Ro 445

**ExxonMobil**
**Refining & Supply Company**
Global Remediation
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**Gene N. Ortega**
Project Manager
Global Remediation – U.S. Retail

**ExxonMobil**
*Refining & Supply*

November 13, 2003

Alameda County
NOV 21 2003
Environmental Health

Mr. Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94501

Subject: Former Mobil Station 99-105, 6301 San Pablo Avenue, Oakland, California

Dear Mr. Chan:

Attached for your review and comment is a copy of the *Report of Groundwater Monitoring, Third Quarter 2003* for the above-referenced site. The report, prepared by ETIC Engineering, Inc. of Pleasant Hill, California, details the results of the July 2003 sampling event.

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

Sincerely,

Gene N. Ortega
Project Manager

Attachment: ETIC Groundwater Monitoring Report dated November 2003

c: w/ attachment:
Mr. Chuck Headlee - California Regional Water Quality Control Board, San Francisco Bay Region
Ms. Connie Lam (property owner)

c: w/o attachment:
Mr. Joseph Muehleck - ETIC Engineering, Inc.

R0445

ETIC ENGINEERING

# Report of Groundwater Monitoring
# Third Quarter 2003

## Former Mobil Station 99-105
## 6301 San Pablo Avenue
## Oakland, California



Prepared for

ExxonMobil Refining and Supply Company
25A Crescent Drive #407
Pleasant Hill, California 94523

Prepared by

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

Bryan Campbell
Project Manager

November 13, 2003
Date

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

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

November 6, 2003
Date

November 2003

**SITE CONTACTS**

| | |
|---|---|
| Station Number: | Former Mobil Station 99-105 |
| Station Address: | 6301 San Pablo Avenue<br>Oakland, California |
| ExxonMobil Project Manager: | Gene N. Ortega<br>ExxonMobil Refining and Supply Company<br>25A Crescent Drive #407<br>Pleasant Hill, California 94523<br>(925) 246-8747 |
| Consultant to ExxonMobil: | ETIC Engineering, Inc.<br>2285 Morello Avenue<br>Pleasant Hill, California 94523<br>(925) 602-4710 |
| ETIC Project Manager: | Bryan Campbell |
| Regulatory Oversight: | Barney Chan<br>Alameda County Health Care Services Agency<br>1131 Harbor Bay Parkway<br>Alameda, California 94501<br>510-567-6765 |
| | Chuck Headlee<br>California Regional Water Quality Control Board<br>San Francisco Bay Region<br>1515 Clay Street, Suite 1400<br>Oakland, California 94612<br>(510) 622-2300 |

## INTRODUCTION

At the request of ExxonMobil Refining and Supply Company, ETIC Engineering, Inc. has prepared this quarterly groundwater monitoring report for former Mobil Station 99-105. This report presents the results for the most recent groundwater monitoring conducted at the site and summarizes recent site activities. This report covers site activities through 15 July 2003, the date of the recent monitoring event. Groundwater monitoring results, well construction details, and a groundwater monitoring plan are provided in the attached figures and tables. Groundwater monitoring protocols, field data, and analytical results are provided in the attached appendixes.

## GENERAL SITE INFORMATION

| | |
|---|---|
| **Site name:** | Former Mobil Station 99-105 |
| **Site address:** | 6301 San Pablo Avenue, Oakland, California |
| **Current property owner:** | Connie Lam |
| **Current site use:** | Automobile oil change facility |
| **Current phase of project:** | Groundwater monitoring |
| **Tanks at site:** | Four former gasoline and one used-oil tank removed in 1994 |
| **Number of wells:** | 3 (all onsite) |

## GROUNDWATER MONITORING SUMMARY

| | |
|---|---|
| **Gauging and sampling date:** | 15 July 2003 |
| **Wells gauged and sampled:** | MW2, MW3, MW5 |
| **Wells gauged only:** | None |
| **Groundwater flow direction:** | West |
| **Groundwater gradient:** | 0.091 |
| **Well screens submerged:** | None |
| **Well screens not submerged:** | MW2, MW3, MW5 |
| **Liquid-phase hydrocarbons:** | Not observed or detected |
| **Laboratory:** | TestAmerica, Inc., Nashville, Tennessee |

**Analyses performed:**

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

## ADDITIONAL ACTIVITIES PERFORMED AT SITE

No additional activities were performed at the site.

## WORK PROPOSED FOR NEXT QUARTER

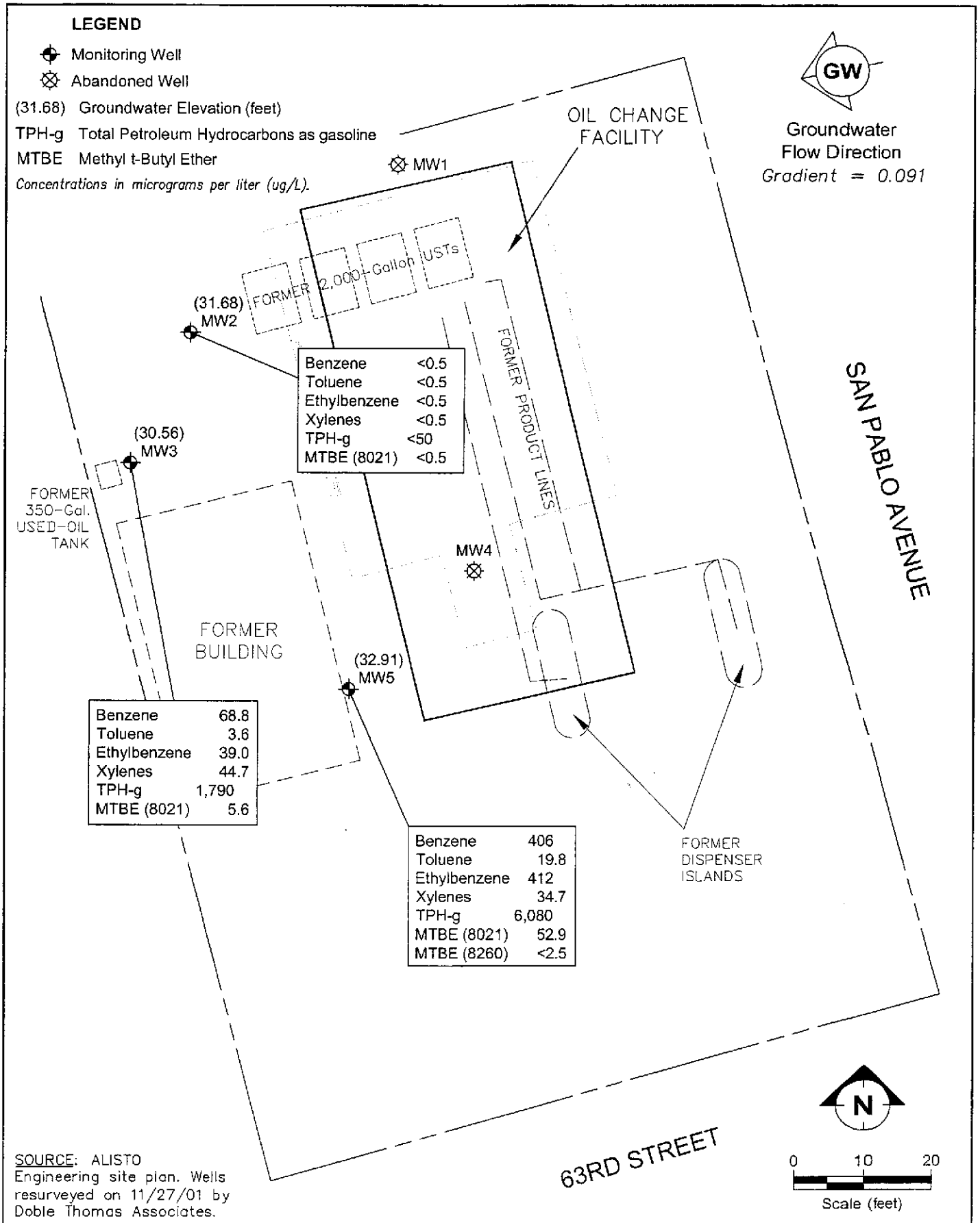
Groundwater will be monitored in accordance with the attached groundwater monitoring plan.

