

**ExxonMobil  
Refining & Supply Company**

Global Remediation  
2300 Clayton Road, Suite 1250  
Concord, CA 94520  
(925) 246-8747 Telephone  
(925) 246-8798 Facsimile  
gene.n.ortega@exxonmobil.com

**Gene N. Ortega**  
Territory Manager  
Global Remediation-US Retail

✓ No 448

**ExxonMobil**  
Refining & Supply

March 24, 2003

Ms. Eva Chu  
Alameda County Health Care Services Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway, Room 250  
Alameda, California 94502-6577

Alameda County  
APR 23 2003  
Environmental Health


**RE: Former Exxon RAS #7-0104/1725 Park Street, Alameda, California.**

Dear Ms. Chu:

Attached for your review and comment is a letter report entitled *Quarterly Groundwater Monitoring Report, Fourth Quarter 2002*, dated March 24, 2003, for the above-referenced site. The report was prepared by Environmental Resolutions, Inc. (ERI) of Novato, California, and details the results of monitoring, sampling, and remedial activities at the subject site.

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

Sincerely,

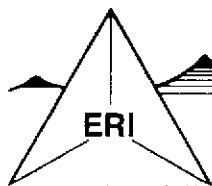


Gene N. Ortega  
Territory Manager

Attachment: ERI's Quarterly Groundwater Monitoring Report, Fourth Quarter 2002, dated March 24, 2003.

cc: w/ attachment  
Mr. Stephen Hill, California Regional Water Quality Control Board, San Francisco Bay Region  
Mr. Joseph A. Aldridge, Valero Energy Corporation

w/o attachment  
Mr. Scott R. Graham, Environmental Resolutions, Inc.



March 24, 2003  
ERI 250611.R10

Alameda County  
APR 23 2003  
Environmental Health

Mr. Gene N. Ortega  
ExxonMobil Oil Corporation  
2300 Clayton Road, Suite 1250  
Concord, California 94520

Subject: Quarterly Groundwater Monitoring and Remediation Status Report, Fourth Quarter 2002,  
Former Exxon Service Station 7-0104, 1725 Park Street, Alameda, California.

Mr. Ortega:

At the request of ExxonMobil Oil Corporation (ExxonMobil), Environmental Resolutions, Inc. (ERI) performed the fourth quarter 2002 groundwater monitoring and sampling activities at the subject site. The purpose of quarterly monitoring and sampling is to evaluate concentrations of dissolved hydrocarbons in groundwater and the effectiveness of remedial actions. The location of the site is shown on the Site Vicinity Map (Plate 1). The locations of select site features are shown on the Generalized Site Plan (Plate 2).

#### **GROUNDWATER MONITORING AND SAMPLING**

On November 8, 2002, ERI measured the depth to water (DTW) and collected groundwater samples from select wells for laboratory analysis. The quarterly groundwater monitoring event for this site was scheduled concurrently with Alisto Engineering Group (Alisto) of Lafayette, California, the environmental consultant for the Shell-branded Station (former Xtra Oil Company) site at 1701 Park Street, Alameda, California. Groundwater monitoring and sampling were performed in accordance with ERI's groundwater sampling protocol (Attachment A). Cumulative groundwater monitoring data for the Shell-branded site are summarized in Attachment B.

Historical and recent monitoring data are summarized in Table 1. A Groundwater Elevation Map is included as Plate 3. Due to ongoing groundwater and soil vapor extraction, the hydraulic gradient and groundwater flow direction may be affected and were not calculated.

#### **Laboratory Analyses and Results**

ERI submitted groundwater samples to Test America Incorporated (Test America), a California state-certified laboratory, under Chain-of-Custody protocol. The samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg); total petroleum hydrocarbons as diesel (TPHd); benzene, toluene, ethylbenzene, and total xylenes (BTEX); and methyl tertiary butyl ether (MTBE). The specific methods of analysis are listed in the notes in Table 1. The results of analyses are also presented in Table 1 and are shown on Plate 2. The laboratory analysis report and Chain-of-Custody record are attached (Attachment C).

## SOIL AND GROUNDWATER REMEDIATION

### Air Sparge/Soil Vapor Extraction

The air sparge/soil vapor extraction (AS/SVE) system began operation on February 16, 1998. ERI assumed operation of the system on April 1, 2000. The operation and performance data provided by the previous consultant are presented in Attachment D. The AS/SVE system was shutdown on March 24, 2000, pending system evaluation and retrofit. At the completion of retrofit activities, ERI restarted the system on June 28, 2000. Operational and performance data collected by ERI are presented in Table 2. The laboratory analysis report and Chain-of-Custody record are attached (Attachment C).

The AS/SVE system currently consists of six AS wells, two SVE wells, a horizontal SVE trench, a moisture separator, a Siemens 100 standard-cubic-feet-per-minute (scfm) vacuum blower, a Gast AS compressor, and two 500-pound vapor-phase granular activated carbon (GAC) vessels. ERI's standard operating procedure for calculating pounds of hydrocarbons in air stream is attached (Attachment E).

### Groundwater Extraction and Treatment

The GRS is designed to remove and treat separate-phase hydrocarbons and groundwater with dissolved hydrocarbons. Pneumatic pumps are used to extract groundwater from extraction wells EW1 through EW5. Subsurface and above-ground piping are used to transfer extracted groundwater to the treatment system. A transfer pump and polyvinyl chloride (PVC) piping are used to direct the water stream through sediment filters and liquid-phase GAC vessels connected in series. The treated groundwater is discharged to the sanitary sewer under East Bay Municipal Utilities District (EBMUD) Discharge Permit No. 50266631.

The GRS was operational from October 10, 1994, through March 28, 2000. ERI retrofitted the GRS system in April 2002. ERI replaced the system's particulate filter, transfer pump, and totalizer. In addition, repairs and/or services were performed on the system compressor, holding tank, control panel, secondary containment and compound. All other components of the GRS system were checked and found to be in good condition. At the completion of retrofit activities, ERI restarted the system on June 5, 2002. Cumulative GRS flow rates, total volume extracted, and influent, intermediate, and effluent sample concentrations are presented in Table 3. The laboratory analysis report and Chain-of-Custody record are attached (Attachment C).

**SUMMARY AND STATUS OF INVESTIGATION**

The following table presents the estimated amounts of gasoline hydrocarbons removed by the AS/SVE system since the last reporting period and since startup.

Period	Pounds of Hydrocarbons Removed	Gallons of Hydrocarbons Removed
8/28/02-11/06/02	44.46	7.30
To Date:	<690.4	<113.4

The following tables present the estimated amounts of hydrocarbons removed by the GRS since startup.

**Old System:**

Period	Pounds of Hydrocarbons* Removed	Gallons of Hydrocarbons Removed
10/10/94 - 3/28/00	<34.54	<5.67

**New System:**

Period	Pounds of Hydrocarbons** Removed	Gallons of Hydrocarbons Removed
8/28/02 - 11/06/02	<0.79	<0.13
To Date:	<37.10	<6.09

\*Includes TPHg and Benzene prior to 6/5/02

\*\*Includes TPHg, Benzene, and MTBE after 6/5/02.

**DOCUMENT DISTRIBUTION**

ERI recommends forwarding copies of this report to:

Ms. Eva Chu  
 Alameda County Health Care Services Agency  
 Department of Environmental Health  
 1131 Harbor Bay Parkway, Room 250  
 Alameda, California 94502-6577

Mr. Stephen Hill  
 California Regional Water Quality Control Board  
 San Francisco Bay Region  
 1515 Clay Street, Suite 1400  
 Oakland, California 94612

Mr. Joseph A. Aldridge  
 Valero Energy Corporation  
 685 West Third Street  
 Hanford, California 93230

**LIMITATIONS**

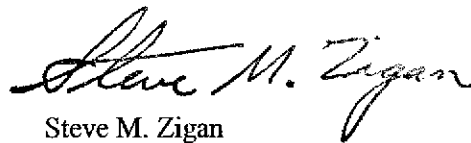
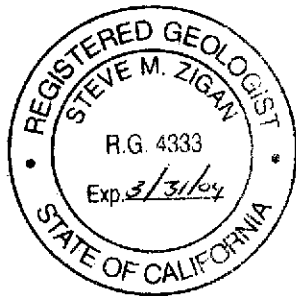
This report was prepared in accordance with generally accepted standards of environmental practice in California at the time this investigation was performed. This report has been prepared for ExxonMobil, and any reliance on this report by third parties shall be at such party's sole risk.

Please call Mr. Scott R. Graham, ERI's project manager for this site, at (415) 382-5989 with any questions regarding this project.

Sincerely,  
Environmental Resolutions, Inc.



Nicole D. Keas  
Staff Geologist



Steve M. Zigan  
R.G. 4333  
H.G. 133

- Attachments: Table 1: Cumulative Groundwater Monitoring and Sampling Data
- Table 2: Cumulative Hydrocarbon Removal and Emissions for Soil Vapor Extraction System
- Table 3: Operation and Performance Data for Groundwater Remediation System
- Plate 1: Site Vicinity Map
- Plate 2: Generalized Site Plan
- Plate 3: Groundwater Elevation Map
- Attachment A: Groundwater Sampling Protocol
- Attachment B: Summary of Groundwater Sampling Xtra Oil Company Service Station
- Attachment C: Laboratory Analysis Reports and Chain-of-Custody Records
- Attachment D: AS/SVE System Operation Data Provided by Previous Consultants
- Attachment E: ERI SOP-25: "Hydrocarbons Removed from a Vadose Well"

TABLE 1  
 CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA  
 Former Exxon Service Station 7-0104  
 1725 Park Street  
 Alameda, California  
 (Page 1 of 17)

Well ID # (TOC)	Sampling Date	SUBJ	DTW feet	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Select VOCs
ug/L												
(17.35)	09/12/94	NLPH	7.11	10.24	---	1,600a	---	200	1.9	210	6.6	---
	10/01/94	NLPH	7.44	9.91	---	1,400a	---	200	<0.5	160	6.6	---
	01/13/95	NLPH	5.13	12.22	---	2,100a	---	410b	17	280b	89	---
	04/27/95	NLPH	6.57	10.78	---	4,700	---	460	41	340	270	---
	08/03/95	NLPH	7.46	9.89	---	1,900	30	140	<5.0	160	9.9	---
	10/17/95	NLPH	7.67	9.68	---	280	5.5	6.2	<0.5	13	0.75	---
	01/24/96	NLPH	6.52	10.83	---	740	440	21	1.4	38	3.1	---
	04/24/96	NLPH	5.95	11.40	---	7,800	250	200	110	1,000	740	---
	07/26/96	NLPH	7.60	9.75	---	620	23	8.0	0.99	26	1.0	---
	10/30/96	NLPH	8.06	9.29	---	700	33	14	2.9	85	3.5	---
	01/31/97	NLPH	5.12	12.23	---	7,600	<200	420	33	1,400	480	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	NLPH	7.54	9.81	---	580	12	10	<0.5	<0.5	<0.5	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	4.48	12.87	---	820	<2.5c	110	2.8	170	14	---
	04/14/98	---	4.69	12.66	---	---	---	---	---	---	---	---
	07/30/98	NLPH	6.19	11.16	---	2,700	41	210	<5.0	550	<5.0	---
	10/19/98	NLPH	6.72	10.63	---	---	---	---	---	---	---	---
	01/13/99	NLPH	6.52	10.83	---	491	9.78	8.0	<0.5	<0.5	<0.5	---
	04/28/99	---	5.37	11.98	---	---	---	---	---	---	---	---
07/09/99	NLPH	6.39	10.96	---	1,030	10.6	114	8.07	184	0.644	---	
10/25/99	NLPH	6.68	10.67	---	---	---	---	---	---	---	---	
01/21/00	NLPH	6.20	11.15	---	<50	5.1	<1.0	<1.0	<1.0	<1.0	---	
04/14/00	NLPH	5.18	12.17	---	---	---	---	---	---	---	---	
06/16/00	Property transferred to Valero Refining Company.											
07/05/00	NLPH	5.93	11.42	---	88	200	4.3	<0.5	0.61	<0.5	---	
10/03/00	NLPH	6.51	10.84	---	<50	240	0.72	<0.5	<0.5	<0.5	---	
01/02/01	NLPH	6.17	11.18	---	<50	68	0.75	<0.5	<0.5	<0.5	---	
04/02/01	NLPH	7.42	9.93	---	140	4.3	<0.5	<0.5	4.1	1.1	---	
07/02/01	NLPH	6.27	11.08	---	74	14	<0.5	<0.5	<0.5	<0.5	---	
10/15/01	NLPH	6.64	10.71	---	110	83	2.6	<0.5	<0.5	<0.5	---	
(17.29)	Nov-2001	Well surveyed in compliance with AB 2886 requirements.										
	02/04/02	NLPH	5.08	12.21	52.0	75.0	67.1	0.70	<0.50	0.50	<0.50	---

**TABLE 1**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-0104  
1725 Park Street  
Alameda, California  
(Page 2 of 17)

Well ID # (TOC)	Sampling Date	SUBJ <.....>	DTW feet.....>	Elev.	TPHd <.....>	TPHg	MTBE	B ug/L.....>	T	E	X	Select VOCs
MW1 (cont.) (17.29)	05/06/02	NLPH	5.48	11.81	129	793	702/1,004g	8.6	<0.5	0.5	1.1	297h
	08/22/02	NLPH	7.14	10.15	602	1,150	181	120	0.8	9.0	3.6	---
	11/08/02	NLPH	6.19	11.10	504	947	182	95.6	4.0	3.7	2.7	---
MW2 (16.67)	09/12/94	NLPH	6.71	9.96	---	31,000a	---	4,400	120	1,700	2,100	---
	10/01/94	NLPH	7.22	9.45	---	45,000a	---	4,500	250	1,800	2,400	---
	01/13/95	NLPH	4.46	12.21	---	---	---	---	---	---	---	---
	04/27/95	NLPH	6.92	9.75	---	44,000	---	7,000	840	2,400	3,400	---
	08/03/95	NLPH	6.96	9.71	---	30,000	37,000	4,600	170	1,600	1,100	---
	10/17/1995	NLPH	7.83	8.84	---	45,000	14,000	5,400	190	2,000	1,500	---
	01/24/96	NLPH	6.45	10.22	---	30,000	4,100	5,000	810	2,200	2,200	---
	04/24/96	NLPH	6.00	10.67	---	34,000	22,000	8,700	410	2,200	2,000	---
	07/26/96	NLPH	7.14	9.53	---	40,000	18,000	10,000	<200	1,800	760	---
	10/30/96	NLPH	6.95	9.72	---	43,000	18,000	9,100	<250	2,400	730	---
	01/31/97	NLPH	5.07	11.60	---	28,000	8,000c	2,400	630	1,500	3,300	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	NLPH	7.34	9.33	---	18,000	2,600	2,900	82	1,500	530	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	4.46	12.21	---	29,000	28,000c	5,600	410	1,500	720	---
	04/14/98	---	4.48	12.19	---	---	---	---	---	---	---	---
	07/30/98	NLPH	6.01	10.66	---	24,000	6,300	7,500	<200	1,300	280	---
	10/19/98	NLPH	6.35	10.32	---	---	---	---	---	---	---	---
	01/13/99	NLPH	6.54	10.13	---	18,400	2,200	4,750	211	1,760	45.3	---
	04/28/99	---	5.54	11.13	---	---	---	---	---	---	---	---
	07/09/99	NLPH	6.45	10.22	---	14,100	3,410	4,270	80.1	1,300	339	---
	10/25/99	---	---	---	---	---	---	---	---	---	---	---
	01/21/00	---	---	---	---	---	---	---	---	---	---	---
	02/11/00	NLPH	---	---	---	<50	15	<1.0	<1.0	<1.0	<1.0	---
	04/14/00	NLPH	4.69	11.98	---	---	---	---	---	---	---	---
	06/16/00	Property transferred to Valero Refining Company.										
	07/05/00	NLPH	5.44	11.23	---	150	86	15	<0.5	6.2	2.8	---
	10/03/00	NLPH	6.31	10.36	---	200	2,500	35	0.51	5.1	12	---
	01/02/01	---	---	---	---	---	---	---	---	---	---	---
	04/02/01	NLPH	5.00	11.67	---	<50	680	3.6	<0.5	<0.5	<0.5	---





**TABLE 1**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-0104  
1725 Park Street  
Alameda, California  
(Page 4 of 17)

Well ID # (TOC)	Sampling Date	SUBJ	DTW feet	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Select VOCs
					ug/L							
MW3 (cont.)	10/03/00	---	---	---	---	---	---	---	---	---	---	---
(17.11)	01/02/01	NLPH	5.78	11.33	560d	2,700	3,100	1300	8.8	11	21.3	---
	04/02/01	NLPH	4.71	12.40	620	3,700	1,400	1,400	11	36	21	---
	07/02/01	NLPH	5.82	11.29	880	5,300	1,200	1,300	32	30	730	---
	10/15/01	NLPH	6.12	10.99	210e	2,300	1,800	630	2.5	8.2	3.34	---
(17.02)	Nov-2001	Well surveyed in compliance with AB 2886 requirements.										
	02/04/02	NLPH	4.59	12.43	402	8,830	1,420	2,300	166	150	158	---
	05/06/02	NLPH	4.84	12.18	1,300	7,950	544/967.0g	1,930	18.0	80.0	648	194h
	08/22/02	NLPH	6.42	10.60	416	2,270	298	506	3.5	8.0	6.5	---
	11/08/02	NLPH	5.66	11.36	193	1,640	470	330	1.8	4.9	2.7	---
MW4	09/12/94	NLPH	6.80	10.54	---	5,200a	---	900	57	310	490	---
(17.34)	10/01/94	NLPH	7.09	10.25	---	9,100a	---	1,200	66	360	380	---
	01/13/95	NLPH	4.66	12.68	---	25,000a	---	1,300	200	550	1,000	---
	04/27/95	NLPH	5.54	11.80	---	5,900	---	650	130	350	590	---
	08/03/95	NLPH	6.92	10.42	---	4,200	5,700	1,000	<12	170	140	---
	10/17/95	NLPH	7.50	9.84	---	6,900	1,700	1,300	30	360	380	---
	01/24/96	NLPH	5.81	11.53	---	6,300	830	1,900	46	290	330	---
	04/24/96	NLPH	5.44	11.90	---	5,000	1,600	1,800	<20	190	130	---
	07/26/96	NLPH	7.03	10.31	---	9,100	1,200	1,700	<25	340	280	---
	10/30/96	NLPH	7.57	9.77	---	5,300	1,500	1,100	35	420	300	---
	01/31/97	NLPH	4.22	13.12	---	6,500	40,000	1,200	28	490	130	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	NLPH	7.56	9.78	---	10,000	11,000	1,100	120	470	720	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	3.70	13.64	---	1,700	4,900c	450	6.8	220	73	---
	04/14/98	---	3.81	13.53	---	---	---	---	---	---	---	---
	07/30/98	NLPH	5.96	11.38	---	2,900	2,800	680	<10	220	56	---
	10/19/98	NLPH	6.51	10.83	---	---	---	---	---	---	---	---
	01/13/99	NLPH	6.24	11.10	---	2,140	1,800	146	<10	60.9	16.2	---
	04/28/99	---	4.80	12.54	---	---	---	---	---	---	---	---
	07/09/99	NLPH	6.04	11.30	---	1,300	1,310	322	<2.5	76.1	<2.5	---
	10/25/99	NLPH	6.51	10.83	---	---	---	---	---	---	---	---
	01/21/00	NLPH	5.75	11.59	---	2,200	1,000	410	3.70	40	14.4	---



