STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY PETE WILSON, *Governor*

DEPARTMENT OF TRANSPORTATION
BOX 23660
OAKLAND, CA 94623-0660
(510) 286-4444
TDD (510) 286-4454

October 23, 1996

# 2189

Mr. Barney Chan, Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, CA 94502

555 Hegenberger Rd (21)

Subject: Quarterly Groundwater Monitoring Report For Hegenberger Maintenance Station

Dear Mr. Chan:

Enclosed is the groundwater monitoring report for the August 1996 sampling and analysis at the above referenced site in Oakland. This is the third quarter of groundwater sampling after the installation and initial sampling of the wells in September/October 1995. Geocon, the consultant carrying out the groundwater study, is scheduled to conduct one more sampling session at the site next month. If you have any comments or questions regarding the report or the site, please call me at 286-5647.

Sincerely,

Christopher R. Wilson

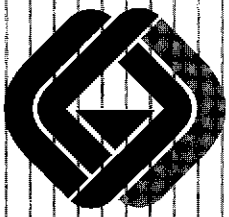
Christopher R. Wilson, P.E.
Office of Environmental Engineering

Enclosure
cc: file

TPHg BTEX has not stabilized yet, keep monitoring water levels from cycle to cycle (10 days).

# GROUNDWATER MONITORING REPORT
# THIRD QUARTER 1996

## HEGENBERGER MAINTENANCE STATION
## OAKLAND, CALIFORNIA



GEOCON

GEOTECHNICAL
&
ENVIRONMENTAL
CONSULTANTS

PREPARED FOR

CALIFORNIA DEPARTMENT OF TRANSPORTATION
OAKLAND, CALIFORNIA

CALTRANS CONTRACT NO. 53W202
TASK ORDER NO. 04-5T9000-01

GEOCON PROJECT NO. S8100-06-34

OCTOBER 1996

The contents of this report reflect the views of the author who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the State of California or the Federal Highway Administration. This report does not constitute a standard, specification, or regulation.

GEOCON

GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Project No. S8100-06-34
October 16, 1996

California Department of Transportation
District 4
P.O. Box 23660
Oakland, California 94623

Attention: Mr. Christopher Wilson

Subject: HEGENBERGER MAINTENANCE STATION
OAKLAND, CALIFORNIA
CONTRACT NO. 53W202
TASK ORDER NO. 04-5T9000-01
GROUNDWATER MONITORING REPORT-THIRD QUARTER 1996

Dear Mr. Wilson:

In accordance with Caltrans Contract No. 53W202 and Task Order No. 04-5T9000-01, Geocon Environmental Consultants, Inc. (Geocon) has completed Third Quarter 1996 groundwater monitoring services at the subject site. The scope of services provided by Geocon included groundwater level measurements, the sampling of five monitoring wells, and the submittal of the water samples to a California-certified laboratory for analytical testing.

The site is located east of Route 880 at 555 Hegenberger Road in Oakland, California. The approximate location of the site is depicted on the attached Vicinity Map, Figure 1.

**PROJECT SCOPE**

**Groundwater Elevation Measurements**

A representative of Geocon measured groundwater levels and sampled for the presence of free product within existing groundwater monitoring wells MW-1 through MW-5 on August 26, 1996. Free product was not detected in any of the wells.

Groundwater was encountered at depths ranging from 5.72 to 6.14 feet below the top of the well casings. A review of the last reported groundwater level measurements performed in April 1996 indicates that groundwater levels have decreased an average of 0.25 foot with the exception of MW-3 which increased approximately 0.13 foot. Based on the August 26, 1996 groundwater elevation data, the groundwater flow is directed to the north-northwest with an approximate gradient of 0.025 ft/ft. The interpreted groundwater flow direction and elevation contours are depicted on Figure 2, Groundwater Elevation Map - August 1996. The August 1996 groundwater flow direction and gradient are similar to those measured and evaluated quarterly since October 1995. A summary of the top of well casing elevations, groundwater level measurements and elevations is presented on Table 1.

## Well Purging and Sampling

Approximately three casing volumes of water (approximately 21 to 28 gallons) were purged from each monitoring well on August 26, 1996. During purging, the pH, temperature, and electrical conductivity of the groundwater were measured and the purging was considered complete when these parameters stabilized to within approximately 10 percent. Extracted groundwater was contained in DOT 17-H 55-gallon drums which were labeled and stored onsite pending receipt of laboratory analysis and subsequent disposal following regulatory protocols. Following well purging, water samples were collected from each well using polyethylene disposable bailers. The samples were decanted into three pre-preserved 40-ml volatile organic analyses (VOA) vials equipped with teflon septums, and two one-liter amber bottles. The groundwater samples and a travel blank consisting of one pre-preserved 40-ml VOA vial were sealed, labeled and placed in an ice chest containing blue ice and subsequently transported to Advanced Technology Laboratories (ATL), located in Signal Hill, California, using standard chain-of-custody documentation. Monitoring Well Sampling Data sheets are presented in Appendix A.

## Laboratory Analyses

The water samples were submitted to ATL for the analysis of total petroleum hydrocarbons as gasoline and diesel fuel (TPHg and TPHd) following EPA Test Method 8015 modified, and benzene, toluene, ethylbenzene and total xylenes (BTEX) following EPA Test Method 8020. A summary of the TPHg, TPHd and BTEX analyses is presented on Table 1. Copies of the laboratory reports and chain-of-custody documentation are presented in Appendix B.