Attachments:

Figure 1: Site Plan Showing Groundwater Elevations and Analytical Results

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

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




SOURCE: ALISTO Engineering site plan. Wells resurveyed on 11/27/01 by Doble Thomas Associates.

ETIC ENGINEERING

SITE PLAN GROUNDWATER ELEVATIONS AND ANALYTICAL RESULTS
FORMER MOBIL STATION 99-105
6301 SAN PABLO AVENUE, OAKLAND, CALIFORNIA
15 JULY 2003

FIGURE: 1

FILENAME: 3q2003.DWG 11/06/03

TABLE 1 WELL CONSTRUCTION DETAILS, FORMER MOBIL STATION 99-105, 6301 SAN PABLO AVENUE, OAKLAND, CALIFORNIA

| Well Number | | Well Installation Date | Elevation TOC (feet) | Casing Material | Total Depth (feet) | Well Depth (feet) | Borehole Diameter (inches) | Casing Diameter (inches) | Screened Interval (feet) | Slot Size (inches) | Filter Pack Interval (feet) | Filter Pack Material |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW1 | b | 03/01/96 | -- | PVC | 21.5 | 20 | 10 | 4 | 5 - 20 | 0.010 | 4.5 - 21.5 | #12 Sand |
| MW2 | a | 03/01/96 | 41.99 | PVC | 21.5 | 20 | 10 | 4 | 5 - 20 | 0.010 | 4.5 - 21.5 | #12 Sand |
| MW3 | a | 03/01/96 | 41.71 | PVC | 21.5 | 20 | 10 | 4 | 5 - 20 | 0.010 | 4.5 - 21.5 | #12 Sand |
| MW4 | b | 03/01/96 | -- | PVC | 26.5 | 25 | 10 | 4 | 5 - 25 | 0.010 | 4.5 - 21.5 | #12 Sand |
| MW5 | a | 09/06/00 | 41.59 | PVC | 21.5 | 20 | 10 | 4 | 5 - 20 | 0.010 | 4 - 21.5 | #2/12 Sand |

a Well surveyed on 11/27/01 by Doble Thomas Associates.

b Well destroyed.

TOC Top of casing.

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 99-105, 6301 SAN PABLO AVENUE, OAKLAND, CALIFORNIA

| Well ID | Date | TOC Elevation (feet) | Depth to Water (feet) | Groundwater Elevation (feet) | Product Thickness (feet) | Concentrations (µg/L) TPH-g | TPH-d | Benzene | Toluene | Ethyl-benzene | Total Xylenes | MTBE (8020 or 8021) | MTBE (8240 or 8260) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TW1 | 01/04/96 | -- | 6.00 | -- | 0.00 | ND | 700 | ND | ND | ND | ND | -- | -- |
| WW1 | 01/04/96 | -- | 3.00 | -- | 0.00 | ND | -- | ND | ND | ND | ND | -- | -- |
| MW1 | 03/14/96 | 32.79 | 4.50 | 28.29 | 0.00 | 610 | 450 | 0.75 | 0.54 | 1.5 | 59 | -- | -- |
| MW1 | 05/21/96 | 32.79 | 5.64 | 27.15 | 0.00 | ND | ND | ND | ND | ND | ND | -- | -- |
| MW1 | 08/13/96 | 32.79 | 9.76 | 23.03 | 0.00 | ND | ND | ND | ND | ND | ND | -- | -- |
| MW1 | 11/08/96 | 32.79 | 10.24 | 22.55 | 0.00 | ND | ND | ND | 0.92 | ND | 2.1 | ND | -- |
| MW1 | 01/31/97 | 32.79 | 3.83 | 28.96 | 0.00 | ND | ND | ND | 0.85 | ND | ND | 2.6 | ND |
| MW1 | 04/22/97 | 32.79 | 9.14 | 23.65 | 0.00 | ND | ND | ND | ND | ND | ND | ND | -- |
| MW1[a] | 07/29/97 | 32.79 | 10.18 | 22.61 | 0.00 | ND | 60[e] | 0.84 | 0.95 | ND | 1.6 | 36 | -- |
| MW1[a] | 10/09/97 | 32.79 | 10.46 | 22.33 | 0.00 | ND | 56[e] | ND | ND | ND | ND | ND | -- |
| MW1[a] | 01/23/98 | 32.79 | 3.95 | 28.84 | 0.00 | ND | 33 | ND | ND | ND | ND | ND | -- |
| MW1 | 04/22/98 | 32.79 | 5.33 | 27.46 | 0.00 | ND | ND | ND | ND | ND | ND | ND | -- |
| MW1 | 07/21/98 | 32.79 | 9.17 | 23.62 | 0.00 | ND | -- | ND | ND | ND | ND | ND | -- |
| MW1 | 10/20/98 | 32.79 | 10.41 | 22.38 | 0.00 | ND | -- | ND | ND | ND | ND | ND | -- |
| MW1 | 01/27/99 | 32.79 | 5.51 | 27.28 | 0.00 | ND | -- | ND | ND | ND | ND | ND | -- |
| MW1 | Destroyed during construction activities in April 1999 | | | | | | | | | | | | |
| MW2 | 03/14/96 | 32.80 | 4.51 | 28.29 | 0.00 | 560 | 250 | 2.0 | 0.96 | 4.3 | 11 | -- | -- |
| MW2 | 05/21/96 | 32.80 | 5.65 | 27.15 | 0.00 | 730 | 560 | 5.1 | 1.4 | 6.7 | 5.9 | -- | -- |
| MW2 | 08/13/96 | 32.80 | 10.14 | 22.66 | 0.00 | 490 | 380[b] | 25 | 3.5 | 7.2 | 13 | -- | -- |
| MW2 | 11/08/96 | 32.80 | 10.70 | 22.10 | 0.00 | 520 | 160[d] | 80 | 2.7 | 14 | 66 | 6.1 | -- |
| MW2 | 01/31/97 | 32.80 | 3.84 | 28.96 | 0.00 | 74 | 130[b] | ND | ND | ND | ND | ND | -- |
| MW2 | 04/22/97 | 32.80 | 9.61 | 23.19 | 0.00 | 260 | 430 | 2.7 | ND | 2.5 | ND | ND | -- |
| MW2[a] | 07/29/97 | 32.80 | 10.53 | 22.27 | 0.00 | 320 | 150[d] | 28 | 1.2 | 10 | ND | ND | -- |
| MW2[a] | 10/09/97 | 32.80 | 10.87 | 21.93 | 0.00 | 460 | 160[b] | 43 | 2.8 | 2.0 | 2.6 | 2.6 | -- |
| MW2[a] | 01/23/98 | 32.80 | 3.75 | 29.05 | 0.00 | ND | 54 | ND | ND | ND | ND | ND | -- |
| MW2 | 04/22/98 | 32.80 | 5.36 | 27.44 | 0.00 | 180 | 540 | 1.2 | 0.3 | 0.4 | ND | ND | -- |
| MW2 | 07/21/98 | 32.80 | 9.55 | 23.25 | 0.00 | 80 | -- | 8.9 | 2.1 | 0.6 | 2.5 | ND | -- |
| MW2 | 10/20/98 | 32.80 | 10.75 | 22.05 | 0.00 | 50 | -- | 0.8 | 0.7 | ND | 0.8 | ND | -- |
| MW2 | 01/27/99 | 32.80 | 5.53 | 27.27 | 0.00 | ND | -- | 0.6 | ND | ND | ND | ND | -- |

