bromofluorobenzene	86	38-134							
MW2		09-01-26	83-2-F	01/29/09 08:40	Aqueous	GC1	02/04/09	02/05/09 02:12	090204B02
Comment(s): -Results were ev							•		,
<u>Parameter</u>	Result	<u>RL</u>	MDL	_	<u>DF</u>	Qual	<u>Units</u>		
TPH as Gasoline <u>Surrogates:</u>	ND <u>REC (%)</u>	50 Control Limits	48	1		Qual	ug/L		
1,4-Bromofluorobenzene	85	38-134							
MW3		09-01-26	83-3-F	01/29/09 09:15	Aqueous	GC 1	02/04/09	02/05/09 04:51	090204B02
Comment(s): -Results were ev						-	_		
<u>Parameter</u>	Result	<u>RL</u>	MDL.		<u>DF</u>	Qual	<u>Units</u>		
TPH as Gasoline	92	50	48	4			ug/L		
Surrogates:	<u>REC (%)</u>	Control Limits				Qual			
1,4-Bromofiuorobenzene	90	38-134							
MW4	A CONTROL OF THE CONTROL OF T	09-01-26	83-4-F	01/29/09 10:00	Aqueous	GC1	02/04/09	02/05/09 05:23	090204B02
Comment(s): -Results were ev	aluated to the MDL,					e qualified with	a "J" flag.		
<u>Parameter</u>	Result	<u>RL</u>	MDL	1	<u>DF</u>	<u>Qual</u>	<u>Units</u>		
TPH as Gasoline Surrogates:	ND REC.(%)	50 Control Limits	48	1		Oust	ug/L		
1,4-Bromofluorobenzene	86	38-134				Qual			
., - = . 5.1701100010001100110	***	30 .0.							

RL - Reporting Limit

DF - Dilution Factor

Qual - Qualifiers







ETIC Engineering, Inc. 2285 Morello Avenue

Pleasant Hill, CA 94523-1850

Date Received:

Work Order No:

Preparation:

Method:

01/31/09

09-01-2683

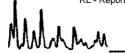
EPA 5030B

EPA 8015B (M)

Project: ExxonMobil 04334

Page 2 of 2

Client Sample Number		Lab Samp Number		Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank		099-12-4	136-2,790	NA NA	Aqueous	GC1	02/04/09	02/05/09 00:37	090204B02
Comment(s): -Results were e	valuated to the MDL,	, concentrations	>= to the N	VIDL. but < RL	., if found, a	re qualified with	h a "J" flag.		
<u>Parameter</u>	Result	<u>RL</u>	<u>MDL</u>	_	<u>DF</u>	<u>Qual</u>	<u>Units</u>		
TPH as Gasoline	ND	50	48	1			ug/L		
Surrogates:	REC (%)	Control Limits				Qual			
1,4-Bromofluorobenzene	87	38-134							