TABLE 1  
 CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA  
 Former Exxon Service Station 7-0104  
 1725 Park Street  
 Alameda, California  
 (Page 6 of 17)

Well ID # (TOC)	Sampling Date	SUBJ <.....>	DTW feet	Elev. >.....<	TPHd <.....>	TPHg <.....>	MTBE <.....>	B <.....>	T <.....>	E <.....>	X <.....>	Select VOCs <.....>
MW5 (cont.) (16.71)	07/09/99	NLPH	6.08	10.63	---	4,360	2,360	1,780	18.6	45	<5.0	---
	10/25/99	NLPH	6.46	10.25	---	---	---	---	---	---	---	---
	01/21/00	NLPH	5.79	10.92	---	2,600	3,100	720	4.7	25	11.3	---
	04/14/00	NLPH	4.57	12.14	---	---	---	---	---	---	---	---
	06/16/00	Property transferred to Valero Refining Company.										
	07/05/00	NLPH	5.37	11.34	---	5,100	380	1,800	14	52	34	---
	10/03/00	NLPH	5.93	10.78	---	5,800	630	2,000	8.9	59	21	---
	01/02/01	NLPH	5.68	11.03	---	4,800	1,100	1,600	9.6	38	15	---
	04/02/01	NLPH	4.87	11.84	---	6,800	1,500	2,000	40	150	49	---
	07/02/01	NLPH	5.77	10.94	---	4,100	960	1,600	20	35	21	---
10/15/01	NLPH	6.15	10.56	---	3,900	1,000	1,400	8.7	17	15.7	---	
(16.64)	Nov-2001	Well surveyed in compliance with AB 2886 requirements.										
	02/04/02	NLPH	4.69	11.95	976	4,380	620	1,440	38.0	84.0	50.0	---
	05/06/02	NLPH	5.00	11.64	1,360	3,810	764/1,220g	1,110	20.0	26.0	26.0	306h/3.20i
	08/22/02	NLPH	6.98	9.66	695	3,190	545	823	9.0	11.0	31.0	---
	11/08/02	NLPH	5.31	11.33	645	3,360	746	1,050	9.4	11.1	17.8	---
MW6 (17.56)	09/12/94	NLPH	6.88	10.68	---	1,500a	---	150	4.4	170	85	---
	10/01/94	NLPH	7.15	10.41	---	87a	---	120	<0.5	99	38	---
	01/13/95	NLPH	4.80	12.76	---	9,900a	---	710	220	780	1,100	---
	04/27/95	NLPH	6.14	11.42	---	3,900	---	340	40	460	320	---
	08/03/95	NLPH	6.83	10.73	---	1,100	65	89	<2.5	110	63	---
	10/17/95	NLPH	7.66	9.90	---	8,500	<5.0	410	74	850	110	---
	01/24/96	NLPH	5.86	11.70	---	31,000	<5.0	560	1,500	2,200	7,500	---
	04/24/96	NLPH	5.39	12.17	---	15,000	280	460	570	1,400	3,300	---
	07/26/96	NLPH	6.97	10.59	---	27,000	1,300	270	660	1,600	5,500	---
	10/30/96	NLPH	7.45	10.11	---	28,000	900	490	440	1,800	6,200	---
	01/31/97	NLPH	4.30	13.26	---	7,000	770	190	1,000	380	1,400	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	NLPH	7.57	9.99	---	6,800	1,100	200	<50	300	860	---
	10/08/97	NLPH	7.48	10.08	---	51,000	580	870	7,300	2,600	12,000	---
	01/28/98	NLPH	3.74	13.82	---	15,000	2,400c	650	2,300	900	2,700	---
04/14/98	NLPH	3.92	13.64	---	25,000	2,100c	850	3,300	1,200	4,300	---	
07/30/98	NLPH	6.09	11.47	---	5,900	910	270	65	500	630	---	





**TABLE 1**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-0104  
1725 Park Street  
Alameda, California  
(Page 9 of 17)

Well ID # (TOC)	Sampling Date	SUBJ <.....>	DTW feet	Elev. >.....<	TPHd <.....>	TPHg <.....>	MTBE <.....>	B ug/L	T .....>	E .....>	X .....>	Select VOCs	
MW8 (cont.) (16.33)	04/10/97	---	---	---	---	---	---	---	---	---	---	---	
	07/10/97	---	---	---	---	---	---	---	---	---	---	---	
	10/08/97	---	---	---	---	---	---	---	---	---	---	---	
	01/28/98	NLPH	5.11	11.22	---	---	---	---	---	---	---	---	
	04/14/98	NLPH	5.02	11.31	---	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---	
	07/30/98	NLPH	5.84	10.49	---	<50	6.6	<0.5	<0.5	<0.5	<0.5	---	
	10/19/98	NLPH	6.07	10.26	---	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---	
	01/13/99	NLPH	5.59	10.74	---	<50	<2.0	<0.5	<0.5	<0.5	<0.5	---	
	04/28/99	NLPH	5.38	10.95	---	<50	<0.5c	<0.5	<0.5	<0.5	<0.5	ND	
	07/09/99	NLPH	5.71	10.62	---	<50	3.01	<0.5	<0.5	<0.5	<0.5	---	
	10/25/99	NLPH	6.15	10.18	---	<50	<1.0	<1.0	<1.0	<1.0	<1.0	---	
	01/21/00	NLPH	6.51	9.82	---	<50	<1.0	<1.0	<1.0	<1.0	<1.0	---	
	04/14/00	Brown	5.54	10.79	---	<50	<1	<1	<1	<1	<1	---	
	06/16/00	Property transferred to Valero Refining Company.											
	07/05/00	NLPH	5.67	10.66	---	<50	<2	<0.5	<0.5	<0.5	<0.5	<0.5	---
	10/03/00	NLPH	6.02	10.31	---	<50	<2	<0.5	<0.5	<0.5	<0.5	<0.5	---
01/02/01	NLPH	5.95	10.38	140d	<50	<2	<0.5	<0.5	<0.5	<0.5	<0.5	---	
04/02/01	---	---	---	---	---	---	---	---	---	---	---	---	
07/02/01	NLPH	5.76	10.57	<50	<50	<2	<0.5	<0.5	<0.5	<0.5	<0.5	---	
10/15/01	NLPH	6.19	10.14	<50	<50	<2	<0.5	<0.5	<0.5	<0.5	<0.5	---	
(16.24)	Nov-2001	Well surveyed in compliance with AB 2886 requirements.											
	02/04/02	f	---	---	---	---	---	---	---	---	---	---	
	05/06/02	NLPH	5.31	10.93	<50	<50.0	0.5/<0.50g	<0.5	<0.5	<0.5	<0.5	ND	
	08/22/02	NLPH	6.07	10.17	<50	<50.0	<0.5	<0.5	<0.5	<0.5	<0.5	---	
	11/08/02	NLPH	5.91	10.33	<50	<50.0	<0.5	<0.5	<0.5	<0.5	<0.5	---	
MW9 (15.62)	09/12/94	NLPH	6.84	8.78	---	<50a	---	<0.5	<0.5	<0.5	<0.5	---	
	10/01/94	NLPH	6.97	8.65	---	<50a	---	<0.5	<0.5	<0.5	<0.5	---	
	01/13/95	NLPH	6.18	9.44	---	<50a	---	<0.5	<0.5	<0.5	<0.5	---	
	04/27/95	NLPH	6.58	9.04	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	
	08/03/95	NLPH	6.72	8.90	---	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---	
	10/17/95	NLPH	7.09	8.53	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---	
	01/24/96	NLPH	6.46	9.16	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---	
	04/24/96	NLPH	6.43	9.19	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---	

TABLE 1  
 CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA  
 Former Exxon Service Station 7-0104  
 1725 Park Street  
 Alameda, California  
 (Page 10 of 17)

Well ID # (TOC)	Sampling Date	SUBJ <.....>	DTW feet	Elev.	TPHd <.....>	TPHg <.....>	MTBE <.....>	B <.....>	T <.....>	E <.....>	X <.....>	Select VOCs <.....>	
ug/L													
MW9 (cont.) (15.62)	07/26/96	NLPH	6.80	8.82	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---	
	10/30/96	NLPH	6.94	8.68	---	<50	<5.0	<0.5	<0.5	<0.5	<0.5	---	
	01/31/97	NLPH	6.10	9.52	---	---	---	---	---	---	---	---	
	04/10/97	---	---	---	---	---	---	---	---	---	---	---	
	07/10/97	---	---	---	---	---	---	---	---	---	---	---	
	10/08/97	---	---	---	---	---	---	---	---	---	---	---	
	01/28/98	NLPH	5.66	9.96	---	---	---	---	---	---	---	---	
	04/14/98	---	---	---	---	---	---	---	---	---	---	---	
	07/30/98	NLPH	6.17	9.45	---	---	---	---	---	---	---	---	
	10/19/98	NLPH	6.40	9.22	---	---	---	---	---	---	---	---	
	01/13/99	NLPH	6.28	9.34	---	---	---	---	---	---	---	---	
	04/28/99	NLPH	5.87	9.75	---	<50	<0.5c	<0.5	<0.5	<0.5	<0.5	---	
	07/09/99	NLPH	6.24	9.38	---	<50	<2.0	<0.5	<0.5	<0.5	<0.5	---	
	10/25/99	NLPH	6.67	8.95	---	<50	<1.0	<1.0	<1.0	<1.0	<1.0	---	
	01/21/00	NLPH	6.93	8.69	---	<50	<1.0	<1.0	<1.0	<1.0	<1.0	---	
	04/14/00	Turbid	6.05	9.57	---	<50	<1	<1	<1	<1	<1	---	
	06/16/00	Property transferred to Valero Refining Company.											
	07/05/00	NLPH	6.34	9.28	---	<50	<2	<0.5	<0.5	<0.5	<0.5	<0.5	---
	10/03/00	NLPH	6.52	9.10	---	<50	<2	<0.5	<0.5	<0.5	<0.5	<0.5	---
	01/02/01	NLPH	6.53	9.09	---	<50	<2	<0.5	<0.5	<0.5	<0.5	<0.5	---
04/02/01	NLPH	6.21	9.41	---	<50	<2	<0.5	<0.5	0.57	0.73	---		
07/02/01	NLPH	6.40	9.22	---	<50	<2	<0.5	<0.5	<0.5	<0.5	---		
10/15/01	NLPH	6.65	8.97	---	<50	<2	<0.5	<0.5	<0.5	<0.5	---		
(15.56)	Nov-2001	Well surveyed in compliance with AB 2886 requirements.											
	02/04/02	NLPH	4.77	10.79	<50.0	<50.0	0.50	<0.50	<0.50	<0.50	<0.50	---	
	05/06/02	NLPH	6.29	9.27	<50	<50.0	<0.5/<0.50g	<0.5	<0.5	<0.5	<0.5	ND	
	08/22/02	NLPH	6.70	8.86	<50	<50.0	<0.5	<0.5	<0.5	<0.5	<0.5	---	
	11/08/02	NLPH	6.55	9.01	<50	<50.0	<0.5	<0.5	<0.5	<0.5	<0.5	---	

**TABLE 1**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**

Former Exxon Service Station 7-0104  
1725 Park Street  
Alameda, California  
(Page 11 of 17)

Well ID # (TOC)	Sampling Date	SUBJ <.....>	DTW feet.....>	Elev.	TPHd <.....>	TPHg	MTBE	B	T	E	X	Select VOCs
.....ug/L.....>												
MW10 (16.79)	09/12/94	NLPH	7.04	9.75	---	71a	---	<0.5	<0.5	1.6	<0.5	---
	10/01/94	NLPH	7.30	9.49	---	330a	---	1.1	<0.5	2.8	0.73	---
	01/13/95	NLPH	6.04	10.75	---	90a	---	<0.5	<0.5	<0.5	<0.5	---
	04/27/95	NLPH	6.66	10.13	---	140	---	<0.5	<0.5	5.4	1.3	---
	08/03/95	NLPH	7.23	9.56	---	150	<2.5	<0.5	<0.5	<0.5	<0.5	---
	10/17/95	NLPH	7.93	8.86	---	<50	95	<0.5	<0.5	<0.5	<0.5	---
	01/24/96	NLPH	6.43	10.36	---	760	24	1.6	0.52	62	28	---
	04/24/96	NLPH	6.42	10.37	---	110	6.8	<0.5	<0.5	7.1	<0.5	---
	07/26/96	NLPH	7.47	9.32	---	140	<5.0	<0.5	<0.5	12	0.86	---
	10/30/96	NLPH	7.88	8.91	---	<50	5.6	<0.5	<0.5	<0.5	<0.5	---
	01/31/97	NLPH	5.88	10.91	---	<50	10	<0.5	<0.5	<0.5	<0.5	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	NLPH	7.32	9.47	---	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	12/12/97	Well destroyed.		---	---	---	---	---	---	---	---	---
MW11 (18.04)	10/17/95	NLPH	7.72	10.32	---	34,000	890	3,800	150	950	4,500	---
	01/24/96	NLPH	5.97	12.07	---	44,000	<500	3,800	1,200	2,100	9,800	---
	04/24/96	NLPH	5.84	12.20	---	34,000	720	2,900	1,400	1,700	8,300	---
	07/26/96	NLPH	6.98	11.06	---	39,000	800	4,600	4,200	950	9,500	---
	10/30/96	NLPH	7.54	10.50	---	53,000	990	4,200	3,600	2,100	9,600	---
	01/31/97	NLPH	5.00	13.04	---	23,000	310c	170	2,500	940	4,300	---
	04/10/97	NLPH	---	---	---	29,000	200	1,200	440	970	6,400	---
	07/10/97	NLPH	7.30	10.74	---	42,000	690	1,700	870	1,900	12,000	---
	10/08/97	NLPH	7.62	10.42	---	42,000	1,100	1,700	2,500	1,400	9,900	---
	01/28/98	NLPH	4.77	13.27	---	35,000	6,800c	2,400	3,500	1,700	7,900	---
	04/14/98	NLPH	4.68	13.36	---	15,000	1,200c	1,700	250	500	2,000	---
	07/30/98	NLPH	6.33	11.71	---	24,000	1,700	1,600	560	1,000	4,300	---
	10/19/98	NLPH	6.65	11.39	---	29,000	1,700	1,200	2,500	920	4,900	---
	01/13/99	NLPH	6.42	11.62	---	50,900	1,920	2,210	6,440	2,030	10,600	---
	04/28/99	NLPH	5.30	12.74	---	59,400	2,390c	3,790	4,260	1,790	2,970	---
07/09/99	NLPH	6.22	11.82	---	51,500	4,630	5,890	5,340	2,370	12,700	---	
10/25/99	NLPH	6.77	11.27	---	51,000	1,700	3,900	5,800	2,300	12,300	---	







**TABLE 1**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 7-0104  
1725 Park Street  
Alameda, California  
(Page 14 of 17)

Well ID #	Sampling	SUBJ	DTW	Elev.	TPHd	TPHg	MTBE	B	T	E	X	Select VOCs
(TOC)	Date	<.....>	feet	>	ug/L							
EW2 (16.05)	09/12/94	NLPH	6.09	9.96	---	8,800a	---	2,000	79	180	290	---
	10/01/94	NLPH	7.32	8.73	---	9,500a	---	1,400	6.7	700	310	---
	01/13/95	NLPH	14.38	1.67	---	5,700a	---	930	270	21	280	---
	04/27/95	NLPH	15.23	0.82	---	---	---	---	---	---	---	---
	08/03/95	NLPH	7.19	8.86	---	830	1,600	170	27	36	64	---
	10/17/95	NLPH	18.97	-2.92	---	180	3,600	<0.5	<0.5	<0.5	5.1	---
	01/24/96	NLPH	20.32	-4.27	---	1,700	6,400	290	82	14	170	---
	04/24/96	NLPH	9.46	6.59	---	3,500	7,300	670	200	110	490	---
	07/26/96	NLPH	16.50	-0.45	---	1,400	14,000	250	56	10	220	---
	10/30/96	NLPH	20.30	-4.25	---	1,500	13,000	200	44	8.8	190	---
	01/31/97	NLPH	19.21	-3.16	---	---	---	---	---	---	---	---
	04/10/97	---	---	---	---	---	---	---	---	---	---	---
	07/10/97	---	---	---	---	---	---	---	---	---	---	---
	10/08/97	---	---	---	---	---	---	---	---	---	---	---
	01/28/98	NLPH	3.35	12.70	---	---	---	---	---	---	---	---
	04/14/98	NLPH	3.45	12.60	---	---	---	---	---	---	---	---
	07/30/98	NLPH	11.50	4.55	---	---	---	---	---	---	---	---
	10/19/98	NLPH	5.67	10.38	---	---	---	---	---	---	---	---
	01/13/99	NLPH	9.57	6.48	---	---	---	---	---	---	---	---
	04/28/99	NLPH	10.15	5.90	---	---	---	---	---	---	---	---
06/16/00	Property transferred to Valero Refining Company.											
(16.07)	Nov-2001	Well surveyed in compliance with AB 2886 requirements.										
Not monitored or sampled 07/09/99 through present.												
EW3 (16.02)	09/12/94	NLPH	6.12	9.90	---	300a	---	44	5.9	12	31	---
	10/01/94	NLPH	10.52	5.50	---	140a	---	12	0.42	1.7	3.7	---
	01/13/95	NLPH	18.13	-2.11	---	230a	---	4.6	7.6	1.2	6.6	---
	04/27/95	NLPH	23.07	-7.05	---	---	---	---	---	---	---	---
	08/03/95	NLPH	22.90	-6.88	---	<200	1,400	<2.0	<2.0	<2.0	<2.0	---
	10/17/95	NLPH	22.87	-6.85	---	74	2,400	4.4	<0.5	<0.5	<0.5	---
	01/24/96	NLPH	20.97	-4.95	---	120	2,300	16	<0.5	<0.5	<0.5	---
	04/24/96	NLPH	18.10	-2.08	---	180	3,800	34	3.7	8.9	11	---
07/26/96	NLPH	13.14	2.88	---	180	2,000	45	0.7	<0.5	2.1	---	





**TABLE 1**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**

Former Exxon Service Station 7-0104

1725 Park Street  
Alameda, California

(Page 17 of 17)

---

Notes:		
SUBJ	=	Results of subjective evaluation, liquid-phase hydrocarbon thickness in feet.
TOC	=	Elevation of top of well casing; in feet above mean sea level.
DTW	=	Depth to water.
Elev.	=	Elevation of groundwater in feet above mean sea level.
TPHg	=	Total petroleum hydrocarbons as gasoline analyzed using EPA Method 5030/8015 (modified).
TPHd	=	Total petroleum hydrocarbons as diesel using EPA Method 5030/8015 (modified).
MTBE	=	Methyl tertiary butyl ether analyzed using EPA Method 8021B.
BTEX	=	Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8021B.
Select VOCs	=	Select volatile organic compounds analyzed using EPA Method 8260.
NLPH	=	No liquid-phase hydrocarbons.
SPL	=	Separate-phase liquids present.
ND	=	Not detected at or above laboratory detection limits.
---	=	Not sampled.
ug/L	=	Micrograms per liter.
<	=	Less than the stated laboratory method detection limit.
a	=	Total volatile hydrocarbons by DHS /LUFT Manual Method.
b	=	Results obtained from a 1:10 dilution analyzed on January 17, 1995.
c	=	Methyl tertiary butyl ether by EPA Method 8260 (GC/MS).
d	=	Diesel-range hydrocarbons reportedly detected in bailer blank; result is suspect.
e	=	TPHd was detected in the sample; however, the detections do not resemble the typical diesel pattern.
f	=	Well inaccessible.
g	=	MTBE analyzed using EPA Method 8260B.
h	=	Tertiary butyl alcohol (TBA) detected using EPA Method 8260B.
i	=	Di-isopropyl ether (DIPE) detected using EPA Method 8260B.
j	=	Ethyl tertiary butyl ether (ETBE) detected using EPA Method 8260B.