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 99-105, 6301 SAN PABLO AVENUE, OAKLAND, CALIFORNIA

| Well ID | Date | TOC Elevation (feet) | Depth to Water (feet) | Groundwater Elevation (feet) | Product Thickness (feet) | Concentrations (µg/L) TPH-g | TPH-d | Benzene | Toluene | Ethyl-benzene | Total Xylenes | MTBE (8020 or 8021) | MTBE (8240 or 8260) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW2 | 07/27/99 | 32.80 | 6.20 | 26.60 | 0.00 | ND | -- | ND | 0.6 | ND | ND | ND | -- |
| MW2 | 12/08/99 | 32.80 | 9.98 | 22.82 | 0.00 | ND | -- | 1.2 | 0.43 | ND | ND | ND | -- |
| MW2 | 09/00 | 39.34 | Well resurveyed after repair by Alisto Engineering | | | | | | | | | | |
| MW2 | 10/25/00 | 39.34 | 11.30 | 28.04 | 0.00 | <20 | -- | 2.0 | 0.59 | 0.46 | 1.3 | <0.30 | -- |
| MW2 | 01/15/01 | 39.34 | 9.41 | 29.93 | 0.00 | <20 | -- | <0.20 | 0.46 | <0.20 | <0.60 | <0.30 | -- |
| MW2 | 04/10/01 | 39.34 | 6.16 | 33.18 | 0.00 | 23 | -- | 0.28 | <0.20 | <0.20 | <0.60 | <1.0 | -- |
| MW2 | 07/24/01 | 39.34 | 10.70 | 28.64 | 0.00 | <50 | -- | <0.20 | 0.93 | <0.20 | 0.82 | <0.30 | -- |
| MW2 | 11/27/01 | 39.34 | 10.15 | 29.19 | 0.00 | <50 | -- | 1.2 | 0.22 | <0.20 | <0.60 | <0.30 | -- |
| MW2 | 11/27/01 | 41.99 | Well resurveyed | | | | | | | | | | |
| MW2 | 01/18/02 | 41.99 | 5.46 | 36.53 | 0.00 | <50.0 | -- | <0.50 | <0.50 | <0.50 | <0.50 | 1.40 | -- |
| MW2 | 04/10/02 | 41.99 | 6.48 | 35.51 | 0.00 | <50.0 | -- | <0.50 | <0.50 | <0.50 | <0.50 | 1.80 | -- |
| MW2 | 07/12/02 | 41.99 | 10.45 | 31.54 | 0.00 | <50.0 | -- | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | -- |
| MW2 | 10/14/02 | 41.99 | 11.46 | 30.53 | 0.00 | <50.0 | -- | <0.5 | 4.1 | 0.6 | 4.0 | <0.5 | -- |
| MW2 | 01/20/03 | 41.99 | 5.39 | 36.60 | 0.00 | <50.0 | -- | <0.50 | <0.50 | <0.50 | <0.50 | 0.6 | -- |
| MW2 | 04/28/03 | 41.99 | 5.87 | 36.12 | 0.00 | <50.0 | -- | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | -- |
| **MW2** | **07/15/03** | **41.99** | **10.31** | **31.68** | **0.00** | **<50** | **--** | **<0.5** | **<0.5** | **<0.5** | **<0.5** | **<0.5** | **--** |
| MW3 | 03/14/96 | 32.80 | 9.55 | 23.25 | 0.00 | 4,200 | 1,200 | 220 | 30 | 140 | 520 | -- | -- |
| MW3 | 05/21/96 | 32.80 | 10.16 | 22.64 | 0.00 | 8,500 | 2,800 | 710 | 110 | 440 | 1,700 | -- | -- |
| MW3 | 08/13/96 | 32.80 | 11.18 | 21.62 | 0.00 | 5,000 | 2,300[c] | 430 | ND | 200 | 360 | -- | -- |
| MW3 | 11/08/96 | 32.80 | 11.51 | 21.29 | 0.00 | 8,400 | 2,900[b] | 890 | 82 | 790 | 1,700 | 73 | ND |
| MW3 | 01/31/97 | 32.80 | 7.90 | 24.90 | 0.00 | 16,000 | 7,500[b] | 660 | 85 | 960 | 1,800 | ND | -- |
| MW3 | 04/22/97 | 32.80 | 10.64 | 22.16 | 0.00 | 8,000 | 2,700 | 340 | 33 | 400 | 490 | 200 | ND |
| MW3[a] | 07/29/97 | 32.80 | 11.36 | 21.44 | 0.00 | 9,800 | 2,300[b] | 330 | ND | 530 | 530 | ND | -- |
| MW3[a] | 10/09/97 | 32.80 | 11.52 | 21.28 | 0.00 | 7,300 | 2,600[b] | 300 | ND | 430 | 460 | 270 | ND |
| MW3[a] | 01/23/98 | 32.80 | 7.50 | 25.30 | 0.00 | 6,100 | 2,300 | 190 | 23 | 330 | 320 | ND | -- |
| MW3 | 04/22/98 | 32.80 | 6.81 | 25.99 | 0.00 | 4,900 | 2,600 | 140 | 12 | 250 | 230 | ND | ND |
| MW3 | 07/21/98 | 32.80 | 10.65 | 22.15 | 0.00 | 7,400 | -- | 250 | 16 | 400 | 370 | 74 | ND |
| MW3 | 10/20/98 | 32.80 | 11.57 | 21.23 | 0.00 | 6,700 | -- | 200 | 18 | 350 | 350 | ND | ND |
| MW3 | 01/27/99 | 32.80 | 9.11 | 23.69 | 0.00 | 3,100 | -- | 74 | 4 | 94 | 39 | 13 | -- |
| MW3 | 07/27/99 | 32.80 | 7.27 | 25.53 | 0.00 | 8,900 | -- | 170 | 21 | 360 | 440 | ND | -- |
| MW3 | 12/08/99 | 32.80 | 10.63 | 22.17 | 0.00 | 4,800 | -- | 94 | 13 | 170 | 210 | ND | -- |

