

Mobil Oil Corporation

EBH
Arum
3225 GALLOWES ROAD
FAIRFAX, VIRGINIA 22031

September 16, 1991

Mr. Rafat Shahid
Alameda County Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

Subject: GROUND WATER MONITORING REPORT
Former Mobil Station #10-E6A
100 MacArthur Boulevard
Oakland, California 94611

Dear Mr. Shahid:

610 records to dept/ret book

Enclosed for your information and review is the quarterly groundwater sampling report dated September 12, prepared by Alton Geoscience, for the subject location. MW2 and MW3 remain below the detection limit for BTEX and TPH-G. MW1 had a slight increase in BTEX and TPH-G.

Based upon the low levels of dissolved contaminants, Mobil proposes semi-annual sampling events. I would appreciate if you would respond prior to November 1, so I can reschedule the sampling event with the consultant.

Should you have any questions, please do not hesitate to call me at 1-800-227-0707 extension 5316.

Michele A. Fear

Michele A. Fear
Environmental Monitoring
Analyst
Mobil Oil Corporation

Attachment

cc: Mr. Steve Richie w/attachment
California Water Quality Control Board
San Francisco Bay Region
1800 Harrison Street, Room 700
Oakland, California 94533-6376

Mr. Peter DeSantis w/attachment
BP Oil Company
2868 Prospect Park, Suite 360
Rancho Cordova, California 95670-6020

D. J. Hill - Mobil Field Engineering Supervisor w/o attachment
S. E. Malone - Mobil Monitoring Analyst Supervisor w/attachment



Environmental
Awareness

3225 Gallows Rd
Fairfax, Va
22031

**QUARTERLY GROUND WATER
MONITORING AND SAMPLING REPORT**

for

**Former Mobil Service Station 10-E&A
100 MacArthur Boulevard
Oakland, California**

Project No. 30-0063-02

Prepared By:

**Alton Geoscience
1000 Burnett Avenue, Suite 140
Concord, California**

September 12, 1991

**QUARTERLY GROUND WATER
MONITORING AND SAMPLING REPORT**

Former Mobil Service Station 10-E6A
100 MacArthur Boulevard
Oakland, California

September 12, 1991

INTRODUCTION

This report presents the results and findings of the August 1991 quarterly ground water monitoring and sampling activities performed by Alton Geoscience at former Mobil Service Station 10-E6A, 100 MacArthur Boulevard, Oakland, California. A site vicinity map is shown in Figure 1. Figure 2 is a ground water elevation contour map.

PROJECT BACKGROUND

During the removal, by others, of the 280-gallon waste oil tank in September 1988, sheen was noted on the ground water in the tank cavity. A soil sample collected from the tank backfill material contained 65,000 parts per million (ppm) total oil and grease (TOG). Based on this finding, the Alameda County Department of Environmental Health (ACDEH) requested that a site assessment be performed to determine the impact of TOG on the subsurface soil and/or ground water.

To assess the lateral and vertical extent of hydrocarbon-affected soil and/or ground water at the site, Mobil Oil Corporation retained Alton Geoscience to complete a site investigation which included drilling three soil borings and installing three ground water monitoring wells (MW-1, MW-2, and MW-3, shown on Figure 2). Soil samples collected from the borings did not contain total petroleum hydrocarbons as gasoline (TPH-G), TOG, or halogenated volatile organic compounds (HVOC) above analytical detection limits. A ground water sample collected from Monitoring Well MW-1 contained 3.3 parts per billion (ppb) benzene, 0.6 ppb of toluene, and 0.9 ppb of 1,2 dichloroethane. Ground water from MW-2 contained 6.5 ppb of benzene (for details, refer to the Alton Geoscience report dated December 20, 1989). Based on the findings of this investigation, a quarterly ground water monitoring and sampling program was initiated.

FIELD PROCEDURES

On July 1, 1991, Alton Geoscience monitored MW-1, MW-2, and MW-3. Additionally, as a remedial measure, the monitoring wells were purged of between 23 and 55 gallons of water.

On August 19, 1991, Alton Geoscience monitored and sampled the wells. Prior to purging and sampling, the ground water level in each well was measured from the top of casing to the nearest 0.01 foot using an electronic sounder. Ground water was collected using a hand bailer and visually inspected for the presence of free product or sheen.