---

Data prior to second Quarter 2000 provided by Delta Environmental Consultants, Inc.

---

TABLE 2  
 CUMULATIVE HYDROCARBON REMOVAL AND EMISSIONS FOR  
 SOIL VAPOR EXTRACTION SYSTEM  
 Former Exxon Service Station 7-0104  
 1725 Park Street  
 Alameda, California  
 (Page 1 of 7)

Date	Sample ID	Hour Meter	Hours of Operation	FIELD MEASUREMENTS					Analytical Laboratory Results		TPHg Removal		Benzene Removal		Benzene Emission Rate lbs/day
				Temp F	Pressure in H <sub>2</sub> O	Vacuum in H <sub>2</sub> O	Flow lfm scfm	PID ppmv	TPHg mg/m <sup>3</sup>	Benzene mg/m <sup>3</sup>	Per Period Pounds	Cumulative Pounds	Per Period Pounds	Cumulative Pounds	
02/16/98	System startup	---	0	---	---	---	---	---	---	---	---	---	---	---	---
03/24/00	System shutdown pending evaluation	12,001									< 60.8	< 60.8	---	---	
04/01/00	Environmental Resolutions Inc., assumed operation of the system.														
06/28/00	System upgrades completed, system restarted.														
	A-INF	12,008	7	---		26	---	---	770.0						
	A-INT								18.1						
	A-EFF								13.3						
	System shutdown for carbon changeout, 2 x 500-pounds.														
07/11/00	System down upon arrival, restart.														
	A-INF	12,011	3	86		8	4,000	83	207.0	51	< 1.0	0.16	< 61.0	0.00	0.0
	A-INT								9.1	< 10	< 1.0				
	A-EFF								0.0	< 10	< 1.0				< 0.01
07/20/00	System running upon arrival (VES only). System running on departure.														
	A-INF	12,226	215	78		9	4,500	95	42.3						
	A-INT								2.4						
	A-EFF								0.0						
07/31/00	System down on departure for carbon changeout (2x500 lb).														
	A-INF	12,493	267	87		9	4,500	93	266.0						
	A-INT								73.0						
	A-EFF								41.2						
08/10/00	System down upon arrival for carbon changeout. System running on departure.														
	A-INF	12,733	0	80		30	800	16	53.5	43	< 1	6.27	< 67.2	< 0.13	< 0.14
	A-INT								0.0	< 10	< 1				
	A-EFF								0.0	< 10	< 1				< 0.001
08/16/00		12,874	141	84		31.5	250	5	164.1						
	A-INT								0.0						
	A-EFF								0.0						
08/24/00	System down on departure for carbon changeout.														
	A-INF	13,065	191	76		20	2,400	49	294.0						
	A-INT								23.7						
	A-EFF								2.4						
09/12/00	System down upon arrival for carbon changeout. System running on departure.														
	A-INF	13,070	5	74		20	2,600	53	247.5	190	2.5	5.09	< 72.3	< 0.08	< 0.21
	A-INT								0.0	< 10	< 1.0				
	A-EFF								0.0	< 10	< 1.0				< 0.00
09/26/00		13,406	336	80		22	2,450	50	448.7						

TABLE 2  
 CUMULATIVE HYDROCARBON REMOVAL AND EMISSIONS FOR  
 SOIL VAPOR EXTRACTION SYSTEM  
 Former Exxon Service Station 7-0104  
 1725 Park Street  
 Alameda, California  
 (Page 2 of 7)

Date	Sample ID	Hour Meter	Hours of Operation	FIELD MEASUREMENTS						Analytical Laboratory Results			TPHg Removal		Benzene Removal		Benzene Emission Rate lbs/day
				Temp F	Pressure in H <sub>2</sub> O	Vacuum in H <sub>2</sub> O	Flow lfm	scfm	PID ppmv	TPHg mg/m <sup>3</sup>	Benzene mg/m <sup>3</sup>	Per Period Pounds	Cumulative Pounds	Per Period Pounds	Cumulative Pounds		
	A-INT								10.7								
	A-EFF								0.0								
10/12/00	System running on arrival and down upon departure for carbon c/o. Samples taken																
	A-INF	13,786	380	67		24	2,400	50	96.4	55	< 1.0	16.90	< 89.2	< 0.24	< 0.45		
	A-INT								72.3	21	< 1.0						
	A-EFF								9.0	< 10	< 1.0						< 0.004
10/30/00	System down upon arrival for carbon changeout. System running on departure.																
	A-INF	13,788	2	56		24	2,450	52	10,024	1,700	15	0.33	< 89.5	< 0.00	< 0.46		
	A-INT								59.1	< 10	< 1.0						
	A-EFF								0.0	< 10	< 1.0						< 0.005
11/08/00	A-INF	14,008	220	60		25	2,300	48	102.6	29	< 1.0	35.42	< 125.0	< 0.33	< 0.79		
	A-INT								41.8	< 10	< 1.0						
	A-EFF								Stet	< 10	< 1.0						< 0.004
11/21/00	System running upon arrival. System down upon departure for carbon changeout.																
	A-INF	14,314	306	68		25	2,300	47	322.0								
	A-INT								32.3								
	A-EFF								42.9								
12/06/00	System down upon arrival for carbon changeout. System down upon departure for carbon changeout																
12/11/00	System down upon arrival due to carbon changeout. Running on departure.																
	A-INF	14,316	2	52		24	2,400	51	957	240	2.1	7.66	< 132.6	< 0.09	< 0.87		
	A-INT								1.2	< 10	< 1.0						
	A-EFF								3.1	< 10	< 1.0						< 0.005
12/27/00	A-INF	14,697	381	56		26	2,600	54	192.1								
	A-INT								4.8								
	A-EFF								0.0								
01/09/01	A-INF	15,012	315	56		25	2,400	50	82.4	32	< 1.0	17.95	< 150.6	< 0.20	< 1.08		
	A-INT								23.2	< 10	< 1.0						
	A-EFF								0.0	< 10	< 1.0						< 0.005
01/23/01	System down on departure for carbon changeout.																
	A-INF	15,353	341	60		26	2,300	48	485.0								
	A-INT								35.2								
	A-EFF								20.7								
01/31/01	A-INF	15,355	2	45		33	1,500	32	10000								
	A-INT								0								
	A-EFF								0								
02/13/01	A-INF	15,669	314	56		12	4,000	87	37.8	31	< 1.0	5.32	< 155.9	< 0.17	< 1.25		
	A-INT								29.5	< 10	< 1.0						
	A-EFF								0	< 10	< 1.0						< 0.008
02/27/01	System down upon departure for C/O.																
	A-INF	15,999	330	70		8	4,000	85	316								
	A-INT								37.5								
	A-EFF								73.6								
03/13/01	System down upon arrival for C/O and running upon departure. Monthly samples taken.																



TABLE 2  
 CUMULATIVE HYDROCARBON REMOVAL AND EMISSIONS FOR  
 SOIL VAPOR EXTRACTION SYSTEM  
 Former Exxon Service Station 7-0104  
 1725 Park Street  
 Alameda, California  
 (Page 3 of 7)

Date	Sample ID	Hour Meter	Hours of Operation	FIELD MEASUREMENTS					Analytical Laboratory Results			TPHg Removal		Benzene Removal		Benzene Emission Rate lbs/day	
				Temp F	Pressure in H <sub>2</sub> O	Vacuum in H <sub>2</sub> O	Flow lfm	scfm	PID ppmv	TPHg mg/m <sup>3</sup>	Benzene mg/m <sup>3</sup>	Per Period Pounds	Cumulative Pounds	Per Period Pounds	Cumulative Pounds		
	A-INF	16,002	3	65		9	4,000	86	5833	1300	6.1	71.70	< 227.6	< 0.38	< 1.63		
	A-INT								190.4	16	< 1.0						
	A-EFF								0	11	< 1.0					< 0.008	
03/27/01	System running on arrival and departure.																
	A-INF	16,336	334	62		10	4,000	86	182.6								
	A-INT								16.8								
	A-EFF								0								
04/12/01	System running on arrival and departure.																
	A-INF	16,725	389	72		8	4,000	85	4.8								
	A-INT								2.6								
	A-EFF								0								
04/25/01	System running on arrival and departure.																
	A-INF	17,034	309	80		9	4,000	84	18.6	< 10	< 1.0	< 214.61	< 442.2	< 1.16	< 2.79		
	A-INT								9.5	< 10	< 1.0						
	A-EFF								0	26	< 1.0					< 0.008	
05/09/01	System running on arrival and departure.																
	A-INF	17,371	337	86		10	4,000	83	11.3	< 10	< 1.0	< 1.05	< 443.3	< 0.10	< 2.90		
	A-INT								3.6	< 10	< 1.0						
	A-EFF								5.9	< 10	< 1.0					< 0.007	
05/24/01	System running on arrival and departure.																
	A-INF	17,734	363	86		20	3,050	61	6.2								
	A-INT								1.6								
	A-EFF								3.1								
06/04/01	System running on arrival and departure.																
	A-INF	17,992	258	80		40	500	10	496	280	< 1.0	< 15.53	< 458.8	< 0.11	< 3.00		
	A-INT								19.7	< 10	< 1.0						
	A-EFF								3.2	< 10	< 1.0					< 0.001	
06/19/01	System running on arrival and departure.																
	A-INF	18,353	361	80		38	500	10	140								
	A-INT								6.4								
	A-EFF								3.0								
07/02/01	System running on arrival and departure.																
	A-INF	18,660	307	80		38	500	10	7.2								
	A-INT								0.0								
	A-EFF								0.0								
07/17/01	System running on arrival and departure.																
	A-INF	19,028	368	75		10	4,000	84	0.0	< 10	< 1.0	< 26.38	< 485.2	< 0.18	< 3.19		
	A-INT								0.0	< 10	< 1.0						
	A-EFF								0.0	< 10	< 1.0					< 0.008	
08/07/01	System running on arrival and shut down on departure for blower failure																
	A-INF	---	---	---		---	---	---	---								
	A-INT								---								
	A-EFF								---								

TABLE 2  
 CUMULATIVE HYDROCARBON REMOVAL AND EMISSIONS FOR  
 SOIL VAPOR EXTRACTION SYSTEM  
 Former Exxon Service Station 7-0104  
 1725 Park Street  
 Alameda, California  
 (Page 4 of 7)

Date	Sample ID	Hour Meter	Hours of Operation	FIELD MEASUREMENTS					Analytical Laboratory Results		TPHg Removal		Benzene Removal		Benzene Emission Rate lbs/day
				Temp F	Pressure in H <sub>2</sub> O	Vacuum in H <sub>2</sub> O	Flow lfm scfm	PID ppmv	TPHg mg/m <sup>3</sup>	Benzene mg/m <sup>3</sup>	Per Period Pounds	Cumulative Pounds	Per Period Pounds	Cumulative Pounds	
08/13/01	System down on arrival, blower removed awaiting replacement.														
08/27/01	System down, awaiting blower replacement.														
09/10/01	System down, awaiting blower replacement.														
10/18/01	System down on arrival, installed blower, and running on departure.														
	A-INF	19,534	506	120		31	4,000	74	568.0						
	A-INT								3.0						
	A-EFF								2.0						
10/24/01	System running on arrival and running upon departure.														
	A-INF	19,673	139	80		41	3,300	63	93.1	72	< 1.0	< 7.31	< 492.5	< 0.18	< 3.36
	A-INT								7.3	< 10	< 1.0				
	A-EFF								5	< 10	< 1.0				< 0.006
11/07/01	System running on arrival and down upon departure for carbon c/o. Samples taken														
	A-INF	20,012	339	74		45	3,000	58	230.0	55	< 1.0	4.88	< 497.4	< 0.08	< 3.44
	A-INT								27.0	< 10	< 1.0				
	A-EFF								5.1	< 10	< 1.0				< 0.005
11/21/01	System running on arrival and down upon departure for carbon c/o. Samples taken														
	A-INF	20,012	0	150		45	3,000	51	373.0						
	A-INT								0.0						
	A-EFF								0						
12/12/01	System down upon arrival, K.O. tank H/H, and running upon departure.														
12/12/01	A-JNF	20,361	349	142		46	3,000	51	98.1	45	1.3	3.55	< 500.9	< 0.08	< 3.52
	A-INT								1.0	< 10	< 1.0				
	A-EFF								2.7	< 10	< 1.0				< 0.005
12/27/01	System down upon arrival and running upon departure.														
12/27/01	A-INF	20,508	147	142		44	2,400	41	2396						
	A-INT								2.4						
	A-EFF								0						
01/09/02	System down upon arrival, K.O. tank H/H, and running upon departure.														
01/09/02	A-INF	20,541	33	148		42	2,700	46	794.5	670	8.0	11.68	< 512.6	0.15	< 3.67
	A-INT								36.2	< 10	< 1.0				
	A-EFF								2	< 10	< 1.0				< 0.004
01/23/02	System running upon arrival and down upon departure for carbon c/o.														
01/23/02	A-INF	20,876	335	136		45	3,800	66	41.2						
	A-INT								8.3						
	A-EFF								7.2						
02/06/02	System down upon arrival and running upon departure.														
02/06/02	A-INF	20,877	1	50		50	3,000	60	260	458	24.5	37.43	< 550.0	1.08	< 4.75
	A-INT								4.9	< 5.00	< 0.500				
	A-EFF								0.1	< 5.00	< 0.500				< 0.003
02/21/02	System running upon arrival and upon departure.														
02/21/02	A-INF	21,237	360	158		50	2,600	43	189.8						
	A-INT								4.7						
	A-EFF								0.0						

TABLE 2  
 CUMULATIVE HYDROCARBON REMOVAL AND EMISSIONS FOR  
 SOIL VAPOR EXTRACTION SYSTEM  
 Former Exxon Service Station 7-0104  
 1725 Park Street  
 Alameda, California  
 (Page 5 of 7)

Date	Sample ID	Hour Meter	Hours of Operation	FIELD MEASUREMENTS					Analytical Laboratory Results		TPH <sub>g</sub> Removal		Benzene Removal		Benzene Emission Rate lbs/day	
				Temp F	Pressure in H <sub>2</sub> O	Vacuum in H <sub>2</sub> O	Flow lfm	scfm	PID ppmv	TPH <sub>g</sub> mg/m <sup>3</sup>	Benzene mg/m <sup>3</sup>	Per Period Pounds	Cumulative Pounds	Per Period Pounds		Cumulative Pounds
03/06/02	System running upon arrival and upon departure.															
03/06/02	A-INF	21,549	312	152		45	2,800	47	185.2	82.3	2.90	36.20	< 586.2	1.84	< 6.59	
	A-INT								14.2	15.1	< 0.500					
	A-EFF								1.4	16.0	< 0.500					< 0.002
03/21/02	System running upon arrival and upon departure. Installed pressure gauge for field reading.															
03/21/02	A-INF	21,913	364	146	---	38	3,200	55	96.3							
	A-INT								1.5							
	A-EFF								1.7							
04/10/02	System running upon arrival and down upon departure.															
04/10/02	A-INF	22,393	480	76	---	45	3,200	61	64.3	12.0	0.16	8.06	< 594.3	0.26	< 6.85	
	A-INT								19.6	< 10	< 0.10					
	A-EFF								6	< 10	< 0.10					< 0.001
05/08/02	System down upon arrival and running upon departure.															
05/08/02	A-INF	22,394	1	109	---	37	3,000	55	354.1	440.0	3.2	0.05	< 594.3	0.00	< 6.85	
	A-INT								16.7	< 10	< 0.10					
	A-EFF								11.9	10	< 0.10					< 0.000
05/16/02	System running upon arrival and upon departure.															
05/16/02	A-INF	22,592	198	118	7	41	2,800	50	98.1							

TABLE 2  
 CUMULATIVE HYDROCARBON REMOVAL AND EMISSIONS FOR  
 SOIL VAPOR EXTRACTION SYSTEM  
 Former Exxon Service Station 7-0104  
 1725 Park Street  
 Alameda, California  
 (Page 6 of 7)