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 99-105, 6301 SAN PABLO AVENUE, OAKLAND, CALIFORNIA

| Well ID | Date | TOC Elevation (feet) | Depth to Water (feet) | Groundwater Elevation (feet) | Product Thickness (feet) | Concentrations ($\mu$g/L) TPH-g | TPH-d | Benzene | Toluene | Ethyl-benzene | Total Xylenes | MTBE (8020 or 8021) | MTBE (8240 or 8260) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW3 | 09/00 | 39.27 | Well resurveyed after repair by Alisto Engineering | | | | | | | | | | |
| MW3 | 10/25/00 | 39.27 | 12.08 | 27.19 | 0.00 | 3,800 | -- | 63 | 2.9 | 100 | 65 | <50 | <5 |
| MW3 | 01/15/01 | 39.27 | 10.29 | 28.98 | 0.00 | 4,300 | -- | 76 | 9.5 | 47 | 76 | <5.0 | -- |
| MW3 | 04/10/01 | 39.27 | 10.11 | 29.16 | 0.00 | 2,700 | -- | 55 | 4.4 | 100 | 37 | <20 | -- |
| MW3 | 07/24/01 | 39.27 | 11.57 | 27.70 | 0.00 | 3,100 | -- | 110 | 6.9 | 110 | 81 | <1.0 | -- |
| MW3 | 11/27/01 | 39.27 | 10.93 | 28.34 | 0.00 | 2,400 | -- | 47 | 8.9 | 25 | 35 | <0.30 | -- |
| MW3 | 11/27/01 | 41.71 | Well resurveyed | | | | | | | | | | |
| MW3 | 01/18/02 | 41.71 | 9.47 | 32.24 | 0.00 | 1,130 | -- | 15.3 | 2.30 | 42.0 | 24.6 | 13.6 | -- |
| MW3 | 04/10/02 | 41.71 | 10.14 | 31.57 | 0.00 | 916 | -- | 35.1 | 3.00 | 22.5 | 13.8 | 11.2 | -- |
| MW3 | 07/12/02 | 41.71 | 11.34 | 30.37 | 0.00 | 2,330 | -- | 60.5 | 2.90 | 39.8 | 50.9 | 15.4 | -- |
| MW3 | 10/14/02 | 41.71 | 12.10 | 29.61 | 0.00 | 2,550 | -- | 36.9 | 3.8 | 20.3 | 48.0 | <0.5 | -- |
| MW3 | 01/20/03 | 41.71 | 9.20 | 32.51 | 0.00 | 1,750 | -- | 20.4 | 304.0 | 60.7 | 22.0 | 10.7 | -- |
| MW3 | 04/28/03 | 41.71 | 9.37 | 32.34 | 0.00 | 2,730 | -- | 10.0 | 2.7 | 42.7 | 20.1 | 11.2 | -- |
| **MW3** | **07/15/03** | **41.71** | **11.15** | **30.56** | **0.00** | **1,790** | -- | **68.8** | **3.6** | **39.0** | **44.7** | **5.6** | **--** |
| MW4 | 03/14/96 | 31.50 | 4.92 | 26.58 | 0.00 | 12,000 | 3,500 | 2,200 | 140 | 880 | 2,000 | -- | -- |
| MW4 | 05/21/96 | 31.50 | 8.60 | 22.90 | 0.00 | 11,000 | 4,200 | 1,700 | ND | 930 | 470 | -- | -- |
| MW4 | 08/13/96 | 31.50 | 10.02 | 21.50 | 0.02 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW4 | 11/08/96 | 31.50 | 10.28 | 21.33 | 0.15 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW4 | 01/31/97 | 31.50 | 7.88 | 23.62 | 0.00 | 23,000 | 8,200[b] | 980 | 68 | 1,100 | 1,400 | ND | -- |
| MW4 | 04/22/97 | 31.50 | 7.40 | 24.10 | 0.00 | 8,800 | 4,500 | 950 | ND | 610 | 130 | ND | -- |
| MW4 | 07/29/97 | 31.50 | 9.85 | 21.74 | 0.12 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW4 | 10/09/97 | 31.50 | 10.35 | 21.38 | 0.30 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW4 | 01/23/98 | 31.50 | 4.68 | 27.51 | 0.92 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW4 | 04/22/98 | 31.50 | 6.39 | 25.22 | 0.14 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW4 | 07/21/98 | 31.50 | 7.10 | 24.55 | 0.20 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW4 | 10/20/98 | 31.50 | 9.03 | 22.60 | 0.17 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW4 | 01/27/99 | 31.50 | 5.37 | 26.18 | 0.07 | -- | -- | -- | -- | -- | -- | -- | -- |
| MW4 | Destroyed during construction activities in April 1999 | | | | | | | | | | | | |
| MW5 | 09/00 | 39.18 | Well surveyed after installation by Alisto Engineering | | | | | | | | | | |
| MW5 | 10/25/00 | 39.18 | 10.92 | 28.26 | 0.00 | 2,500 | -- | 79 | 3.8 | 66 | <20 | <20 | -- |

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 99-105, 6301 SAN PABLO AVENUE, OAKLAND, CALIFORNIA