 ETIC Engineering, Inc.
 Date Received:
 01/31/09

 2285 Morello Avenue
 Work Order No:
 09-01-2683

 Pleasant Hill, CA 94523-1850
 Preparation:
 EPA 5030B

 Method:
 EPA 8021B

 Units:
 ug/L

				Units:				ug/L
Project: ExxonMobil 043	34			_			Pag	e 1 of 2
Client Sample Number			Lab Sample Number	Date/Time Collected Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW1			09-01-2683-1-D	01/29/09 Aqueous 08:10	GC 8	02/02/09	02/02/09 14:40	090202B01
Comment(s): -Results were ev	aluated to the I	MDL, con	centrations >= to the	WDL but < RL, if found, are	qualified with	n a "J" flag.		
<u>Parameter</u>	Result	<u>RL</u>	MDL DF Qual	<u>Parameter</u>		Result	RL	MDL DF Qual
Benzene	ND	0.50	0.14 1	Ethylbenzene		ND	0.50	0.17 1
Toluene	0.21	0.50	0.17 1 J,Z	Xylenes (total)		0.30	1.0	0.26 1 J,Z
Surrogates:	<u>REC (%)</u>	Control	Qual					
4.4 Daniel Branch		<u>Limits</u>						
1,4-Bromofluorobenzene	97	70-130		A CONTRACTOR OF THE CONTRACTOR	96 1006, 1964 F4 18 <u>6</u> 0	ddaydd datale y i'r ddag	international and the second	
NEWV2		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	09-01-2683-2-D	01/29/09 Aqueous 08:40	GC8	02/02/09	02/02/09 15:14	090202B01
Comment(s): -Results were ev	aluated to the	MDL, con	centrations >= to the	MDL but < RL, if found, are	qualified with	n a "J" flag.		
<u>Parameter</u>	Result	<u>RL</u>	MDL DF Qual	<u>Parameter</u>		Result	<u>RL</u>	MDL DF Qual
Benzene	ND	0.50	0.14 1	Ethylbenzene		ND	0.50	0.17 1
Toluene	ND	0.50	0.17 1	Xylenes (total)		ND	1.0	0.26 1
Surrogates:	<u>REC (%)</u>	Control Limits	Qual					
1,4-Bromofluorobenzene	96	70-130						
**************************************	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		09-01-2683-3-D	01/29/09 Aqueous 09:15	GC 8	02/02/09	02/02/09 15:48	090202B01
Comment(s): -Results were ev	aluated to the	MDL, con	centrations >= to the	MDL but < RL, if found, are	qualified with	h a "J" flag.		
<u>Parameter</u>	Result	RL	MDL DF Qual	Parameter		Result	RL	MDL DF Qual
Benzene	13	0.50	0.14 1	Ethylbenzene		13	0.50	0.17 1
Toluene	0.33	0.50	0.17 1 J	Xylenes (total)		0.52	1.0	0.26 1 J,Z
Surrogates:	REC (%)	Control	Qual	, ,				
		Limits						
1,4-Bromofluorobenzene	98	70-130					ana na ang manazana	Pepalengas value a second
MW4			09-01-2683-4-D	01/29/09 Aqueous 10:00	GC 8	02/02/09	02/02/09 16:22	090202B01
Comment(s): -Results were ev	aluated to the	MDL, con	centrations >= to the	MDL but < RL, if found, are	e qualified wit	h a "J" flag.		
<u>Parameter</u>	Result	RL	MDL DF Qual	<u>Parameter</u>		Result	<u>RL</u>	MDL DF Qual
Benzene	ND	0.50	0.14 1	Ethylbenzene		ND	0.50	0.17 1
Toluene	0.19	0.50	0.17 1 J,Z	Xylenes (total)		ND	1.0	0.26 1
Surrogates:	REC (%)	Control Limits	Qual					
1,4-Bromofluorobenzene	95	70-130						

RL - Reporting Limit

DF - Dilution Factor

Qual - Qualifiers





ETIC Engineering, Inc.

2285 Morello Avenue

Pleasant Hill, CA 94523-1850

Date Received:

Work Order No:

Preparation:

Method: Units: 01/31/09

09-01-2683 EPA 5030B

EPA 8021B

ug/L

Project: ExxonMobil 04334

Page 2 of 2

Client Sample Nun	nber			Lab Sample Number	•	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	00	Batch ID
Method Blank	The second secon			099-12-667	-327	The state of the s	Aqueous	GC 8	02/02/09	02/02/09 11:15	090	202B01
Comment(s):	-Results we	ere evaluated to the	MDL, conc	entrations :	>= to the f	MDL but < RL	, if found, an	e qualified with	a "J" flag.			
<u>Parameter</u>		Result	RL	MDL I	F Qual	<u>Parameter</u>			Result	RL	<u>MDL</u>	DF Qual
Benzene		ND	0.50	0.14	1	Ethylbenzer	ne		ND	0.50	0.17	1
Toluene		ND	0.50	0.17	1	Xylenes (to	al)		ND	1.0	0.26	1
Surrogates:		REC (%)	Control Limits		Qual							
1,4-Bromofluorobe	enzene	113	70-130									





ETIC Engineering, Inc. 2285 Morello Avenue

Pleasant Hill, CA 94523-1850

Date Received:

Work Order No:

Preparation: Method:

01/31/09

09-01-2683 EPA 5030B

EPA 8260B

Project: ExxonMobil 04334							Pa	ge 1 of 2
Client Sample Number		Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW1	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	09-01-2683-1-A	01/29/09 08:10	Aqueous	GC/MS Z	02/07/09	02/07/09 19:01	090207L01
<u>Parameter</u>	Result	<u>RL</u>	<u>DF</u>	Qual	<u>Units</u>			
Methyl-t-Butyl Ether (MTBE)	1.6	0.50	1		ug/L			
Surrogates:	REC (%)	Control Limits		Qual				
1,2-Dichloroethane-d4 Dibromofluoromethane Toluene-d8 1,4-Bromofluorobenzene	114 105 100 95	73-157 82-142 82-112 75-105						
MW2		09-01-2683-2-A	01/29/09 08:40	Aqueous	GC/MS Z	02/07/09	02/07/09 19:31	090207L01
Parameter	Result	<u>RL</u>	<u>DF</u>	Qual	<u>Units</u>			,
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1		ug/L			
Surrogates:	REC (%)	Control Limits		Qual				
1,2-Dichloroethane-d4 Dibromofluoromethane Toluene-d8 1,4-Bromofluorobenzene	119 107 99 92	73-157 82-142 82-112 75-105						
MW3		09-01-2683-3-A	01/29/09 09:15	Aqueous	GC/MS Z	02/07/09	02/07/09 20:02	090207L01
Parameter	Result	RL	<u>DF</u>	Qual	Units			
Methyl-t-Butyl Ether (MTBE)	ND	0.50	4		ug/L			
Surrogates:	REC (%)	Control Limits		Qual				
1,2-Dichloroethane-d4 Dibromofluoromethane Toluene-d8 1,4-Bromofluorobenzene	126 115 102 95	73-157 82-142 82-112 75-105						



DF - Dilution Factor ,

Qual - Qualifiers







ETIC Engineering, Inc.

2285 Morello Avenue

Pleasant Hill, CA 94523-1850

Date Received:

Work Order No:

Preparation:

Method:

01/31/09

09-01-2683

EPA 5030B

**EPA 8260B** 

Project: ExxonMobil 04334

Page 2 of 2

Project: Exxoniviobil U4334							Pe	ige 2 of 2
Client Sample Number		Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW4		09-01-2683-4-A	01/29/09 10:00	Aqueous	GC/MS Z	02/07/09	02/07/09 20:32	090207L01
<u>Parameter</u>	Result	RL	<u>DF</u>	Qual	Units			
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1		ug/L			
Surrogates:	REC (%)	Control Limits		Qual				
1,2-Dichloroethane-d4	125	73-157						
Dibromofluoromethane	112	82-142						
Toluene-d8 1,4-Bromofluorobenzene	101 91	82-112 75-105						
1,4°DIOIIOIIIOIODAIREIRE	ਹ।	73-103						
Method Blank		099-10-025-803	N/A	Aqueous	GC/MS Z	02/07/09	02/07/09 11:50	090207L01
Parameter	Result	<u>RL</u>	DE	Qual	<u>Units</u>			
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1		ug/L			
Surrogates:	REC (%)	Control Limits		Qual				
We have a series of the control of	1120 (70)							
1,2-Dichloroethane-d4	120	73-157						
1,2-Dichloroethane-d4 Dibromofluoromethane	120 115	73-157 82-142						
1,2-Dichloroethane-d4 Dibromofluoromethane Toluene-d8 1,4-Bromofluorobenzene	120	73-157						





## **Quality Control - Spike/Spike Duplicate**



ETIC Engineering, Inc. 2285 Morello Avenue Pleasant Hill, CA 94523-1850 Date Received: Work Order No: Preparation: Method: 01/31/09 09-01-2683 EPA 5030B EPA 8015B (M)

#### Project ExxonMobil 04334

Quality Control Sample ID	Matrix	Instrumer	Date nt Prepar		Date Analyzed	MS/MSD Batch Number
MW2	Aqueo	us GC1		9	02/05/09	090204502
<u>Parameter</u>	MS %REC	MSD %REC	%REC CL	<u>RPD</u>	RPD CL	Qualifiers
TPH as Gasoline	91	94	68-122	3	0-18	



