

**EXXON COMPANY, U.S.A.**

# 245

ENVIRONMENTAL PROTECTION  
05/07/99 7 PM 3:05

P.O. BOX 4032 • CONCORD, CA 94524-4032  
MARKETING DEPARTMENT • ENVIRONMENTAL ENGINEERING

MARLA D. GUENSLER  
SENIOR ENGINEER  
(925) 246-8776  
(925) 246-8798 FAX

o Check what we decided in mtg.  
o Check to see if white survey done  
o see if another well is needed as 212th  
d.g. of MW II/9A.

MAY 6 1999

Mr. Barney Chan  
Alameda County Health Care Services Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway, Room 250  
Alameda, California 95402-6577

Should be receiving a letter from T. Faulkner  
of ERI re this site + the other 2 Exxon sites

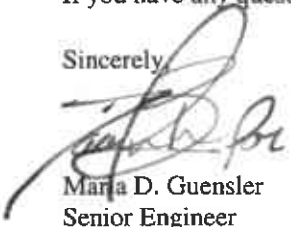
RE: Exxon RAS #7-0238/2200 East 12<sup>th</sup> Street, Oakland, California.

Dear Mr. Chan:

Attached for your review and comment is a letter report entitled *Quarterly Groundwater Monitoring Report, First Quarter 1999*, dated April 8, 1999, for the above referenced site. The report was prepared by Environmental Resolutions, Inc. (ERI) of Novato, California, and details the results of the quarterly groundwater monitoring and sampling activities at the subject site.

If you have any questions or comments, please contact me at (925) 246-8776.

Sincerely,



Marja D. Guensler  
Senior Engineer

MDG/tjm

Attachment: ERI's Quarterly Groundwater Monitoring Report, First Quarter 1999, dated April 8, 1999.

cc: w/ attachment  
Mr. Stephen Hill - California Regional Water Quality Control Board-San Francisco Bay Region

w/o attachment  
Mr. Mark S. Dockum - Environmental Resolutions, Inc.





**ENVIRONMENTAL RESOLUTIONS, INC.**

April 8, 1999  
ERI 229313.R04

Ms. Marla D. Guensler  
Exxon Company, U.S.A.  
P.O. Box 4032  
Concord, California 94524-4032

Subject: Quarterly Groundwater Monitoring, First Quarter 1999, Exxon Service Station  
7-0238, 2200 East 12th Street, Oakland, California.

Ms. Guensler:

At the request of Exxon Company, U.S.A. (Exxon), Environmental Resolutions, Inc. (ERI), is reporting the results of the first quarter 1999, groundwater monitoring and sampling event. The location of the site is shown on the Site Vicinity Map (Plate 1). The purpose of quarterly monitoring and sampling is to evaluate concentrations of dissolved hydrocarbons in groundwater and groundwater flow direction and gradient. Blaine Tech Services, Inc. (Blaine Tech) performed the site field activities at the request of Exxon.

### **GROUNDWATER MONITORING AND SAMPLING**

On February 26, 1999, Blaine Tech measured depth to water (DTW) and collected groundwater samples from select monitoring wells for laboratory analysis. Groundwater monitoring and sampling were performed in accordance with Blaine Tech's groundwater sampling protocol (Attachment A).

Calculated groundwater gradient and flow direction are presented on Plate 2. Historical and recent monitoring data are summarized in Table 1.

### **LABORATORY ANALYSES AND RESULTS**

Groundwater samples were submitted to Sequoia Analytical Laboratories (California State Certification Number 1210) in Redwood City, California, under Chain of Custody protocol. The samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl tertiary butyl ether (MTBE), and total purgeable petroleum hydrocarbons as gasoline (TPPHg), using the methods listed in the notes in Table 1. The laboratory analysis reports and Chain of Custody records are attached (Attachment B). Cumulative results of laboratory analyses of groundwater samples are summarized in Table 1. The results of analyses of groundwater samples collected during the recent sampling event are shown on Plate 2.

**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 Exxon Company, U.S.A. and any reliance on this report by third parties shall be at such party's sole risk.

ERI recommends forwarding copies of this report to:

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

Mr. Barney Chan  
Alameda County Health Care Services Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway, Room 250  
Alameda, California 94502-6577

If you have any questions or comments regarding this report, please call the undersigned at (415) 382-5991.



Sincerely,  
Environmental Resolutions, Inc.

Mark S. Dockum, R.G., C.E.G.  
Senior Project Manager

Tracy A. Faulkner  
Program Manager

Enclosures: Table 1: Cumulative Groundwater Monitoring and Sampling Data

Plate 1: Site Vicinity Map

Plate 2: Generalized Site Plan

Attachment A: Groundwater Sampling Protocol

Attachment B: Laboratory Analysis Reports and Chain of Custody Record

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

Exxon Service Station 7-0238

2200 East 12th Street

Oakland, California

(Page 1 of 3)

