RO-2424

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Gene N. Ortega
Territory Manager
Global Remediation – U.S. Retail

ExxonMobil
Refining & Supply

February 22, 2002

Ms. Eva Chu
Alameda County Health Agency
Division of Environmental Protection
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

MAR 01 2002

Subject: Former Exxon RAS #7-0210, 7840 Amador Valley Boulevard, Dublin, California

Dear Ms. Chu:

Attached for your review and comment is a copy of the *Report of Groundwater Monitoring, Fourth Quarter* 2001 for the above-referenced site. The report, prepared by ETIC Engineering, Inc. of Pleasant Hill, California, details the results of the November 2001 sampling event.

If you have any questions or comments, please contact me at (925) 246-8747.

Sincerely,

Gene N. Ortega
Territory Manager

Attachment: ETIC Groundwater Monitoring Report dated February 2002

c: w/ attachment:
Mr. Winson B. Low - Valero Energy Corporation

c: w/o attachment:
Ms. Christa Marting - ETIC Engineering, Inc.

Run for other other oxygenates, TBA, 1,1-DCA
using 8260

RO-2424

ETIC
Engineering, Inc.

Report of Groundwater Monitoring
Fourth Quarter 2001

Former Exxon Retail Site 7-0210
7840 Amador Valley Boulevard
Dublin, California

Prepared for

ExxonMobil Refining and Supply Company
2300 Clayton Road, Suite 1250
Concord, California 94520

Prepared by

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

Ted Moise
Project Manager

2/22/02
Date

Heidi Dieffenbach-Carle, R.G. #6793
Senior Geologist

February 14, 2002
Date

REGISTERED GEOLOGIST
HEIDI L. DIEFFENBACH-CARLE
No. 6793
STATE OF CALIFORNIA

February 2002

SITE CONTACTS

Station Number:	Former Exxon Retail Site 7-0210
Station Address:	7840 Amador Valley Boulevard Dublin, California
ExxonMobil Project Manager:	Gene N. Ortega ExxonMobil Refining and Supply Company 2300 Clayton Road, Suite 1250 Concord, California 94520 (925) 246-8747
Consultant to ExxonMobil:	ETIC Engineering, Inc. 2285 Morello Avenue Pleasant Hill, California 94523 (925) 602-4710
ETIC Project Manager:	Ted Moise
Regulatory Oversight:	Eva Chu Alameda County Health Agency Division of Environmental Protection Department of Environmental Health 1131 Harbor Bay Parkway, 2nd Floor Alameda, California 94502 (510) 567-6700

INTRODUCTION

At the request of ExxonMobil Refining and Supply Company, ETIC Engineering, Inc. has prepared this quarterly groundwater monitoring report for former Exxon Retail Site 7-0210. This report presents the results for the most recent groundwater monitoring conducted at the site and summarizes recent site activities. 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 Exxon Retail Site 7-0210
Site address:	7840 Amador Valley Boulevard, Dublin, California
Current property owner:	Valero Energy Corporation
Current site use:	Active station operated by Valero Energy Corporation
Current phase of project:	Groundwater monitoring
Tanks at site:	Three underground storage tanks (gasoline)
Number of wells:	3 (all onsite)

GROUNDWATER MONITORING SUMMARY

Gauging and sampling date:	5 November 2001
Wells gauged and sampled:	MW5-MW7
Wells gauged only:	None
Groundwater flow direction:	Southeast
Groundwater gradient:	0.003
Well screens submerged:	None
Well screens not submerged:	MW5-MW7
Liquid-phase hydrocarbons:	Not observed or detected
Laboratory:	Southern Petroleum Laboratories, Inc., Houston, Texas

Analyses performed:

- Total Petroleum Hydrocarbons as gasoline by modified EPA Method 8015
- Total Petroleum Hydrocarbons as diesel by modified EPA Method 8015
- Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8021B
- Methyl t-butyl ether by EPA Method 8021B
- Methyl t-butyl ether by EPA Method 8260B (confirmation samples)

ADDITIONAL ACTIVITIES PERFORMED AT SITE

Wells associated with the site were surveyed in October 2001 by a licensed land surveyor.

WORK PROPOSED FOR NEXT QUARTER

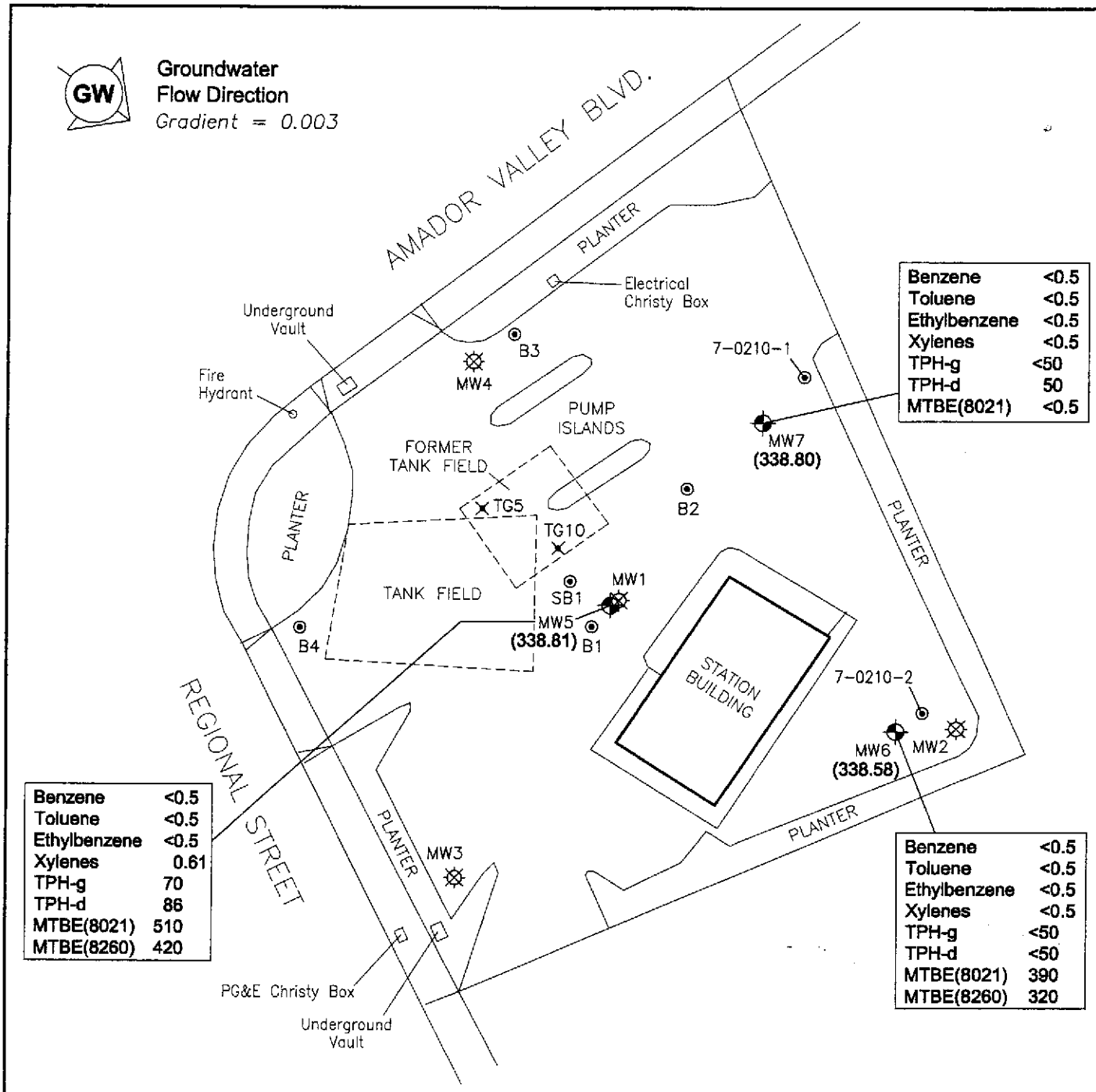
Groundwater will be monitored in accordance with the attached groundwater monitoring plan.