Date	Sample ID	Hour Meter	Hours of Operation	FIELD MEASUREMENTS						Analytical Laboratory Results		TPH <sub>g</sub> Removal		Benzene Removal		Benzene	
				Temp F	Pressure in H <sub>2</sub> O	Vacuum in H <sub>2</sub> O	Flow lfm	scfm	PID ppmv	TPH <sub>g</sub> mg/m <sup>3</sup>	Benzene mg/m <sup>3</sup>	Per Period Pounds	Cumulative Pounds	Per Period Pounds	Cumulative Pounds	Emission Rate lbs/day	
	A-INT								3.9								
	A-EFF								3.9								
05/22/02	System running upon arrival and upon departure.																
05/22/02	A-INF	22,731	139	118	7	38	2,800	51	98.1								
	A-INT								3.9								
	A-EFF								3.9								
06/05/02	System running upon arrival and down upon departure for carbon changeout.																
06/05/02	A-INF	23,068	337	118	---	38	3,000	54	101.1								
	A-INT								10.1								
	A-EFF								18.2								
06/19/02	System down upon arrival and running upon departure.																
06/19/02	A-INF	23,068	0	76	---	9	3,000	63	178.8	120.0	0.83	41.86	< 636.2	0.30	< 7.15		
	A-INT								0.0	< 10	< 0.10						
	A-EFF								0.0	< 10	< 0.10						< 0.001
07/03/02	System running upon arrival and upon departure.																
07/03/02	A-INF	23,409	341	112	---	25	3,000	57	62.2	33	0.25	5.86	< 642.1	0.04	< 7.19		
	A-INT								0.0	< 10	< 0.10						
	A-EFF								0.0	< 10	< 0.10						< 0.001
07/17/02	System down upon arrival and running upon departure.																
07/17/02	A-INF	23,434	25	109	---	70	3,000	50	82.2								
	A-INT								0.0								
	A-EFF								0.0								
07/31/02	System running upon arrival and upon departure.																
07/31/02	A-INF	23,764	330	110	---	21	3,000	58	16.4								
	A-INT								0.0								
	A-EFF								0.0								
08/14/02	System running upon arrival and upon departure.																
08/14/02	A-INF	24,103	339	112	---	16	3,000	58	9.8	19	0.21	3.88	< 645.9	0.03	< 7.23		
	A-INT								0.0	< 10	< 0.10						
	A-EFF								0.0	< 10	< 0.10						< 0.001
08/28/02	System running upon arrival and down upon departure.																
08/28/02	A-INF	24,414	311	110	---	16	3,000	58	16.0								
	A-INT								0.0								
	A-EFF								0.0								
11/06/02	System down upon arrival and running upon departure.																
11/06/02	A-INF	24,415	1	106	---	26	3,000	57	1282	1,300	12	44.46	< 690.4	0.41	< 7.64		
	A-INT								0.0	< 10	< 0.10						
	A-EFF								0.0	< 10	< 0.10						< 0.001

TABLE 2  
 CUMULATIVE HYDROCARBON REMOVAL AND EMISSIONS FOR  
 SOIL VAPOR EXTRACTION SYSTEM  
 Former Exxon Service Station 7-0104  
 1725 Park Street  
 Alameda, California  
 (Page 7 of 7)

Date	Sample ID	Hour Meter	Hours of Operation	FIELD MEASUREMENTS					Analytical Laboratory Results		TPHg Removal		Benzene Removal		Benzene Emission Rate lbs/day
				Temp F	Pressure in H <sub>2</sub> O	Vacuum in H <sub>2</sub> O	Flow lfm scfm	PID ppmv	TPHg mg/m <sup>3</sup>	Benzene mg/m <sup>3</sup>	Per Period Pounds	Cumulative Pounds	Per Period Pounds	Cumulative Pounds	

Notes: Data prior to April 1, 2000 provided by Delta Environmental Consultants, Inc.

- A-INF = Influent vapor sample collected prior to biofilters.
- A-INT1 = Vapor sample collected after biofilters.
- A-INT2 = Vapor sample collected after 1st carbon vessel.
- A-INT3 = Vapor sample collected after 2nd carbon vessel.
- A-EFF = Vapor sample collected from effluent sample port.
- cfm = Cubic feet per minute.
- ppmv = Parts per million by volume.
- mg/M<sup>3</sup> = Milligrams per cubic meter.
- = Not sampled/Not measured.

Removal rates are calculated using ERI SOP-25: "Hydrocarbons Removed from A Vadese Well".













TABLE 3  
 OPERATION AND PERFORMANCE DATA FOR  
 GROUNDWATER REMEDIATION SYSTEM  
 Former Exxon Service Station 7-0104  
 1725 Park Street  
 Alameda, California  
 (Page 6 of 8)

Date	Total Flow gal	Average Flowrate gpm	Sample ID	Laboratory Analytical Results							TPHg Removal		Benzene Removal		MTBE Removal	
				TPHg	B	T	E	X	MTBE	Per Period	Cumulative	Per Period	Cumulative	Per Period	Cumulative	
				ug/L							lbs		lbs		lbs	
06/07/99	5,706,250	1.8	W-INF	< 250	24.8	<2.5	<2.5	8.74	---	< 0.20	< 28.4	0.0246	< 4.68	---	---	
			W-INT	< 100	< 1.0	<1.0	<1.0	<1.0								
			W-EFF	< 250	< 2.5	<2.5	<2.5	<2.5								
07/28/99	5,805,010	1.3	W-INF	< 100	7.00	<1.0	2.40	6.40	---	< 0.14	< 28.5	0.0131	< 4.70	---	---	
			W-INT	< 50	< 0.5	<0.5	<0.5	<0.5								
			W-EFF	< 50	< 0.5	<0.5	<0.5	<0.5								
08/09/99	5,849,280	2.6	W-INF	< 500	17.1	5.88	<5.0	26.8	---	< 0.11	< 28.7	0.0044	< 4.70	---	---	
			W-INT	< 250	< 2.5	<2.5	<2.5	<2.5								
			W-EFF	< 250	< 2.5	<2.5	<2.5	<2.5								
09/07/99	5,880,860	0.8	W-INF	< 500	20.4	<5.0	<5.0	31.1	---	< 0.13	< 28.8	0.0049	< 4.71	---	---	
			W-INT	< 50	< 0.5	<0.5	<0.5	<0.5								
			W-EFF	< 50	< 0.5	<0.5	<0.5	<0.5								
10/12/99	5,966,690	1.7	W-INF	100	2	<1.0	<1.0	<1.0	---	< 0.21	< 29.0	0.0080	< 4.71	---	---	
			W-INT	< 50	< 1.0	<1.0	<1.0	<1.0								
			W-EFF	< 50	< 1.0	<1.0	<1.0	<1.0								
11/18/99	5,971,540	0.1	W-INF	660	66	7.8	5.6	57	---	0.02	< 29.0	0.0014	< 4.72	---	---	
			W-INT	< 50	< 1.0	<1.0	<1.0	<1.0								
			W-EFF	< 50	< 1.0	<1.0	<1.0	<1.0								
12/09/99	5,992,780	0.7	W-INF	200	28	3.2	2.2	22.4	---	0.08	< 29.1	0.0083	< 4.72	---	---	
			W-INT1	< 50	< 1.0	<1.0	<1.0	<1.0								
			W-INT2	< 50	< 1.0	<1.0	<1.0	<1.0								
			W-EFF	< 50	< 1.0	<1.0	<1.0	<1.0								
01/10/00	6,035,690	0.9	W-INF	120	11	1.5	1.8	14.5	---	0.06	< 29.2	0.0070	< 4.73	---	---	
			W-INT	< 50	< 1.0	<1.0	<1.0	<1.0								
			W-EFF	< 50	< 1.0	<1.0	<1.0	<1.0								
02/08/00	6,055,000	0.5	W-INF	130	14	<1.0	<1.0	11.9	---	0.02	< 29.2	0.0020	< 4.73	---	---	
			MID	< 50	< 1.0	<1.0	<1.0	<1.0								
			W-EFF	< 50	< 1.0	<1.0	<1.0	<1.0								
03/24/00	6,080,125	0.4	System shutdown pending evaluation.													
03/28/00	6,080,360	0.0	W-INF	< 50	< 1.0	<1.0	<1.0	<1.0	---	< 0.02	< 29.2	< 0.0016	< 4.73	---	---	
			MID	< 50	< 1.0	<1.0	<1.0	<1.0								
			W-EFF	< 67	< 1.0	<1.0	<1.0	<1.0								



TABLE 3  
OPERATION AND PERFORMANCE DATA FOR  
GROUNDWATER REMEDIATION SYSTEM

Former Exxon Service Station 7-0104

1725 Park Street

Alameda, California

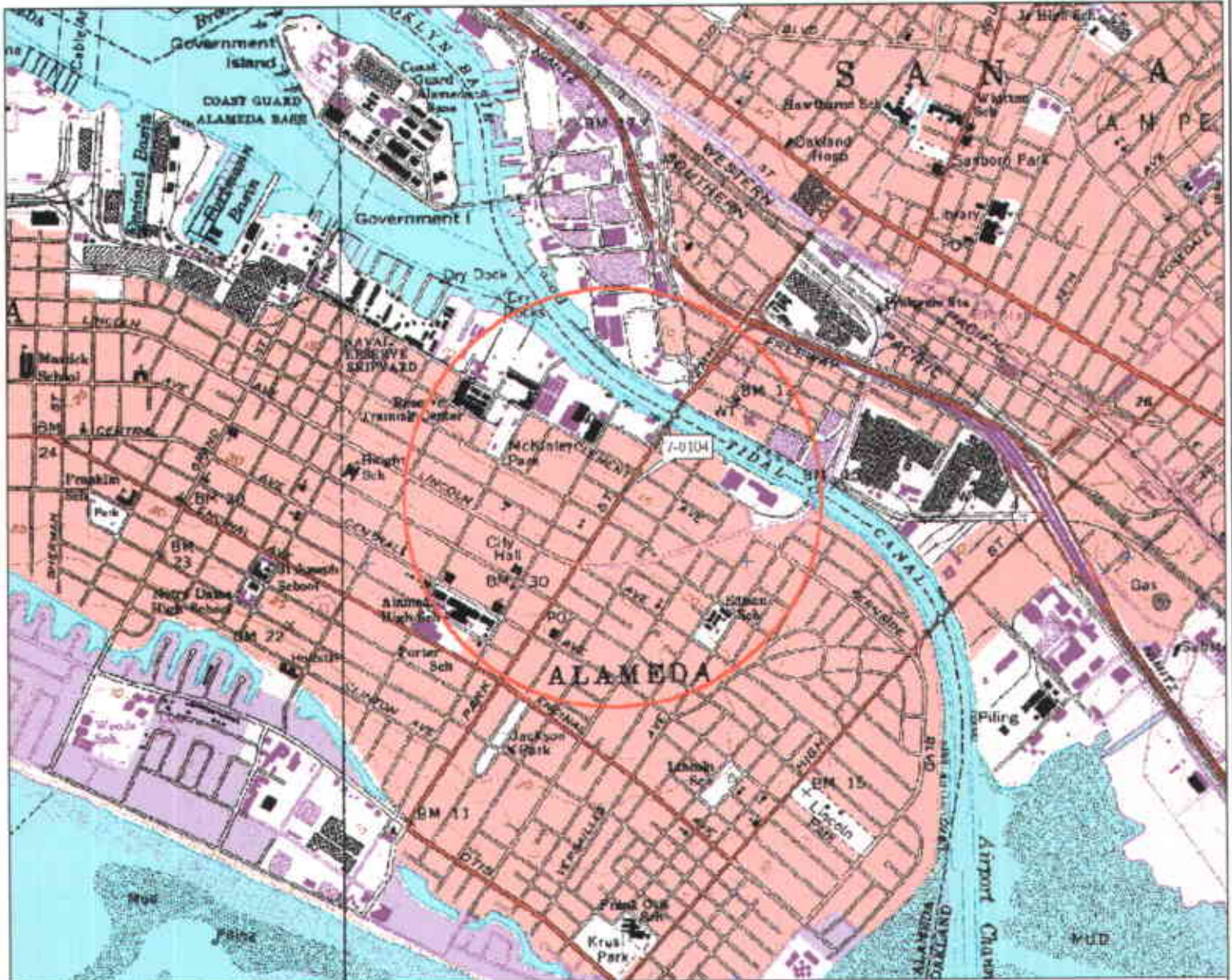
(Page 8 of 8)

---

Notes: Data prior to April 1, 2000 provided by Delta Environmental Consultants, Inc.

W-INF	=	Water sample collected at the influent sample location.
W-INT	=	Water sample collected at the intermediate sample location.
W-EFF	=	Water sample collected at the effluent sample location.
W-PSP#1	=	Water sample collected at the effluent sample location (EBMUD process sampling point #1).
gal	=	Gallons.
gpm	=	Gallons per minute.
ug/L	=	Micrograms per liter.
lbs	=	Pounds.
TPHg	=	Total petroleum hydrocarbons as gasoline.
B	=	Benzene.
T	=	Toluene.
E	=	Ethylbenzene.
X	=	Total xylenes.
<	=	Less than the laboratory method detection limit as indicated.
---	=	Not measured/Not sampled/Not analyzed/Not calculated

---



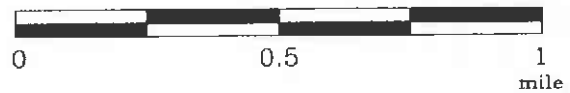
3-D TopoQuads Copyright © 1999 DeLorme Yearwood, ME 04061. Source Date: 05/01  
 500 ft. Scale: 1:17,000. Detail: 1:4. Datum: WGS84

**EXPLANATION**



1/2-mile radius circle

**APPROXIMATE SCALE**



SOURCE:  
 Modified from a map  
 provided by  
 DeLorme 3-D TopoQuads



**SITE VICINITY MAP**

FORMER EXXON SERVICE STATION 7-0104  
 1725 Park Street  
 Alameda, California

**PROJECT NO.**

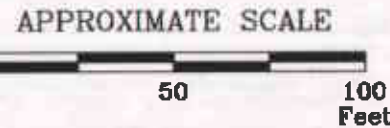
2506

**PLATE**

1

Analyte Concentrations in ug/L  
 Sampled November 8, 2002

- 5,680 Total Petroleum Hydrocarbons as diesel
- 26,000 Total Petroleum Hydrocarbons as gasoline
- 246 Methyl Tertiary Butyl Ether
- 1,170 Benzene
- 2,130 Toluene
- 1,020 Ethylbenzene
- 5,390 Total Xylenes
- < Less Than the Stated Laboratory Reporting Limit
- ug/L Micrograms per Liter
- NS Not Sampled



FN 25060002

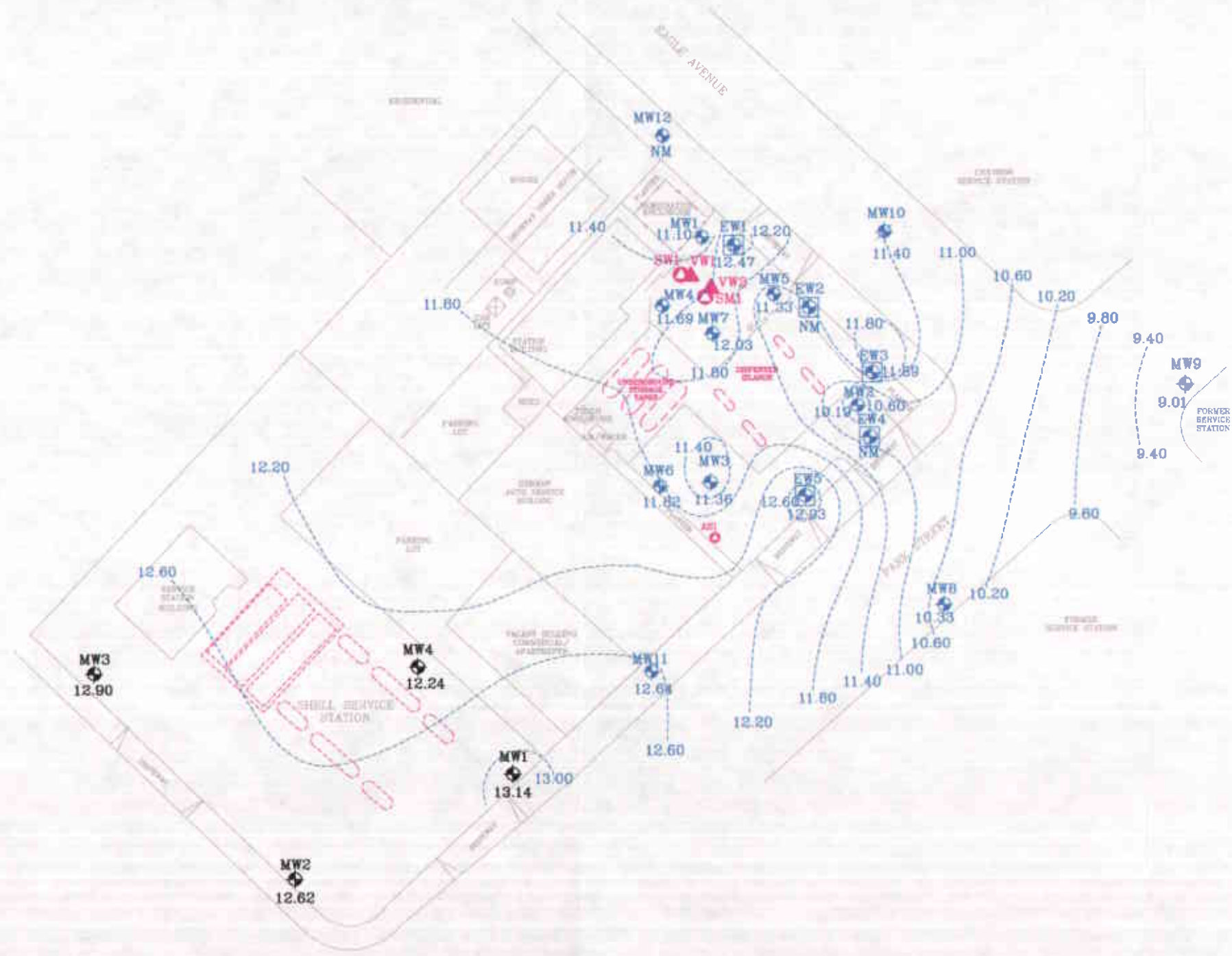


**GENERALIZED SITE PLAN**  
 FORMER  
 EXXON SERVICE STATION 7-0104  
 1725 Park Street  
 Alameda, California

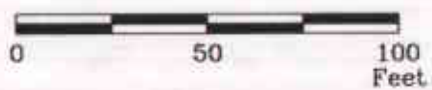
- EXPLANATION**
- MW11 Groundwater Monitoring Well
  - EW4 Recovery Well
  - MW10 Destroyed Groundwater Monitoring Well
  - MW4 Groundwater Monitoring Well By Others
  - VW2 Vapor Extraction Well
  - AS1 Air Sparge/Soil Vapor Well

**PROJECT NO.**  
 2506

**PLATE**  
 2



APPROXIMATE SCALE



FN 25060002

**GROUNDWATER ELEVATION MAP**  
**November 8, 2002**

FORMER  
 EXXON SERVICE STATION 7-0104  
 1725 Park Street  
 Alameda, California

**EXPLANATION**

- MW11 Groundwater Monitoring Well
- 12.64 Groundwater elevation in feet; datum is mean sea level
- EW4 Recovery Well
- MW10 Destroyed Groundwater Monitoring Well

- NM = Not Measured
- MW4 Groundwater Monitoring Well By Others
- VW2 Vapor Extraction Well
- AS1 Air Sparge/Soil Vapor Well

**PROJECT NO.**  
2506

**PLATE**  
3





**ATTACHMENT A**  
**GROUNDWATER SAMPLING PROTOCOL**

## GROUNDWATER SAMPLING PROTOCOL

The static water level and separate-phase product level, if present, in each well that contains water and/or separate-phase product are measured with an ORS Interface Probe, which is accurate to the nearest 0.01 foot. To calculate groundwater elevations and evaluate groundwater gradient, depth to water (DTW) levels are subtracted from top of casing elevations.