Well ID # (TOC)	Sampling Date	SUBJ <.....>	DTW feet	Elev. >.....<	TPPHg <.....>	MTBE	B ug/L	T	E	X
MW9A (11.46)	11/2/95	NLPH	7.16	4.30	<50	<10	<0.5	<0.5	<0.5	<0.5
	4/26/96	NLPH	6.33	5.13	---	---	---	---	---	---
	8/22/96	NLPH	7.02	4.44	---	---	---	---	---	---
	2/24/97	---	---	---	---	---	---	---	---	---
	3/16/98	NLPH	6.14	5.32	<200	40,000	7.9	<2.0	<2.0	<2.0
	4/21/98	NLPH	6.29	5.17	<50	53,000	3.8	<0.5	<0.5	<0.5
	(14.53) 7/22/98	NLPH	6.58	7.95	<250	18,000	<2.5	<2.5	<2.5	<2.5
	12/22/98	NLPH	6.47	8.06	<50	5,200	<0.5	<0.5	<0.5	<0.5
	2/26/99	NLPH	6.38	8.15	<100	10,000	<1.0	<1.0	<1.0	<1.0
MW9B (9.80)	11/2/95	NLPH	6.14	3.66	130	<10	3.3	<0.5	<0.5	<0.5
	4/26/96	NLPH	5.66	4.14	270	70	130	2.8	6.7	<3
	8/22/96	NLPH	6.16	3.64	210	31	5.7	6.8	1.1	9.2
	2/24/97	NLPH	5.58	4.22	1,400	1,300	76	1.4	4.1	1.2
	3/16/98	NLPH	5.32	4.48	860	1,500	140	2.0	11	<2.0
	4/21/98	NLPH	5.49	4.31	1,800	18,000	300	<5.0	7.9	<5.0
	(12.83) 7/22/98	NLPH	5.79	7.04	<500	26,000	13	<5.0	<5.0	<5.0
	12/22/98	NLPH	5.69	7.14	700	21,000	110	3.1	9.1	14
	2/26/99	NLPH	5.10	7.73	---	---	---	<25	52	38
MW9C (11.14)	11/2/95	---	---	---	---	---	---	---	---	---
	4/26/96	---	---	---	---	---	---	---	---	---
	8/22/96	---	---	---	---	---	---	---	---	---
	2/24/97	---	---	---	---	---	---	---	---	---
	3/16/98	NLPH	5.51	5.63	<500	150,000	24	<5.0	<5.0	<5.0
	4/21/98	NLPH	5.83	5.31	150	130,000/150,000*	<0.5	<0.5	<0.5	<0.5
	(14.19) 7/22/98	NLPH	6.43	7.76	<500	95,000	<5.0	<5.0	<5.0	<5.0
	12/22/98	NLPH	6.16	8.03	<500	84,000	<5.0	<5.0	<5.0	<5.0
	2/26/99	NLPH	5.46	8.73	<250	55,000	<2.5	<2.5	<2.5	<2.5
MW9D (12.90)	11/2/95	---	---	---	---	---	---	---	---	---
	4/26/96	---	---	---	---	---	---	---	---	---
	8/22/96	---	---	---	---	---	---	---	---	---
	2/24/97	---	---	---	---	---	---	---	---	---

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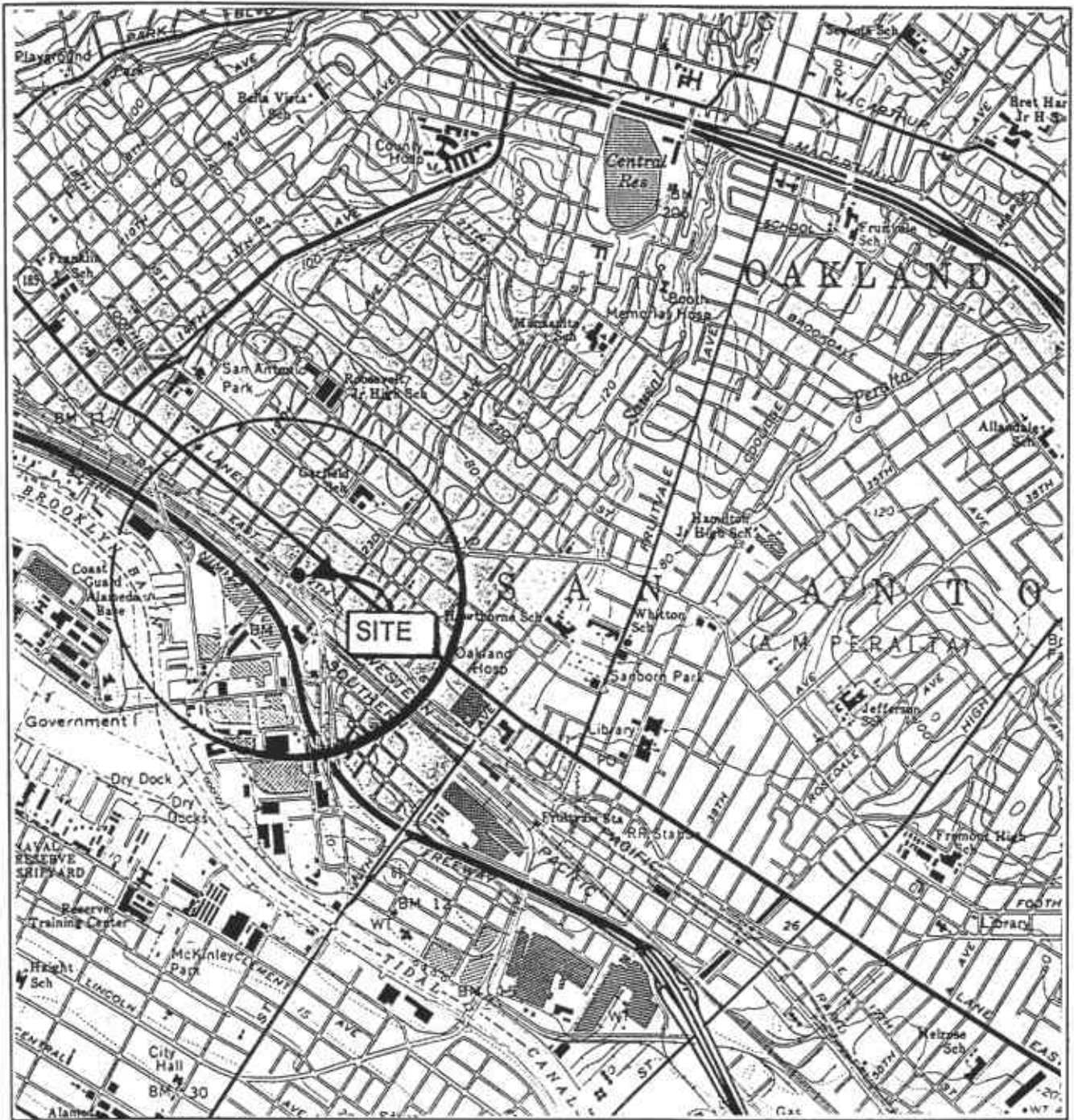
TABLE 1  
 CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA  
 Exxon Service Station 7-0238  
 2200 East 12th Street  
 Oakland, California  
 (Page 2 of 3)