Attachments:

Figure 1: Site Plan Showing Groundwater Elevations and Analytical Results

Table 1: Well Construction Details
Table 2: Groundwater Monitoring Data
Table 3: Groundwater Monitoring Plan

Appendix A: Field Protocols
Appendix B: Field Documents
Appendix C: Laboratory Analytical Report



LEGEND

- GROUNDWATER MONITORING WELL LOCATION
- SOIL BORING / GROUNDWATER SAMPLING LOCATION
- CONFIRMATION SOIL SAMPLE
- DESTROYED GROUNDWATER MONITORING WELL

(338.81) GROUNDWATER ELEVATION (FEET)
TPH-g TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
TPH-d TOTAL PETROLEUM HYDROCARBONS AS DIESEL
MTBE METHYL T-BUTYL ETHER
CONCENTRATIONS IN MICROGRAMS PER LITER (ug/L).

N

0 40

Scale (feet)

FILENAME: 4Q2001a.DWG 12/20/01

ETIC Engineering, Inc.

SITE PLAN SHOWING GROUNDWATER ELEVATIONS
AND ANALYTICAL RESULTS
FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BLVD., DUBLIN, CA.
5 NOVEMBER 2001

FIGURE: 1

TABLE 1 WELL CONSTRUCTION DETAILS, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, 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	a	04/14/92	96.32	PVC	26.5	24.75	10.25	4	11-24	0.010	10-25	--
MW2	a	05/13/92	95.91	PVC	26	25	10.25	4	10-25	0.010	9.5-26	--
MW3	a	05/14/92	97.95	PVC	28	27.75	10.25	4	12.5-27.5	0.010	11-28	--
MW4	a	05/14/92	96.69	PVC	26.5	25	10.25	4	12-25	0.010	11-26	--
MW5	b	11/15/00	352.95	PVC	25	25	8.25	2	10-25	0.020	7-25	#3 sand
MW6	b	11/14/00	352.69	PVC	27	25	8.25	2	10-25	0.020	8-27	#3 sand
MW7	b	11/14/00	351.87	PVC	26	25	8.25	2	10-25	0.020	7-25	#3 sand

a Well was destroyed April 1996.
b Elevation is based on the Alameda Benchmark AM-STW. Elevation = 344.17 feet.
PVC Polyvinyl chloride.
TOC Top of casing.
-- Information not available.

TABLE 2 GROUNDWATER MONITORING DATA, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	LPH Thickness (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	TPH-g (µg/L)	TPH-d (µg/L)	MTBE (µg/L)	Other Oxygenates and Additives[a] (µg/L)
MW1	05/21/92	96.32	14.45	81.87	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW1	02/10/93	96.32	12.22	84.10	0.00	3.1	<0.5	1.8	0.6	2,600		NA	
MW1	05/20/93	96.32	10.74	85.58	0.00	1.9	<0.5	1.8	<1.0	1,000		NA	
MW1	06/23/93	96.32	11.74	84.58	0.00	1.0	<0.5	1.2	<0.5	1,300		NA	
MW1	08/23/93	96.32	12.72	83.60	0.00	<0.5	<0.5	<0.5	0.8	80		NA	
MW1	10/25/93	96.32	13.99	82.33	0.00	<0.5	<0.5	0.8	1.3	140		NA	
MW1	02/16/94	96.32	14.90	81.42	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW1	04/16/94	96.32	14.49	81.83	0.00	<0.5[b]	<0.5	<0.5	<0.5	190		NA	
MW1	07/26/94	96.32	15.11	81.21	0.00	<0.5[b]	<0.5	<0.5	<0.5	130		NA	
MW1	10/05/94	96.32	15.69	80.63	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW1	01/04/95	96.32	14.66	81.66	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW1	06/12/95	96.32	10.08	86.24	0.00	<0.5	<0.5	<0.5	<0.5	<50		230	
MW1			Well destroyed April 1996.										
MW2	05/21/92	95.91	14.30	81.61	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW2	02/10/93	95.91	12.34	83.57	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW2	05/20/93	95.91	10.73	85.18	0.00	<0.5	<0.5	<0.5	<1.0	320		NA	
MW2	06/23/93	95.91	11.74	84.17	0.00	<0.5	<0.5	<0.5	<0.5	130		NA	
MW2	08/23/93	95.91	12.60	83.31	0.00	<0.5	<0.5	<0.5	1.1	140		NA	
MW2	10/25/93	95.91	13.86	82.05	0.00	<0.5	<0.5	0.5	2.4	75		NA	
MW2	02/16/94	95.91	14.73	81.18	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW2	04/16/94	95.91	14.33	81.58	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW2	07/26/94	95.91	14.96	80.95	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW2	10/05/94	95.91	15.49	80.42	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW2	01/04/95	95.91	14.44	81.47	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	