Prior to sample collection, each well was purged of the required casing volumes and until stabilization of pH, temperature, and conductivity. The ground water monitoring and sampling forms are included in Appendix A. Water samples were collected using a clean bailer, and then decanted into the glass containers for delivery to a California-certified laboratory following proper sample preservation and chain of custody procedures.

DISCUSSION OF RESULTS

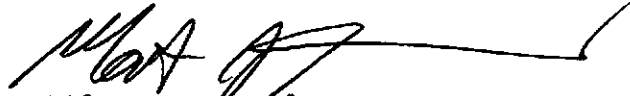
The results of the ground water monitoring and laboratory analysis of water samples are summarized in Table 1. The official laboratory reports and chain of custody records are presented in Appendix B.

A ground water elevation contour map, based on the August 19, 1991, ground water monitoring data, is shown in Figure 2. The ground water gradient direction is to the south with a gradient of 0.06 foot/foot, both of which are generally consistent with the results of previous monitoring events.

No free product or sheen was present in any of the wells. The results of ground water sampling and analysis indicated the following:

- The ground water sample collected from MW-1 contained TPH-G and benzene at concentrations of 370 and 35 ppb; suggesting an apparent increase in these constituents over the previous sampling event.
- TPH-G and benzene, toluene, ethylbenzene, and total xylenes (BTEX) constituents were not detected in the samples collected from MW-2 and MW-3.
- 1,2 dichloroethane was detected in MW-1 at a concentration of 1.4 ppb.

ALTON GEOSCIENCE



**Matthew Hopwood
Project Manager**



**Peter C. Lange, R.G. 5089
Associate, Concord Operations**



FIGURE 1: SITE VICINITY MAP

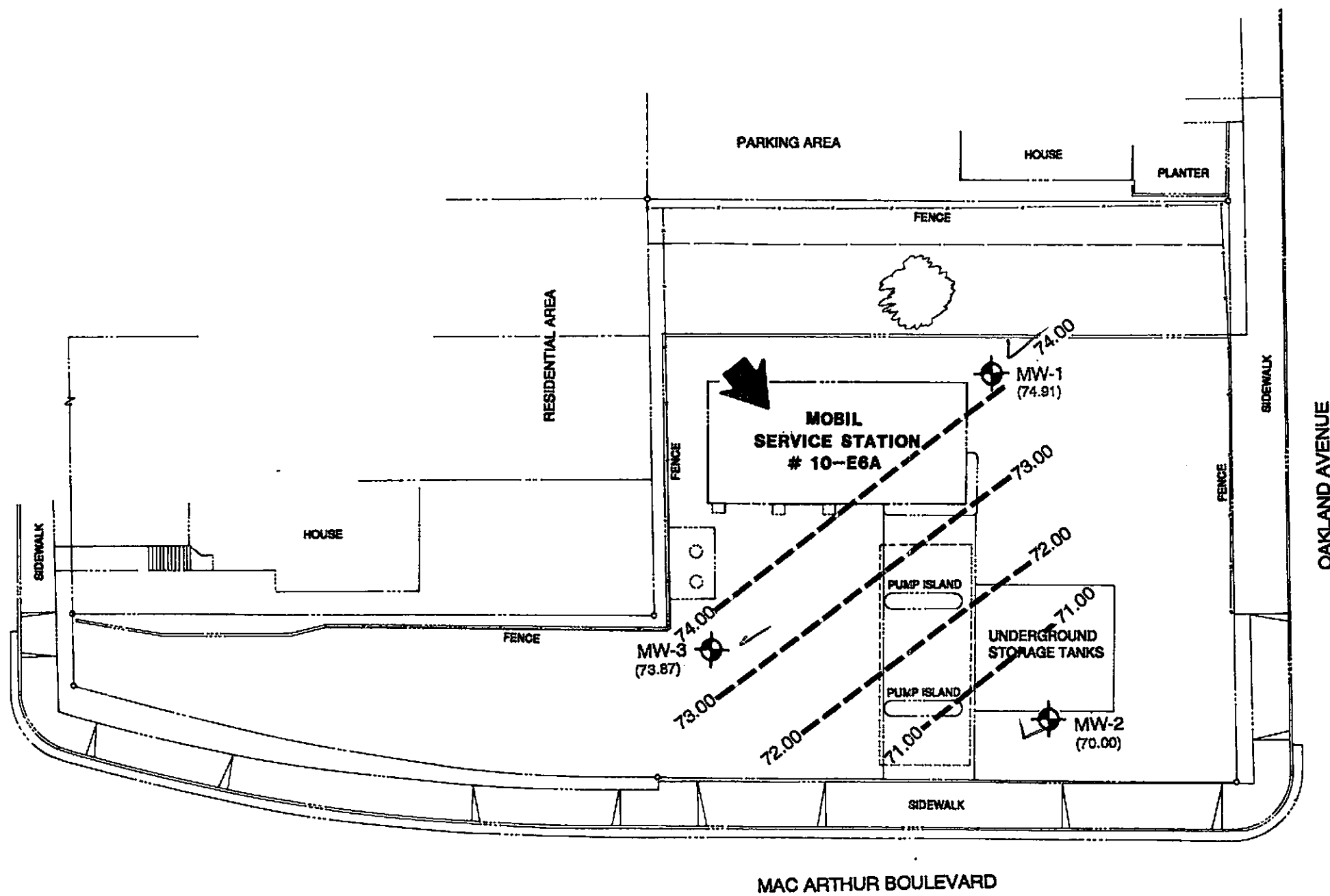
MOBIL OIL CORPORATION
 SERVICE STATION NO. 10-E6A
 100 MAC ARTHUR BOULEVARD
 OAKLAND, CALIFORNIA