Groundwater samples collected for subjective evaluation are collected by gently lowering approximately half the length of a clean Teflon® or polypropylene bailer past the air-water interface (if possible) and collecting a sample from near the surface of the water in the well. The samples are checked for measurable free-phase hydrocarbons or sheen. If appropriate, free-phase hydrocarbons are removed from the well.

Before water samples are collected from the groundwater monitoring wells, the wells are purged until a minimum of three well casing volumes is purged and stabilization of the temperature, pH, and conductivity is obtained. Water samples from the wells that do not obtain stability of the temperature, pH, and conductivity are considered to be "grab samples". The quantity of water purged from each well is calculated as follows:

1 well casing volume =  $\pi r^2 h (7.48)$  where:

r	=	radius of the well casing in feet.
h	=	column of water in the well in feet (depth to bottom - depth to water)
7.48	=	conversion constant from cubic feet to gallons
$\pi$	=	ratio of the circumference of a circle to its diameter

Gallons of water purged/gallons in 1 well casing volume = well casing volumes removed.

After purging, each well is allowed to recharge to at least 80% of the initial water level. Water samples from wells that do not recover at least 80% (due to slow recharging of the well) between purging and sampling are considered to be "grab samples". Water samples are collected with a new, disposable Teflon® or polypropylene bailer. The groundwater is carefully poured into selected sample containers (40-milliliter (ml) glass vials, 1,000 ml glass amber bottles, etc.), which are filled so as to produce a positive meniscus.

Depending on the required analysis, each sample container is preserved with hydrochloric acid, nitric acid, etc., or it is preservative free. The type of preservative used for each sample is specified on the chain of custody form.

Each vial and glass amber bottle is sealed with a cap containing a Teflon® septum, and subsequently examined for air bubbles to avoid headspace, which would allow volatilization to occur. The samples are promptly transported in iced storage in a thermally-insulated ice chest, accompanied by a Chain-of-Custody Record, to a California state-certified laboratory.

**ATTACHMENT B**

**SUMMARY OF GROUNDWATER SAMPLING  
XTRA OIL COMPANY SERVICE STATION**

TABLE 1 - SUMMARY OF GROUNDWATER SAMPLING

XTRA OIL COMPANY SERVICE STATION  
1701 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-210

WELL ID	DATE OF MONITORING/ SAMPLING	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-D (ug/l)	TPH-G (ug/l)	MTBE (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	
(19.60)	MW1	2/4/2002	5.01	14.59	1,800	6,500	140	74	100	230	1,500
		5/7/2002	6.10	13.50	7,900	41,000	<1,000	1,300	5,200	1,700	6,300
		8/22/2002	6.91	12.69	4,800	42,000	<500	1,100	6,300	1,900	7,900
		11/8/2002	6.46	13.14	6,800	38,000	<1,000	770	4,600	1,600	6,600
(20.31)	MW2	2/4/2002	6.75	13.56	35,000	17,000	1,200	3,600	<50	960	500
		5/7/2002	7.20	13.11	59,000	16,000	3,100	3,500	43	520	220
		8/22/2002	7.96	12.35	60,000	15,000	700	2,700	30	460	220
		11/8/2002	7.69	12.62	100,000	15,000	<250	2,100	60	1,100	150
(20.57)	MW3	2/4/2002	5.85	14.72	<50	<50	<5	<0.5	<0.5	<0.5	<0.5
		5/7/2002	6.49	14.08	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5
		8/22/2002	7.93	12.64	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5
		11/8/2002	7.67	12.90	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5
(19.69)	MW4	2/4/2002	5.82	13.87	12,000	50,000	<500	3,000	8,100	1,900	7,600
		5/7/2002	6.08	13.61	3,200	17,000	<500	270	820	870	3,700
		8/22/2002	7.45	12.24	3,800	26,000	2,100	720	920	1,500	6,500
		11/8/2002	7.45	12.24	3,600	20,000	670	290	630	1,200	5,100

Notes:

SUBJ Results of subjective evaluation, liquid-phase hydrocarbon thickness in feet.  
TOC Elevation of top of well casing; in feet above mean sea level.  
DTW Depth to water.  
Elev. Elevation of groundwater in feet above mean sea level.  
TPHg Total petroleum hydrocarbons as gasoline analyzed using EPA Method 5030/8015 (modified).  
TPHd Total petroleum hydrocarbons as diesel using EPA Method 5030/8015 (modified)  
MTBE Methyl tertiary butyl ether analyzed using EPA Method 8021B.  
BTEX Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8021B.

Oxygenated Compounds Oxygenates compounds analyzed using EPA Method 8260.

NLPH No liquid-phase hydrocarbons.

--- Not sampled.

ug/L Micrograms per liter.

< Less than the stated laboratory method detection limit.

---

TABLE 1 - SUMMARY OF GROUNDWATER SAMPLING  
 XTRA OIL COMPANY SERVICE STATION  
 1701 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-210

WELL ID	DATE OF MONITORING/ SAMPLING	CASING ELEVATION (Feet)	(a)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (Feet)	(b)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)
MW-1	11/08/02	19.60		6.46	---	13.14		38000	6800	770	4600
QC-1 (c)	11/08/02	---		---	---	---		49000	---	880	4800
MW-2	11/08/02	20.31		7.69	---	12.62		15000	100000	2100	60
MW-3	11/08/02	20.57		7.67	---	12.90		ND<50	ND<50	ND<0.5	ND<0.5
MW-4	11/08/02	19.69		7.45	---	12.24		20000	3600	290	630

ABBREVIATIONS:

TPH-G Total petroleum hydrocarbons as gasoline using EPA Methods 5030/8015  
 TPH-D Total petroleum hydrocarbons as diesel using EPA Methods 3510/8015  
 B Benzene using EPA Methods 5030/8020  
 T Toluene using EPA Methods 5030/8020  
 E Ethylbenzene using EPA Methods 5030/8020  
 X Total xylenes using EPA Methods 5030/8020  
 MTBE Methyl tert butyl ether using EPA Methods 5030/8020  
 SVOCs Semivolatile organic compounds using EPA Method 8270  
 DO Dissolved oxygen  
 ug/l Micrograms per liter  
 ppm Parts per million  
 --- Not analyzed/applicable/measurable  
 ND Not detected above reported detection limit  
 MCC McCampbell Analytical, Inc.  
 CHR Chromalab, Inc.

NOTES:

(a) Top of casing surveyed relative to ground surface  
 (b) Groundwater elevations expressed relative to datum and adjusted assuming a specific gravity of 1.0  
 (c) Blind duplicate.

E (ug/l)	X (ug/l)	MTBE (ug/l)	OTHER SVOCs (ug/l)	NAPHTHALENE (ug/l)	BENZO- PYRENE (ug/l)	DO (ppm)	LAB
1600	6600	ND<1000	---	---	---	---	MCC
1800	6700	ND<1700	---	---	---	---	MCC
1100	150	ND<250	---	---	---	---	MCC
ND<0.5	ND<0.5	ND<5.0	---	---	---	---	MCC
1200	5100	670	---	---	---	---	MCC

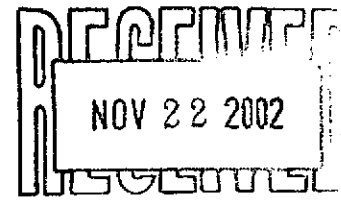
ative to mean sea level.

pressed in feet above mean sea level, and  
fic gravity of 0.75 for free product.

**ATTACHMENT C**

**LABORATORY ANALYSIS REPORTS  
AND CHAIN-OF-CUSTODY RECORDS**





11/21/02

ERI - NORTHERN CA 3876  
SCOTT GRAHAM  
73 DIGITAL DRIVE, SUITE 100  
NOVATO, CA 94949

This report includes the analytical certificates of analysis for all samples listed below. These samples relate to your project 250613X EXXOMOBIL 7-0104. The Laboratory Project number is 309021.

An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report.

Page 1

Sample Identification	Lab Number	Collection Date
MW1	02-A186294	11/ 8/02
MW2	02-A186295	11/ 8/02
MW3	02-A186296	11/ 8/02
MW4	02-A186297	11/ 8/02
MW5	02-A186298	11/ 8/02
MW6	02-A186299	11/ 8/02
MW7	02-A186300	11/ 8/02
MW8	02-A186301	11/ 8/02
MW9	02-A186302	11/ 8/02
MW11	02-A186303	11/ 8/02

# TestAmerica

INCORPORATED

Page 2

Sample Identification  
-----

Lab Number  
-----

Collection Date  
-----

These results relate only to the items tested.  
This report shall not be reproduced except in full and with  
permission of the laboratory.

Report Approved By:

Roxanne L. Connor

Report Date: 11/21/02

Paul E. Lane, Jr., Lab Director  
Michael H. Dunn, M.S., Technical Director  
Johnny A. Mitchell, Dir. Technical Serv.  
Eric S. Smith, Assistant Technical Director  
Roxanne L. Connor, Technical Services

Gail A. Lage, Technical Serv.  
Glenn L. Norton, Technical Serv.  
Kelly S. Comstock, Technical Serv.  
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 01168CA

## ANALYTICAL REPORT

ERI - NORTHERN CA 3876  
 SCOTT GRAHAM  
 73 DIGITAL DRIVE, SUITE 100  
 NOVATO, CA 94949

Lab Number: 02-A186294  
 Sample ID: MW1  
 Sample Type: Water  
 Site ID: 7-0104

Project: 250613X  
 Project Name: EXXONMOBIL 7-0104  
 Sampler: CYNTHIA KALLENBACH

Date Collected: 11/ 8/02  
 Time Collected: 14:15  
 Date Received: 11/13/02  
 Time Received: 9:00  
 Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
*ORGANIC PARAMETERS*									
Benzene	95.6	ug/L	0.5	1.0	11/17/02	14:42	H. Wagner	8021B	2005
Ethylbenzene	3.7	ug/L	0.5	1.0	11/17/02	14:42	H. Wagner	8021B	2005
Toluene	4.0	ug/L	0.5	1.0	11/17/02	14:42	H. Wagner	8021B	2005
Xylenes (Total)	2.7	ug/L	0.5	1.0	11/17/02	14:42	H. Wagner	8021B	2005
Methyl-t-butylether	182.	ug/L	0.5	1.0	11/17/02	14:42	H. Wagner	8021B	2005
TPH (Gasoline Range)	947.	ug/L	50.0	1.0	11/17/02	14:42	H. Wagner	8015B	2005
TPH (Diesel Range)	504.	ug/L	50.	1.0	11/19/02	19:40	D.Haywood	8015B/3510	5798

Silica Gel Cleanup performed for TPH-DRO analysis.

Sample Extraction Data

Parameter	Wt/Vol		Date	Time	Analyst	Method
	Extracted	Extract Vol				
EPH	1000 ml	1.00 ml	11/15/02		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	108.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	102.	69. - 132.

Sample report continued . . .

## ANALYTICAL REPORT

Laboratory Number: 02-A186294

Sample ID: MW1

Project: 250613X

Page 2

### LABORATORY COMMENTS:

ND = Not detected at the report limit.

B = Analyte was detected in the method blank.

J = Estimated Value below Report Limit.

E = Estimated Value above the calibration limit of the instrument.

# = Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

## ANALYTICAL REPORT

ERI - NORTHERN CA 3876  
 SCOTT GRAHAM  
 73 DIGITAL DRIVE, SUITE 100  
 NOVATO, CA 94949

Lab Number: 02-A186295  
 Sample ID: MW2  
 Sample Type: Water  
 Site ID: 7-0104

Project: 250613X  
 Project Name: EXXONMOBIL 7-0104  
 Sampler: CYNTHIA KALLENBACH

Date Collected: 11/ 8/02  
 Time Collected: 14:45  
 Date Received: 11/13/02  
 Time Received: 9:00  
 Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
*ORGANIC PARAMETERS*									
Benzene	14.0	ug/L	0.5	1.0	11/17/02	15:12	H. Wagner	8021B	2005
Ethylbenzene	0.6	ug/L	0.5	1.0	11/17/02	15:12	H. Wagner	8021B	2005
Toluene	0.7	ug/L	0.5	1.0	11/17/02	15:12	H. Wagner	8021B	2005
Xylenes (Total)	1.0	ug/L	0.5	1.0	11/17/02	15:12	H. Wagner	8021B	2005
Methyl-t-butylether	177.	ug/L	0.5	1.0	11/17/02	15:12	H. Wagner	8021B	2005
TPH (Gasoline Range)	158.	ug/L	50.0	1.0	11/17/02	15:12	H. Wagner	8015B	2005
TPH (Diesel Range)	83.	ug/L	50.	1.0	11/19/02	19:59	D.Haywood	8015B/3510	5798

Silica Gel Cleanup performed for TPH-DRO analysis.

Sample Extraction Data

Parameter	Wt/Vol		Date	Time	Analyst	Method
	Extracted	Extract Vol				
EPH	1000 ml	1.00 ml	11/15/02		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	113.	41. - 155.
BTEX/GRO Surr., a,a,a-TPT	100.	69. - 132.

Sample report continued . . .

## ANALYTICAL REPORT

Laboratory Number: 02-A186295  
Sample ID: MW2  
Project: 250613X  
Page 2

### LABORATORY COMMENTS:

- ND = Not detected at the report limit.
- B = Analyte was detected in the method blank.
- J = Estimated Value below Report Limit.
- E = Estimated Value above the calibration limit of the instrument.
- # = Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

## ANALYTICAL REPORT

ERI - NORTHERN CA 3876  
 SCOTT GRAHAM  
 73 DIGITAL DRIVE, SUITE 100  
 NOVATO, CA 94949

Lab Number: 02-A186296  
 Sample ID: MW3  
 Sample Type: Water  
 Site ID: 7-0104

Project: 250613X  
 Project Name: EXXONMOBIL 7-0104  
 Sampler: CYNTHIA KALLENBACH

Date Collected: 11/ 8/02  
 Time Collected: 14:20  
 Date Received: 11/13/02  
 Time Received: 9:00  
 Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
*ORGANIC PARAMETERS*									
Benzene	330.	ug/L	5.0	10.0	11/18/02	13:28	H. Wagner	8021B	4757
Ethylbenzene	4.9	ug/L	0.5	1.0	11/17/02	16:44	H. Wagner	8021B	2005
Toluene	1.8	ug/L	0.5	1.0	11/17/02	16:44	H. Wagner	8021B	2005
Xylenes (Total)	2.7	ug/L	0.5	1.0	11/17/02	16:44	H. Wagner	8021B	2005
Methyl-t-butylether	470.	ug/L	5.0	10.0	11/18/02	13:28	H. Wagner	8021B	4757
TPH (Gasoline Range)	1640	ug/L	50.0	1.0	11/17/02	16:44	H. Wagner	8015B	2005
TPH (Diesel Range)	193.	ug/L	50.	1.0	11/19/02	20:18	D.Haywood	8015B/3510	5798

Silica Gel Cleanup performed for TPH-DRO analysis.

Sample Extraction Data

Parameter	Wt/Vol		Date	Time	Analyst	Method
	Extracted	Extract Vol				
EPH	1000 ml	1.00 ml	11/15/02		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	108.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	94.	69. - 132.

Sample report continued . . .

## ANALYTICAL REPORT

Laboratory Number: 02-A186296  
Sample ID: MW3  
Project: 250613X  
Page 2

### LABORATORY COMMENTS:

- ND = Not detected at the report limit.
- B = Analyte was detected in the method blank.
- J = Estimated Value below Report Limit.
- E = Estimated Value above the calibration limit of the instrument.
- # = Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.



## ANALYTICAL REPORT

ERI - NORTHERN CA 3876  
 SCOTT GRAHAM  
 73 DIGITAL DRIVE, SUITE 100  
 NOVATO, CA 94949

Lab Number: 02-A186297  
 Sample ID: MW4  
 Sample Type: Water  
 Site ID: 7-0104

Project: 250613X  
 Project Name: EXXONMOBIL 7-0104  
 Sampler: CYNTHIA KALLENBACH

Date Collected: 11/ 8/02  
 Time Collected: 14:55  
 Date Received: 11/13/02  
 Time Received: 9:00  
 Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
*ORGANIC PARAMETERS*									
Benzene	169.	ug/L	0.5	1.0	11/17/02	17:14	H. Wagner	8021B	2005
Ethylbenzene	34.9	ug/L	0.5	1.0	11/17/02	17:14	H. Wagner	8021B	2005
Toluene	4.3	ug/L	0.5	1.0	11/17/02	17:14	H. Wagner	8021B	2005
Xylenes (Total)	23.3	ug/L	0.5	1.0	11/17/02	17:14	H. Wagner	8021B	2005
Methyl-t-butylether	1200	ug/L	10.0	20.0	11/18/02	13:58	H. Wagner	8021B	4757
TPH (Gasoline Range)	2340	ug/L	50.0	1.0	11/17/02	17:14	H. Wagner	8015B	2005
TPH (Diesel Range)	680.	ug/L	50.	1.0	11/19/02	20:38	D. Haywood	8015B/3510	5798

Silica Gel Cleanup performed for TPH-DRO analysis.

Sample Extraction Data

Parameter	Wt/Vol		Date	Time	Analyst	Method
	Extracted	Extract Vol				
EPH	1000 ml	1.00 ml	11/15/02		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	111.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	97.	69. - 132.

Sample report continued . . .