TABLE 2 GROUNDWATER MONITORING DATA, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	LPH Thickness (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	TPH-g (µg/L)	TPH-d (µg/L)	MTBE (µg/L)	Other Oxygenates and Additives (µg/L)
MW2	06/12/95	95.91	10.10	85.81	0.00	<0.5	<0.5	<0.5	<0.5	<50		59	
MW2			Well destroyed April 1996.										
MW3	05/21/92	97.95	16.05	81.90	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW3	02/10/93	97.95	13.77	84.18	0.00	<0.5	<0.5	<0.5	0.7	<50		NA	
MW3	05/20/93	97.95	12.32	85.63	0.00	<0.5	<0.5	<0.5	<1.0	<50		NA	
MW3	06/23/93	97.95	13.34	84.61	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW3	08/23/93	97.95	14.30	83.65	0.00	2.3	1.2	1.4	4.1	<50		NA	
MW3	10/25/93	97.95	15.62	82.33	0.00	NS	NS	NS	NS	NS		NS	
MW3	02/16/94	97.95	16.48	81.47	0.00	NS	NS	NS	NS	NS		NS	
MW3	04/16/94	97.95	16.61	81.34	0.00	NS	NS	NS	NS	NS		NS	
MW3	07/26/94	97.95	16.72	81.23	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW3	10/05/94	97.95	17.33	80.62	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW3	01/04/95	97.95	16.29	81.66	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW3	06/12/95	97.95	11.67	86.28	0.00	<0.5	<0.5	<0.5	<0.5	<50		<2.5	
MW3			Well destroyed April 1996.										
MW4	05/21/92	96.69	14.59	82.10	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW4	02/10/93	96.69	12.30	84.39	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW4	05/20/93	96.69	10.75	85.94	0.00	1.4	1.0	<0.5	1.8	<50		NA	
MW4	06/23/93	96.69	11.78	84.91	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW4	08/23/93	96.69	12.82	83.87	0.00	<0.5	<0.5	<0.5	0.8	<50		NA	
MW4	10/25/93	96.69	14.10	82.59	0.00	NS	NS	NS	NS	NS		NS	
MW4	02/16/94	96.69	15.02	81.67	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW4	04/16/94	96.69	14.61	82.08	0.00	NS	NS	NS	NS	NS		NS	

TABLE 2 GROUNDWATER MONITORING DATA, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	LPH Thickness (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	TPH-g (µg/L)	TPH-d (µg/L)	MTBE (µg/L)	Other Oxygenates and Additives (µg/L)
MW4	07/26/94	96.69	15.23	81.46	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW4	10/05/94	96.69	15.85	80.84	0.00	<0.5	12	<0.5	<0.5	<50		NA	
MW4	01/04/95	96.69	14.84	81.85	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW4	06/12/95	96.69	10.07	86.62	0.00	<0.5	<0.5	<0.5	<0.5	<50		<2.5	
MW4			Well destroyed April 1996.										
MW5	06/15/00	STATION OPERATIONS TRANSFERRED TO VALERO ENERGY CORPORATION											
MW5	11/17/00	352.93	13.51	339.42	0.00	<0.5	<0.5	<0.5	2.46	240		1,500	
MW5	11/17/00	352.93										1,600[a]	
MW5	02/02/01	352.93	13.81	339.12	0.00	<0.5	<0.5	<0.5	<0.5	110		1,400	
MW5	02/02/01	352.93										1,200[a]	
MW5	05/09/01	352.93	12.20	340.73	0.00	<0.5	<0.5	<0.5	<0.5	<50		770[a]	ND[c]
MW5	09/12/01	352.93	13.84	339.09	0.00	<0.5	<0.5	<0.5	<0.5	100		760	NA
MW5	09/12/01	352.93										800[a]	
MW5	**11/05/01**	**352.95**	**14.14**	**338.81**	**0.00**	**<0.5**	**<0.5**	**<0.5**	**0.61**	**70**	**86**	**510**	**NA**
MW5	**11/05/01**	**352.95**										**420[a]**	
MW6	06/15/00	STATION OPERATIONS TRANSFERRED TO VALERO ENERGY CORPORATION											
MW6	11/17/00	352.66	13.47	339.19	0.00	<0.5	<0.5	<0.5	<0.5	<50		270	
MW6	11/17/00	352.66										260[a]	
MW6	02/02/01	352.66	13.79	338.87	0.00	<0.5	<0.5	<0.5	<0.5	<50		160	
MW6	02/02/01	352.66										130[a]	
MW6	05/09/01	352.66	12.25	340.41	0.00	<0.5	<0.5	<0.5	<0.5	<50		760[a]	ND[c]
MW6	09/12/01	352.66	13.83	338.83	0.00	<0.5	<0.5	<0.5	<0.5	<50		680	NA
MW6	09/12/01	352.66										740[a]	

TABLE 2 GROUNDWATER MONITORING DATA, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	LPH Thickness (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	TPH-g (µg/L)	TPH-d (µg/L)	MTBE (µg/L)	Other Oxygenates and Additives (µg/L)
MW6	**11/05/01**	**352.69**	**14.11**	**338.58**	**0.00**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<50**	**<50**	**390**	**NA**
MW6	**11/05/01**	**352.69**										**320[a]**	
MW7	06/15/00	STATION OPERATIONS TRANSFERRED TO VALERO ENERGY CORPORATION											
MW7	11/17/00	351.86	12.44	339.42	0.00	<0.5	<0.5	<0.5	<0.5	<50		<0.5	
MW7	02/02/01	351.86	12.74	339.12	0.00	<0.5	<0.5	<0.5	<0.5	<50		<0.5	
MW7	05/09/01	351.86	11.15	340.71	0.00	<0.5	<0.5	<0.5	<0.5	<50		<5[a]	ND[c]
MW7	09/12/01	351.86	12.74	339.12	0.00	<0.5	<0.5	<0.5	<0.5	<50		<0.5	NA
MW7	**11/05/01**	**351.87**	**13.07**	**338.80**	**0.00**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<50**	**50**	**<0.5**	**NA**

a Analysis by EPA Method 8260.

b A peak eluting earlier than benzene, suspected to be MTBE.

c Other oxygenates and additives include diisopropyl ether, t-butyl alcohol, tert-amyl methyl ether, tert-butyl ethyl ether, 1,2-dibromoethane, and 1,2-dichloroethane.