## Analytical Results

The results of laboratory tests indicate that TPHg was detected in wells MW-1 and MW-3 through MW-5 at concentrations ranging from 300 to 3,800 micrograms per liter (µg/l). TPHd was detected in wells MW-1 and MW-3 through MW-5 at concentrations ranging from 70 to 430 µg/l. BTEX was detected in wells MW-1 and MW-3 through MW-5 at concentrations ranging from 0.9 to 780 µg/l. The maximum concentrations of the target compounds were detected in well MW-1. Nondetected concentrations of the target compounds were reported for well MW-2 and for total xylenes in well MW-4. After fluctuations in the concentrations of the target compounds over the last three quarters, concentrations decreased this quarter for each of the wells for each of the target compounds with the exception of total xylenes in well MW-1 and TPHd in well MW-4. TPHg and benzene concentrations are depicted on Figure 3, TPHg and Benzene Concentrations in Groundwater - August 1996. A cumulative summary of groundwater analytical data is presented on Table 1.

If you have any questions concerning the contents of this groundwater monitoring report, or if we may be of further service, please contact the undersigned at your convenience.

Very truly yours,

GEOCON ENVIRONMENTAL CONSULTANTS, INC.

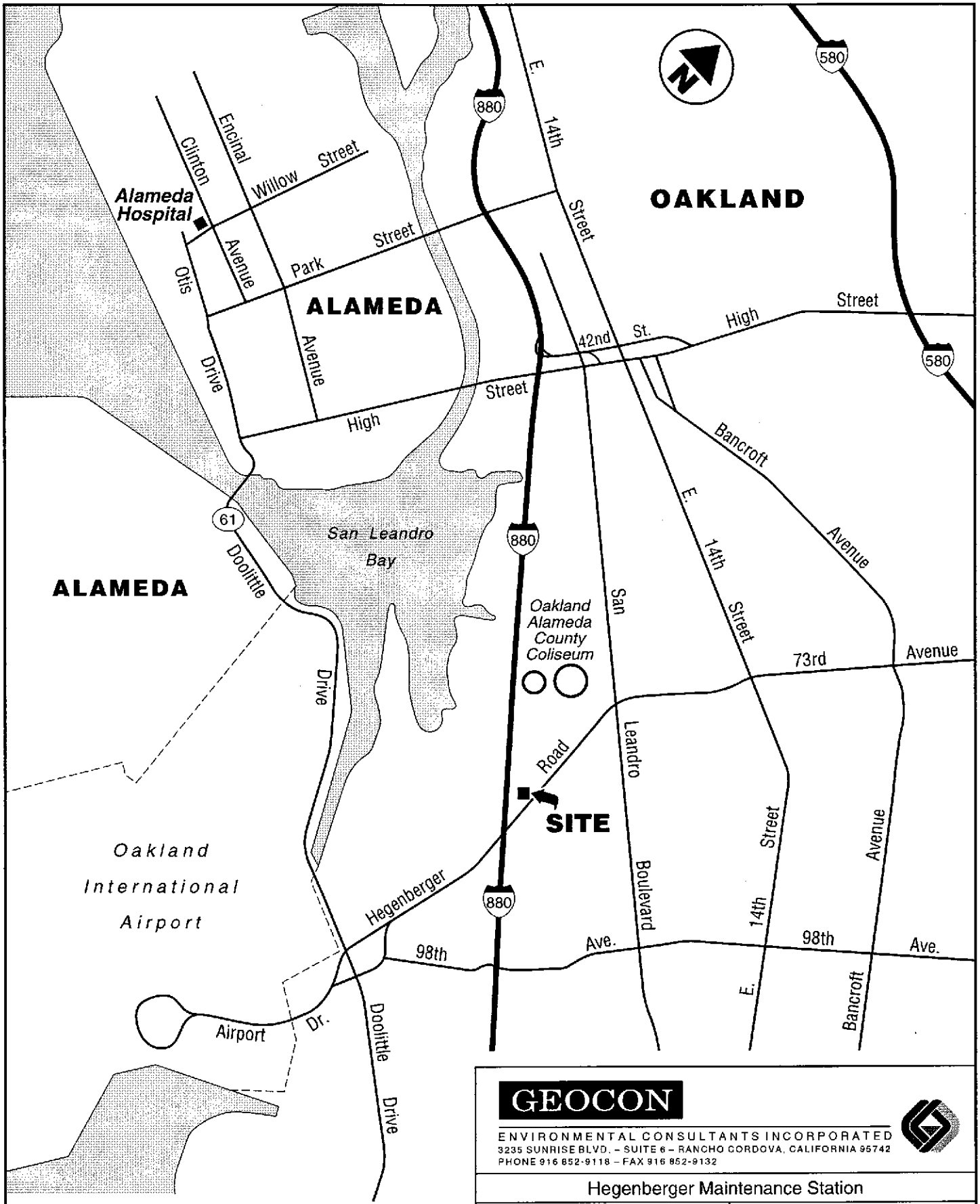
Richard H. Walls
Richard H. Walls, PE
Senior Remediation Engineer

Rebecca L Silva
Rebecca L. Silva
Senior Staff Environmental Scientist

RLS:RHW:ds

(3) Addressee

Attachments: Figure 1 - Vicinity Map
Figure 2 - Groundwater Elevation Map - August 1996
Figure 3 - TPHg and Benzene Concentrations in Groundwater - August 1996
Table 1 - Cumulative Summary of Groundwater Elevation and Analytical Data
Appendix A: Monitoring Well Sampling Data Sheets
Appendix B: Laboratory Reports and Chain of Custody Documentation




GEOCON
ENVIRONMENTAL CONSULTANTS INCORPORATED
3235 SUNRISE BLVD. – SUITE 6 – RANCHO CORDOVA, CALIFORNIA 95742
PHONE 916 852-9118 – FAX 916 852-9132