Well ID # (TOC)	Sampling Date	SUBJ <.....>	DTW feet	Elev. >.....<	TPPHg <.....>	MTBE	B ug/L	T	E	X
MW9D (cont.) (12.90) (15.98)	3/16/98	NLPH	6.94	5.96	<50	10	<0.5	<0.5	<0.5	<0.5
	4/21/98	NLPH	7.22	5.68	<50	12	<0.5	<0.5	<0.5	<0.5
	7/22/98	NLPH	7.85	8.13	<50	13	<0.5	<0.5	<0.5	<0.5
	12/22/98	NLPH	7.58	8.40	<50	12	<0.5	<0.5	<0.5	<0.5
	2/26/99	NLPH	6.42	9.56	<50	310	<0.5	<0.5	<0.5	<0.5
MW9F (8.37)	11/2/95	---	---	---	---	---	---	---	---	---
	4/26/96	NLPH	---	---	<50	57	<0.5	<0.5	<0.5	<0.5
	8/22/96	NLPH	---	---	<50	5.8	<0.5	<0.5	<0.5	<0.5
	2/24/97	NLPH	---	---	<50	<30	<0.5	<0.5	<0.5	<0.5
	3/16/98	NLPH	---	---	---	---	---	---	---	---
	4/21/98	---	---	---	---	---	---	---	---	---
	7/22/98	---	---	---	---	---	---	---	---	---
	12/22/98	NLPH	5.47	5.91	<50	81	<0.5	<0.5	<0.5	<0.5
2/26/99	NLPH	5.35	6.03	<50	<2.5	<0.5	<0.5	<0.5	<0.5	
MW9G (9.95)	11/2/95	NLPH	5.92	4.03	<50	<10	<0.5	<0.5	<0.5	<0.5
	4/26/96	NLPH	5.28	4.67	<50	18	<0.5	<0.5	<0.5	<0.5
	8/22/96	NLPH	5.57	4.38	<50	18	<0.5	<0.5	<0.5	<0.5
	2/24/97	NLPH	5.30	4.65	<50	240	<0.5	0.57	<0.5	0.62
	3/16/98	---	---	---	---	---	---	---	---	---
	4/21/98	---	---	---	---	---	---	---	---	---
	7/22/98	---	---	---	---	---	---	---	---	---
	12/22/98	NLPH	5.28	7.71	<50	1,100	<0.5	<0.5	<0.5	<0.5
2/26/99	NLPH	5.31	7.68	<50	50	<0.5	<0.5	<0.5	<0.5	
MW9H (8.58)	11/2/95	NLPH	8.40	0.18	<50	<10	<0.5	<0.5	<0.5	<0.5
	4/26/96	NLPH	8.05	0.53	---	---	---	---	---	---
	8/22/96	NLPH	8.17	0.41	---	---	---	---	---	---
	2/24/97	---	---	---	---	---	---	---	---	---
	3/16/98	---	---	---	---	---	---	---	---	---
	4/21/98	---	---	---	---	---	---	---	---	---
	7/22/98	---	---	---	---	---	---	---	---	---
	12/22/98	NLPH	7.81	3.80	<50	<2.5	<0.5	<0.5	<0.5	<0.5
2/26/99	NLPH	7.61	4.00	<50	<2.5	<0.5	<0.5	<0.5	<0.5	
(11.61)	12/22/98	NLPH	7.81	3.80	<50	<2.5	<0.5	<0.5	<0.5	<0.5
	2/26/99	NLPH	7.61	4.00	<50	<2.5	<0.5	<0.5	<0.5	<0.5