## Quality Control - Spike/Spike Duplicate



ETIC Engineering, Inc. 2285 Morello Avenue Pleasant Hill, CA 94523-1850 Date Received: Work Order No: Preparation: Method: 01/31/09 09-01-2683 EPA 5030B EPA 8021B

#### Project ExxonMobil 04334

Quality Control Sample ID	Matrix	instrument	Date Prepared	Ai	Date nalyzed	MS/MSD Batch Number
MW1	Aqueous		02/02/09	0	2/02/09	090202801
<u>Parameter</u>	MS %REC	MSD %REC	%REC CL	<u>RPD</u>	RPD CL	Qualifiers
Benzene	101	100	57-129	1	0-23	
Toluene	95	92	50-134	3	0-26	
Ethylbenzene	102	100	58-130	2	0-26	
p/m-Xylene	105	104	58-130	1	0-28	
o-Xylene	99	98	57-123	1	0-26	
Methyl-t-Butyl Ether (MTBE)	100	106	44-134	7	0-27	

RPD - Reia



## **Quality Control - Spike/Spike Duplicate**



ETIC Engineering, Inc. 2285 Morello Avenue Pleasant Hill, CA 94523-1850 Date Received: Work Order No: Preparation: Method: 01/31/09 09-01-2683 EPA 5030B EPA 8260B

#### Project ExxonMobil 04334

Quality Control Sample ID	Matrix	Instrument	Date Prepared		Date Analyzed	MS/MSD Batch Number
09-01-2545-2	Aqueous	GC/MS Z	02/07/09		02/07/09	090207801
<u>Parameter</u>	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	104	102	86-122	2	0-8	
Carbon Tetrachloride	118	118	78-138	0	0-9	
Chlorobenzene	100	100	90-120	0	0-9	
1,2-Dibromoethane	100	98	70-130	3	0-30	
1,2-Dichlorobenzene	100	97	89-119	3	0-10	
1,1-Dichloroethene	106	107	52-142	1	0-23	
Ethylbenzene	101	100	70-130	1	0-30	
Toluene	106	102	85-127	3	0-12	
Trichloroethene	101	99	78-126	2	0-10	
Vinyl Chloride	117	120	56-140	2	0-21	
Methyl-t-Butyl Ether (MTBE)	105	100	64-136	5	0-28	
Tert-Butyl Alcohol (TBA)	111	105	27-183	. 6	0-60	
Diisopropyl Ether (DIPE)	102	101	78-126	1	0-16	
Ethyl-t-Butyl Ether (ETBE)	93	92	67-133	1	0-21	
Tert-Amyl-Methyl Ether (TAME)	95	89	63-141	6	0-21	
Ethanol	107	95	11-167	12	0-64	





ETIC Engineering, Inc.

2285 Morello Avenue

Pleasant Hill, CA 94523-1850

Date Received:

Work Order No:

Preparation:

Method:

N/A

09-01-2683

EPA 3510C

EPA 8015B (M)

Project: ExxonMobil 04334

Quality Control Sample ID		trument	Date Prepared	Date Analyzed	LCS/LCSD Ba Number	tch
099-12-330-938 A	Aqueous G	Section of the sectio	02/02/09	02/04/09	090202B16	A STANDARD OF THE PROPERTY OF
Parameter	LCS %REC	LCSD %R	EC %REC	CL RPD	RPD CL	Qualifiers
TPH as Diesel	111	105	75-1	17 5	0-13	





ETIC Engineering, Inc. 2285 Morello Avenue Pleasant Hill, CA 94523-1850 Date Received: Work Order No: Preparation: Method: N/A 09-01-2683 EPA 5030B EPA 8015B (M)

Project: ExxonMobil 04334

Quality Control Sample ID	Matrix	Instrument	Date strument Prepared		LCS/LCSD Ba Number	itch
099-12-436-2,790	Aqueous	GC 1	02/04/09	02/05/09	090204B02	
<u>Parameter</u>	LCS %REG	C LCSD %	REC %RE	EC CL RF	PD RPD CL	Qualifiers
TPH as Gasoline	97	92	78	-120 6	0-10	