SOURCE: U.S.G.S. OAKLAND
 QUADRANGLES, CALIFORNIA
 7.5 MINUTE SERIES (TOPOGRAPHIC)



PROJECT NO. 30-063



ALTON GEOSCIENCE
 1000 Burnett Ave. Ste. 140
 Concord, California



LEGEND:

-  MONITORING WELL
- (74.91) GROUND WATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 71.00- GROUND WATER ELEVATION CONTOUR LINE
-  GENERAL DIRECTION OF GROUND WATER FLOW

1. CONTOUR LINES ARE INTERPRETIVE BASED ON FLUID LEVELS IN MONITORING WELLS MEASURED ON AUGUST 19, 1991.
2. CONTOUR INTERVAL=1.0 FOOT.

FIGURE 2: GROUND WATER ELEVATION CONTOUR MAP

MOBIL OIL SERVICE STATION NO. 10-E6A
100 MAC ARTHUR BLVD.
OAKLAND, CALIFORNIA


 **ALTON GEOSCIENCE**
1000 Burnett Ave. Ste. 140
Concord, California

Table 1
Summary of Results of Ground Water Sampling
Project No. 30-063

Concentrations in parts per billion (ppb)

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION	DEPTH TO WATER	GROUND WATER ELEVATION	TPH-G	TPH-D	HVOC	TOB	B	T	E	X	LAB
MW-1	11/04/89	90.20	13.21	76.99	ND<500	ND<50	0.9*	ND<5000	3.4	0.6	ND<0.3	ND<0.3	SAL
MW-1	11/11/89	90.20	13.32	76.88	---	---	---	---	---	---	---	---	NA
MW-1	04/03/90	90.20	12.46	77.74	820	---	---	---	64	1.9	23	34	AI
MW-1	07/30/90	90.20	12.92	77.28	190	ND<50	ND**	ND<5000	11	ND<5.0	ND<5.0	ND<5.0	AI
MW-1	11/20/90	90.20	14.08	76.12	50	79	4.0*	ND<5000	2.4	ND<0.3	ND<0.3	ND<0.3	SAL
MW-1	03/01/91	90.20	13.61	76.59	ND<100	ND<1000	ND**	14000	0.9	ND<0.3	ND<0.3	0.3	SAL
MW-1	08/19/91	90.20	15.74	74.46	370	ND<50	1.4*	ND<5000	35	0.73	6.4	5.6	SA
MW-2	11/04/89	87.91	15.84	72.07	ND<500	---	---	---	6.5	ND<0.3	ND<0.3	ND<0.3	SAL
MW-2	11/11/89	87.91	14.75	73.16	---	---	---	---	---	---	---	---	NA
MW-2	04/03/90	87.91	15.25	72.66	ND<100	---	---	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	AI
MW-2	07/30/90	87.91	15.59	72.32	61	---	---	---	6.5	ND<0.5	ND<0.5	ND<0.5	AI
MW-2	11/20/90	87.91	17.81	70.10	ND<50	---	---	---	0.3	ND<0.3	ND<0.3	ND<0.3	SAL
MW-2	03/01/91	87.91	17.11	70.80	ND<100	---	4.0*	---	0.4	ND<0.3	ND<0.3	ND<0.3	SAL
MW-2	08/19/91	87.91	17.97	69.94	ND<30	---	---	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	SA
MW-3	11/04/89	87.02	15.40	71.62	ND<500	---	---	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	SAL
MW-3	11/11/89	87.02	14.10	72.92	---	---	---	---	---	---	---	---	NA
MW-3	04/03/90	87.02	13.90	73.12	ND<100	---	---	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	AI
MW-3	07/30/90	87.02	13.77	73.25	ND<50	---	---	ND<5000	ND<0.5	ND<0.5	ND<0.5	ND<0.5	AI
MW-3	11/20/90	87.02	14.67	72.35	ND<50	---	---	---	0.3	0.8	0.4	1.5	SAL
MW-3	03/01/91	87.02	15.22	71.80	ND<100	---	ND**	---	0.4	ND<0.3	ND<0.3	ND<0.3	SAL
MW-3	08/19/91	87.02	13.15	73.87	ND<30	---	---	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	SA