| Well ID | Date | TOC Elevation (feet) | Depth to Water (feet) | Groundwater Elevation (feet) | Product Thickness (feet) | Concentrations (µg/L) TPH-g | TPH-d | Benzene | Toluene | Ethyl-benzene | Total Xylenes | MTBE (8020 or 8021) | MTBE (8240 or 8260) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW5 | 01/15/01 | 39.18 | 8.32 | 30.86 | 0.00 | 3,900 | -- | 120 | 7.9 | 280 | 52 | <5.0 | -- |
| MW5 | 04/10/01 | 39.18 | 7.21 | 31.97 | 0.00 | 8,000 | -- | 280 | 4.4 | 410 | 100 | <50 | <5 |
| MW5 | 07/24/01 | 39.18 | 9.54 | 29.64 | 0.00 | 7,000 | -- | 360 | 7.4 | 380 | 67 | <1.0 | -- |
| MW5 | 11/27/01 | 39.18 | 8.84 | 30.34 | 0.00 | 5,000 | -- | 64 | 11 | 340 | 52 | 8.9 | <2 |
| MW5 | 11/27/01 | 41.59 | Well resurveyed | | | | | | | | | | |
| MW5 | 01/18/02 | 41.59 | 6.52 | 35.07 | 0.00 | 6,330 | -- | 99.1 | 2.30 | 103 | 19.6 | 21.8 | -- |
| MW5 | 04/10/02 | 41.59 | 7.20 | 34.39 | 0.00 | 2,140 | -- | 275 | 8.00 | 183 | 24.5 | <2.50 | -- |
| MW5 | 07/12/02 | 41.59 | 8.83 | 32.76 | 0.00 | 3,940 | -- | 350 | <0.50 | 268 | 14 | 20 | <0.50 |
| MW5 | 10/14/02 | 41.59 | 10.74 | 30.85 | 0.00 | 4,040 | -- | 98.5 | 9.0 | 169 | 29.0 | <2.5 | -- |
| MW5 | 01/20/03 | 41.59 | 6.45 | 35.14 | 0.00 | 7,660 | -- | 421 | 10.0 | 743 | 96.0 | 59 | <0.50 |
| MW5 | 04/28/03 | 41.59 | 6.68 | 34.91 | 0.00 | 7,510 | -- | 403 | 5.5 | 524 | 50.5 | 47 | <0.50 |
| **MW5** | **07/15/03** | **41.59** | **8.68** | **32.91** | **0.00** | **6,080** | **--** | **406** | **19.8** | **412** | **34.7** | **52.9** | **<2.5** |

a Well sampled using no-purge method.
b Diesel and unidentified hydrocarbons <C15
c Diesel and unidentified hydrocarbons <C15>C25
d Diesel and unidentified hydrocarbons >C20
e Unidentified hydrocarbons >C18

MTBE Methyl tertiary butyl ether.
ND Not detected at or above method detection limit.
TOC Top of casing.
TOG Total oil and grease.
TPH-d Total Petroleum Hydrocarbons as diesel.
TPH-g Total Petroleum Hydrocarbons as gasoline.

-- Not measured/not analyzed.
mg/L Milligrams per liter.
µg/L Micrograms per liter.

TABLE 3 GROUNDWATER MONITORING PLAN,
FORMER MOBIL STATION 99-105, 6301 SAN PABLO AVENUE, OAKLAND, CALIFORNIA

| Well Number | Groundwater Gauging Frequency | Groundwater Sampling and Analysis Frequency | |
|---|---|---|---|
| | | BTEX and TPH-g | MTBE |
| MW2 | Q | Q | Q |
| MW3 | Q | Q | Q |
| MW5 | Q | Q | Q |

Q = Quarterly.

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

# Appendix A

# Field Protocols

# PROTOCOLS FOR QUARTERLY GROUNDWATER MONITORING

## GROUNDWATER GAUGING

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

## WELL PURGING

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

## GROUNDWATER SAMPLING

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

# Appendix B

# Field Documents

ETIC ENGINEERING

# MONITORING WELL DATA FORM

Client: ExxonMobil

Date: 7-15-03

Project Number: TM99105.6

Station Number: 99-105

Site Location:
6301 San Pablo Road, Oakland, CA

Samplers: (W)

| MONITORING WELL NUMBER | DEPTH TO WATER (TOC) | DEPTH TO PRODUCT (TOC) | APPARENT PRODUCT THICKNESS | AMOUNT OF PRODUCT REMOVED | Well Completion Depth (Feet) | DEPTH TO BOTTOM (TOC) | WELL CASING DIAMETER |
|---|---|---|---|---|---|---|---|
| **MW2** | 10.31 | | | | | 18.78 | 4" |
| **MW3** | 11.15 | | | | | 18.30 | 4" |
| **MW5** | 8.68 | | | | | 20.35 | 4" |
| | | | | | | | |
| | **Check DTW and DTB** | | | | | | |
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ETIC ENGINEERING

# GROUNDWATER PURGE AND SAMPLE

Project Name: Former Exxon 99-105 Well No: MW-2 Date: 7-15-03

Project No: TM99105.6 Personnel: RT

## GAUGING DATA

Water Level Measuring Method: WLM Measuring Point Description: TOC

| WELL PURGE VOLUME CALCULATION | Total Depth (feet) | | Depth to Water (feet) | | Water Column (feet) | | Multiplier for Casing Diameter | | | | Casing Volume (gal) | | Total Purge Volume (gal) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | 2 | 4 | 6 | | | |
| | 18.78 | - | 10.31 | = | 8.47 | X | 0.04 | 0.16 | 0.64 | 1.44 | 5.42 | = | 16.26 |

## PURGING DATA

Purge Method: WaTerra Purge Depth: Screen Purge Rate: (gpm)

| | | | | | | |
|---|---|---|---|---|---|---|
| Time | 9:12 | 9:27 | | | | |
| Volume Purge (gal) | 5 | 10 | 15 | | | |
| Temperature ( C) | 19.2 | 18.9 | | | | |
| pH | 5.20 | 5.44 | | | | |
| Spec.Cond.(umhos) | 306.1 | 368.5 | | | | |
| Turbidity/Color | SLIGHT/BRN | SLIGHT/BRN | | | | |
| Odor (Y/N) | N | N | | | | |
| Dewatered (Y/N) | N | N | | | | |

Comments/Observbations:

WELL DEWATERED @ 17m GALLONS

REMARKED & SAMPLED

## SAMPLING DATA

Time Sampled: 9:45 Approximate Depth to Water During Sampling: (feet)

Comments:

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

Total Purge Volume: 17 (gallons) Disposal:

Weather Conditions: OK

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

Well Head Conditions Requiring Correction: NONE

Problems Encountered During Purging and Sampling: NONE

Comments:

ETIC ENGINEERING

# GROUNDWATER PURGE AND SAMPLE

Project Name: Former Exxon 99-105 Well No: MW3 Date: 7/15/03

Project No: TM99105.6 Personnel: WP

## GAUGING DATA

Water Level Measuring Method: WLM Measuring Point Description: TOC

| WELL PURGE VOLUME CALCULATION | Total Depth (feet) | | Depth to Water (feet) | | Water Column (feet) | | Multiplier for Casing Diameter | | | | Casing Volume (gal) | | Total Purge Volume (gal) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 18.30 | - | 11.15 | = | 7.15 | X | 1 | 2 | 4 | 6 | 4.57 | = | 13.72 |
| | | | | | | | 0.04 | 0.16 | 0.64 | 1.44 | | | |

## PURGING DATA

Purge Method: WaTerra Purge Depth: Screen Purge Rate: (gpm)

| Time | 8:56 | 9:02 | | | | |
|---|---|---|---|---|---|---|
| Volume Purge (gal) | 5 | 10 | 15 | | | |
| Temperature ( C) | 18.5 | 18.5 | | | | |
| pH | 6.23 | 6.34 | | | | |
| Spec.Cond.(umhos) | 8334 | 8755 | | | | |
| Turbidity/Color | SLTY/BLK | SLTY/BLK | | | | |
| Odor (Y/N) | Y | Y | | | | |
| Dewatered (Y/N) | N | N | | | | |

Comments/Observbations:

WELL DEWATERED 15 GALLONS

RECHARGED & SAMPLED WELL

## SAMPLING DATA

Time Sampled: 9:10 Approximate Depth to Water During Sampling: (feet)

Comments:

| Sample Number | Number of Containers | Container Type | Perservative | Volume Filled (mL or L) | Turbidity/ Color | Analysis Method |
|---|---|---|---|---|---|---|
| MW3 | 6 | Voa | HCL | 40 ml | | TPH-g, BTEX, MTBE |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Total Purge Volume: 15 (gallons) Disposal:

Weather Conditions: OK

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

Well Head Conditions Requiring Correction: NONE

Problems Encountered During Purging and Sampling: NONE

Comments:

ETIC ENGINEERING

# GROUNDWATER PURGE AND SAMPLE

Project Name: Former Exxon 99-105 Well No: MW5 Date: 7-15-03

Project No: TM99105.6 Personnel: WT

## GAUGING DATA

Water Level Measuring Method: WLM Measuring Point Description: TOC

| WELL PURGE VOLUME CALCULATION | Total Depth (feet) | | Depth to Water (feet) | | Water Column (feet) | | Multiplier for Casing Diameter | | | | Casing Volume (gal) | | Total Purge Volume (gal) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 20.55 | - | 8.67 | = | 11.67 | X | 1 | 2 | 4 | 6 | 7.46 | = | 22.40 |
| | | | | | | | 0.04 | 0.16 | 0.64 | 1.44 | | | |

## PURGING DATA

Purge Method: WaTerra Purge Depth: Screen Purge Rate: (gpm)

| | | | | | | |
|---|---|---|---|---|---|---|
| Time | 9:34 | 9:40 | 9:46 | | | |
| Volume Purge (gal) | 7 | 14 | 21 | | | |
| Temperature ( C) | 20.4 | 19.6 | 19.5 | | | |
| pH | 6.74 | 6.70 | 6.70 | | | |
| Spec.Cond.(umhos) | 881.7 | 890.2 | 902.2 | | | |
| Turbidity/Color | CLR/CLR | CLR/CLR | CLR/CLR | | | |
| Odor (Y/N) | Y | Y | Y | | | |
| Dewatered (Y/N) | N | N | N | | | |

Comments/Observbations:

## SAMPLING DATA

Time Sampled: 9:50 Approximate Depth to Water During Sampling: (feet)

Comments:

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

Total Purge Volume: 21 (gallons) Disposal:

Weather Conditions: SUNNY

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

Well Head Conditions Requiring Correction: NONE

Problems Encountered During Purging and Sampling: NONE

Comments:

# Appendix C

# Laboratory Analytical Reports

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7/23/03

ETIC 3865
BRYAN CAMPBELL
2285 MORELLO AVENUE
PLEASANT HILL, CA 94523

This report includes the analytical certificates of analysis for all samples listed below. These samples relate to your project identified below:

Project Name: EXXONMOBIL 99-105
Project Number: .
Laboratory Project Number: 339706.

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. If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-800-765-0980.



| Sample Identification | Lab Number | Collection Date |
|---|---|---|
| MW2 | 03-A110629 | 7/15/03 |
| MW3 | 03-A110630 | 7/15/03 |
| MW5 | 03-A110631 | 7/15/03 |



Report Approved By: _____ Report Date: 7/22/03

Ashley Morris, Lab Director
Michael H. Dunn, M.S., QA/QC Director
Johnny A. Mitchell, Operations Manager Organics
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

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# ANALYTICAL REPORT

ETIC 3865
BRYAN CAMPBELL
2285 MORELLO AVENUE
PLEASANT HILL, CA 94523

Project:
Project Name: EXXONMOBIL 99-105
Sampler: WYNN P.

Lab Number: 03-A110629
Sample ID: MW2
Sample Type: Water
Site ID: 99-105

Date Collected: 7/15/03
Time Collected: 8:45
Date Received: 7/17/03
Time Received: 8:10
Page: 1

| Analyte | Result | Units | Report Limit | Dil Factor | Analysis Date | Analysis Time | Analyst | Method | Batch |
|---|---|---|---|---|---|---|---|---|---|
| *ORGANIC PARAMETERS* | | | | | | | | | |
| Benzene | ND | ug/L | 0.50 | 1.0 | 7/20/03 | 22:08 | H. Wagner | 8021B | 6923 |
| Ethylbenzene | ND | ug/L | 0.5 | 1.0 | 7/20/03 | 22:08 | H. Wagner | 8021B | 6923 |
| Toluene | ND | ug/L | 0.5 | 1.0 | 7/20/03 | 22:08 | H. Wagner | 8021B | 6923 |
| Xylenes (Total) | ND | ug/L | 0.5 | 1.0 | 7/20/03 | 22:08 | H. Wagner | 8021B | 6923 |
| Methyl-t-butylether | ND | ug/L | 0.5 | 1.0 | 7/20/03 | 22:08 | H. Wagner | 8021B | 6923 |
| TPH (Gasoline Range) | ND | ug/L | 50.0 | 1.0 | 7/20/03 | 22:08 | H. Wagner | 8015B | 6923 |

| Surrogate | % Recovery | Target Range |
|---|---|---|
| BTEX/GRO Surr., a,a,a-TFT | 95. | 69. - 129. |

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.

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# ANALYTICAL REPORT

ETIC 3865
BRYAN CAMPBELL
2285 MORELLO AVENUE
PLEASANT HILL, CA 94523

Project:
Project Name: EXXONMOBIL 99-105
Sampler: WYNN P.

Lab Number: 03-A110630
Sample ID: MW3
Sample Type: Water
Site ID: 99-105

Date Collected: 7/15/03
Time Collected: 9:10
Date Received: 7/17/03
Time Received: 8:10
Page: 1

| Analyte | Result | Units | Report Limit | Dil Factor | Analysis Date | Analysis Time | Analyst | Method | Batch |
|---|---|---|---|---|---|---|---|---|---|
| *ORGANIC PARAMETERS* | | | | | | | | | |
| Benzene | 68.8 | ug/L | 0.50 | 1.0 | 7/20/03 | 22:41 | H. Wagner | 8021B | 6923 |
| Ethylbenzene | 39.0 | ug/L | 0.5 | 1.0 | 7/20/03 | 22:41 | H. Wagner | 8021B | 6923 |
| Toluene | 3.6 | ug/L | 0.5 | 1.0 | 7/20/03 | 22:41 | H. Wagner | 8021B | 6923 |
| Xylenes (Total) | 44.7 | ug/L | 0.5 | 1.0 | 7/20/03 | 22:41 | H. Wagner | 8021B | 6923 |
| Methyl-t-butylether | 5.6 | ug/L | 0.5 | 1.0 | 7/20/03 | 22:41 | H. Wagner | 8021B | 6923 |
| TPH (Gasoline Range) | 1790 | ug/L | 50.0 | 1.0 | 7/20/03 | 22:41 | H. Wagner | 8015B | 6923 |

| Surrogate | % Recovery | Target Range |
|---|---|---|
| BTEX/GRO Surr., a,a,a-TFT | 145. # | 69. - 129. |

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.
8021: Surrogate out of range high due to sample matrix.
Confirmed by repeat analysis.