LPH Liquid-phase hydrocarbons.
TPH-g Total Petroleum Hydrocarbons as gasoline.
TPH-d Total Petroleum Hydrocarbons as diesel.
MTBE Methyl tertiary butyl ether.
NA Not analyzed.
ND Not detected.
NS Not sampled.

µg/L Micrograms per liter.

TABLE 3 GROUNDWATER MONITORING PLAN,
FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

Well Number	Groundwater Gauging Frequency	Groundwater Sampling and Analysis Frequency		
		BTEX and TPH-g	TPH-d	MTBE
MW5	Q	Q	Q	Q
MW6	Q	Q	Q	Q
MW7	Q	Q	Q	Q

Q = Quarterly.

BTEX = Benzene, toluene, ethylbenzene, total xylenes.
TPH-g = Total Petroleum Hydrocarbons as gasoline.
TPH-d = Total Petroleum Hydrocarbons as diesel.
MTBE = Methyl tertiary butyl ether.

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 and, if the well does not recover, the well is considered "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 parameters are considered stable when two consecutive readings indicate no greater than a 10 percent change from the previous reading for temperature and electrical conductance and no greater than a 0.1 pH units change from the previous reading for pH. Groundwater in each well is purged using an inertial pump, 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 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

ETIC
Engineering, Inc.

MONITORING WELL DATA FORM

Client: *ExxonMobil*

Date: 11/5/2001

Project Number: *UP0210.1*

Station Number: *7-0210*

Site Location:
7840 AMADOR VALLY BLVD., DUBLIN, CA

Samplers: Brian B.

MONITORING WELL NUMBER	DEPTH TO WATER (TOC) ft.	DEPTH TO PRODUCT (TOC)	APPARENT PRODUCT THICKNESS	AMOUNT OF PRODUCT REMOVED	MONITORING WELL INTEGRITY	DEPTH TO BOTTOM (TOC) ft.	WELL CASING DIAMETER in.
MM-5	14.14					24.35'	2"
MM-6	14.11					24.72'	2"
MM-7	13.07					23.78'	2"

ETIC Engineering, Inc.

GROUNDWATER PURGE AND SAMPLE

Project Name: Exxon 7-0210 | Well No: MW5 | Date: 11/5/2001

Project No: UP0210.1 | Personnel: Brian B.

GAUGING DATA

Water Level Measuring Method: WLM | Measuring Point Description: TOC

WELL PURGE VOLUME CALCULATION	Total Depth (feet)		Depth to Water (feet)		Water Column (feet)		Multiplier for Casing Diameter				Casing Volume (gal)		Total Purge Volume (gal)
	24.35	−	14.14	=	10.21	X	1	(2)	4	6	1.5	=	4.5
							0.04	0.16	0.64	1.44			

PURGING DATA

Purge Method: ~~Submersible Pump~~ Handbail | Purge Depth: Screen | Purge Rate: (gpm)

Time	1027	1030	1033			
Volume Purge (gal)	1.5	3	4.5			
Temperature (C)	21.1	22.3	22.4			
pH	7.02	6.56	6.57			
Spec.Cond. (umhos)	1420 mS	1375 mS	1374 mS			
Turbidity/Color						
Odor (Y/N)	Y	Y	Y			
Casing Volumes	5.1+	5.1+	5.1+			
Dewatered (Y/N)	N	N	N			

Comments/Observbations:

SAMPLING DATA

Time Sampled: 1040 | Approximate Depth to Water During Sampling: 15 (feet)

Comments:

Sample Number	Number of Containers	Container Type	Perservative	Volume Filled (mL or L)	Turbidity/ Color	Analysis Method
MW5	6	Voa	HCL	40 ml		TPH-g, BTEX, MTBE
	2	1LAg	—	1L		TPHd

Total Purge Volume: 4.5 (gallons) | Disposal: ROMIC

Weather Conditions: OK

Condition of Well Box and Casing at Time of Sampling: OK

Well Head Conditions Requiring Correction: None

Problems Encountered During Purging and Sampling: None

Comments:

ETIC
Engineering, Inc.

GROUNDWATER PURGE AND SAMPLE

Project Name: Exxon 7-0210 | Well No: MW6 | Date: 11/5/2001

Project No: UP0210.1 | Personnel: Brian B.

GAUGING DATA

Water Level Measuring Method: WLM | Measuring Point Description: TOC

WELL PURGE VOLUME CALCULATION	Total Depth (feet)		Depth to Water (feet)		Water Column (feet)		Multiplier for Casing Diameter				Casing Volume (gal)		Total Purge Volume (gal)
	24.72	−	14.11	=	10.61	X	1	(2)	4	6	1.5	=	4.5
							0.04	0.16	0.64	1.44			

PURGING DATA

Purge Method: ~~Submersible Pump~~ Hand bail | Purge Depth: Screen | Purge Rate: (gpm)

Time	1156	1159	1203			
Volume Purge (gal)	1.5	3	4.5			
Temperature (C)	22.4	21.9	22.0			
pH	6.83	6.63	6.57			
Spec.Cond. (umhos)	1355 us	1359 us	1362 us			
Turbidity/Color						
Odor (Y/N)	N	N	N			
Casing Volumes	Silty	Silty	Silty			
Dewatered (Y/N)	N	N	N			

Comments/Observbations:

SAMPLING DATA

Time Sampled: 1210 | Approximate Depth to Water During Sampling: 15 (feet)

Comments:

Sample Number	Number of Containers	Container Type	Perservative	Volume Filled (mL or L)	Turbidity/ Color	Analysis Method
MW6	6	Voa	HCL	40 ml		TPH-g, BTEX, MTBE
	2	1 Lag	—	1L		TPHd

Total Purge Volume: 4.5 (gallons) | Disposal: ROMIC

Weather Conditions: ok

Condition of Well Box and Casing at Time of Sampling: ok

Well Head Conditions Requiring Correction: none

Problems Encountered During Purging and Sampling: none

Comments:

ETIC Engineering, Inc.