TABLE 1  
 CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA  
 Exxon Service Station 7-0238  
 2200 East 12th Street  
 Oakland, California  
 (Page 3 of 3)

Well ID # (TOC)	Sampling Date	SUBJ <.....>	DTW feet	Elev. >.....<	TPPHg <.....>	MTBE <.....>	B ug/L	T ug/L	E ug/L	X ug/L
MW9I (10.11)	11/2/95	NLPH	6.04	4.07	<50	<10	<0.5	<0.5	<0.5	<0.5
	4/26/96	NLPH	5.27	4.84	<50	99	<0.5	<0.5	<0.5	<0.5
	8/22/96	NLPH	5.66	4.45	<50	170	<0.5	<0.5	<0.5	<0.5
	2/24/97	NLPH	5.24	4.87	120	9,100	<0.5	<0.5	<0.5	<0.5
	3/16/98	NLPH	4.91	5.20	<200	59,000	13	<2.0	<2.0	<2.0
(13.14)	4/21/98	NLPH	5.08	5.03	<500	59,000	<5.0	<5.0	<5.0	<5.0
	7/22/98	NLPH	5.44	7.70	<500	62,000	<5.0	<5.0	<5.0	<5.0
	12/22/98	NLPH	5.32	7.82	200	51,000	1.7	<0.5	<0.5	<0.5
	2/26/99	NLPH	4.71	8.43	<500	5,700	<5.0	<5.0	<5.0	<5.0

- Notes:
- SUBJ = Results of subjective evaluation.
  - NLPH = No liquid-phase hydrocarbons present in well.
  - TOC = Elevation of top of well casing; relative to mean sea level.
  - DTW = Depth to water.
  - Elev. = Elevation of groundwater surface; relative to mean sea level.
  - TPPHg = Total purgeable petroleum hydrocarbons as gasoline analyzed using EPA method 5030/8015 (modified).
  - MTBE = Methyl tertiary butyl ether analyzed using EPA method 5030/8020.
  - BTEX = Benzene, toluene, ethylbenzene, and total xylenes using EPA method 5030/8020.
  - < = Less than the indicated detection limit shown by the laboratory.
  - = Not measured or sampled.
  - \* = MTBE confirmed using EPA method 8260.



FN: 22930001

**EXPLANATION**



APPROXIMATE SCALE



Source: U.S.G.S. 7.5 minute topographic quadrangle map Oakland East, California (Photorevised 1980)