End of Sample Report.

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# ANALYTICAL REPORT

ETIC 3865
BRYAN CAMPBELL
2285 MORELLO AVENUE
PLEASANT HILL, CA 94523

Project:
Project Name: EXXONMOBIL 99-105
Sampler: WYNN P.

Lab Number: 03-A110631
Sample ID: MW5
Sample Type: Water
Site ID: 99-105

Date Collected: 7/15/03
Time Collected: 9:50
Date Received: 7/17/03
Time Received: 8:10
Page: 1

| Analyte | Result | Units | Report Limit | Dil Factor | Analysis Date | Analysis Time | Analyst | Method | Batch |
|---|---|---|---|---|---|---|---|---|---|
| *ORGANIC PARAMETERS* | | | | | | | | | |
| Benzene | 406. | ug/L | 2.50 | 5.0 | 7/22/03 | 5:54 | H. Wagner | 8021B | 9980 |
| Ethylbenzene | 412. | ug/L | 2.5 | 5.0 | 7/22/03 | 5:54 | H. Wagner | 8021B | 9980 |
| Toluene | 19.8 | ug/L | 0.5 | 1.0 | 7/20/03 | 23:13 | H. Wagner | 8021B | 6923 |
| Xylenes (Total) | 34.7 | ug/L | 0.5 | 1.0 | 7/20/03 | 23:13 | H. Wagner | 8021B | 6923 |
| Methyl-t-butylether | 52.9 | ug/L | 0.5 | 1.0 | 7/20/03 | 23:13 | H. Wagner | 8021B | 6923 |
| TPH (Gasoline Range) | 6080 | ug/L | 250. | 5.0 | 7/22/03 | 5:54 | H. Wagner | 8015B | 9980 |
| *VOLATILE ORGANICS* | | | | | | | | | |
| Methyl-t-butyl ether | ND | ug/L | 2.50 | 5.0 | 7/23/03 | 6:54 | CHollingsw | 8260B | 381 |

| Surrogate | % Recovery | Target Range |
|---|---|---|
| BTEX/GRO Surr., a,a,a-TFT | 146. # | 69. - 129. |
| VOA Surr 1,2-DCA-d4 | 104. | 70. - 133. |
| VOA Surr Toluene-d8 | 103. | 76. - 123. |
| VOA Surr, 4-BFB | 107. | 71. - 132. |
| VOA Surr, DBFM | 92. | 74. - 128. |

Sample report continued . . .

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# ANALYTICAL REPORT

Laboratory Number: 03-A110631
Sample ID: MW5
Project:


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.
8021: Surrogate out of range high due to sample matrix.
Confirmed by repeat analysis.

End of Sample Report.

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**PROJECT QUALITY CONTROL DATA**
**Project Number:**
**Project Name: EXXONMOBIL 99-105**
**Page: 1**
**Laboratory Receipt Date: 7/17/03**

Matrix Spike Recovery

Note: If Blank is referenced as the sample spiked, insufficient volume was received for the defined analytical batch for MS/MSD analysis on an true sample matrix. Laboratory reagent water was used for QC purposes.

| Analyte | units | Orig. Val. | MS Val | Spike Conc | Recovery | Target Range | Q.C. Batch | Spike Sampl |
|---|---|---|---|---|---|---|---|---|
| **UST ANALYSIS** | | | | | | | | |
| Benzene | mg/l | < 0.00050 | 0.0568 | 0.0500 | 114 | 60. - 143. | 6923 | 03-A11062 |
| Toluene | mg/l | < 0.0005 | 0.0561 | 0.0500 | 112 | 62. - 139. | 6923 | 03-A11062 |
| Ethylbenzene | mg/l | < 0.0005 | 0.0557 | 0.0500 | 111 | 61. - 138. | 6923 | 03-A11062 |
| Xylenes (Total) | mg/l | < 0.0005 | 0.107 | 0.100 | 107 | 59. - 137. | 6923 | 03-A11062 |
| Methyl-t-butylether | mg/l | < 0.0005 | 0.0516 | 0.0500 | 103 | 60. - 138. | 6923 | 03-A11062 |
| TPH (Gasoline Range) | mg/l | < 0.0500 | 0.991 | 1.00 | 99 | 56. - 134. | 6923 | 03-A11062 |
| BTEX/GRO Surr., a,a,a-TFT | % Recovery | | | | 103 | 69 - 129 | 6923 | |

Matrix Spike Duplicate

| Analyte | units | Orig. Val. | Duplicate | RPD | Limit | Q.C. Batch |
|---|---|---|---|---|---|---|
| **UST PARAMETERS** | | | | | | |
| Benzene | mg/l | 0.0568 | 0.0575 | 1.22 | 23. | 6923 |
| Toluene | mg/l | 0.0561 | 0.0552 | 1.62 | 24. | 6923 |
| Ethylbenzene | mg/l | 0.0557 | 0.0554 | 0.54 | 24. | 6923 |
| Xylenes (Total) | mg/l | 0.107 | 0.107 | 0.00 | 25. | 6923 |
| Methyl-t-butylether | mg/l | 0.0516 | 0.0515 | 0.19 | 24. | 6923 |
| TPH (Gasoline Range) | mg/l | 0.991 | 1.08 | 8.59 | 24. | 6923 |
| BTEX/GRO Surr., a,a,a-TFT | % Recovery | | 102. | | | 6923 |

Laboratory Control Data

| Analyte | units | Known Val. | Analyzed Val | % Recovery | Target Range | Q.C. Batch |
|---|---|---|---|---|---|---|
| **UST PARAMETERS** | | | | | | |

Project QC continued . . .

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**PROJECT QUALITY CONTROL DATA**
**Project Number:**
**Project Name: EXXONMOBIL 99-105**
**Page: 2**
**Laboratory Receipt Date: 7/17/03**

Laboratory Control Data

| Analyte | units | Known Val. | Analyzed Val | % Recovery | Target Range | Q.C. Batch |
|---|---|---|---|---|---|---|
| Benzene | mg/l | 0.100 | 0.0991 | 99 | 74 - 120 | 6923 |
| Benzene | mg/l | 0.100 | 0.0960 | 96 | 74 - 120 | 9980 |
| Toluene | mg/l | 0.100 | 0.0960 | 96 | 73 - 118 | 6923 |
| Ethylbenzene | mg/l | 0.100 | 0.0952 | 95 | 72 - 118 | 6923 |
| Ethylbenzene | mg/l | 0.100 | 0.0934 | 93 | 72 - 118 | 9980 |
| Xylenes (Total) | mg/l | 0.200 | 0.188 | 94 | 72 - 116 | 6923 |
| Methyl-t-butylether | mg/l | 0.100 | 0.0865 | 86 | 64 - 124 | 6923 |
| TPH (Gasoline Range) | mg/l | 1.00 | 0.991 | 99 | 72 - 125 | 6923 |
| TPH (Gasoline Range) | mg/l | 1.00 | 1.00 | 100 | 72 - 125 | 9980 |
| BTEX/GRO Surr., a,a,a-TFT | % Recovery | | | 102 | 69 - 129 | 6923 |
| BTEX/GRO Surr., a,a,a-TFT | % Recovery | | | 106 | 69 - 129 | 9980 |