GROUNDWATER PURGE AND SAMPLE

Project Name: Exxon 7-0210 Well No: MW7 Date: 11/5/2001

Project No: UP0210.1 Personnel: Brian B.

GAUGING DATA

Water Level Measuring Method: WLM Measuring Point Description: TOC

WELL PURGE VOLUME CALCULATION	Total Depth (feet)		Depth to Water (feet)		Water Column (feet)		Multiplier for Casing Diameter				Casing Volume (gal)		Total Purge Volume (gal)
							1	2	4	6			
	23.78	−	13.07	=	10.71	X	0.04	0.16	0.64	1.44	2	=	6

PURGING DATA

Purge Method: ~~Submersible Pump~~ Hand bail Purge Depth: Screen Purge Rate: (gpm)

Time	1107	1123	1127			
Volume Purge (gal)	2	4	6			
Temperature (C)	21.6	21.8	22.1			
pH	6.25	6.63	6.53			
Spec.Cond.(umhos)	1359 ms	1362 ms	1360 ms			
Turbidity/Color						
Odor (Y/N)	N	N	N			
Casing Volumes	Silty	Silty	Silty			
Dewatered (Y/N)	N	N	N			

Comments/Observbations:

SAMPLING DATA

Time Sampled: 1135 Approximate Depth to Water During Sampling: 14 (feet)

Comments:

Sample Number	Number of Containers	Container Type	Perservative	Volume Filled (mL or L)	Turbidity/ Color	Analysis Method
MW7	6	Voa	HCL	40 ml		TPH-g, BTEX, MTBE
	2	1LAg	—	1L		TPHd

Total Purge Volume: 6 (gallons) Disposal: ROMIC

Weather Conditions: ok

Condition of Well Box and Casing at Time of Sampling: ok

Well Head Conditions Requiring Correction: none

Problems Encountered During Purging and Sampling: none

Comments:

Appendix C

Laboratory Analytical Reports

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

EXXON Company U.S.A.

Certificate of Analysis Number:

01110245

Report To:		Project Name:	UP0210.0
ETIC Engineering, Inc.		Site:	7-0210
John Ortega		Site Address:	7840 Amador Valley Blvd.
2285 Morello Avenue			Dublin CA
Pleasant Hill		PO Number:	EWR#21012153
California		State:	California
94523-		State Cert. No.:	1903
ph: (925) 602-4710	fax: (925) 602-4720	Date Reported:	11/27/01

This Report Contains A Total Of 15 Pages

Excluding This Page

And

Chain Of Custody

11/27/01

Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

EXXON Company U.S.A.

Certificate of Analysis Number:

01110245

Report To:		Project Name:	UP0210.0
ETIC Engineering, Inc.		Site:	7-0210
John Ortega		Site Address:	7840 Amador Valley Blvd.
2285 Morello Avenue			Dublin CA
Pleasant Hill		PO Number:	EWR#21012153
California		State:	California
94523-		State Cert. No.:	1903
ph: (925) 602-4710	fax: (925) 602-4720	Date Reported:	11/27/01

Upon receipt of your samples it was found that all containers for Diesel Range Organics were not received. Client was notified via e-mail on November 8, 2001. The laboratory received all liters on November 9, 2001 that were not received with original shipment on November 8, 2001.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like " matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Sonia West
Senior Project Manager

11/27/01
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

EXXON Company U.S.A.

Certificate of Analysis Number:

01110245

Report To: ETIC Engineering, Inc.
John Ortega
2285 Morello Avenue

Pleasant Hill
California
94523-
ph: (925) 602-4710 fax: (925) 602-4720

Fax To: ETIC Engineering, Inc.
John Ortega fax : (925) 602-4720

Project Name: UP0210.0
Site: 7-0210
Site Address: 7840 Amador Valley Blvd.
Dublin CA
PO Number: EWR#21012153
State: California
State Cert. No.: 1903
Date Reported: 11/27/01

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW5	01110245-01	Water	11/5/01 10:40:00 AM	11/9/01 10:00:00 AM		☐
MW6	01110245-02	Water	11/5/01 12:10:00 PM	11/9/01 10:00:00 AM		☐
MW7	01110245-03	Water	11/5/01 11:35:00 AM	11/9/01 10:00:00 AM		☐
MW7	01110245-03	Water	11/5/01 11:35:00 AM	11/9/01 10:00:00 AM		☑

Sonia West
Senior Project Manager

11/27/01
Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW5 **Collected:** 11/5/01 10:40:00 **SPL Sample ID:** 01110245-01

Site: 7-0210

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS			**MCL**	**CA_DRO**		**Units: ug/L**		
Diesel Range Organics	86		50	1		11/14/01 19:21	AR	909797
Surr: n-Pentacosane	76.4	%	20-150	1		11/14/01 19:21	AR	909797