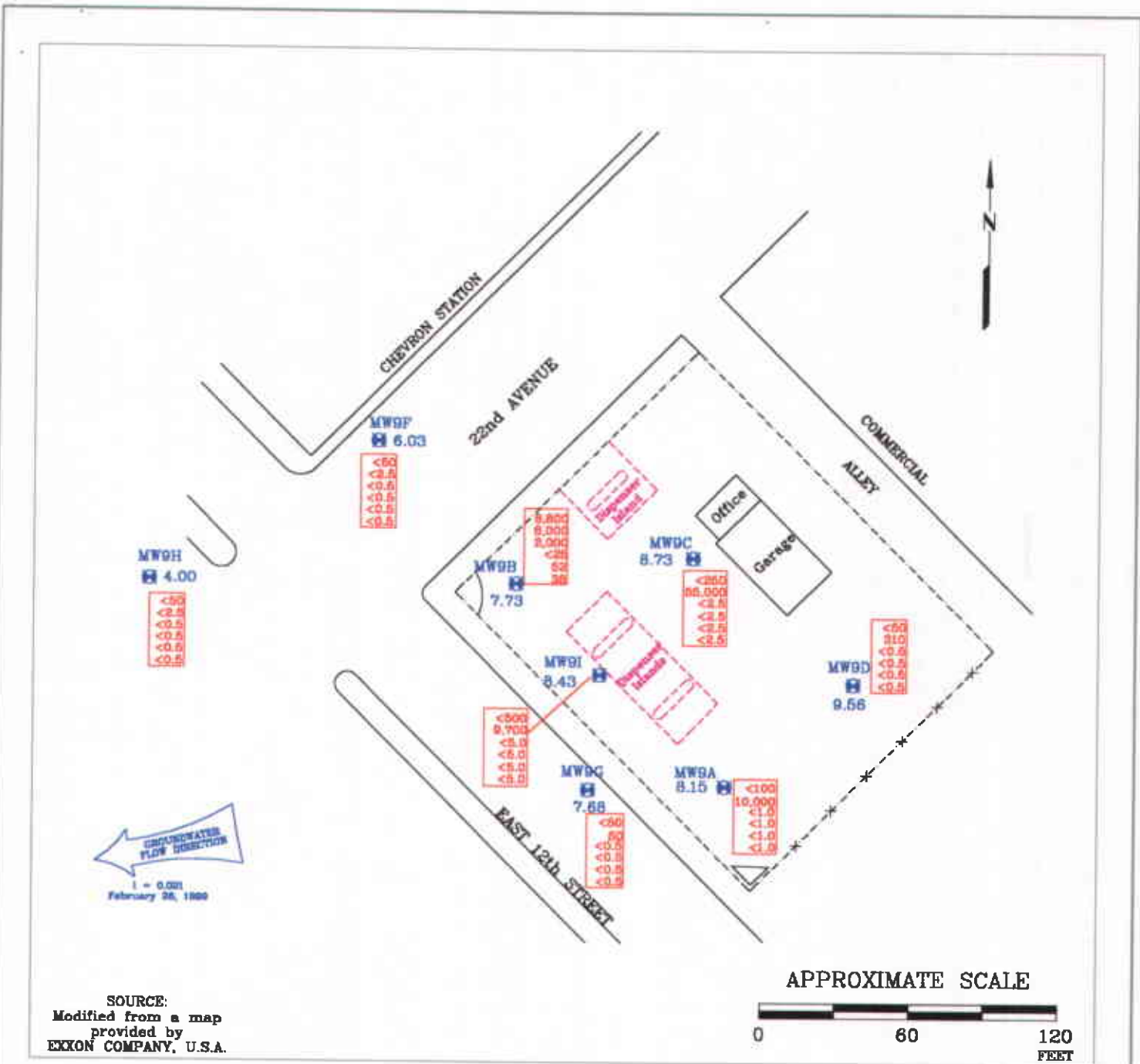
**PROJECT** ERI 2293

**SITE VICINITY MAP**

EXXON SERVICE STATION 7-0238  
2200 East 12th Street  
Oakland, California

**PLATE**

1



FN 22930002

**EXPLANATION**

- MW9I  
⊕ Groundwater Monitoring Well
- 8.43 Groundwater elevation in feet above mean sea level
- i = Interpreted Groundwater Gradient

**GENERALIZED SITE PLAN**

EXXON SERVICE STATION 7-0238  
2200 East 12th street  
Oakland, California

**PROJECT NO.**

2293

**PLATE**

2

March 18, 1999





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

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

Blaine Tech Services, Inc. performs environmental sampling and documentation as an independent third party. We specialize in groundwater monitoring assignments and intentionally limit the scope of our services to those centered on the generation of objective information.

To avoid conflicts of interest, Blaine Tech Services, Inc. personnel do not evaluate or interpret the information we collect. As a state licensed contractor (C-57 well drilling –water – 746684 ) performing strictly technical services, we do not make any professional recommendations and perform no consulting of any kind.

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## SAMPLING PROCEDURES OVERVIEW

### SAFETY

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

### INSPECTION AND GAUGING

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

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

The water in each well is inspected for the presence of immiscibles or sheen and when free product is suspected, it is confirmed using an electronic interface probe (e.g. MMC). If sheen or product is found in a well, the Project Coordinator notifies the appropriate party (e.g. Exxon employee or consultant).

No samples are collected from a well containing sheen or product.

### EVACUATION

Depth to water measurements are collected by our personnel prior to purging and minimum purge volumes are calculated anew for each well based on the height of the water column and the diameter of the well. Expected purge volumes are never less than three case volumes and

are set at no less than four case volumes in some jurisdictions.

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

## PARAMETER STABILIZATION

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

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

## DEWATERED WELLS

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

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

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

## PURGEWATER CONTAINMENT

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

Non hazardous purgewater is transported under standard Bill of Lading documentation to a Blaine Tech Services, Inc. facility before being transported to an Exxon approved disposal facility (e.g. Romic Environmental Technologies Corporation in East Palo Alto, California).

## SAMPLE COLLECTION DEVICES

All samples are collected using a disposable bailer.

## SAMPLE CONTAINERS

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

## TRIP BLANKS

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

## SAMPLE STORAGE

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

## DOCUMENTATION CONVENTIONS

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

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

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

## DECONTAMINATION

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

leaving the site.

The primary decontamination device is a commercial steam cleaner. The steam cleaner is de-tuned to function as a hot pressure washer which is then operated with high quality deionized water which is produced at our facility and stored onboard our sampling vehicle. Cleaning is facilitated by the use of proprietary fixtures and devices included in the patented workstation (U.S. Patent 5,535,775) that is incorporated in each sampling vehicle. The steam cleaner is used to decon reels, pumps and bailers.

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

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

:

#### DISSOLVED OXYGEN READINGS

All Dissolved Oxygen readings are taken using YSI meters (e.g. YSI Model 58 or equivalent YSI meter). These meters are equipped with a YSI stirring device that enables them to collect accurate in-situ readings. The probe/stirring devices are modified to allow downhole measurements to be taken from wells as small as two-inch diameter.

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

#### OXYIDATON REDUCTION POTENTIAL READINGS

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

**ATTACHMENT B**

**LABORATORY ANALYSIS REPORTS  
AND CHAIN OF CUSTODY RECORD**

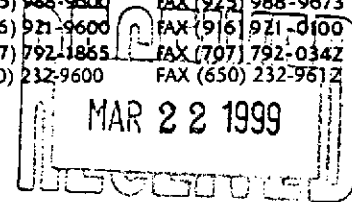


**Sequoia  
Analytical**

680 Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite 8  
1455 McDowell Blvd. North, Ste. D  
1551 Industrial Road

Redwood City, CA 94063  
Walnut Creek, CA 94598  
Sacramento, CA 95834  
Petaluma, CA 94954  
San Carlos, CA 94070-4111

(650) 364-9600 FAX (650) 364-9233  
(925) 988-9600 FAX (925) 988-9673  
(916) 921-9600 FAX (916) 921-0100  
(707) 792-1865 FAX (707) 792-0342  
(650) 232-9600 FAX (650) 232-9612



Environmental Resolutions  
74 Digital Drive, Suite 6  
Novato, CA 94949  
Attention: Mark Dockum

Client Proj. ID: Exxon 7-0238, 2293  
Lab Proj. ID: 9903029

Received: 03/01/99  
Reported: 03/17/99

**LABORATORY NARRATIVE**

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 14 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

TPGM2W; 029-1,3,2,8, WERE RUN TWICE FOR MTBE ON HP31, 3/15/99.