Laboratory Control Data

| Analyte | units | Known Val. | Analyzed Val | % Recovery | Target Range | Q.C. Batch |
|---|---|---|---|---|---|---|
| **VOA PARAMETERS** | | | | | | |
| Methyl-t-butyl ether | mg/l | 0.0500 | 0.0556 | 111 | 64 - 140 | 381 |
| VOA Surr 1,2-DCA-d4 | % Rec | | | 102 | 70 - 133 | 381 |
| VOA Surr Toluene-d8 | % Rec | | | 104 | 76 - 123 | 381 |
| VOA Surr, 4-BFB | % Rec | | | 107 | 71 - 132 | 381 |
| VOA Surr, DBFM | % Rec | | | 94 | 74 - 128 | 381 |

Blank Data

| Analyte | Blank Value | Units | Q.C. Batch | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| **UST PARAMETERS** | | | | | |
| Benzene | < 0.00050 | mg/l | 6923 | 7/20/03 | 18:20 |

Project QC continued . . .

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**PROJECT QUALITY CONTROL DATA**
**Project Number:**
**Project Name: EXXONMOBIL 99-105**
**Page: 3**
**Laboratory Receipt Date: 7/17/03**

Blank Data

| Analyte | Blank Value | Units | Q.C. Batch | Analysis Date | Analysis Time |
|---|---|---|---|---|---|
| Benzene | < 0.00050 | mg/l | 9980 | 7/21/03 | 20:41 |
| Toluene | < 0.0005 | mg/l | 6923 | 7/20/03 | 18:20 |
| Ethylbenzene | < 0.0005 | mg/l | 6923 | 7/20/03 | 18:20 |
| Ethylbenzene | < 0.0005 | mg/l | 9980 | 7/21/03 | 20:41 |
| Xylenes (Total) | < 0.0005 | mg/l | 6923 | 7/20/03 | 18:20 |
| Methyl-t-butylether | < 0.0005 | mg/l | 6923 | 7/20/03 | 18:20 |
| TPH (Gasoline Range) | < 0.0500 | mg/l | 6923 | 7/20/03 | 18:20 |
| TPH (Gasoline Range) | < 0.0500 | mg/l | 9980 | 7/21/03 | 20:41 |

Blank Data

| Analyte | Blank Value | Units | Q.C. Batch | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| **UST PARAMETERS** | | | | | |
| BTEX/GRO Surr., a,a,a-TFT | 102. | % Recovery | 6923 | 7/20/03 | 18:20 |
| BTEX/GRO Surr., a,a,a-TFT | 97. | % Recovery | 9980 | 7/21/03 | 20:41 |

Blank Data

| Analyte | Blank Value | Units | Q.C. Batch | Date Analyzed | Time Analyzed |
|---|---|---|---|---|---|
| **VOA PARAMETERS** | | | | | |
| Methyl-t-butyl ether | < 0.00014 | mg/l | 381 | 7/22/03 | 23:05 |
| VOA Surr 1,2-DCA-d4 | 102. | % Rec | 381 | 7/22/03 | 23:05 |
| VOA Surr Toluene-d8 | 103. | % Rec | 381 | 7/22/03 | 23:05 |
| VOA Surr, 4-BFB | 107. | % Rec | 381 | 7/22/03 | 23:05 |
| VOA Surr, DBFM | 96. | % Rec | 381 | 7/22/03 | 23:05 |

Project QC continued . . .

TestAmerica
ANALYTICAL TESTING CORPORATION

2960 Foster Creighton Drive • Nashville, Tennessee 37204
800-765-0980 • 615-726-3404 Fax

**PROJECT QUALITY CONTROL DATA**
**Project Number:**
**Project Name: EXXONMOBIL 99-105**
**Page: 4**
**Laboratory Receipt Date: 7/17/03**

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

End of Report for Project 339706

TestAmerica INCORPORATED

Nashville Division
2960 Foster Creighton
Nashville, TN 37204

CHA CUS REC
Phone: 615-726-0177
Toll Free: 800-765-0980
Fax: 615-726-3404

ExxonMobil

Consultant Name: ETIC ENGINEERING
Address: 2774 EAST WALNUT STREET
City/State/Zip: PASADENA, CA 91107
ExxonMobil Project Mgr: BRYAN CAMPBELL
Telephone Number: (626) 432-5999 EXT. 14
Fax No.: (626) 432-5998
Sampler Name: (Print) WYNN PROUGH
Sampler Signature:

Report To: BRYAN CAMPBELL
Invoice To: GENE ORTEGA (EXXONMOBIL TM)
Account #: 3865
PO #:
Facility ID # 99-105
Site Address 6301 SAN PABLO AVENUE
City, State Zip OAKLAND, CA

339706

| Sample ID / Description | Date Sampled | Time Sampled | No. of Containers Shipped | Grab | Composite | Field Filtered | Preservative: Ice | $HNO_3$ (Red Label) | HCl (Blue Label) | NaOH ( Orange Label) | $H_2SO_4$ Plastic (Yellow Label) | $H_2SO_4$ Glass(Yellow Label) | None (Black Label) | Other ( Specify) | Matrix: Groundwater | Wastewater | Drinking Water | Sludge | Soil | Other (specify): | Analyze For: TPH-G/BTEX/MTBE BY 8015/8020 | 8260 | RUSH TAT (Pre-Schedule) | TAT request (in Bus. Days) | STD TAT | Fax Results |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW2 | 7/15 | 8:45 | 6 | | | | X | | X | | | | | | X | | | | | | X | 8260 | | | X | X |
| MW3 | 7/15 | 9:10 | 6 | | | | X | | X | | | | | | X | | | | | | X | 8260 | | | X | X |
| MW5 | 7/15 | 9:50 | 6 | | | | X | | X | | | | | | X | | | | | | X | 8260 | | | X | X |

Special Instructions:
CONFIRM HIGHEST MTBE DETECTION BY 8260.

GLOBAL ID# T0600101855

EDF FILE REQUIRED

Laboratory Comments:
Temperature Upon Receipt: 3.2c
Sample Containers Intact? (Y) N
VOCs Free of Headspace? (Y) N

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| WYNN PROUGH | 7/15/03 | 14:30 | | | |
| Relinquished by: | Date | Time | Received by TestAmerica: | Date | Time |
| | | | | 7.17.03 | 0810 |

C:\WINDOWS\Desktop\99-105 COC 3Q03

TestAmerica
ANALYTICAL TESTING CORPORATION

Nashville Division

COOLER RECEIPT FORM

BC# 339706

Client: ETIC Eng.

Cooler Received On: 7/17/03 And Opened On: 7/17/03 By: Mike McBride

(Signature)

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

(Fed-Ex) UPS Velocity Airborne Route Off-street Misc.