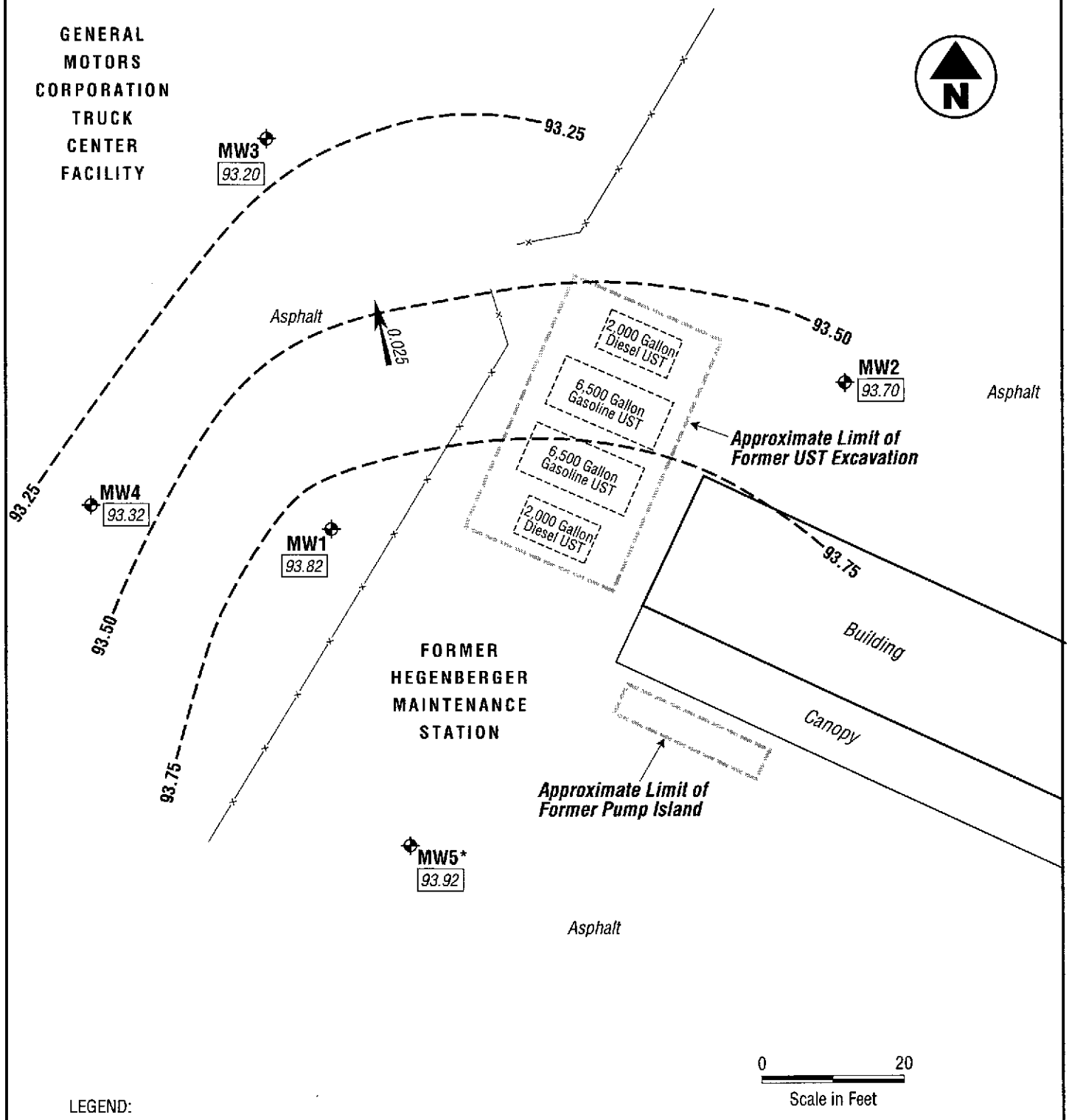
Hegenberger Maintenance Station

555 Hegenberger Road
Oakland, California

**VICINITY MAP**

GEOCON Proj. No. S8100-06-34

Task Order No. 04-5T9000-01 | October 1996 | Figure 1




LEGEND:

- Location of Former UST
- MW1 — Location of Groundwater Monitoring Well, GEOCON, Sept. 95
- Groundwater Elevation Contour (Interval = 0.25 Ft.)
- 93.70 — Relative Elevation of Groundwater Measured 8/26/96
- 0.025 — Approximate Groundwater Gradient
- * MW5 Not Used to Calculate Groundwater Gradient

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3235 SUNRISE BLVD. – SUITE 6 – RANCHO CORDOVA, CALIFORNIA 95742
PHONE 916 852-9118 – FAX 916 852-9132