Prep Method	Prep Date	Prep Initials
SW3510B	11/11/2001 11:12	KL

GASOLINE RANGE ORGANICS			**MCL**	**CA_GRO**		**Units: ug/L**		
Gasoline Range Organics	70		50	1		11/08/01 21:22	D_R	901893
Surr: 1,4-Difluorobenzene	97.7	%	62-144	1		11/08/01 21:22	D_R	901893
Surr: 4-Bromofluorobenzene	105	%	44-153	1		11/08/01 21:22	D_R	901893
PURGEABLE AROMATICS			**MCL**	**SW8021B**		**Units: ug/L**		
Benzene	ND		0.5	1		11/08/01 21:22	D_R	901752
Ethylbenzene	ND		0.5	1		11/08/01 21:22	D_R	901752
Methyl tert-butyl ether	510		2.5	5		11/09/01 16:13	D_R	902511
Toluene	ND		0.5	1		11/08/01 21:22	D_R	901752
m,p-Xylene	0.61		0.5	1		11/08/01 21:22	D_R	901752
o-Xylene	ND		0.5	1		11/08/01 21:22	D_R	901752
Xylenes,Total	0.61		0.5	1		11/08/01 21:22	D_R	901752
Surr: 1,4-Difluorobenzene	101	%	72-137	1		11/08/01 21:22	D_R	901752
Surr: 1,4-Difluorobenzene	98.8	%	72-137	5		11/09/01 16:13	D_R	902511
Surr: 4-Bromofluorobenzene	97.0	%	48-156	1		11/08/01 21:22	D_R	901752
Surr: 4-Bromofluorobenzene	94.0	%	48-156	5		11/09/01 16:13	D_R	902511
VOLATILE ORGANICS BY METHOD 8260B			**MCL**	**SW8260B**		**Units: ug/L**		
Methyl tert-butyl ether	420		150	30		11/19/01 21:49	JN	918267
Surr: 1,2-Dichloroethane-d4	65.8	%	62-130	30		11/19/01 21:49	JN	918267
Surr: 4-Bromofluorobenzene	88.6	%	70-130	30		11/19/01 21:49	JN	918267
Surr: Toluene-d8	197 MI	%	74-122	30	*	11/19/01 21:49	JN	918267

Sonia West
Project Manager

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW6 **Collected:** 11/5/01 12:10:00 **SPL Sample ID:** 01110245-02

Site: 7-0210

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS				**MCL**	**CA_DRO**	**Units: ug/L**		
Diesel Range Organics	ND		50	1		11/14/01 19:59	AR	909799
Surr: n-Pentacosane	77.2	%	20-150	1		11/14/01 19:59	AR	909799

Prep Method	Prep Date	Prep Initials
SW3510B	11/11/2001 11:12	KL

GASOLINE RANGE ORGANICS				**MCL**	**CA_GRO**	**Units: ug/L**		
Gasoline Range Organics	ND		50		1	11/08/01 21:46	D_R	901894
Surr: 1,4-Difluorobenzene	96.3	%	62-144		1	11/08/01 21:46	D_R	901894
Surr: 4-Bromofluorobenzene	100	%	44-153		1	11/08/01 21:46	D_R	901894
PURGEABLE AROMATICS				**MCL**	**SW8021B**	**Units: ug/L**		
Benzene	ND		0.5		1	11/09/01 15:49	D_R	902510
Ethylbenzene	ND		0.5		1	11/09/01 15:49	D_R	902510
Methyl tert-butyl ether	390		0.5		1	11/09/01 15:49	D_R	902510
Toluene	ND		0.5		1	11/09/01 15:49	D_R	902510
m,p-Xylene	ND		0.5		1	11/09/01 15:49	D_R	902510
o-Xylene	ND		0.5		1	11/09/01 15:49	D_R	902510
Xylenes,Total	ND		0.5		1	11/09/01 15:49	D_R	902510
Surr: 1,4-Difluorobenzene	96.4	%	72-137		1	11/09/01 15:49	D_R	902510
Surr: 4-Bromofluorobenzene	95.0	%	48-156		1	11/09/01 15:49	D_R	902510
VOLATILE ORGANICS BY METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**		
Methyl tert-butyl ether	320		120		25	11/19/01 22:17	JN	918268
Surr: 1,2-Dichloroethane-d4	77.1	%	62-130		25	11/19/01 22:17	JN	918268
Surr: 4-Bromofluorobenzene	97.1	%	70-130		25	11/19/01 22:17	JN	918268
Surr: Toluene-d8	182 MI	%	74-122		25 *	11/19/01 22:17	JN	918268

Sonia West
Project Manager

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW7 **Collected:** 11/5/01 11:35:00 **SPL Sample ID:** 01110245-03

Site: 7-0210

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
DIESEL RANGE ORGANICS			**MCL**	**CA_DRO**		**Units: ug/L**		
Diesel Range Organics	50		50	1		11/14/01 21:54	AR	909803
Surr: n-Pentacosane	77.6	%	20-150	1		11/14/01 21:54	AR	909803

Prep Method	Prep Date	Prep Initials
SW3510B	11/11/2001 11:12	KL

GASOLINE RANGE ORGANICS			**MCL**	**CA_GRO**		**Units: ug/L**		
Gasoline Range Organics	ND		50	1		11/08/01 22:11	D_R	901895
Surr: 1,4-Difluorobenzene	107	%	62-144	1		11/08/01 22:11	D_R	901895
Surr: 4-Bromofluorobenzene	88.7	%	44-153	1		11/08/01 22:11	D_R	901895
PURGEABLE AROMATICS			**MCL**	**SW8021B**		**Units: ug/L**		
Benzene	ND		0.5	1		11/08/01 22:11	D_R	901754
Ethylbenzene	ND		0.5	1		11/08/01 22:11	D_R	901754
Methyl tert-butyl ether	ND		0.5	1		11/08/01 22:11	D_R	901754
Toluene	ND		0.5	1		11/08/01 22:11	D_R	901754
m,p-Xylene	ND		0.5	1		11/08/01 22:11	D_R	901754
o-Xylene	ND		0.5	1		11/08/01 22:11	D_R	901754
Xylenes,Total	ND		0.5	1		11/08/01 22:11	D_R	901754
Surr: 1,4-Difluorobenzene	101	%	72-137	1		11/08/01 22:11	D_R	901754
Surr: 4-Bromofluorobenzene	94.0	%	48-156	1		11/08/01 22:11	D_R	901754

Sonia West

Sonia West
Project Manager

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

UP0210.0

Analysis: Diesel Range Organics
Method: CA_DRO

WorkOrder: 01110245
Lab Batch ID: 16109

Method Blank

RunID: HP_V_011114E-909806 Units: mg/L
Analysis Date: 11/15/2001 1:05 Analyst: AR
Preparation Date: 11/11/2001 11:12 Prep By: KL Method SW3510B

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
01110245-01C	MW5
01110245-02C	MW6
01110245-03C	MW7

Analyte	Result	Rep Limit
Diesel Range Organics	ND	0.050
Surr: n-Pentacosane	43.4	20-150

Laboratory Control Sample (LCS)