**SEQUOIA ANALYTICAL**

David A. Pichette  
Project Manager



Environmental Resolutions 74 Digital Drive, Suite 6 Novato, CA 94949	Client Proj. ID: Exxon 7-0238, 2293 Sample Descript: MW9A Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9903029-01	Sampled: 02/26/99 Received: 03/01/99  Analyzed: 03/15/99 Reported: 03/17/99
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QC Batch Number: GC031599BTEX31A  
Instrument ID: GCHP31

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	100	N.D.
Methyl t-Butyl Ether	2500	10000
Benzene	1.0	N.D.
Toluene	1.0	N.D.
Ethyl Benzene	1.0	N.D.
Xylenes (Total)	1.0	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	101

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
\_\_\_\_\_  
David A. Pichette  
Project Manager





# Sequoia Analytical

680 Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite 8  
1455 McDowell Blvd. North, Ste. D  
1551 Industrial Road

Redwood City, CA 94063  
Walnut Creek, CA 94598  
Sacramento, CA 95834  
Petaluma, CA 94954  
San Carlos, CA 94070-4111

(650) 364-9600  
(925) 988-9600  
(916) 921-9600  
(707) 792-1865  
(650) 232-9600

FAX (650) 364-9233  
FAX (925) 988-9673  
FAX (916) 921-0100  
FAX (707) 792-0342  
FAX (650) 232-9612

Environmental Resolutions  
74 Digital Drive, Suite 6  
Novato, CA 94949

Client Proj. ID: Exxon 7-0238, 2293  
Sample Descript: MW9B  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9903029-02

Sampled: 02/26/99  
Received: 03/01/99  
Analyzed: 03/15/99  
Reported: 03/17/99

QC Batch Number: GC031599BTEX31A  
Instrument ID: GCHP31

## Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2500	8800
Methyl t-Butyl Ether	125	8000
Benzene	25	2000
Toluene	25	N.D.
Ethyl Benzene	25	52
Xylenes (Total)	25	38
Chromatogram Pattern:		GAS
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70	130
		104

Analyses reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

David A. Pichette  
Project Manager



# Sequoia Analytical

680 Chesapeake Drive  
404 N. Wiger Lane  
819 Striker Avenue, Suite B  
1455 McDowell Blvd. North, Ste. D  
1551 Industrial Road

Redwood City, CA 94063  
Walnut Creek, CA 94598  
Sacramento, CA 95834  
Petaluma, CA 94954  
San Carlos, CA 94070-4111

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FAX (916) 921-0100  
FAX (707) 792-0342  
FAX (650) 232-9612

Environmental Resolutions 74 Digital Drive, Suite 6 Novato, CA 94949	Client Proj. ID: Exxon 7-0238, 2293 Sample Descript: MW9C Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9903029-03	Sampled: 02/26/99 Received: 03/01/99 Analyzed: 03/15/99 Reported: 03/17/99
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QC Batch Number: GC031599BTEX31A  
Instrument ID: GCHP31

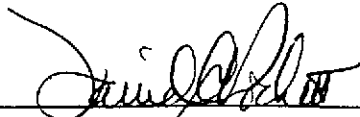
## Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	250	N.D.
Methyl t-Butyl Ether	500	55000
Benzene	2.5	N.D.
Toluene	2.5	N.D.
Ethyl Benzene	2.5	N.D.
Xylenes (Total)	2.5	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70	130
		97

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

  
\_\_\_\_\_  
David A. Pichette  
Project Manager



Environmental Resolutions 74 Digital Drive, Suite 6 Novato, CA 94949	Client Proj. ID: Exxon 7-0238, 2293 Sample Descript: MW9D Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9903029-04	Sampled: 02/26/99 Received: 03/01/99  Analyzed: 03/11/99 Reported: 03/17/99
--	---	---


QC Batch Number: GC031199BTEX18A  
Instrument ID: GCHP18

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	310
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70	130
		93

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

  
David A. Pichette  
Project Manager





# Sequoia Analytical

680 Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite B  
1455 McDowell Blvd. North, Ste. D  
1551 Industrial Road

Redwood City, CA 94063  
Walnut Creek, CA 94598  
Sacramento, CA 95834  
Petaluma, CA 94954  
San Carlos, CA 94070-4111

(650) 364-9600  
(925) 988-9600  
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FAX (925) 988-9673  
FAX (916) 921-0100  
FAX (707) 792-0342  
FAX (650) 232-9612

Environmental Resolutions  
74 Digital Drive, Suite 6  
Novato, CA 94949

Attention: Mark Dockum

Client Proj. ID: Exxon 7-0238, 2293  
Sample Descript: MW9F  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9903029-05