Hegenberger Maintenance Station

555 Hegenberger Road
Oakland, California

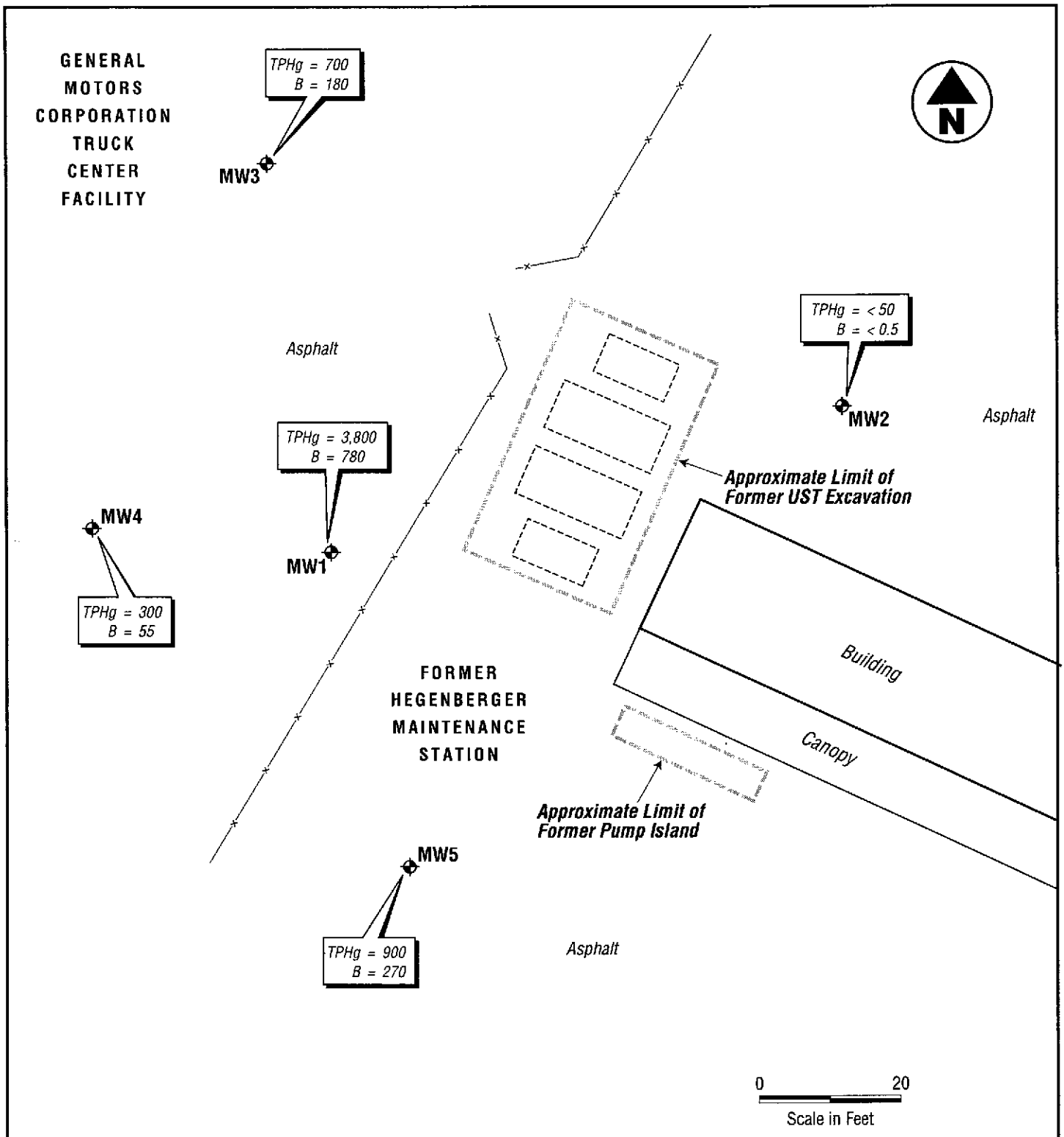
**GROUNDWATER ELEVATION MAP – AUGUST 1996**

GEOCON Proj. No. S8100-06-34

Task Order No. 04-5T9000-01

October 1996

Figure 2




LEGEND:

- Location of Former UST
- MW1 — Location of Groundwater Monitoring Well, GEOCON, Sept. 95

*TPHg = Total Petroleum Hydrocarbons as Gasoline*
*B = Benzene*
*All Concentrations in Micrograms Per Liter (ppb)*

**GEOCON**

ENVIRONMENTAL CONSULTANTS INCORPORATED
3295 SUNRISE BLVD. – SUITE 6 – RANCHO CORDOVA, CALIFORNIA 95742
PHONE 916 852-9118 – FAX 916 852-9132

| | | |
|---|---|---|
| Hegenberger Maintenance Station | | |
| 555 Hegenberger Road Oakland, California | **TPHg & BENZENE CONCENTRATIONS IN GROUNDWATER- AUGUST 1996** | |
| GEOCON Proj. No. S8100-06-34 | | |
| Task Order No. 04-5T9000-01 | October 1996 | Figure 3 |

TABLE 1
CUMULATIVE SUMMARY OF GROUNDWATER ELEVATION AND ANALYTICAL DATA
HEGENBERGER MAINTENANCE STATION
OAKLAND, CALIFORNIA

| SAMPLE I.D. | DATE | TOC ELEVATION (REF) | DEPTH TO GROUNDWATER (feet) | GROUNDWATER ELEVATION (REF) | TPHg (µg/l) | TPHd (µg/l) | TPHmo (µg/l) | O&G (µg/l) | B (µg/l) | T (µg/l) | E (µg/l) | X (µg/l) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 10/11/95 | 99.73 | 6.55 | 93.18 | 720 | <50 | <50 | <5,000 | 660 | 13 | 4.7 | 2.8 |
| MW-1 | 01/17/96 | 99.73 | 5.64 | 94.09 | 4,400 | <50 | <50 | --- | 1,000 | 30 | 21 | 17 |
| MW-1 | 04/16/96 | 99.73 | 5.46 | 94.27 | 6,050 | 7,450 | --- | --- | 914 | 34.7 | 34.4 | 15.8 |
| MW-1 | 08/26/96 | 99.73 | 5.91 | 93.82 | 3,800 | 430 | --- | --- | 780 | 23 | 21 | 20 |
| MW-2 | 10/11/95 | 99.68 | 6.88 | 92.80 | <50 | <50 | <50 | <5,000 | <0.3 | <0.3 | <0.3 | <0.5 |
| MW-2 | 01/17/96 | 99.68 | 5.32 | 94.36 | 4,900 | <50 | <50 | --- | 2,100 | <15 | <15 | <15 |
| MW-2 | 04/16/96 | 99.68 | 5.81 | 93.87 | <50 | <50 | --- | --- | 1.02 | <0.5 | <0.5 | <0.5 |
| MW-2 | 08/26/96 | 99.68 | 5.98 | 93.70 | <50 | <50 | --- | --- | <0.5 | <0.5 | <0.5 | <0.5 |
| MW-2dup | 08/26/96 | 99.68 | --- | --- | <50 | <50 | --- | --- | <0.5 | <0.5 | <0.5 | <0.5 |
| MW-3 | 10/11/95 | 98.92 | 6.42 | 92.50 | 1,300* | <50 | <50 | <5,000 | 1.0 | <0.3 | <0.3 | <0.3 |
| MW-3 | 01/17/96 | 98.92 | 5.82 | 93.10 | 171 | <50 | <50 | --- | 64 | <0.3 | 1.0 | <0.3 |
| MW-3 | 04/16/96 | 98.92 | 5.85 | 93.07 | 6,740 | 565** | --- | --- | 2,770 | 31.0 | 13.9 | 21.9 |
| MW-3dup | 04/16/96 | 98.92 | --- | --- | 6,710 | 540** | --- | --- | 2,790 | 31.1 | 13.9 | 21.8 |
| MW-3 | 08/26/96 | 98.92 | 5.72 | 93.20 | 700 | 70 | --- | --- | 180 | 4.2 | 1.0 | 4.6 |
| MW-4 | 10/11/95 | 99.46 | 6.63 | 92.83 | 500 | <50 | <50 | <5,000 | 17 | 1.1 | <0.3 | 0.48 |
| MW-4 | 01/17/96 | 99.46 | 5.77 | 93.69 | 459 | <50 | <50 | --- | 72 | 4.1 | <0.3 | 1.7 |
| MW-4 | 04/16/96 | 99.46 | 5.89 | 93.57 | 2,200 | <50 | --- | --- | 851 | 7.67 | 1.41 | 5.72 |
| MW-4 | 08/26/96 | 99.46 | 6.14 | 93.32 | 300 | 110 | --- | --- | 55 | 4.9 | 1.2 | <0.5 |
| MW-5 | 10/11/95 | 99.91 | 6.68 | 93.23 | 1,000 | <50 | <50 | <5,000 | 45 | 15 | 1.9 | 6.1 |
| MW-5 | 01/17/96 | 99.91 | 5.74 | 94.17 | <50 | <50 | <50 | --- | 2.0 | <0.3 | <0.3 | <0.3 |
| MW-5 | 04/16/96 | 99.91 | 5.85 | 94.06 | 1,740 | 855** | --- | --- | 157 | 20.1 | 3.92 | 22.4 |
| MW-5 | 08/26/96 | 99.91 | 5.99 | 93.92 | 900 | 270 | --- | --- | 55 | 6.4 | 0.9 | 3.7 |