EXPLANATION OF ABBREVIATIONS:

TPH-G :Total Petroleum Hydrocarbons as Gasoline
(EPA method 8015 modified)

TPH-D :Total Petroleum Hydrocarbons as Diesel
(EPA method 8015 modified)

TOB :Total Oil and Grease (EPA method 503E & 503D)
(EPA method 624/B010)

B :Benzene (EPA method B020)

T :Toluene (EPA method B020)

E :Ethylbenzene (EPA method B020)

X :Xylenes (EPA method B020)

--- :Not analyzed

ND< :Not detected at method detection limit shown

NA :Not applicable

* :1,2-Dichloroethane was the HVOC detected

** :Detection limits vary with compound

SAL :Superior Analytical Laboratory

AI :Anamatrix Inc.

SA :Sequoia Analytical Laboratory

Note: Depth to water level measured from top of well casing in feet.

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Ground Water Monitoring Well Development
or Sampling Field Survey Forms

Well # MW-1 Project # 30-0063-02 Location OAKLAND Date 2/1/91

Sampling Team D. Burel Sampling Method: Bailer Pump
Type of Pump or Bailer Used _____

Decon Method:
Triple rinsed w/TSP and Deionized Water or Steam Cleaned _____

Well Data:
Depth to Water 12.52 ft
Total Well Depth 32.25 ft
Water Col. Height _____ ft

Conversion	
diam.	gal/ft
2 in.	x 0.16
3 in.	x 0.36
4 in.	x 0.65
6 in.	x 1.44

Vol. of Water Column _____
Purge Factor _____
Total Vol. to Purge _____

Chemical Data:

T (F)	SC/unhos	pH	Time	Comments	Volume (gal)
Actual Volume Purged					55

Comments:

ALTON GEOSCIENCE

Ground Water Monitoring Well Development
or Sampling Field Survey Forms

Well # AW-2 Project # 30-0063-02 Location OAKLAND Date 7/1/91

Sampling Team D. Burel Sampling Method: Bailer _____ Pump
Type of Pump or Bailer Used _____

Decon Method:
Triple rinsed w/TSP and Deionized Water or Steam Cleaned _____

Well Data:
Depth to Water 17.00 ft
Total Well Depth 32.36 ft
Water Col. Height _____ ft

Conversion	
diam.	gal/ft
2 in.	x 0.16
3 in.	x 0.36
4 in.	x 0.65
6 in.	x 1.44

Vol. of Water Column _____
Purge Factor _____
Total Vol. to Purge _____

Chemical Data:

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)

Actual Volume Purged 23

Comments:

ALTON GEOSCIENCE

Ground Water Monitoring Well Development
or Sampling Field Survey Forms

Well # mw-3 Project # 30-0063-02 Location OAKLAND Date 7/1/91

Sampling Team D. BURC I Sampling Method: Bailer Pump
Type of Pump or Bailer Used _____

Decon Method:
Triple rinsed w/TSP and Deionized Water _____ or Steam Cleaned _____

Well Data:

Depth to Water 15.15 ft
Total Well Depth 32.42 ft
Water Col. Height _____ ft

Conversion	
dian.	gal/ft
2 in.	x 0.16
3 in.	x 0.36
4 in.	x 0.65
6 in.	x 1.44

Vol. of Water Column _____
Purge Factor _____
Total Vol. to Purge _____

Chemical Data:

T (F)	SC/unhos	pH	Time	Comments	Volume (gal)
Actual Volume Purged					

Comments:

ALTON GEOSCIENCE

Ground Water Monitoring Well Development
or Sampling Field Survey Forms

Well # MW-3 Project # 30-063-01 Location CAKLAND Date 8/19/91

Sampling Team D. Burc 1 Sampling Method: Bailer _____ Pump _____
Type of Pump or Bailer Used _____

Decon Method:
Triple rinsed w/TSP and Deionized Water or Steam Cleaned _____

Well Data:

Depth to Water 15.74 ft
Total Well Depth 32.47 ft
Water Col. Height 16.75 ft

Conversion	
diam.	gal/ft
2 in.	x 0.16
3 in.	x 0.36
4 in.	x 0.65
6 in.	x 1.44

Vol. of Water Column 10.8
Purge Factor 3
Total Vol. to Purge 32.6

Chemical Data: Y1000

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
71.2	1.86	8.55	1:01	CLEAR	6.52
69.5	0.74	8.49	1:04	" "	13.04
70.3	0.80	8.40	1:06	" "	19.58
70.1	0.77	8.28	1:07	" "	26.08
70.1	0.77	8.24	1:08	" "	32.6
			1:18	Actual Volume Purged	33.1

Comments:

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Ground Water Monitoring Well Development
or Sampling Field Survey Forms

Well # MW-2 Project # 30-063-01 Location DAKINNO Date 4/19/91
 Sampling Team D. Burel Sampling Method: Bailer Pump
 Type of Pump or Bailer Used _____

Decon Method:
 Triple rinsed w/TSP and Deionized Water or Steam Cleaned

Well Data:

Depth to Water 17.97 ft
 Total Well Depth 32.37 ft
 Water Col. Height 14.4 ft

Conversion	
diam.	gal/ft
2 in.	x 0.16
3 in.	x 0.36
4 in.	x <u>0.63</u>
6 in.	x 1.44

Vol. of Water Column 9.36
 Purge Factor 3
 Total Vol. to Purge 28

Chemical Data:

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
70.4	1.27	7.94	1:24	CLEAR	5.6
70.0	1.27	7.72	1:26	" "	11.2
70.7	1.23	7.57	1:27	" "	16.8
70.7	1.23	7.22	1:29	" "	22.4
70.7	1.5	7.25	1:31	" "	28
1:36 Actual Volume Purged					28.5

Comments:

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Ground Water Monitoring Well Development
or Sampling Field Survey Forms

Well # MW-1 Project # 30-065-01 Location OAKLAND Date 8/19/91

Sampling Team D. Burel Sampling Method: Bailer Pump
Type of Pump or Bailer Used

Decon Method:
Triple rinsed w/TSP and Deionized Water or Steam Cleaned

Well Data:

Depth to Water 13.15 ft
Total Well Depth 51.98 ft
Water Col. Height 18.83 ft

Conversion	
dian.	gal/ft
2 in.	x 0.16
3 in.	x 0.36
4 in.	<u>x 0.65</u>
6 in.	x 1.44

Vol. of Water Column 12.2
Purge Factor 3
Total Vol. to Purge 36

Chemical Data: X1000

T (F)	SC/unhos	pH	Time	Comments	Volume (gal)
71.6	1.16	7.90	1:50	CLEAR	7.2
69.9	1.06	7.86	1:51	" "	14.4
69.2	1.14	7.41	1:53	" "	21.6
70.0	1.10	7.31	1:55	" "	28.9
70.5	1.15	7.26	1:56	" "	36
2:06 Actual Volume Purged					36.5

Comments:



SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

SEP - 3 1991

Alton Geoscience
1000 Burnett Street, Suite 140
Concord, CA 94520
Attention: Matt Hopwood

Client Project ID: #30-063-01, B-P 100 Mac Arthur Blv,
Matrix Descript: Water Oakland
Analysis Method: EPA 5030/8015/8020
First Sample #: 108-0989 A-C