Sampled: 02/26/99  
Received: 03/01/99  
Analyzed: 03/15/99  
Reported: 03/17/99

QC Batch Number: GC031599BTEX31A  
Instrument ID: GCHP31

## Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	104

Analyses reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

David A. Pichette  
Project Manager



# Sequoia Analytical

680 Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite 8  
1455 McDowell Blvd. North, Ste. D  
1551 Industrial Road

Redwood City, CA 94063  
Walnut Creek, CA 94598  
Sacramento, CA 95834  
Petaluma, CA 94954  
San Carlos, CA 94070-4111

(650) 364-9600  
(925) 988-9600  
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FAX (707) 792-0342  
FAX (650) 232-9612

Environmental Resolutions  
74 Digital Drive, Suite 6  
Novato, CA 94949

Client Proj. ID: Exxon 7-0238, 2293  
Sample Descript: MW9G  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9903029-06

Sampled: 02/26/99  
Received: 03/01/99  
Analyzed: 03/11/99  
Reported: 03/17/99

QC Batch Number: GC031199BTEX18A  
Instrument ID: GCHP18

## Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	50
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	95

Analyses reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

David A. Pichette  
Project Manager



# Sequoia Analytical

680 Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite 8  
1455 McDowell Blvd. North, Ste. D  
1551 Industrial Road

Redwood City, CA 94063  
Walnut Creek, CA 94598  
Sacramento, CA 95834  
Petaluma, CA 94954  
San Carlos, CA 94070-4111

(650) 364-9600  
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FAX (925) 988-9673  
FAX (916) 921-0100  
FAX (707) 792-0342  
FAX (650) 232-9612

Environmental Resolutions 74 Digital Drive, Suite 6 Novato, CA 94949	Client Proj. ID: Exxon 7-0238, 2293 Sample Descript: MW9H Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9903029-07	Sampled: 02/26/99 Received: 03/01/99 Analyzed: 03/11/99 Reported: 03/17/99
Attention: Mark Dockum		

QC Batch Number: GC031199BTEX18A  
Instrument ID: GCHP18

## Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	85

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

David A. Pichette  
Project Manager



Environmental Resolutions  
74 Digital Drive, Suite 6  
Novato, CA 94949

Attention: Mark Dockum

Client Proj. ID: Exxon 7-0238, 2293  
Sample Descript: MW9i  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9903029-08

Sampled: 02/26/99  
Received: 03/01/99

Analyzed: 03/11/99  
Reported: 03/17/99

QC Batch Number: GC031199BTEX18A  
Instrument ID: GCHP18

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	N.D.
Methyl t-Butyl Ether	1250	9700
Benzene	5.0	N.D.
Toluene	5.0	N.D.
Ethyl Benzene	5.0	N.D.
Xylenes (Total)	5.0	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	81

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

David A. Pichette  
Project Manager





Environmental Resolutions  
74 Digital Drive, Suite 6  
Novato, CA 94949

Attention: Mark Dockum

Client Proj. ID: Exxon 7-0238, 2293  
Sample Descript: TB  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9903029-09

Sampled: 02/26/99  
Received: 03/01/99  
Analyzed: 03/11/99  
Reported: 03/17/99

QC Batch Number: GC031199BTEX31A  
Instrument ID: GCHP31

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	94

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

David A. Pichette  
Project Manager







# Sequoia Analytical

680 Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite 8  
1455 McDowell Blvd. North, Ste. D  
1551 Industrial Road

Redwood City, CA 94063  
Walnut Creek, CA 94598  
Sacramento, CA 95834  
Petaluma, CA 94954  
San Carlos, CA 94070-4111

(650) 364-9600  
(925) 988-9600  
(916) 921-9600  
(707) 792-1865  
(650) 232-9600

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FAX (925) 988-9673  
FAX (916) 921-0100  
FAX (707) 792-0342  
FAX (650) 232-9612

Environmental Resolutions  
74 Digital Drive, Suite 6  
Novato, CA 94949  
Attention: Mark Dockum

Client Project ID: Exxon 7-0238, 2293

QC Sample Group: 9903029

Reported: Mar 17, 1999

## QUALITY CONTROL DATA REPORT

Matrix: Liquid  
Method: EPA 8015  
Analyst: MM

ANALYTE Gasoline

QC Batch #: GC031199BTEX31A

Sample No.: 9903083-01

Date Prepared: 3/11/99

Date Analyzed: 3/11/99

Instrument I.D.#: GCHP31

Sample Conc., ug/L: N.D.