RunID: HP_V_011114E-909804 Units: mg/L
Analysis Date: 11/15/2001 0:27 Analyst: AR
Preparation Date: 11/11/2001 11:12 Prep By: KL Method SW3510B

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Diesel Range Organics	2.5	2.5	99	21	175

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 01110245-02
RunID: HP_V_011114E-909800 Units: mg/L
Analysis Date: 11/14/2001 20:37 Analyst: AR
Preparation Date: 11/11/2001 11:12 Prep By: KL Method SW3510B

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Diesel Range Organics	ND	5	4.9	97.5	5	5	98.1	0.595	20	21	175

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

UP0210.0

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 01110245
Lab Batch ID: R47353

Method Blank

RunID: VARE_011108D-901746 Units: ug/L
Analysis Date: 11/08/2001 17:41 Analyst: D_R

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
01110245-01A	MW5
01110245-03A	MW7

Analyte	Result	Rep Limit
Benzene	ND	0.50
Ethylbenzene	ND	0.50
Methyl tert-butyl ether	ND	0.50
Toluene	ND	0.50
m,p-Xylene	ND	0.50
o-Xylene	ND	0.50
Xylenes,Total	ND	0.50
Surr: 1,4-Difluorobenzene	95.5	72-137
Surr: 4-Bromofluorobenzene	94.8	48-156

Laboratory Control Sample (LCS)

RunID: VARE_011108D-901744 Units: ug/L
Analysis Date: 11/08/2001 16:52 Analyst: D_R

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	49	97	70	130
Ethylbenzene	50	49	98	70	130
Methyl tert-butyl ether	50	49	98	70	130
Toluene	50	49	99	70	130
m,p-Xylene	100	98	98	70	130
o-Xylene	50	49	98	70	130
Xylenes,Total	150	147	98	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 01101147-07
RunID: VARE_011108D-901756 Units: ug/L
Analysis Date: 11/08/2001 23:00 Analyst: D_R

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	23	115	20	24	121	4.82	21	32	164

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

UP0210.0

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 01110245
Lab Batch ID: R47353

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 01101147-07
RunID: VARE_011108D-901756 Units: ug/L
Analysis Date: 11/08/2001 23:00 Analyst: D_R

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Ethylbenzene	ND	20	22	108	20	23	114	5.85	19	52	142
Methyl tert-butyl ether	0.65	20	24	116	20	25	121	4.54	20	39	150
Toluene	ND	20	21	105	20	22	110	5.18	20	38	159
m,p-Xylene	1.6	40	44	107	40	47	114	6.06	17	53	144
o-Xylene	0.70	20	21	104	20	23	110	6.33	18	53	143
Xylenes,Total	2.3	60	65	105	60	70	113	7.67	18	53	144

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

UP0210.0

Analysis: Gasoline Range Organics
Method: CA_GRO

WorkOrder: 01110245
Lab Batch ID: R47358

Method Blank

RunID: VARE_011108E-901892 Units: mg/L
Analysis Date: 11/08/2001 17:41 Analyst: D_R

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
01110245-01A	MW5
01110245-02A	MW6
01110245-03A	MW7

Analyte	Result	Rep Limit
Gasoline Range Organics	ND	0.050
Surr: 1,4-Difluorobenzene	97.0	62-144
Surr: 4-Bromofluorobenzene	101.3	44-153

Laboratory Control Sample (LCS)

RunID: VARE_011108E-901891 Units: mg/L
Analysis Date: 11/08/2001 17:16 Analyst: D_R

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Gasoline Range Organics	1	0.89	89	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 01101147-08
RunID: VARE_011108E-901896 Units: mg/L
Analysis Date: 11/08/2001 23:49 Analyst: D_R

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range Organics	ND	0.9	0.92	103	0.9	0.93	103	0.711	36	36	160

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

UP0210.0

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 01110245
Lab Batch ID: R47388

Method Blank

RunID: VARE_011109A-902501 Units: ug/L
Analysis Date: 11/09/2001 8:03 Analyst: D_R

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
01110245-01A	MW5
01110245-02A	MW6

Analyte	Result	Rep Limit
Benzene	ND	0.50
Ethylbenzene	ND	0.50
Methyl tert-butyl ether	ND	0.50
Toluene	ND	0.50
m,p-Xylene	ND	0.50
o-Xylene	ND	0.50
Xylenes,Total	ND	0.50
Surr: 1,4-Difluorobenzene	96.9	72-137
Surr: 4-Bromofluorobenzene	92.2	48-156

Laboratory Control Sample (LCS)

RunID: VARE_011109A-902500 Units: ug/L
Analysis Date: 11/09/2001 7:14 Analyst: D_R

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	49	99	70	130
Ethylbenzene	50	50	99	70	130
Methyl tert-butyl ether	50	48	97	70	130
Toluene	50	50	100	70	130
m,p-Xylene	100	99	99	70	130
o-Xylene	50	49	98	70	130
Xylenes,Total	150	148	99	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 01110043-01
RunID: VARE_011109A-902503 Units: ug/L
Analysis Date: 11/09/2001 9:42 Analyst: D_R

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
nzene	1.3	20	24	115	20	25	119	3.59	21	32	164

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

EXXON Company U.S.A.

UP0210.0

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 01110245
Lab Batch ID: R47388

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 01110043-01
RunID: VARE_011109A-902503 Units: ug/L
Analysis Date: 11/09/2001 9:42 Analyst: D_R

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
thylbenzene	0.79	20	24	114	20	24	114	0.249	19	52	142
lethyl tert-butyl ether	ND	20	23	116	20	26	127	8.88	20	39	150
Toluene	3.0	20	26	115	20	26	116	0.499	20	38	159
,p-Xylene	1.7	40	49	119	40	49	118	0.921	17	53	144
-Xylene	0.93	20	24	117	20	24	115	1.54	18	53	143
Xylenes,Total	2.6	60	73	117	60	73	117	0	18	53	144

Qualifiers:
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HOUSTON, TX 77054
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Quality Control Report

EXXON Company U.S.A.