Sampled: Aug 19, 1991
Received: Aug 20, 1991
Analyzed: Aug 22, 1991
Reported: Aug 27, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P.	Benzene	Toluene	Ethyl	Xylenes
		Hydrocarbons			Benzene	
		$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)
1080989 A-C	MW-3	N.D.	N.D.	N.D.	N.D.	N.D.
1080955 A-C	MW-2	N.D.	N.D.	N.D.	N.D.	N.D.
1080956 A-C	MW-1	370	35	0.73	6.4	5.6

Detection Limits:

30

0.30

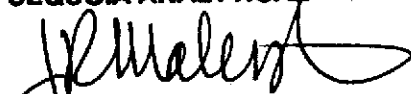
0.30

0.30

0.30

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

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Julia R. Malerstein
Project Manager

1080989.ALG <1>



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Alton Geoscience
1000 Burnett Street, Suite 140
Concord, CA 94520
Attention: Matt Hopwood

Client Project ID: #30-063-01,B-P 100 Mac Arthur Blv, Oakland

QC Sample Group: 1080989,1080955-956

Reported: Aug 27, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene		Ethyl Benzene Xylenes	
	Benzene	Toluene	Benzene	Xylenes

Method:	EPA8020/8015	EPA8020/8015	EPA8020/8015	EPA8020/8015
Analyst:	RH/JF	RH/JF	RH/JF	RH/JF
Reporting Units:	ug/L	ug/L	ug/L	ug/L
Date Analyzed:	Aug 22, 1991	Aug 22, 1991	Aug 22, 1991	Aug 22, 1991
QC Sample #:	108-0601	108-0601	108-0601	108-0601

Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	20	20	20	60
Conc. Matrix Spike:	19	19	21	64
Matrix Spike % Recovery:	95	95	110	110
Conc. Matrix Spike Dup.:	20	20	21	64
Matrix Spike Duplicate % Recovery:	100	100	110	110
Relative % Difference:	5.1	5.1	0	0

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Julia R. Malerstein
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Alton Geoscience 1000 Burnett Street, Suite 140 Concord, CA 94520 Attention: Matt Hopwood	Client Project ID: #30-063-01, B-P 100 Mac Arthur Blv, Matrix Descript: Water Oakland Analysis Method: EPA 3510/8015 First Sample #: 108-0956 D	Sampled: Aug 19, 1991 Received: Aug 20, 1991 Extracted: Aug 22, 1991 Analyzed: Aug 26, 1991 Reported: Aug 27, 1991
--	--	--

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons $\mu\text{g/L}$ (ppb)
1080956 D	MW-1	N.D.

Detection Limits:

50

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

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Julia R. Malerstein
Project Manager

1080989.ALG <3>



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Alton Geoscience
1000 Burnett Street, Suite 140
Concord, CA 94520
Attention: Matt Hopwood

Client Project ID: #30-063-01, B-P 100 Mac Arthur Blv,

QC Sample Group: 108-0956

Reported: Aug 27, 1991

QUALITY CONTROL DATA REPORT

ANALYTE

Diesel

Method: EPA 8015
Analyst: A. Tuzon
Reporting Units: μ/L
Date Analyzed: Aug 27, 1991
QC Sample #: BLK082091

Sample Conc.: N.D.

Spike Conc.
Added: 300

Conc. Matrix
Spike: 250

Matrix Spike
% Recovery: 82

Conc. Matrix
Spike Dup.: 210

Matrix Spike
Duplicate
% Recovery: 71

Relative
% Difference: 14

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Julia R. Malerstein
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Alton Geoscience
1000 Burnett Street, Suite 140
Concord, CA 94520
Attention: Matt Hopwood

Client Project ID: #30-063-01, B-P 100 Mac Arthur Blv,
Matrix Descript: Water
Analysis Method: SM 5520 B&F (Gravimetric)
First Sample #: 108-0956 E

Sampled: Aug 19, 1991
Received: Aug 20, 1991
Extracted: Aug 23, 1991
Analyzed: Aug 26, 1991
Reported: Aug 27, 1991

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/L (ppm)
1080956 E	MW-1	N.D.