Notes:
TOC = Top of casing
REF = Top of casing elevations referenced to an onsite arbitrary elevation of 100.00 feet
TPHg = Total petroleum hydrocarbons as gasoline
TPHd = Total petroleum hydrocarbons as diesel
TPHmo = Total petroleum hydrocarbons as motor oil
O&G = Oil and grease
BTEX = Benzene, toluene, ethylbenzene and total xylenes
µg/l = Micrograms per liter
< = Less than laboratory test method detection limit
--- = Not tested

* = Laboratory report notation "Weathered gas detected"
** = Laboratory report notation "Peaks in the diesel range"

# MONITORING WELL SAMPLING DATA

| | |
|---|---|
| **Project Name**: Hegenberger Maint. Station | **Project Number**: S8100-06-34 |
| Well No.: MW-1 | Date: 8/26/96 |
| Well Diameter: 4 in. | Field Personnel: DW |
| Casing Length: 20 feet | Screened Casing Length |
| Well Elevation: feet MSL measured from | |

| **PURGE CHARACTERISTICS** | |
|---|---|
| Water Depth Before Pumping: 5.91 ft. | 2 in.=.1632 Gal/ft. 4 in. = .6528 Gal/ft. |
| Calculated Water Column Volume: 9.2 Gal. | Volumes Purged: 3 |
| Start Pumping Time: 1142 | End Pumping Time: 1215 |
| Total Time: 33 min. | Flow Gauge: to |
| Total Volume Pumped: 28 Gal. | Avg. Flow Rate: 0.8 gpm |
| Water Depth After Pumping: 17.95 feet | Time: |

**SAMPLING CHARACTERISTICS**

Sampling Method: disposable bailer

Laboratory Analysis: TPHg, TPHd, BTEX

| TIME | TEMPERATURE | CONDUCTIVITY | pH | Gallons Purged |
|---|---|---|---|---|
| 1149 | 69.1 | 1769 | 7.89 | 9 |
| 1200 | 68.3 | 1937 | 7.41 | 18 |
| 1215 | 67.2 | 1636 | 7.28 | 28 |
| | | | | |
| 1220 | | | | sample |

comments: water clear; strong odor; dry after 20 gallons

# MONITORING WELL SAMPLING DATA

| **Project Name**: Hegenberger Maint. Station | **Project Number**: S8100-06-34 |
|---|---|
| Well No.: MW-2 | Date: 8/26/96 |
| Well Diameter: 4 in. | Field Personnel: DW |
| Casing Length: 20 feet | Screened Casing Length |
| Well Elevation: feet MSL measured from | |

| **PURGE CHARACTERISTICS** | |
|---|---|
| Water Depth Before Pumping: 5.98 ft. | 2 in.=.1632 Gal/ft. 4 in. = .6528 Gal/ft. |
| Calculated Water Column Volume: 9.2 Gal. | Volumes Purged: 3 |
| Start Pumping Time: 0932 | End Pumping Time: 1000 |
| Total Time: 28 min. | Flow Gauge: to |
| Total Volume Pumped: 27.5 Gal. | Avg. Flow Rate: 1 gpm |
| Water Depth After Pumping: 17.25 feet | Time: |

**SAMPLING CHARACTERISTICS**

Sampling Method: disposable bailer

Laboratory Analysis: TPHg, TPHd, BTEX

| TIME | TEMPERATURE | CONDUCTIVITY | pH | Gallons Purged |
|---|---|---|---|---|
| 0936 | 68.7 | 3050 | 7.64 | 9 |
| 0946 | 69.6 | 2980 | 6.95 | 18 |
| 1000 | 67.6 | 3040 | 6.96 | 27 |
| | | | | |
| 1010 | | | | sample |

comments: water clear; no odor

# MONITORING WELL SAMPLING DATA

| **Project Name**: Hegenberger Maint. Station | **Project Number**: S8100-06-34 |
|---|---|
| Well No.: MW-3 | Date: 8/26/96 |
| Well Diameter: 4 in. | Field Personnel: DW |
| Casing Length: 20 feet | Screened Casing Length |
| Well Elevation: feet MSL measured from | |

| **PURGE CHARACTERISTICS** | | |
|---|---|---|
| Water Depth Before Pumping: 5.72 ft. | 2 in.=.1632 Gal/ft. 4 in. = .6528 Gal/ft. | |
| Calculated Water Column Volume: 9.3 Gal. | | Volumes Purged: 3 |
| Start Pumping Time: 1216 | End Pumping Time: 1244 | |
| Total Time: 28 min. | Flow Gauge: to | |
| Total Volume Pumped: 28 Gal. | Avg. Flow Rate: 1 gpm | |
| Water Depth After Pumping: 16.20 feet | Time: | |