Conc. Spiked, ug/L: 250

Matrix Spike, ug/L: 230

% Recovery: 92

Matrix

Spike Duplicate, ug/L: 140

% Recovery: 56

Relative % Difference: 49

RPD Control Limits: 0-25

LCS Batch#: GC031199BTEX31A

Date Prepared: 3/11/99

Date Analyzed: 3/11/99

Instrument I.D.#: GCHP31

Conc. Spiked, ug/L: 250

LCS Recovery, ug/L: 260

LCS % Recovery: 104

Percent Recovery Control Limits:

MS/MSD 60-140

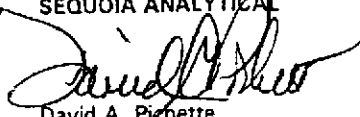
LCS 70-130

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

**Please Note:**

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

  
David A. Pichette  
Project Manager





# Sequoia Analytical

680 Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite 8  
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FAX (707) 792-0342  
FAX (650) 232-9612

Environmental Resolutions 74 Digital Drive, Suite 6 Novato, CA 94949 Attention: Mark Dockum	Client Project ID: Exxon 7-0238, 2293
QC Sample Group: 9903029	Reported: Mar 17, 1999

## QUALITY CONTROL DATA REPORT

Matrix: Liquid
Method: EPA 8015
Analyst: PETER ALCALA
<b>ANALYTE Gasoline</b>

QC Batch #: GC031599BTEX31A

Sample No.: GW9903428-1

Date Prepared: 3/15/99

Date Analyzed: 3/15/99

Instrument I.D.#: GCHP31

Sample Conc., ug/L: N.D.

Conc. Spiked, ug/L: 250

Matrix Spike, ug/L: 210

% Recovery: 84

Matrix

Spike Duplicate, ug/L: 230

% Recovery: 92

Relative % Difference: 9.1

RPD Control Limits: 0-25

LCS Batch#: GC031599BTEX31A

Date Prepared: 3/15/99

Date Analyzed: 3/15/99

Instrument I.D.#: GCHP31

Conc. Spiked, ug/L: 250

LCS Recovery, ug/L: 250

LCS % Recovery: 100

Percent Recovery Control Limits:

MS/MSD	60-140
LCS	70-130

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

David A. Pichette  
Project Manager





# Sequoia Analytical

680 Chesapeake Drive  
404 N. Wiget Lane  
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1551 Industrial Road

Redwood City, CA 94063  
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San Carlos, CA 94070-4111

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FAX (650) 232-9612

Environmental Resolutions  
74 Digital Drive, Suite 6  
Novato, CA 94949  
Attention: Mark Dockum

Client Project ID: Exxon 7-0238, 2293

QC Sample Group: 9903029

Reported: Mar 17, 1999

## QUALITY CONTROL DATA REPORT

Matrix: Liquid  
Method: EPA 8015  
Analyst: MM

ANALYTE Gasoline

QC Batch #: GC031199BTEX18A

Sample No.: 9903029-05

Date Prepared: 3/11/99

Date Analyzed: 3/11/99

Instrument I.D.#: GCHP18

Sample Conc., ug/L: N.D.

Conc. Spiked, ug/L: 250

Matrix Spike, ug/L: 220

% Recovery: 88

Matrix

Spike Duplicate, ug/L: 220

% Recovery: 88

Relative % Difference: 0.0

RPD Control Limits: 0-25

LCS Batch#: GC031199BTEX18A

Date Prepared: 3/11/99

Date Analyzed: 3/11/99

Instrument I.D.#: GCHP18

Conc. Spiked, ug/L: 250

LCS Recovery, ug/L: 240

LCS % Recovery: 96

Percent Recovery Control Limits:

MS/MSD 60-140

LCS 70-130

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

  
David A. Pichette  
Project Manager





Sequoia Analytical  
680 Chesapeake Dr.  
Redwood City, CA 94063  
(650) 364-9600 • FAX (650) 364-9233

# EXXON COMPANY, U.S.A.

P.O. Box 2180, Houston, TX 77002-7426

## CHAIN OF CUSTODY

Consultant's Name: ERI / Exxon Page 1 of 1

Address: 74 Digital Dr, Suite G, Novato, CA, 94949 Site Location: Oakland

Project #: 990226-21 Consultant Project #: 2293 Consultant Work Release #: 19900938

Project Contact: Mark Dockum Phone #: (415) 382-5991 Laboratory Work Release #:

EXXON Contact: Marla Guenster Phone #: (925) 246-8776 EXXON RAS #: 7-0238

Sampled by (print): Seremy Sampler's Signature: [Signature]

Shipment Method: Air Bill #:

TAT:  24 hr  48 hr  72 hr  96 hr  Standard (10 day) 9903029

**ANALYSIS REQUIRED**

Sample Description	Collection Date	Collection Time	Matrix Soil/Water/Air	Prsv	# of Cont.	Sequoia's Sample #	TPH/Gas BTEX/ 8015/ 8020	TPH/ Diesel EPA 8015	TRPH S.M. 5520	MTBE	Temperature: _____	
											Inbound Seal: Yes No	Outbound Seal: Yes No
* MW9A	2/26/99	1017	W		3	01	X			X		
* MW9B		1110				02	X			X		
* MW9C		1052				03	X			X		
* MW9D		958				04	X			X		
* MW9E		940				05	X			X		
* MW9F		925				06	X			X		
* MW9G		910				07	X			X		
* MW9H		1032				08	X			X		
* MW9I						09	X			X		
* TB					2	09	X			X		

RELINQUISHED BY / AFFILIATION	Date	Time	ACCEPTED / AFFILIATION	Date	Time	Additional Comments
<u>[Signature]</u>	3/1/99	1136	<u>C. [Signature]</u> Novellane / SFG	3/1	1127	
				3/1/99	1234	

Pink - Client  
Yellow - Sequoia  
White - Sequoia