## ANALYTICAL REPORT

Laboratory Number: 02-A186297  
Sample ID: MW4  
Project: 250613X  
Page 2

### LABORATORY COMMENTS:

- ND = Not detected at the report limit.
- B = Analyte was detected in the method blank.
- J = Estimated Value below Report Limit.
- E = Estimated Value above the calibration limit of the instrument.
- # = Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

## ANALYTICAL REPORT

ERI - NORTHERN CA 3876  
 SCOTT GRAHAM  
 73 DIGITAL DRIVE, SUITE 100  
 NOVATO, CA 94949

Lab Number: 02-A186298  
 Sample ID: MW5  
 Sample Type: Water  
 Site ID: 7-0104

Project: 250613X  
 Project Name: EXXONMOBIL 7-0104  
 Sampler: CYNTHIA KALLENBACH

Date Collected: 11/ 8/02  
 Time Collected: 14:35  
 Date Received: 11/13/02  
 Time Received: 9:00  
 Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
*ORGANIC PARAMETERS*									
Benzene	1050	ug/L	10.0	20.0	11/18/02	14:28	H. Wagner	8021B	4757
Ethylbenzene	11.1	ug/L	0.5	1.0	11/17/02	17:45	H. Wagner	8021B	2005
Toluene	9.4	ug/L	0.5	1.0	11/17/02	17:45	H. Wagner	8021B	2005
Xylenes (Total)	17.8	ug/L	0.5	1.0	11/17/02	17:45	H. Wagner	8021B	2005
Methyl-t-butylether	746.	ug/L	10.0	20.0	11/18/02	14:28	H. Wagner	8021B	4757
TPH (Gasoline Range)	3360	ug/L	50.0	1.0	11/17/02	17:45	H. Wagner	8015B	2005
TPH (Diesel Range)	645.	ug/L	50.	1.0	11/19/02	20:57	D. Haywood	8015B/3510	5798

Silica Gel Cleanup performed for TPH-DRO analysis.

Sample Extraction Data

Parameter	Wt/Vol		Date	Time	Analyst	Method
	Extracted	Extract Vol				
EPH	1000 ml	1.00 ml	11/15/02		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	110.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	95.	69. - 132.

Sample report continued . . .

## ANALYTICAL REPORT

Laboratory Number: 02-A186298  
Sample ID: MW5  
Project: 250613X  
Page 2

### LABORATORY COMMENTS:

- ND = Not detected at the report limit.
- B = Analyte was detected in the method blank.
- J = Estimated Value below Report Limit.
- E = Estimated Value above the calibration limit of the instrument.
- # = Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

## ANALYTICAL REPORT

ERI - NORTHERN CA 3876  
 SCOTT GRAHAM  
 73 DIGITAL DRIVE, SUITE 100  
 NOVATO, CA 94949

Lab Number: 02-A186299  
 Sample ID: MW6  
 Sample Type: Water  
 Site ID: 7-0104

Project: 250613X  
 Project Name: EXXONMOBIL 7-0104  
 Sampler: CYNTHIA KALLENBACH

Date Collected: 11/ 8/02  
 Time Collected: 14:50  
 Date Received: 11/13/02  
 Time Received: 9:00  
 Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
*ORGANIC PARAMETERS*									
Benzene	49.3	ug/L	0.5	1.0	11/17/02	18:15	H. Wagner	8021B	2005
Ethylbenzene	586.	ug/L	10.0	20.0	11/18/02	16:00	H. Wagner	8021B	4757
Toluene	42.7	ug/L	0.5	1.0	11/17/02	18:15	H. Wagner	8021B	2005
Xylenes (Total)	858.	ug/L	10.0	20.0	11/18/02	16:00	H. Wagner	8021B	4757
Methyl-t-butylether	1150	ug/L	10.0	20.0	11/18/02	16:00	H. Wagner	8021B	4757
TPH (Gasoline Range)	5640	ug/L	50.0	1.0	11/17/02	18:15	H. Wagner	8015B	2005
TPH (Diesel Range)	822.	ug/L	50.	1.0	11/19/02	21:16	D.Haywood	8015B/3510	5798

Silica Gel Cleanup performed for TPH-DRO analysis.

Sample Extraction Data

Parameter	Wt/Vol		Date	Time	Analyst	Method
	Extracted	Extract Vol				
EPH	1000 ml	1.00 ml	11/15/02		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	94.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	107.	69. - 132.

Sample report continued . . .

## ANALYTICAL REPORT

Laboratory Number: 02-A186299

Sample ID: MW6

Project: 250613X

Page 2

### LABORATORY COMMENTS:

ND = Not detected at the report limit.

B = Analyte was detected in the method blank.

J = Estimated Value below Report Limit.

E = Estimated Value above the calibration limit of the instrument.

# = Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

## ANALYTICAL REPORT

ERI - NORTHERN CA 3876  
 SCOTT GRAHAM  
 73 DIGITAL DRIVE, SUITE 100  
 NOVATO, CA 94949

Lab Number: 02-A186300  
 Sample ID: MW7  
 Sample Type: Water  
 Site ID: 7-0104

Project: 250613X  
 Project Name: EXXONMOBIL 7-0104  
 Sampler: CYNTHIA KALLENBACH

Date Collected: 11/ 8/02  
 Time Collected: 14:30  
 Date Received: 11/13/02  
 Time Received: 9:00  
 Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
*ORGANIC PARAMETERS*									
Benzene	1.7	ug/L	0.5	1.0	11/18/02	21:41	D.Yeager	8021B	2008
Ethylbenzene	ND	ug/L	0.5	1.0	11/18/02	21:41	D.Yeager	8021B	2008
Toluene	ND	ug/L	0.5	1.0	11/18/02	21:41	D.Yeager	8021B	2008
Xylenes (Total)	0.6	ug/L	0.5	1.0	11/18/02	21:41	D.Yeager	8021B	2008
Methyl-t-butylether	319.	ug/L	5.0	10.0	11/19/02	15:35	D.Yeager	8021B	7099
TPH (Gasoline Range)	463.	ug/L	50.0	1.0	11/18/02	21:41	D.Yeager	8015B	2008
TPH (Diesel Range)	ND	ug/L	50.	1.0	11/19/02	21:35	D.Haywood	8015B/3510	5798

Silica Gel Cleanup performed for TPH-DRO analysis.

Sample Extraction Data

Parameter	Wt/Vol	Extracted	Extract Vol	Date	Time	Analyst	Method
EPH	1000 ml	1.00 ml	11/15/02			M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	111.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	104.	69. - 132.

Sample report continued . . .

## ANALYTICAL REPORT

Laboratory Number: 02-A186300  
Sample ID: MW7  
Project: 250613X  
Page 2

### LABORATORY COMMENTS:

- ND = Not detected at the report limit.
- B = Analyte was detected in the method blank.
- J = Estimated Value below Report Limit.
- E = Estimated Value above the calibration limit of the instrument.
- # = Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.



## ANALYTICAL REPORT

ERI - NORTHERN CA 3876  
 SCOTT GRAHAM  
 73 DIGITAL DRIVE, SUITE 100  
 NOVATO, CA 94949

Lab Number: 02-A186301  
 Sample ID: MW8  
 Sample Type: Water  
 Site ID: 7-0104

Project: 250613X  
 Project Name: EXXONMOBIL 7-0104  
 Sampler: CYNTHIA KALLENBACH

Date Collected: 11/ 8/02  
 Time Collected: 14:00  
 Date Received: 11/13/02  
 Time Received: 9:00  
 Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
*ORGANIC PARAMETERS*									
Benzene	ND	ug/L	0.5	1.0	11/18/02	22:13	D.Yeager	8021B	2008
Ethylbenzene	ND	ug/L	0.5	1.0	11/18/02	22:13	D.Yeager	8021B	2008
Toluene	ND	ug/L	0.5	1.0	11/18/02	22:13	D.Yeager	8021B	2008
Xylenes (Total)	ND	ug/L	0.5	1.0	11/18/02	22:13	D.Yeager	8021B	2008
Methyl-t-butylether	ND	ug/L	0.5	1.0	11/18/02	22:13	D.Yeager	8021B	2008
TPH (Gasoline Range)	ND	ug/L	50.0	1.0	11/18/02	22:13	D.Yeager	8015B	2008
TPH (Diesel Range)	ND	ug/L	50.	1.0	11/19/02	21:55	D.Haywood	8015B/3510	5798

Silica Gel Cleanup performed for TPH-DRO analysis.

Sample Extraction Data

Parameter	Wt/Vol		Date	Time	Analyst	Method
	Extracted	Extract Vol				
EPH	1000 ml	1.00 ml	11/15/02		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	95.	41. - 155.
BTEX/GRO Surr., a,a,a-TPT	101.	69. - 132.

Sample report continued . . .

## ANALYTICAL REPORT

Laboratory Number: 02-A186301  
Sample ID: MW8  
Project: 250613X  
Page 2

### LABORATORY COMMENTS:

- ND = Not detected at the report limit.
- B = Analyte was detected in the method blank.
- J = Estimated Value below Report Limit.
- E = Estimated Value above the calibration limit of the instrument.
- # = Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

## ANALYTICAL REPORT

ERI - NORTHERN CA 3876  
 SCOTT GRAHAM  
 73 DIGITAL DRIVE, SUITE 100  
 NOVATO, CA 94949

Lab Number: 02-A186302  
 Sample ID: MW9  
 Sample Type: Water  
 Site ID: 7-0104

Project: 250613X  
 Project Name: EXXONMOBIL 7-0104  
 Sampler: CYNTHIA KALLENBACH

Date Collected: 11/ 8/02  
 Time Collected: 14:10  
 Date Received: 11/13/02  
 Time Received: 9:00  
 Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
*ORGANIC PARAMETERS*									
Benzene	ND	ug/L	0.5	1.0	11/18/02	22:44	D.Yeager	8021B	2008
Ethylbenzene	ND	ug/L	0.5	1.0	11/18/02	22:44	D.Yeager	8021B	2008
Toluene	ND	ug/L	0.5	1.0	11/18/02	22:44	D.Yeager	8021B	2008
Xylenes (Total)	ND	ug/L	0.5	1.0	11/18/02	22:44	D.Yeager	8021B	2008
Methyl-t-butylether	ND	ug/L	0.5	1.0	11/18/02	22:44	D.Yeager	8021B	2008
TPH (Gasoline Range)	ND	ug/L	50.0	1.0	11/18/02	22:44	D.Yeager	8015B	2008
TPH (Diesel Range)	ND	ug/L	50.	1.0	11/19/02	22:14	D.Haywood	8015B/3510	5798

Silica Gel Cleanup performed for TPH-DRO analysis.

Sample Extraction Data

Parameter	Wt/Vol		Date	Time	Analyst	Method
	Extracted	Extract Vol				
EPH	1000 ml	1.00 ml	11/15/02		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	106.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	101.	69. - 132.

Sample report continued . . .

## ANALYTICAL REPORT

Laboratory Number: 02-A186302  
Sample ID: MW9  
Project: 250613X  
Page 2

### LABORATORY COMMENTS:

- ND = Not detected at the report limit.
- B = Analyte was detected in the method blank.
- J = Estimated Value below Report Limit.
- E = Estimated Value above the calibration limit of the instrument.
- # = Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

## ANALYTICAL REPORT

ERI - NORTHERN CA 3876  
 SCOTT GRAHAM  
 73 DIGITAL DRIVE, SUITE 100  
 NOVATO, CA 94949

Lab Number: 02-A186303  
 Sample ID: MW11  
 Sample Type: Water  
 Site ID: 7-0104

Project: 250613X  
 Project Name: EXXONMOBIL 7-0104  
 Sampler: CYNTHIA KALLENBACH

Date Collected: 11/ 8/02  
 Time Collected: 15:00  
 Date Received: 11/13/02  
 Time Received: 9:00  
 Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
*ORGANIC PARAMETERS*									
Benzene	1170	ug/L	10.0	20.0	11/18/02	23:16	D.Yeager	8021B	2008
Ethylbenzene	1020	ug/L	10.0	20.0	11/18/02	23:16	D.Yeager	8021B	2008
Toluene	2130	ug/L	10.0	20.0	11/18/02	23:16	D.Yeager	8021B	2008
Xylenes (Total)	5390	ug/L	10.0	20.0	11/18/02	23:16	D.Yeager	8021B	2008
Methyl-t-butylether	246.	ug/L	10.0	20.0	11/18/02	23:16	D.Yeager	8021B	2008
TPH (Gasoline Range)	26000	ug/L	1000	20.0	11/18/02	23:16	D.Yeager	8015B	2008
TPH (Diesel Range)	3680	ug/L	250.	5.0	11/20/02	10:14	D.Haywood	8015B/3510	5798

Silica Gel Cleanup performed for TPH-DRO analysis.

Sample Extraction Data

Parameter	Wt/Vol		Date	Time	Analyst	Method
	Extracted	Extract Vol				
EPH	1000 ml	1.00 ml	11/15/02		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	105.	41. - 155.
BTEX/GRO Surr., a,a,a-TPT	104.	69. - 132.

Sample report continued . . .

## ANALYTICAL REPORT

Laboratory Number: 02-A186303  
Sample ID: MW11  
Project: 250613X  
Page 2

### LABORATORY COMMENTS:

- ND = Not detected at the report limit.
- B = Analyte was detected in the method blank.
- J = Estimated Value below Report Limit.
- E = Estimated Value above the calibration limit of the instrument.
- # = Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

**PROJECT QUALITY CONTROL DATA**

Project Number: 250613X

Page: 1

Laboratory Receipt Date: 11/13/02

Matrix Spike Recovery

Note: If Blank is referenced as the sample spiked, insufficient volume was received for MS/MSD analysis for that method and the method requirements for MS/MSD analysis could not be met.

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
**UST ANALYSIS**								
Benzene	mg/l	< 0.0005	0.0574	0.0500	115	74. - 129.	2005	02-A186139
Benzene	mg/l	< 0.0005	0.0515	0.0500	103	74. - 129.	4757	blank
Benzene	mg/l	< 0.0005	0.0548	0.0500	110	74. - 129.	2008	02-A187755
Toluene	mg/l	< 0.0005	0.0560	0.0500	112	74. - 128.	2005	02-A186139
Toluene	mg/l	0.0005	0.0545	0.0500	108	74. - 128.	2008	02-A187755
Ethylbenzene	mg/l	< 0.0005	0.0569	0.0500	114	75. - 128.	2005	02-A186139
Ethylbenzene	mg/l	< 0.0005	0.0504	0.0500	101	75. - 128.	4757	blank
Ethylbenzene	mg/l	0.0011	0.0548	0.0500	107	75. - 128.	2008	02-A187755
Xylenes (Total)	mg/l	< 0.0005	0.112	0.100	112	72. - 126.	2005	02-A186139
Xylenes (Total)	mg/l	< 0.0005	0.100	0.100	100	72. - 126.	4757	blank
Xylenes (Total)	mg/l	0.0030	0.110	0.100	107	72. - 126.	2008	02-A187755
Methyl-t-butylether	mg/l	0.0006	0.0545	0.0500	108	64. - 133.	2005	02-A186139
Methyl-t-butylether	mg/l	< 0.0005	0.0490	0.0500	98	64. - 133.	4757	blank
Methyl-t-butylether	mg/l	< 0.0005	0.0532	0.0500	106	64. - 133.	2008	02-A187755
Methyl-t-butylether	mg/l	< 0.0005	0.0502	0.0500	100	64. - 133.	7099	blank
TPH (Gasoline Range)	mg/l	< 0.0500	0.998	1.00	100	59. - 128.	2005	02-A186139
TPH (Gasoline Range)	mg/l	< 0.0500	0.994	1.00	99	59. - 128.	2008	02-A187755
TPH (Diesel Range)	mg/l	< 0.050	0.611	1.00	61	23. - 120.	5798	BLANK
BTEX/GRO Surr., a,a,a-TFT	‡ Recovery				99	69. - 132.	2005	
BTEX/GRO Surr., a,a,a-TFT	‡ Recovery				104	69. - 132.	2008	
BTEX/GRO Surr., a,a,a-TFT	‡ Recovery				113	69. - 132.	7099	

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
**UST PARAMETERS**						
Benzene	mg/l	0.0574	0.0577	0.52	15.	2005

Project QC continued . . .

**PROJECT QUALITY CONTROL DATA**

Project Number: 250613X

Page: 2

Laboratory Receipt Date: 11/13/02

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
Benzene	mg/l	0.0515	0.0485	6.00	15.	4757
Benzene	mg/l	0.0548	0.0554	1.09	15.	2008
Toluene	mg/l	0.0560	0.0564	0.71	15.	2005
Toluene	mg/l	0.0545	0.0554	1.64	15.	2008
Ethylbenzene	mg/l	0.0569	0.0567	0.35	15.	2005
Ethylbenzene	mg/l	0.0504	0.0474	6.13	15.	4757
Ethylbenzene	mg/l	0.0548	0.0554	1.09	15.	2008
Xylenes (Total)	mg/l	0.112	0.112	0.00	19.	2005
Xylenes (Total)	mg/l	0.100	0.0947	5.44	19.	4757
Xylenes (Total)	mg/l	0.110	0.111	0.90	19.	2008
Methyl-t-butylether	mg/l	0.0545	0.0540	0.92	23.	2005
Methyl-t-butylether	mg/l	0.0490	0.0482	1.65	23.	4757
Methyl-t-butylether	mg/l	0.0532	0.0534	0.38	23.	2008
Methyl-t-butylether	mg/l	0.0502	0.0420	17.79	23.	7099
TPH (Gasoline Range)	mg/l	0.998	0.957	4.19	22.	2005
TPH (Gasoline Range)	mg/l	0.994	1.07	7.36	22.	2008
TPH (Diesel Range)	mg/l	0.611	0.654	6.80	20.	5798
BTEX/GRO Surr., a,a,a-TFT	% Recovery		99.			2005
BTEX/GRO Surr., a,a,a-TFT	% Recovery		106.			2008
BTEX/GRO Surr., a,a,a-TFT	% Recovery		113.			7099

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
**UST PARAMETERS**						
Benzene	mg/l	0.100	0.0963	96	74 - 124	2005
Benzene	mg/l	0.100	0.0971	97	74 - 124	4757
Benzene	mg/l	0.100	0.105	105	74 - 124	2008
Toluene	mg/l	0.100	0.0951	95	74 - 121	2005
Toluene	mg/l	0.100	0.104	104	74 - 121	2008

Project QC continued . . .