**SAMPLING CHARACTERISTICS**

Sampling Method: disposable bailer

Laboratory Analysis: TPHg, TPHd, BTEX

| TIME | TEMPERATURE | CONDUCTIVITY | pH | Gallons Purged |
|---|---|---|---|---|
| 1223 | 74.0 | 6920 | 8.26 | 9 |
| 1234 | 69.9 | 6730 | 7.88 | 18 |
| 1244 | 68.7 | 5710 | 7.36 | 28 |
| | | | | |
| 1300 | | | | sample |

comments: water clear; strong odor

# MONITORING WELL SAMPLING DATA

| | |
|---|---|
| **Project Name**: Hegenberger Maint. Station | **Project Number**: S8100-06-34 |
| Well No.: MW-4 | Date: 8/26/96 |
| Well Diameter: 4 in. | Field Personnel: DW |
| Casing Length: 20 feet/T.D. = 17 | Screened Casing Length |
| Well Elevation: feet MSL measured from | |

| **PURGE CHARACTERISTICS** | |
|---|---|
| Water Depth Before Pumping: 6.14 ft. | 2 in.=.1632 Gal/ft. 4 in. = .6528 Gal/ft. |
| Calculated Water Column Volume: 7 Gal. | Volumes Purged: 3 |
| Start Pumping Time: 1052 | End Pumping Time: 1112 |
| Total Time: 20 min. | Flow Gauge: to |
| Total Volume Pumped: 21 Gal. | Avg. Flow Rate: 1 gpm |
| Water Depth After Pumping: 14.86 feet | Time: |

**SAMPLING CHARACTERISTICS**

Sampling Method: disposable bailer

Laboratory Analysis: TPHg, TPHd, BTEX

| TIME | TEMPERATURE | CONDUCTIVITY | pH | Gallons Purged |
|---|---|---|---|---|
| 1056 | 68.8 | 3070 | 6.75 | 7 |
| 1103 | 66.8 | 3330 | 6.87 | 14 |
| 1112 | 66.0 | 3390 | 6.62 | 21 |
| | | | | |
| 1135 | | | | sample |

comments: water clear; moderate odor

# MONITORING WELL SAMPLING DATA

| | |
|---|---|
| **Project Name**: Hegenberger Maint. Station | **Project Number**: S8100-06-34 |
| Well No.: MW-5 | Date: 8/26/96 |
| Well Diameter: 4 in. | Field Personnel: DW |
| Casing Length: 20 feet | Screened Casing Length |
| Well Elevation: feet MSL measured from | |

| **PURGE CHARACTERISTICS** | |
|---|---|
| Water Depth Before Pumping: 5.99 ft. | 2 in.=.1632 Gal/ft. 4 in. = .6528 Gal/ft. |
| Calculated Water Column Volume: 9.1 Gal. | Volumes Purged: 3 |
| Start Pumping Time: 1015 | End Pumping Time: 1044 |
| Total Time: 29 min. | Flow Gauge: to |
| Total Volume Pumped: 24 Gal. | Avg. Flow Rate: 0.8 gpm |
| Water Depth After Pumping: 18.97 feet | Time: |

**SAMPLING CHARACTERISTICS**

Sampling Method: disposable bailer

Laboratory Analysis: TPHg, TPHd, BTEX

| TIME | TEMPERATURE | CONDUCTIVITY | pH | Gallons Purged |
|---|---|---|---|---|
| 1022 | 71.8 | 1140 | 6.96 | 9 |
| 1033 | 68.1 | 1316 | 6.81 | 18 |
| 1044 | 68.4 | 1290 | 6.72 | 24 |
| | | | | |
| 1125 | | | | sample |

comments: water clear; strong odor; dry after 16 gallons; slow recharge; pumped dry 4 times

Advanced Technology
Laboratories

September 9, 1996



ELAP No:: 1838

Geocon Environmental
3235 Sunrise Blvd. #6
Rancho Cordova, CA 95742

ATTN: Mr. Doug Winchester

Client's Project: Hagenberger, S8100-06-34
Lab No.: 12972-001/006

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

Edgar P. Caballero
Laboratory Director
EPC/ms

Enclosures

This cover letter is an integral part of this analytical report.

| | | | |
|---|---|---|---|
| **Client:** | **Geocon Environmental** | **QC Batch #:** | **968015DW260** |
| **Attn:** | **Mr. Doug Winchester** | **Date Sampled:** | **08/26/96** |
| | | **Date Received:** | **09/03/96** |
| **Client's Project:** | **Hagenberger, S8100-06-34** | **Date Extracted:** | **09/05/96** |
| | | **Date Analyzed:** | **09/05/96** |
| | | **Extraction Method:** | **3510** |
| **Matrix:** | **Water** | **Extraction Material:** | **Methylene** |
| **Analyst Initials:** | **ZC** | | **Chloride** |

**Method 8015M/TPH (Diesel)**

| Lab No.: | Sample ID: | Results, mg/l | DLR, mg/l | Dilution Factor |
|---|---|---|---|---|
| Method Blank | -- | ND | 0.05 | 1 |
| 12972-001 | MW-1 | 0.43 | 0.05 | 1 |
| 12972-002 | MW-2 | ND | 0.05 | 1 |
| 12972-002Dup | MW-2 | ND | 0.05 | 1 |
| 12972-003 | MW-3 | 0.07 | 0.05 | 1 |
| 12972-004 | MW-4 | 0.11 | 0.05 | 1 |
| 12972-005 | MW-5 | 0.27 | 0.05 | 1 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | %Recovery | Limits | |
| LCS | ----- | 70 | 50-150 | 1 |