ETIC Engineering, Inc. 2285 Morello Avenue Pleasant Hill, CA 94523-1850 Date Received: Work Order No: Preparation:

Method:

N/A 09-01-2683 EPA 5030B EPA 8021B

Project: ExxonMobil 04334

Quality Control Sample ID	Matrix I	instrument	Date Prepared	Da Anal		LCS/LCSD Bate Number	:h
099-12-667-327	Aqueous	GC 8	02/02/09	02/02	2/09	090202B01	
<u>Parameter</u>	LCS %REC	LCSD %	REC %I	REC CL	RPD	RPD CL	Qualifiers
Benzene	100	102		70-118	2	0-9	
Toluene	93	93	1	66-114	0	0-9	
Ethylbenzene	102	101		72-114	0	0-9	
p/m-Xylene	105	105		74-116	1	0-9	
o-Xylene	99	99		72-114	1	0-9	
Methyl-t-Butyl Ether (MTBE)	105	109	,	41-137	4	0-13	





ETIC Engineering, Inc. 2285 Morello Avenue Pleasant Hill, CA 94523-1850 Date Received: Work Order No: Preparation: Method: N/A 09-01-2683 EPA 5030B EPA 8260B

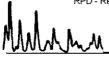
Project: ExxonMobil 04334

Quality Control Sample ID	Matrix	Instrument	Date Prepared		ate yzed	LCS/LCSD I Numbe	
099-10-025-803	Aqueous	GC/MS Z	02/07/09	02/07	/09	090207L	71
Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	99	98	87-117	82-122	1	0-7	
Carbon Tetrachloride	111	114	78-132	69-141	3	0-8	
Chlorobenzene	99	98	88-118	83-123	1	0-8	
1,2-Dibromoethane	100	99	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	98	98	88-118	83-123	0	0-8	
1,1-Dichloroethene	96	100	71-131	61-141	3	0-14	
Ethylbenzene	99	97	80-120	73-127	2	0-20	
Toluene	100	100	85-127	78-134	0	0-7	
Trichloroethene	99	103	85-121	79-127	4	0-11	
Vinyl Chloride	105	107	64-136	52-148	1	0-10	
Methyl-t-Butyl Ether (MTBE)	97	96	67-133	56-144	1	0-16	
Tert-Butyl Alcohol (TBA)	96	94	34-154	14-174	2	0-19	
Diisopropyl Ether (DIPE)	93	92	80-122	73-129	0	0-8	
Ethyl-t-Butyl Ether (ETBE)	88	92	73-127	64-136	5	0-11	
Tert-Amyl-Methyl Ether (TAME)	93	92	69-135	58-146	1	0-12	
Ethanol	90	93	34-124	19-139	3	0-44	

Total number of LCS compounds: 16

Total number of ME compounds: 0

Total number of ME compounds allowed:
LCS ME CL validation result: Pass





## **Glossary of Terms and Qualifiers**



Work Order Number: 09-01-2683

<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
Α	Result is the average of all dilutions, as defined by the method.
В	Analyte was present in the associated method blank.
С	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
l	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
Χ	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.



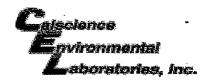
7440 LINCOLN WAY GARDEN GROVE, CA 92841-1432

TEL: (714) 895-5494 . FAX: (714) 894-7501

## **CHAIN OF CUSTODY RECORD**

DATE:

	TEL: (714) 895-5494 . F	FAX: (714) 89	4-7501											F	AGE:			1		OF			1	
LABORATORY CLIENT: EXXONMODII C/O ETIC E	ExxonMobil c/o ETIC Engineering						CLIENT PROJECT NAME / NUMBER:						P.O.	. NO.:										
ADDRESS: 2285 Morello Avenue			<u></u>			0 PR	04334, 2492 Castro Valley Blvd., Castro Vall PROJECT CONTACT: Project Number					ley, (	y, CA 4510815837 QUOTE NO.:											
Pleasant Hill, CA 94523					Erik Appel, ETIC Engineering  SAMPLER(S): (SIGNATURE)						TM04334.1.6													
TEL: 925-602-4710 x21 TURNAROUND TIME	FAX: 925-602-4720		E-MAIL See i	instruct	ions	Bythe sm								USE			اما	ΣI	<u>。</u>					
SAME DAY 1 24 HR	R 48HR 72 H	IR <b>X</b> 50				REQUESTED ANAL					LYS	0 (1-2 6 8 3) Lysis												
SPECIAL REQUIREMENTS (ADDITION RWQCB REPORTING	IAL COSTS MAY APPLY)		·			T			T	T		T												
SPECIAL INSTRUCTIONS		ES UNTIL	/_	/		15B	1B (N	5B *	308															
edf file required, Glob email report to eappel@ * Use Silica Gel Clean	eticeng.com & eticlah	<b>5</b>		om		y EPA Method 8015B	BTEX by EPA Method 8021B (M)	TPH-d by EPA Method 8015B	y EPA Method 8260B	William William Company						A CONTRACTOR OF THE CONTRACTOR	Million of the Control of the Contro	The same state of the same sta		·				
SE SAMPLE ID	LOCATION/ DESCRIPTION	DATE.	PLING TIME	Malris	*Cont	TPH-g by	ВТЕХЬ	TPH-d b	MTBE by															
MW1		0/29/09		Water	8	Х	х	Х	Х									$\neg$						_
Ž MW2		1'/	0840	Water	8	Х	Х	Х	Х														_	
2 MW3		\ \	0915	Water	8	Х	Х	Х	Х						1			$\dashv$				$\neg$	-	
MW4		4	1000	Water	8	Х	Х	Х	Х							1		1				$\dashv$		
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WORK ORDER #: **09-** [1] - [2] [5] [3]

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: ETC	DATE:	131/09							
TEMPERATURE: (Criteria: 0.0 °C - 6.0 °C, not frozen)									
Temperature $3 \cdot 4 ^{\circ}C - 0.2 ^{\circ}C (CF) = 3 \cdot 2 ^{\circ}C$	Blank	Sample							
☐ Sample(s) outside temperature criteria (PM/APM contacted by:).									
$\square$ Sample(s) outside temperature criteria but received on ice/chilled on same da	y of sampling.								
☐ Received at ambient temperature, placed on ice for transport by Cou	urier.	]							
Ambient Temperature:   Air   Filter   Metals Only   PCBs Only   Initial:									
CUSTODY SEALS INTACT:									
□ Cooler □ □ No (Not Intact) ☑ Not Present	□ N/A	Initial: WB							
□ Sample □ □ No (Not Intact) Not Present		Initial: <u>\$0</u>							
SAMPLE CONDITION: Yes	No	N/A							
Chain-Of-Custody (COC) document(s) received with samples									
COC document(s) received complete									
Sampler's name indicated on COC									
Sample container label(s) consistent with COC									
Sample container(s) intact and good condition									
Correct containers and volume for analyses requested									
Analyses received within holding time									
Proper preservation noted on COC or sample container									
Volatile analysis container(s) free of headspace									
Tedlar bag(s) free of condensation.									
CONTAINER TYPE:									
Solid: □4ozCGJ □8ozCGJ □16ozCGJ □Sleeve □EnCores® □Te	erraCores®								
Water: □VOA 🗹 VOAh □VOAna₂ □125AGB □125AGBh □125A	AGBpo₄ 151/	\GB □1AGBna₂							
□1AGBs □500AGB □500AGBs □250CGB □250CGBs □1PB □5									
□250PBn □125PB □125PBznna □100PBsterile □100PBna₂ □_	D								
Air: ☐Tedlar® ☐Summa® ☐  Container: C:Clear A:Amber P:Poly/Plastic G:Glass J:Jar B:Bottle  Preservative: h:HCL n:HNO3 na2:Na2S2O3 na:NaOH po4:H3PO4 s:H2SO4 znna:ZnAc2+N		beled by: So ewed by: W.S.C unned by: D							

Control of the Contro

SOP T100_090 (12/10/08)