Detection Limits:

5.0

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

SEQUOIA ANALYTICAL


Julia R. Malerstein
Project Manager

1080989.ALG <5>



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Alton Geoscience
1000 Burnett Street, Suite 140
Concord, CA 94520
Attention: Matt Hopwood

Client Project ID: #30-063-01, B-P 100 Mac Arthur Blv,

QC Sample Group: 108-0956

Reported: Aug 27, 1991

QUALITY CONTROL DATA REPORT

ANALYTE

Total Recoverable
Petroleum Oil

Method: SM 5520 B&F
Analyst: D. Newcomb
Reporting Units: mg/kg
Date Analyzed: Aug 26, 1991
QC Sample #: atrix Blank 082691M

Sample Conc.: N.D.

Spike Conc.
Added: 5,000

Conc. Matrix
Spike: 4,200

Matrix Spike
% Recovery: 84

Conc. Matrix
Spike Dup.: 4,200

Matrix Spike
Duplicate
% Recovery: 84

Relative
% Difference: 0

SEQUOIA ANALYTICAL

% Recovery: $\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$

Relative % Difference: $\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$


Julia R. Malerstein
Project Manager



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Alton Geoscience
1000 Burnett Street, Suite 140
Concord, CA 94520
Attention: Matt Hopwood

Client Project ID: #30-063-01, B-P 100 Mac Arthur Blv,
Sample Descript: Water, MW-1
Analysis Method: EPA 5030/8010
Lab Number: 108-0956 F-H

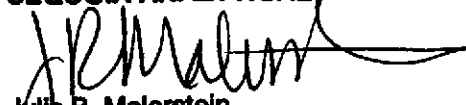
Sampled: Aug 19, 1991
Received: Aug 20, 1991
Analyzed: 8/25-26/91
Reported: Aug 27, 1991

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane.....	0.50	N.D.
Bromoform.....	1.0	N.D.
Bromomethane.....	1.0	N.D.
Carbon tetrachloride.....	0.50	N.D.
Chlorobenzene.....	0.50	N.D.
Chloroethane.....	1.0	N.D.
2-Chloroethylvinyl ether.....	1.0	N.D.
Chloroform.....	0.50	N.D.
Chloromethane.....	1.0	N.D.
Dibromochloromethane.....	0.50	N.D.
1,2-Dichlorobenzene.....	0.50	N.D.
1,3-Dichlorobenzene.....	0.50	N.D.
1,4-Dichlorobenzene.....	0.50	N.D.
1,1-Dichloroethane.....	0.50	N.D.
1,2-Dichloroethane.....	0.50	1.4
1,1-Dichloroethene.....	0.50	N.D.
cis-1,2-Dichloroethene.....	0.50	N.D.
trans-1,2-Dichloroethene.....	0.50	N.D.
1,2-Dichloropropane.....	0.50	N.D.
cis-1,3-Dichloropropene.....	1.0	N.D.
trans-1,3-Dichloropropene.....	1.0	N.D.
Methylene chloride.....	2.0	N.D.
1,1,2,2-Tetrachloroethane.....	0.50	N.D.
Tetrachloroethene.....	0.50	N.D.
1,1,1-Trichloroethane.....	0.50	N.D.
1,1,2-Trichloroethane.....	0.50	N.D.
Trichloroethene.....	0.50	N.D.
Trichlorofluoromethane.....	1.0	N.D.
Vinyl chloride.....	1.0	N.D.

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

SEQUOIA ANALYTICAL


Julia R. Malerstein
Project Manager



SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Alton Geoscience
1000 Burnett Street, Suite 140
Concord, CA 94520
Attention: Matt Hopwood

Client Project ID: #30-063-01,B-P 100 Mac Arthur Blv,

QC Sample Group: 108-0956

Reported: Aug 27, 1991

QUALITY CONTROL DATA REPORT

ANALYTE

1,1-Dichloroethene Trichloroethene Chlorobenzene

	EPA8010	EPA8010	EPA8010
Method:	EPA8010	EPA8010	EPA8010
Analyst:	S.Le	S.Le	S.Le
Reporting Units:	ppb	ppb	ppb
Date Analyzed:	Aug 25, 1991	Aug 25, 1991	Aug 25, 1991
QC Sample #:	108-0676	108-0676	108-0676
Sample Conc.:	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10
Conc. Matrix Spike:	6.5	9.7	10
Matrix Spike % Recovery:	65	97	100
Conc. Matrix Spike Dup.:	6.7	9.1	11
Matrix Spike Duplicate % Recovery:	67	91	110
Relative % Difference:	3.0	6.4	9.5

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Julia R. Malerstein
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