MDL = Method Detection Limit
ND = Not Detected (Below DLR).
DLR = MDL X Dilution Factor

**Reviewed/Approved By:** _____ **Date:** 9/10/96

**Yun Pan**
**Department Supervisor**

**The cover letter is an integral part of this analytical report.**

*Advanced Technology Laboratories*
*1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040*

# Spike Recovery and RPD Summary Report - WATER (MG/L)

Method : C:\HPCHEM\5\METHODS\DIESEL.M
Title : Diesel
Last Update : Thu Sep 05 16:14:44 1996
Response via : Initial Calibration

Non-Spiked Sample: DB9551.D

| | Spike Sample | Spike Duplicate Sample |
|---|---|---|
| File ID : | DS9542.D | DS9543.D |
| Sample : | MS E-9/5/96 WATER | MSD E-9/5/96 WATER |
| Acq Time: | 05 Sep 96 07:10 PM | 05 Sep 96 07:32 PM |

| Compound | Sample Conc | Spike Added | Spike Res | Dup Res | Spike %Rec | Dup %Rec | RPD | QC Limits RPD | QC Limits % Rec |
|---|---|---|---|---|---|---|---|---|---|
| Diesel | ND | 1.0 | 1.00 | 1.08 | 96 | 103 | 8 | 50 | 50-150 |

QC Batch #: 968015DW260

Reviewed/Approved By: _____ Date: 9/9/96
Yun Pan
Organics Supervisor

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Geocon Environmental
Attn: Mr. Doug Winchester

Client's Project: Hagenberger, S8100-06-34

Date Received: 09/03/96
Matrix: Water

METHOD 8015M (Gasoline)/EPA 8020 (BTEX)

| Lab No.: | | | Method Blank | | 12972-001 | | 12972-002 | | 12972-003 | | 12972-004 | | 12972-005 | | 12972-002Dup | | LCS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample I.D.: | | | -- | | MW-1 | | MW-2 | | MW-3 | | MW-4 | | MW-5 | | MW-2 | | ---- | |
| Date Sampled: | | | -- | | 08/26/96 | | 08/26/96 | | 08/26/96 | | 08/26/96 | | 08/26/96 | | 08/26/96 | | ---- | |
| QC Batch #: | | | 968G20W2204 | | 968G20W2204 | | 968G20W2204 | | 968G20W2204 | | 968G20W2204 | | 968G20W2204 | | 968G20W2204 | | 968G20W2204 | |
| Date Analyzed: | | | 09/05/96 | | 09/05/96 | | 09/05/96 | | 09/05/96 | | 09/05/96 | | 09/05/96 | | 09/05/96 | | 09/05/96 | |
| Analyst Initials: | | | DT | | DT | | DT | | DT | | DT | | DT | | DT | | DT | |
| Dilution Factor: | | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | 1.0 | |
| Analyte | MDL | Units | DLR | Results | DLR | Results | DLR | Results | DLR | Results | DLR | Results | DLR | Results | DLR | Results | %Rec. | Limits |
| TPH (Gas) | 0.05 | mg/l | 0.05 | ND | 0.05 | 3.8 | 0.05 | ND | 0.05 | 0.7 | 0.05 | 0.3 | 0.05 | 0.9 | 0.05 | ND | 85 | 50-150 |
| Benzene | 0.5 | ug/l | 0.5 | ND | 5.0 | 780* | 0.5 | ND | 0.5 | 180 | 0.5 | 55 | 0.5 | 55 | 0.5 | ND | 126 | 50-150 |
| Toluene | 0.5 | ug/l | 0.5 | ND | 0.5 | 23 | 0.5 | ND | 0.5 | 4.2 | 0.5 | 4.9 | 0.5 | 6.4 | 0.5 | ND | 116 | 50-150 |
| Ethylbenzene | 0.5 | ug/l | 0.5 | ND | 0.5 | 21 | 0.5 | ND | 0.5 | 1.0 | 0.5 | 1.2 | 0.5 | 0.9 | 0.5 | ND | 109 | 50-150 |
| Xylenes (total) | 0.5 | ug/l | 0.5 | ND | 0.5 | 20 | 0.5 | ND | 0.5 | 4.6 | 0.5 | ND | 0.5 | 3.7 | 0.5 | ND | 103 | 50-150 |

| Lab No.: | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client Sample I.D.: | | | | | | | | | | | | | | | | | | |
| Date Sampled: | | | | | | | | | | | | | | | | | | |
| QC Batch #: | | | | | | | | | | | | | | | | | | |
| Date Analyzed: | | | | | | | | | | | | | | | | | | |
| Analyst Initials: | | | | | | | | | | | | | | | | | | |
| Dilution Factor: | | | | | | | | | | | | | | | | | | |
| Analyte | MDL | Units | | | | | | | | | | | | | | | | |
| TPH (Gas) | 0.05 | mg/l | | | | | | | | | | | | | | | | |
| Benzene | 0.5 | ug/l | | | | | | | | | | | | | | | | |
| Toluene | 0.5 | ug/l | | | | | | | | | | | | | | | | |
| Ethylbenzene | 0.5 | ug/l | | | | | | | | | | | | | | | | |
| Xylenes (total) | 0.5 | ug/l | | | | | | | | | | | | | | | | |

MDL = Method Detection Limit
ND = Not Detected. (Below DLR)
DLR = MDL X Dilution Factor
NA = Not Analyzed
* = Dilution Factor is 10.