**PROJECT QUALITY CONTROL DATA**

Project Number: 250613X

Page: 3

Laboratory Receipt Date: 11/13/02

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
Ethylbenzene	mg/l	0.100	0.0956	96	75 - 123	2005
Ethylbenzene	mg/l	0.100	0.0977	98	75 - 123	4757
Ethylbenzene	mg/l	0.100	0.101	101	75 - 123	2008
Xylenes (Total)	mg/l	0.200	0.190	95	72 - 120	2005
Xylenes (Total)	mg/l	0.200	0.194	97	72 - 120	4757
Xylenes (Total)	mg/l	0.200	0.204	102	72 - 120	2008
Methyl-t-butylether	mg/l	0.100	0.0915	92	64 - 128	2005
Methyl-t-butylether	mg/l	0.100	0.0896	90	64 - 128	4757
Methyl-t-butylether	mg/l	0.100	0.106	106	64 - 128	2008
Methyl-t-butylether	mg/l	0.100	0.107	107	64 - 128	7099
TPH (Gasoline Range)	mg/l	1.00	0.998	100	61 - 139	2005
TPH (Gasoline Range)	mg/l	1.00	0.994	99	61 - 139	2008
TPH (Diesel Range)	mg/l	1.00	0.748	75	42 - 115	5798
BTEX/GRO Surr., a,a,a-TFT	% Recovery			98	69 - 132	2005
BTEX/GRO Surr., a,a,a-TFT	% Recovery			115	69 - 132	2008
BTEX/GRO Surr., a,a,a-TFT	% Recovery			116	69 - 132	7099

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
**UST PARAMETERS**					
Benzene	< 0.0005	mg/l	2005	11/17/02	6:04
Benzene	< 0.0005	mg/l	4757	11/17/02	16:13
Benzene	< 0.0005	mg/l	2008	11/18/02	21:10
Toluene	< 0.0005	mg/l	2005	11/17/02	6:04
Toluene	< 0.0005	mg/l	2008	11/18/02	21:10
Ethylbenzene	< 0.0005	mg/l	2005	11/17/02	6:04
Ethylbenzene	< 0.0005	mg/l	4757	11/17/02	16:13
Ethylbenzene	< 0.0005	mg/l	2008	11/18/02	21:10
Xylenes (Total)	< 0.0005	mg/l	2005	11/17/02	6:04

Project QC continued . . .

**PROJECT QUALITY CONTROL DATA**

Project Number: 250613X

Page: 4

Laboratory Receipt Date: 11/13/02

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Analysis Date	Analysis Time
Xylenes (Total)	< 0.0005	mg/l	4757	11/17/02	16:13
Xylenes (Total)	< 0.0005	mg/l	2008	11/18/02	21:10
Methyl-t-butylether	< 0.0005	mg/l	2005	11/17/02	6:04
Methyl-t-butylether	< 0.0005	mg/l	4757	11/17/02	16:13
Methyl-t-butylether	< 0.0005	mg/l	2008	11/18/02	21:10
Methyl-t-butylether	< 0.0005	mg/l	7099	11/19/02	7:07
TPH (Gasoline Range)	< 0.0500	mg/l	2005	11/17/02	6:04
TPH (Gasoline Range)	< 0.0500	mg/l	2008	11/18/02	21:10
TPH (Diesel Range)	< 0.050	mg/l	5798	11/19/02	15:47

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
**UST PARAMETERS**					
BTEX/GRO Surr., a,a,a-TFT	101.	% Recovery	2005	11/17/02	6:04
BTEX/GRO Surr., a,a,a-TFT	102.	% Recovery	2008	11/18/02	21:10
BTEX/GRO Surr., a,a,a-TFT	103.	% Recovery	7099	11/19/02	7:07

# = Value outside Laboratory historical or method prescribed QC limits.

End of Report for Project 309021

# TESTAMERICA, INC.-NASHVILLE

## COOLER RECEIPT FORM

Client: ERI BC# 309021

Cooler Received On: 11/12/02 And Opened On: 11/12/02 By: MARVIN BLUMHOEFER

Mar Blumhofer  
(Signature)

1. Temperature of Cooler when opened 10 Degrees Celsius
2. Were custody seals on outside of cooler?..... YES  NO  N/A
  - a. If yes, how many, what kind and where: 2 front
  - b. Were the seals intact, signed, and dated correctly?..... YES  NO  N/A
3. Were custody seals on containers and intact?..... NO  YES  N/A
4. Were custody papers inside cooler?..... YES  NO  N/A
5. Were custody papers properly filled out (ink, signed, etc)?..... YES  NO  N/A
6. Did you sign the custody papers in the appropriate place?..... YES  NO  N/A
7. What kind of packing material used? Bubblewrap Peanuts Vermiculite Other None
8. Was sufficient ice used (if appropriate)?..... YES  NO  N/A
9. Did all bottles arrive in good condition (unbroken)?..... YES  NO  N/A
10. Were all bottle labels complete (#, date, signed, pres, etc)?..... YES  NO  N/A
11. Did all bottle labels and tags agree with custody papers?..... YES  NO  N/A
12. Were correct bottles used for the analysis requested?..... YES  NO  N/A
13. a. Were VOA vials received?..... YES  NO  N/A
  - b. Was there any observable head space present in any VOA vial?..... NO  YES  N/A
14. Was sufficient amount of sample sent in each bottle?..... YES  NO  N/A
15. Were correct preservatives used?..... YES  NO  N/A  
If not, record standard ID of preservative used here \_\_\_\_\_
16. Was residual chlorine present?..... NO  YES  N/A
17. Corrective action taken, if necessary:

See attached for resolution

1 VOA MW-11 B.I.S.  
1 LITER MW-7 B.I.S.  
1 LITER MW-3 B.I.S.



(615) 726-0177

Nashville Division

2960 Foster Creighton

Nashville, TN 37204



Consultant Name: Environmental Resolutions, Inc.

Address: 73 Digital Drive, Suite 100

City/State/Zip: Novato, California 94949

Project Manager: Scott Graham

Telephone Number: (415) 382-5989

ERI Job Number: 250613X

Sampler Name: (Print) Cynthia Kallenbach

Sampler Signature: [Signature]

ExxonMobil Engineer Gene N. Ortega

Telephone Number (925) 246-8747

Account #: 3876

PO #: 4501667094

Facility ID #: 7-0104

Global ID#: T0600100555

Site Address 1725 Park Street

City, State Zip Alameda, California

Shipping Method:  Lab Courier  Hand Deliver  Commercial Express  Other:

TAT  
 24 hour  72 hour  
 48 hour  96 hour  
 8 day

PROVIDE:  
 EDF Report  
 FAX Results

Special Instructions:

Matrix Analyze For:

Sample ID / Description	DATE	TIME	COMP	GRAB	PRESERV	NUMBER	Matrix			Analyze For:									
							Water	Soil	Vapor	TPHd 8015B	TPHg 8015B	BTEX 8021B	MTBE 8021B	confirm MTBE 8260	Oxygenates 8260	VOCs 8260	MTBE 524.1		
<del>QCTB</del> QCTB	11/8/02	—		X	HCL	2	X			H	O	L	D						
186294 MW1	11/8/02	1415		X	HCL / O	4/2	X			X	X	X	X						
95 MW2	11/8/02	1445		X	HCL / O	4/2	X			X	X	X	X						
96 MW3	11/8/02	1420		X	HCL / O	4/2	X			X	X	X	X						
97 MW4	11/8/02	1455		X	HCL / O	4/2	X			X	X	X	X						
98 MW5	11/8/02	1435		X	HCL / O	4/2	X			X	X	X	X						
186299 MW6	11/8/02	1450		X	HCL / O	4/2	X			X	X	X	X						
186300 MW7	11/8/02	1430		X	HCL / O	4/2	X			X	X	X	X						
301 MW8	11/8/02	1400		X	HCL / O	4/2	X			X	X	X	X						
302 MW9	11/8/02	1410		X	HCL / O	4/2	X			X	X	X	X						
186303 MW11	11/8/02	1500		X	HCL / O	4/2	X			X	X	X	X						

Relinquished by: Cynthia Kallenbach Date: 11/14/02 Time: 1:00  
 Received by: [Signature] Date: 11-22 Time: 9:00  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Received by TestAmerica: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Laboratory Comments:  
 Temperature Upon Receipt:  
 Sample Containers Intact?  
 VOAs Free of Headspace?



# Sequoia Analytical

885 Jarvis Drive  
Morgan Hill, CA 95037  
(408) 776-9600  
FAX (408) 782-6308  
www.sequiolabs.com

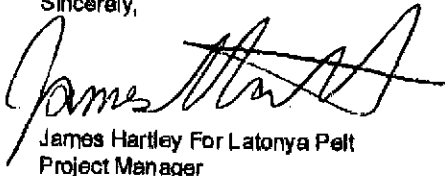
2 December, 2002

Scott Graham  
Environmental Resolutions (Exxon)  
73 Digital Drive, Suite 100  
Novato, CA 94949

RE: Exxon 7-0104  
Sequoia Report: MLK0199

Enclosed are the results of analyses for samples received by the laboratory on 11/07/02 14:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



James Hartley For Latonya Pelt  
Project Manager

CA ELAP Certificate #1210





# Sequoia Analytical

885 Jarvis Drive  
Morgan Hill, CA 95037  
(408) 776-9600  
FAX (408) 782-6308  
www.sequoiabs.com

Environmental Resolutions (Exxon)  
73 Digital Drive, Suite 100  
Novato CA, 94949

Project: Exxon 7-0104  
Project Number: 7-0104  
Project Manager: Scott Graham

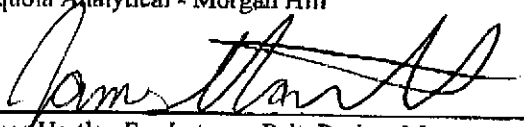
Reported:  
12/02/02 15:29

## ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W-EFF	MLK0199-01	Water	11/06/02 11:00	11/07/02 14:35
W-INT-2	MLK0199-02	Water	11/06/02 11:10	11/07/02 14:35
W-INT-1	MLK0199-03	Water	11/06/02 11:20	11/07/02 14:35
W-INF	MLK0199-04	Water	11/06/02 11:30	11/07/02 14:35
A-EFF	MLK0199-05	Air	11/06/02 08:30	11/07/02 14:35
A-INT	MLK0199-06	Air	11/06/02 08:40	11/07/02 14:35
A-INF	MLK0199-07	Air	11/06/02 08:50	11/07/02 14:35

Sequoia Analytical - Morgan Hill

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

  
James Hartley For Latonya Pelt, Project Manager

Page 1 of 9




 Environmental Resolutions (Exxon)  
 73 Digital Drive, Suite 100  
 Novato CA, 94949

 Project: Exxon 7-0104  
 Project Number: 7-0104  
 Project Manager: Scott Graham

 Reported:  
 12/02/02 15:29

## Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEXM by EPA 8021B Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>W-EFF (MLK0199-01) Water</b> Sampled: 11/06/02 11:00 Received: 11/07/02 14:35									
Gasoline Range Organics (C6-C10)	ND	50	ug/l	1	2K20003	11/20/02	11/20/02	8015Bm/8021B	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		106 %	55-142	"	"	"	"	"	
<b>W-INT-2 (MLK0199-02) Water</b> Sampled: 11/06/02 11:10 Received: 11/07/02 14:35									
Gasoline Range Organics (C6-C10)	ND	50	ug/l	1	2K20003	11/20/02	11/20/02	8015Bm/8021B	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		92.0 %	55-142	"	"	"	"	"	
<b>W-INT-1 (MLK0199-03) Water</b> Sampled: 11/06/02 11:20 Received: 11/07/02 14:35									
Gasoline Range Organics (C6-C10)	100	50	ug/l	1	2K20003	11/20/02	11/20/02	8015Bm/8021B	HC-12
Benzene	3.9	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	1.4	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	150	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		94.2 %	55-142	"	"	"	"	"	





# Sequoia Analytical

885 Jarvis Drive  
Morgan Hill, CA 95037  
(408) 776-9600  
FAX (408) 782-6308  
www.sequoialabs.com

Environmental Resolutions (Exxon) 73 Digital Drive, Suite 100 Novato CA, 94949	Project: Exxon 7-0104 Project Number: 7-0104 Project Manager: Scott Graham	Reported: 12/02/02 15:29
--	--	-----------------------------

**Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEXM by EPA 8021B**  
**Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>W-INF (MLK0199-04) Water Sampled: 11/06/02 11:30 Received: 11/07/02 14:35</b>									
<b>Gasoline Range Organics (C6-C10)</b>	<b>660</b>	<b>500</b>	<b>ug/l</b>	<b>10</b>	<b>2K20001</b>	<b>11/20/02</b>	<b>11/20/02</b>	<b>8015Bm/8021B</b>	<b>HC-19</b>
Benzene	ND	5.0	"	"	"	"	"	"	"
Toluene	ND	5.0	"	"	"	"	"	"	"
Ethylbenzene	ND	5.0	"	"	"	"	"	"	"
Xylenes (total)	ND	5.0	"	"	"	"	"	"	"
Methyl tert-butyl ether	1700	25	"	"	"	"	"	"	"
Surrogate: <i>a,a,a</i> -Trifluorotoluene		84.3 %		55-142	"	"	"	"	"







Environmental Resolutions (Exxon) 73 Digital Drive, Suite 100 Novato CA, 94949	Project: Exxon 7-0104 Project Number: 7-0104 Project Manager: Scott Graham	Reported: 12/02/02 15:29
--	--	-----------------------------

**Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEX by EPA 8021B in Air**  
**Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>A-EFF (MLK0199-05) Air</b> Sampled: 11/06/02 08:30 Received: 11/07/02 14:35									
Gasoline Range Organics (C6-C10)	ND	10	mg/m <sup>3</sup> Air	1	2K09001	11/09/02	11/09/02	8015Bm/8021B	
Benzene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.10	"	"	"	"	"	"	
Xylenes (total)	ND	0.10	"	"	"	"	"	"	
Surrogate: <i>a,a,a</i> -Trifluorotoluene		97.5 %	56-134		"	"	"	"	
<b>A-INT (MLK0199-06) Air</b> Sampled: 11/06/02 08:40 Received: 11/07/02 14:35									
Gasoline Range Organics (C6-C10)	ND	10	mg/m <sup>3</sup> Air	1	2K09001	11/09/02	11/09/02	8015Bm/8021B	
Benzene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.10	"	"	"	"	"	"	
Xylenes (total)	ND	0.10	"	"	"	"	"	"	
Surrogate: <i>a,a,a</i> -Trifluorotoluene		66.0 %	56-134		"	"	"	"	
<b>A-INF (MLK0199-07) Air</b> Sampled: 11/06/02 08:50 Received: 11/07/02 14:35									
Gasoline Range Organics (C6-C10)	1300	100	mg/m <sup>3</sup> Air	10	2K09001	11/09/02	11/09/02	8015Bm/8021B	HC-12
Benzene	12	1.0	"	"	"	"	"	"	
Toluene	13	1.0	"	"	"	"	"	"	
Ethylbenzene	1.5	1.0	"	"	"	"	"	"	
Xylenes (total)	7.5	1.0	"	"	"	"	"	"	
Surrogate: <i>a,a,a</i> -Trifluorotoluene		98.5 %	56-134		"	"	"	"	





# Sequoia Analytical

885 Jarvis Drive  
Morgan Hill, CA 95037  
(408) 776-9600  
FAX (408) 782-6308  
www.sequoiainst.com

Environmental Resolutions (Exxon)  
73 Digital Drive, Suite 100  
Novato CA, 94949

Project: Exxon 7-0104  
Project Number: 7-0104  
Project Manager: Scott Graham

Reported:  
12/02/02 15:29

## Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEXM by EPA 8021B - Quality Control Sequoia Analytical - Morgan Hill

Analyte	Result	Evaluation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	------------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

### Batch 2K20001 - EPA 5030B [P/T]

#### Blank (2K20001-BLK1)

Prepared & Analyzed: 11/20/02

Gasoline Range Organics (C6-C10)	ND	25	ug/l							
Benzene	ND	0.25	"							
Toluene	ND	0.25	"							
Ethylbenzene	ND	0.25	"							
Xylenes (total)	ND	0.25	"							
Methyl tert-butyl ether	ND	1.25	"							
Surrogate: a,a,a-Trifluorotoluene	10.5		"	10.0		105	55-142			

#### LCS (2K20001-BS1)

Prepared & Analyzed: 11/20/02

Gasoline Range Organics (C6-C10)	10.5	0.50	ug/l	10.0		105	68-140			
Benzene	10.2	0.50	"	10.0		102	76-127			
Toluene	10.3	0.50	"	10.0		103	77-130			
Ethylbenzene	31.4	0.50	"	30.0		105	78-128			
Xylenes (total)										
Surrogate: a,a,a-Trifluorotoluene	10.0		"	10.0		100	55-142			

#### LCS (2K20001-BS2)

Prepared & Analyzed: 11/20/02

Gasoline Range Organics (C6-C10)	271	50	ug/l	250		108	62-134			
Surrogate: a,a,a-Trifluorotoluene	10.2		"	10.0		102	55-142			

#### Matrix Spike (2K20001-MS1)

Source: MLK0244-02

Prepared & Analyzed: 11/20/02

Gasoline Range Organics (C6-C10)	262	50	ug/l	550	ND	47.6	62-134			QM-07
Benzene	1.90	0.50	"	6.60	ND	26.2	68-140			QM-07
Toluene	26.4	0.50	"	39.7	ND	66.5	76-127			QM-07
Ethylbenzene	10.6	0.50	"	9.20	ND	115	77-130			
Xylenes (total)	55.4	0.50	"	46.1	ND	120	78-128			
Surrogate: a,a,a-Trifluorotoluene	11.1		"	10.0		111	55-142			

#### Matrix Spike Dup (2K20001-MSD1)

Source: MLK0244-02

Prepared & Analyzed: 11/20/02

Gasoline Range Organics (C6-C10)	164	50	ug/l	550	ND	29.8	62-134	46.0	41	QM-07
Benzene	1.82	0.50	"	6.60	ND	25.0	68-140	4.30	30	QM-07
Toluene	25.9	0.50	"	39.7	ND	65.2	76-127	1.91	30	QM-07
Ethylbenzene	9.73	0.50	"	9.20	ND	106	77-130	8.56	21	

Sequoia Analytical - Morgan Hill

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





# Sequoia Analytical

885 Jarvis Drive  
Morgan Hill, CA 95037  
(408) 776-9600  
FAX (408) 787-6308  
www.sequoialabs.com

Environmental Resolutions (Exxon)  
73 Digital Drive, Suite 100  
Novato CA, 94949

Project: Exxon 7-0104  
Project Number: 7-0104  
Project Manager: Scott Graham

Reported:  
12/02/02 15:29

## Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEXM by EPA 8021B - Quality Control Sequoia Analytical - Morgan Hill

Analyte	Result	Evaluation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	------------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

### Batch 2K20001 - EPA 5030B [P/T]

#### Matrix Spike Dup (2K20001-MSD1)

Source: MLK0244-02

Prepared & Analyzed: 11/20/02

Xylenes (total)	52.6	0.50	"	46.1	ND	114	78-128	5.19	21	
Surrogate: <i>a,a,a</i> -Trifluorotoluene	8.58		"	10.0		85.8	55-142			

### Batch 2K20003 - EPA 5030B [P/T]

#### Blank (2K20003-BLK1)

Prepared & Analyzed: 11/20/02

Gasoline Range Organics (C6-C10)	ND	25	ug/l							
Benzene	ND	0.25	"							
Toluene	ND	0.25	"							
Ethylbenzene	ND	0.25	"							
Xylenes (total)	0.560	0.25	"							Q-19
Methyl tert-butyl ether	ND	1.25	"							
Surrogate: <i>a,a,a</i> -Trifluorotoluene	9.34		"	10.0		93.4	55-142			