UP0210.0

Analysis: Volatile Organics by Method 8260B
Method: SW8260B
WorkOrder: 01110245
Lab Batch ID: R48217

Method Blank

RunID: K_011119A-918250 Units: ug/L
Analysis Date: 11/19/2001 13:31 Analyst: JN

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
01110245-01B	MW5
01110245-02B	MW6

Analyte	Result	Rep Limit
Methyl tert-butyl ether	ND	5.0
Surr: 1,2-Dichloroethane-d4	104.0	62-130
Surr: 4-Bromofluorobenzene	96.0	70-130
Surr: Toluene-d8	102.0	74-122

Laboratory Control Sample (LCS)

RunID: K_011119A-918249 Units: ug/L
Analysis Date: 11/19/2001 12:33 Analyst: JN

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1-Dichloroethene	50	50	100	61	145
Benzene	50	53	106	76	127
Chlorobenzene	50	57	114	75	130
Toluene	50	53	106	76	125
Trichloroethene	50	56	112	71	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 01110444-04
RunID: K_011119A-918256 Units: ug/L
Analysis Date: 11/19/2001 16:24 Analyst: JN

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1-Dichloroethene	ND	50	36	72	50	46	92.0	24 *	14	38	172
Benzene	ND	50	46	92	50	48	96.0	4	11	66	134
Chlorobenzene	ND	50	50	100	50	50	100	0	13	67	115
Toluene	ND	50	48	96	50	49	98.0	2	13	59	125
Trichloroethene	ND	50	47	94	50	52	104	10	14	61	134

Qualifiers:
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J - Estimated value between MDL and PQL
MI - Matrix Interference
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* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

Sample Receipt Checklist

And

Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	01110245	Received By:	RE
Date and Time Received:	11/9/01 10:00:00 AM	Carrier name:	FedEx
Temperature:	4	Chilled by:	Water Ice

1.	Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
2.	Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑	
3.	Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
4.	Chain of custody present?	Yes ☑	No ☐		
5.	Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
6.	Chain of custody agrees with sample labels?	Yes ☑	No ☐		
7.	Samples in proper container/bottle?	Yes ☑	No ☐		
8.	Sample containers intact?	Yes ☑	No ☐		
9.	Sufficient sample volume for indicated test?	Yes ☑	No ☐		
10.	All samples received within holding time?	Yes ☑	No ☐		
11.	Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		
12.	Water - VOA vials have zero headspace?	Yes ☑	No ☐	Not Applicable ☐	
13.	Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐	

SPL Representative: Wyatt, Neaundra **Contact Date & Time:** 11/8/01

Client Name Contacted: John Ortega

Non Conformance Issues: 1.Did not receive any liters for all samples as marked on COC.1.Received (on 11/9/01)all liters that were not received with original shipment login liters to WO.

Client Instructions: 1.Did not receive any liters for all samples as marked on COC.1. Received all liters on 11/9/01 that were not received with original shipment login liters to WO.

EXXON COMPANY, USA. (West Coast)

CHAIN OF CUSTODY RECORD NO. _____ Page 1 of 1

Exxon Engineer: Gene Ortega Phone: 925 602 4710
Consultant Co. Name ETIC eng Contact: John Ortega
Address: 2285 Morello Ave Fax: 925 602 4720
Pleasant Hill CA 94523
RAS #: 7-0210 Facility/State ID # (TN Only): _____
AFE # (Terminal Only): _____ Consultant Project #: UP 0210.1
Location: 7840 Amador Valley RD (City) Dublin (State) CA
☒ EE ☐ C&M ☐ SDT
Consultant Work Release #: 21012153
Sampled By: B.B

SAMPLE I.D.	DATE	TIME	COMP	GRAB	MATRIX H_2O	MATRIX SOIL	MATRIX AIR	OTHER	PRESERVATIVE	NO. OF CONTAINERS	CONTAINER SIZE 40ml VOA/1Lag
MW5	11/5/01	1040			X				HCl	9	X
MW6	11/5/01	1210			X				HCl	8	X
MW7	11/5/01	1135			X				HCl	8	X

ANALYSIS REQUEST: (CHECK APPROPRIATE BOX)

TPH/GC 8015 GRO ☒ 8015 DRO ☒ | BTEX 8020 ☒ 602 ☐ | MTBE 8020 ☐ 8260 ☒ Confirm 14 hits by EPA 8260 | OXYGENATES (7) 8260 ☐ | O&G IR 413.1 ☐ GRAV. 413.2 ☐ | VOL. 8260 ☐ 624 ☐ | SEMI-VOL 8270 ☐ 625 ☐ | PNA/PAH 8100 ☐ 8310 ☐ 8270 ☐ | PCB/PEST 8081/8082 ☐ PCB ONLY ☐ | TCLP FULL ☐ VOAC SEMI-VOAC PEST ☐ HERB ☐ | METALS, TOTAL ☐ METALS, TCLP ☐ | LEAD, TOTAL 239.1 ☐ 7421 ☐ LEAD, TCLP ☐ | LEAD, DISSOLVED ☐ LEAD TOTAL ☐ | REACTIVITY ☐ CORROSIVITY ☐ FLASH POINT ☐

OTHER: PURGEABLE HYDROCARBON 8010 ☐ 601 ☐ | TPH/IR 418.1 ☐ | TOX/TOH ☐

RUSH

TAT
24 HR. ____* 72 HR. ____*
48 HR. ____* 96 HR. ____*
8 Business X
Other ____
*Contact US Prior to Sending Sample

EXXON UST CONTRACT NO. C41483

SPECIAL DETECTION LIMITS (Specify)

SPECIAL REPORTING REQUIREMENTS (Specify)
PDF ☐ ☐ EDD
FAX ☐ ☒ FAX C-O-C W/REPORT

REMARKS: *Confirm all MTBE hits w/ EPA 8260

LAB USE ONLY Lot # (W) Storage Location

WORK ORDER #: 0110245 LAB WORK RELEASE #: 21012153

QA/QC Level
Standard ☒ CLP ☐ Other ☐ _____

CUSTODY RECORD

	Relinquished By Sampler:	Date	Time	Received By:
	B.B	11/5/01	1700	
	Relinquished:	Date	Time	Received By:
	Relinquished:	Date	Time	Received By: 11/7/01 1000

Way Bill #: _____ Cooler Temp: 4

Triplicate: Original • White Lab's Copy • Green Client Copy • Yellow