#### LCS (2K20003-BS1)

Prepared & Analyzed: 11/20/02

Benzene	10.5	0.50	ug/l	10.0		105	68-140			
Toluene	11.0	0.50	"	10.0		110	76-127			
Ethylbenzene	11.0	0.50	"	10.0		110	77-130			
Xylenes (total)	32.2	0.50	"	30.0		107	78-128			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	11.1		"	10.0		111	55-142			

#### LCS (2K20003-BS2)

Prepared & Analyzed: 11/20/02

Gasoline Range Organics (C6-C10)	236	50	ug/l	250		94.4	62-134			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	10.8		"	10.0		108	55-142			

#### Matrix Spike (2K20003-MS1)

Source: MLK0249-06

Prepared & Analyzed: 11/20/02

Gasoline Range Organics (C6-C10)	488	50	ug/l	550	ND	88.7	62-134			
Benzene	10.3	0.50	"	6.60	ND	156	68-140			QM-07
Toluene	ND	0.50	"	39.7	ND	-0.655	76-127			QM-07
Ethylbenzene	10.3	0.50	"	9.20	ND	112	77-130			
Xylenes (total)	50.6	0.50	"	46.1	ND	110	78-128			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	15.4		"	10.0		154	55-142			QM-07

Sequoia Analytical - Morgan Hill

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





# Sequoia Analytical

885 Jarvis Drive  
Morgan Hill, CA 95037  
(408) 776-9600  
FAX (408) 782-6308  
www.sequoialabs.com

Environmental Resolutions (Exxon)  
73 Digital Drive, Suite 100  
Novato CA, 94949

Project: Exxon 7-0104  
Project Number: 7-0104  
Project Manager: Scott Graham

Reported:  
12/02/02 15:29

## Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEXM by EPA 8021B - Quality Control Sequoia Analytical - Morgan Hill

Analyte	Result	Evaluation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	---------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

### Batch 2K20003 - EPA 5030B [P/T]

#### Matrix Spike Dup (2K20003-MSD1)

Source: MLK0249-06

Prepared & Analyzed: 11/20/02

Gasoline Range Organics (C6-C10)	449	50	ug/l	550	ND	81.6	62-134	8.32	41	
Benzene	9.10	0.50	"	6.60	ND	138	68-140	12.4	30	
Toluene	41.0	0.50	"	39.7	ND	103	76-127		30	
Ethylbenzene	9.06	0.50	"	9.20	ND	98.5	77-130	12.8	21	
Xylenes (total)	45.4	0.50	"	46.1	ND	98.5	78-128	10.8	21	
Surrogate: <i>m,p</i> -Trifluorotoluene	12.9		"	10.0		129	55-142			

Sequoia Analytical - Morgan Hill

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*





# Sequoia Analytical

885 Jarvis Drive  
Morgan Hill, CA 95037  
(408) 776-9600  
FAX (408) 782-6308  
www.sequoialabs.com

Environmental Resolutions (Exxon)  
73 Digital Drive, Suite 100  
Novato CA, 94949

Project: Exxon 7-0104  
Project Number: 7-0104  
Project Manager: Scott Graham

Reported:  
12/02/02 15:29

## Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEX by EPA 8021B in Air - Quality Control Sequoia Analytical - Morgan Hill

Analyte	Result	Evaluation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	------------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

### Batch 2K09001 - EPA 5030B [P/T]

#### Blank (2K09001-BLK1)

Prepared & Analyzed: 11/09/02

Gasoline Range Organics (C6-C10)	ND	5	mg/m <sup>3</sup> Air							
Benzene	ND	0.05	"							
Toluene	ND	0.05	"							
Ethylbenzene	ND	0.05	"							
Xylenes (total)	ND	0.05	"							

#### Surrogate: *a,a,a*-Trifluorotoluene

1.81 " 2.00 90.5 56-134

#### LCS (2K09001-BS1)

Prepared & Analyzed: 11/09/02

Benzene	1.85	0.10	mg/m <sup>3</sup> Air	2.00		92.5	62-125			
Toluene	1.91	0.10	"	2.00		95.5	68-121			
Ethylbenzene	1.91	0.10	"	2.00		95.5	75-125			
Xylenes (total)	5.74	0.10	"	6.00		95.7	76-121			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	1.72	"	"	2.00		86.0	56-134			

#### LCS (2K09001-BS2)

Prepared & Analyzed: 11/09/02

Gasoline Range Organics (C6-C10)	51.6	10	mg/m <sup>3</sup> Air	50.0		103	65-142			
Surrogate: <i>a,a,a</i> -Trifluorotoluene	2.19	"	"	2.00		110	56-134			

#### LCS Dup (2K09001-BSD1)

Prepared & Analyzed: 11/09/02

Benzene	1.67	0.10	mg/m <sup>3</sup> Air	2.00		83.5	62-125	10.2	31	
Toluene	1.70	0.10	"	2.00		85.0	68-121	11.6	29	
Ethylbenzene	1.73	0.10	"	2.00		86.5	75-125	9.89	32	
Xylenes (total)	5.11	0.10	"	6.00		85.2	76-121	11.6	29	
Surrogate: <i>a,a,a</i> -Trifluorotoluene	2.03	"	"	2.00		102	56-134			

#### LCS Dup (2K09001-BSD2)

Prepared & Analyzed: 11/09/02

Gasoline Range Organics (C6-C10)	48.8	10	mg/m <sup>3</sup> Air	50.0		97.6	65-142	5.58	50	
Surrogate: <i>a,a,a</i> -Trifluorotoluene	2.39	"	"	2.00		120	56-134			

Sequoia Analytical - Morgan Hill

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.





Environmental Resolutions (Exxon)  
 73 Digital Drive, Suite 100  
 Novato CA, 94949

Project: Exxon 7-0104  
 Project Number: 7-0104  
 Project Manager: Scott Graham

Reported:  
 12/02/02 15:29

### Notes and Definitions

- HC-12 Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.
- HC-19 Discrete peak @ C6-C7.
- Q-19 The method blank contains this analyte at a concentration above the method reporting limit. This should be considered in evaluating the data for its intended purpose.
- QM-07 The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: ERI.  
 REC. BY (PRINT): AJ  
 WORKORDER: MLK0199

DATE Received at Lab: 11-8-02  
 TIME Received at Lab: 1045  
 LOGIN DATE: 11-8-02

Drinking water for regulatory purposes: YES /  NO  
 Wastewater for regulatory purposes: YES /  NO

CIRCLE THE APPROPRIATE RESPONSE		LAB SAMPLE #	#	CLIENT ID	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMPLED	REMARKS: CONDITION (ETC.)
1. Custody Seal(s)	Present / <input checked="" type="radio"/> Absent Intact / Broken*	1		A-EFF	(1) Hector bag	air	11-6-02	
2. Chain-of-Custody	<input checked="" type="radio"/> Present / Absent*	2		A-INT	↓	↓	↓	
3. Traffic Reports or Packing List:	Present / <input checked="" type="radio"/> Absent	3		A-INP	↓	↓	↓	
4. Airbill:	Airbill / <input checked="" type="radio"/> Sticker Present / Absent							
5. Airbill #:	<u>543613491</u>							
6. Sample Labels:	<input checked="" type="radio"/> Present / Absent							
7. Sample IDs:	<input checked="" type="radio"/> Listed / Not Listed on Chain-of-Custody							
8. Sample Condition:	<input checked="" type="radio"/> Intact / Broken* / Leaking*							
9. Does information on custody reports, traffic reports and sample labels agree?	<input checked="" type="radio"/> Yes / No*							
10. Sample received within hold time:	<input checked="" type="radio"/> Yes / No*							
11. Proper Preservatives used:	<input checked="" type="radio"/> Yes / No*							
12. Temp Rec. at Lab: (Acceptance range for samples requiring thermal pres.: +/-2°C)	<u>N/A</u> Yes / No**							
**Exception (if any):								

**\*If Circled, contact Project Manager and attach record of resolution.**

## SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: FRI  
 REC. BY (PRINT) R  
 WORKORDER: MLK0299

DATE Received at Lab: 11/8/02  
 TIME Received at Lab: 2030  
 LOG IN DATE: 11-9-02

Drinking water for regulatory purposes: YES/NO NO  
 Wastewater for regulatory purposes: YES/NO NO

CIRCLE THE APPROPRIATE RESPONSE		LAB SAMPLE #	#	CLIENT ID	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMPLED	REMARKS: CONDITION (ETC.)
1. Custody Seal(s)	Present / Absent Intact / Broken*	1		W - eff	(9) Vocab HCO	(L)	11/6/02	
2. Chain-of-Custody	Present / Absent*	3		W - HSC 2				
3. Traffic Reports or Packing List:	Present / Absent	4		W - inf				
4. Airbill:	Airbill / Sticker Present / Absent	6		A - eff	(1) Tackar bag	(A)		
5. Airbill #:		7		A - inf				
6. Sample Labels:	Present / Absent							
7. Sample IDs:	Listed / Not Listed on Chain-of-Custody							
8. Sample Condition:	Intact / Broken* / Leaking*							
9. Does information on custody reports, traffic reports and sample labels agree?	Yes / No*							
10. Sample received within hold time:	Yes / No*							
11. Proper Preservatives used:	Yes / No*							
12. Temp Rec. at Lab:	Yes / No**							
(Acceptance range for samples requiring thermal pres.: 4 +/- 2°C)								
**Exception (if any):								

**\*If Circled, contact Project Manager and attach record of resolution.**

PAGE 14/14





**ATTACHMENT D**

**AS/SVE SYSTEM OPERATION DATA  
PROVIDED BY PREVIOUS CONSULTANTS**

**OPERATIONAL DATA FOR  
SOIL VAPOR EXTRACTION SYSTEM**

Former Exxon Service Station 7-0104

1725 Park Street  
Alameda, California

(Page 1 of 2)

Date	Sample ID	FIELD MEASUREMENTS			Laboratory Analytical Results		TPHg Removal	
		Hour Meter	Hours of Operation	Flow cfm	TPHg ppmv	Benzene ppmv	Per Period Pounds	Cumulative Pounds
2/16/98	System startup	1,583	0	---				
2/19/98	A-INF	1,652	69	48	< 2.4	< 0.031	<	< 0.1
	A-INT				< 2.4	< 0.031		
	A-EFF				< 2.4	< 0.031		
3/3/98	A-INF	1,828	176	50	< 2.4	< 0.031	<	< 0.2
	A-INT				< 2.4	< 0.031		
	A-EFF				< 2.4	< 0.031		
4/2/98	A-INF	2,184	356	52	< 2.4	< 0.031	<	< 0.5
	A-INT				< 2.4	< 0.031		
	A-EFF				< 2.4	< 0.031		
5/4/98	A-INF	2,538	354	131	17	0.44	<	< 5.8
	A-INT				< 2.4	< 0.031		
	A-EFF				< 2.4	< 0.031		
6/10/98	A-INF	2,940	402	131	12	0.047	<	< 10.0
	A-INT				4.2	< 0.031		
	A-EFF				< 2.4	< 0.031		
7/7/99	A-INF	2,940	0	131	76	2.6	<	< 10.0
	A-INT				---	---		
	A-EFF				< 2.4	< 0.031		
8/4/98	A-INF	3,248	308	131	34	0.94	<	< 19.1
	A-INT				8.8	0.27		
	A-EFF				10	< 0.031		
10/20/98	A-INF	3,249	1	131	210	6.0	<	< 19.3
	A-INT				< 2.4	< 0.031		
	A-EFF				< 2.4	< 0.031		
11/9/98	A-INF	3,464	215	131	13	0.056	<	< 21.7
	A-INT				< 2.4	< 0.031		
	A-EFF				< 2.4	< 0.031		
12/8/98	A-INF	3,798	334	131	3.1	0.034	<	< 22.7
	A-INT				< 2.4	< 0.031		
	A-EFF				< 2.4	< 0.031		
1/13/99	A-INF	4,264	466	131	12	< 0.031	<	< 27.5
	A-INT				5.6	< 0.031		
	A-EFF				< 2.4	< 0.031		
2/8/99	A-INF	4,600	336	131	< 12.1	< 0.16	<	< 31.1
	A-INT				< 12.1	< 0.16		
	A-EFF				< 12.1	< 0.16		
3/8/99	A-INF	4,919	319	131	2.7	< 0.031	<	< 31.8
	A-INT				< 2.4	< 0.031		

**OPERATIONAL DATA FOR  
SOIL VAPOR EXTRACTION SYSTEM**

Former Exxon Service Station 7-0104

1725 Park Street

Alameda, California

(Page 2 of 2)

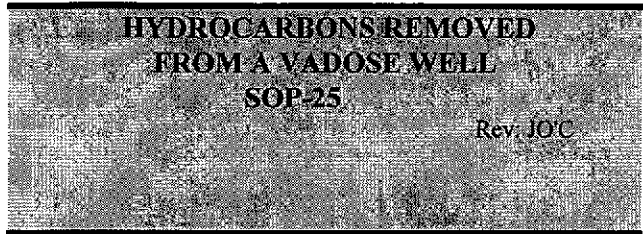
Date	Sample ID	FIELD MEASUREMENTS			Laboratory Analytical Results		TPHg Removal	
		Hour Meter	Hours of Operation	Flow cfm	TPHg ppmv	Benzene ppmv	Per Period Pounds	Cumulative Pounds
	A-EFF				< 2.4	< 0.031		
4/5/99	A-INF	4,957	38	131	42.6	0.474		< 33.3
	A-INT				4.6	< 0.0314		
	A-EFF				< 2.84	< 0.0314		
5/6/99	A-INF	5,470	513	131	11.84	0.0872		< 38.6
	A-INT				4.20	< 0.0314		
	A-EFF				4.71	< 0.0314		
5/26/99	A-INF	5,799	329	131	---	---		< 42.0
	A-INT				18.03	< 0.031		
	A-EFF				11.98	< 0.031		
8/9/99	A-INF	5,799	0	118	240	1.60		< 42.0
	A-INT				< 2.84	< 0.0314		
	A-EFF				< 2.84	< 0.0314		
9/7/99	A-INF	6,275	476	109	10.6	0.0403		< 45.7
	A-INT				6.23	< 0.0314		
	A-EFF				3.74	< 0.0314		
10/12/99	A-INF	6,638	363	122	15	< 0.31		< 50.1
	A-INT				< 2.8	< 0.31		
	A-EFF				< 2.8	< 0.31		
12/9/99	A-INF	6,686	48	109	82	1.0		< 53.0
	A-INT				< 2.8	< 0.31		
	A-EFF				< 2.8	< 0.31		
2/8/00	A-INF	7,030	344	109	31	0.59		< 60.8
	A-INT				< 2.8	< 0.31		
	A-EFF				< 2.8	< 0.31		
3/24/00	System shutdown pending evaluation							
4/1/00	Environmental Resolutions Inc., assumed operation of the system.							

Notes: Data prior to April 1, 2000 provided by Delta Environmental Consultants, Inc.

A-INF = Influent vapor sample collected prior to biofilters.  
A-INT1 = Vapor sample collected after biofilters.  
A-INT2 = Vapor sample collected after 1st carbon vessel.  
A-EFF = Vapor sample collected from effluent sample port.  
cfm = Cubic feet per minute.  
ppmv = Parts per million by volume  
--- = Not sampled/not measured.

**ATTACHMENT E**

**ERI SOP-25:  
"HYDROCARBONS REMOVED FROM A VADOSE WELL"**



POUNDS OF HYDROCARBON IN AN VAPOR STREAM

INPUT DATA:

- 1) Vapor flow rate acfm (usually by Pitot tube)
- 2) Vapor pressure at the flow measuring device (in inches of H<sub>2</sub>O) (use {-} for vacuum)
- 3) Vapor temperature at the flow measuring device.
- 4) Hydrocarbon content of vapor (usually in mg/M<sup>3</sup>) for ppmv you need molecular weight.
- 5) Length of time (usually hours) over which flow rate occurred)

From periodic measurements, a calculation of total pounds of hydrocarbons removed from a well or from a system are calculated. The input data listed above are measured at a point in time. To calculate quantities removed, some assumptions must be made about what was happening between measurements. The following assumptions will be used for the sake of consistency:

ASSUMPTIONS:

- 1) Vapor flow for the period equals the average of the initial and final reading for the period.
- 2) Pressure and temperature for the entire period will be the final reading.
- 3) Hydrocarbon concentration for the period equals the average of the initial and final reading.
- 4) The hours of operation can be taken from an hour meter, an electric meter or will be assumed to be equal to the time between measurements.
- 5) If the unit is found down - try to determine how many hours it did operate and use the data taken for the previous period to make the calculations. Restart the unit and then take data to start the next period.

SAMPLE DATA AND CALCULATIONS

Date	Time	Temp deg F	Press in H <sub>2</sub> O	HC conc mg/M <sup>3</sup> acfm	Vapor flow lb. rem.	Calc.
1/6/95	11:00	70	-46	2000	120	
1/7/95	13:00	55	-50	1350	90	
1/8/95	10:00	80	-13	750	100	7.4

Calculate the pounds of hydrocarbon removed from the system during the basis period from 13:00 (1:00 pm) on the 7th to 10 am on the 8th. Pressure and temperature of the measurements (at the flow meter) must be corrected to the P and T used to report the HC concentration (which are P = 1 atm and T = 70 deg F). 1 atm = 14.7psia, 760 mm Hg, or 407 in H<sub>2</sub>O. T<sub>abs</sub> = 460 + T deg F

Hours of operation = 21, T = 80, P = -13, HC = (1350+750)/2 = 1050 mg/M<sup>3</sup> Flow = 95

$$21 \times 60 \times 95 \times \frac{(460+70)}{(460+80)} \times \frac{(407-13)}{407} \times \frac{28.3}{1000} \times \frac{1050}{1000} \times \frac{1}{454} = 7.4 \text{ lb}$$

$$\frac{\text{hr}}{\text{basis}} \times \frac{\text{min}}{\text{hr}} \times \frac{\text{cu ft}}{\text{min}} \times T_{\text{Corr}} \times P_{\text{Corr}} \times \frac{\text{M}^3}{\text{cu ft}} \times \frac{\text{g}}{\text{M}^3} \times \frac{\text{lb}}{\text{g}} \times \frac{\text{lb}}{\text{basis}} = \text{-----}$$

21 x 60 x 95 x 0.98 x 0.97 x 0.0283 x 1.050 x 1/454 = 7.4 lb.  
cumulative lbs. (the running total) = the sum of all the previous periods.

Note: If results are given in ppm, an assumption about the molecular weight of the hydrocarbon must be made to get mg/M<sup>3</sup>. ppmv x molecular wt. /24.1 = mg/M<sup>3</sup>. (Use 102 for gasoline)