Reviewed/Approved By: _____
Yun Pan
Department Supervisor

Date: 9/10/96

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories

# Spike Recovery and RPD Summary Report - WATER

Method : C:\HPCHEM\5\METHODS\8025WAT.M
Title : EPA M8015 (Gasoline) / EPA 602 (BTEX)
Last Update : Thu Sep 05 11:25:43 1996
Response via : Initial Calibration

Non-Spiked Sample: V00834.D

| | Spike Sample | Spike Duplicate Sample |
|---|---|---|
| File ID : | VS0841.D | VS0842.D |
| Sample : | 12972-003 1ppm MS Gas(+BTEX) | 12972-003 1ppm MSD Gas(+BTEX) |
| Acq Time: | 06 Sep 96 08:15 AM | 06 Sep 96 08:47 AM |

| Compound | Sample Conc | Spike Added | Spike Res | Dup Res | Spike %Rec | Dup %Rec | RPD | QC Limits RPD | QC Limits % Rec |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline (mg/l) | 0.7 | 1 | 1 | 1 | 73 | 72 | 1 | 20 | 66-129 |
| Benzene (ug/l) | 179.3 | 23 | 200 | 199 | 91 | 85 | 7 | 20 | 73-121 |
| Toluene (ug/l) | 4.2 | 57 | 60 | 60 | 98 | 97 | 0 | 20 | 70-127 |

QC Batch #:968G20W2204

Reviewed and Approved by: _____ Date: 9/9/96
Yun Pan
Organics Supervisor

# CHAIN OF CUSTODY RECORD

**Advanced Technology Laboratories**
1510 E. 33rd Street
Signal Hill, CA 90807
(310) 989-4045 • FAX (310) 989-4040

FOR LABORATORY USE ONLY:

Batch #: _____ D.O. # _____
P.O.#: _____
Logged By: DLJ Date: 9-03-96 Time: 0825

Method of Transport: Walk-in ☐ Courier ☒ UPS ☐ FED. EXP. ☐ ATL ☐

Sample Condition Upon Receipt:
1. COOLER TEMP * 7.5 (2-6) 5. SEALED Y☐ N☐
2. CHILLED Y☒ N☐ 6. # OF SPLS MATCH COC Y☐ N☐
3. HEADSPACE (VOA) Y☐ N☐ 7. PRESERVED Y☐ N☐
4. CONTAINER INTACT Y☐ N☒ 8. CONTR. LOT # _____

Client: GEOCON ENVIRONMENTAL - SACRAMENTO
Attn:
Address: 3235 Sunrise Blvd. #6
City Rancho Cordova State CA Zip Code 95742
TEL: ( 916 ) 852-9118
FAX: ( 916 ) 852-9132

Project Name: Hagenberger Project #: 5E100-06-34
Sampler: (Printed Name) Doug Winchester (Signature) Doug Winchester

Relinquished by: (Signature and Printed Name) Doug Winchester Doug Winchester
Received by: (Signature and Printed Name) Diane Galvan
Date: 9-3-96 Time: 0825

Relinquished by: (Signature and Printed Name)
Received by: (Signature and Printed Name)
Date: Time:

Relinquished by: (Signature and Printed Name)
Received by: (Signature and Printed Name)
Date: Time:

Unless otherwise requested, all samples will be disposed 60 days after receipt.

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Doug Winchester Date: 8/26/96
Print Name
Doug Winchester
Signature

Send Report To:
Attn: _____
Co: _____
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:
Please run duplicate on MW-2

SHIP TO LAB: (SUB CONTRACT) _____ TEST: _____ ATL #: _____ DATE: _____ CLIENT I.D. _____
SHIP TO LAB: (SUB CONTRACT) _____ TEST: _____ ATL #: _____ DATE: _____ CLIENT I.D. _____
SHIP TO LAB: (SUB CONTRACT) _____ TEST: _____ ATL #: _____ DATE: _____ CLIENT I.D. _____

Circle or Add Analysis(es) Requested

CIRCLE APPROPRIATE MATRIX

QA/QC: RTNE ☐ RWQCB ☐ WIP ☐ NAVY ☐ CT ☒ OTHER _____

| ITEM | LAB USE ONLY: Batch #: / Lab No. | Sample Description: Sample I.D. | Date | Time | 601/8010 (Halogenated Volatiles-GC) | 602/8020/BTEX (Aromatic Volatiles-GC) | 608/8080 (Pesticides/PCB-GC) | 624/8240/8260 (Volatiles-GC/MS) | 625/8270 (BNA-GC/MS) | 8015M TPHG/BTEX(COMBINATION) | 8015M TPH/D (Diesel-GC) | 418.1 (TPH-IR) | Metals-Total (CAC-6010/7000) | SOLID • SOIL • SLUDGE | OIL • SOLVENT • LIQUID | WATER • WASTEWATER | DRINKING WATER | AIR | WIPE • FILTER | OTHER | TAT | Container(s) # | Container(s) Type | PRESERVATION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12972-001 | MW-1 | 8/26/96 | 1220 | | | | | X | X | | | | | | X | | | | 1 | 5 | 5 | V L | H | |
| | 002 | MW-2 | | 1010 | | | | | X | X | | | | | | X | | | | | | | V L | H | |
| | 003 | MW-3 | | 1300 | | | | | X | X | | | | | | X | | | | | | | V L | H | |
| | 004 | MW-4 | | 1135 | | | | | X | X | | | | | | X | | | | | | | V L | H | 1-VOA rec'd broken |
| | 005 | MW-5 | | 1125 | | | | | X | X | | | | | | X | | | | | | | V L | H | 1-VOA rec'd broken |
| | 006 | Trip Blank | | 0600 | | | | | | | | | | | | | | | | | | | | | |

Sample Archive/Disposal:
☐ Laboratory Standard
☐ Other _____
☐ Return To: _____

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays
* TAT starts 8 a.m. following day if samples received after 3 p.m.

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives:
H=HCl N=$HNO_3$ S=$H_2SO_4$ C=4°C
Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

* $10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

DISTRIBUTION: **White** with report, **Green** to organic, **Yellow** to inorganic, **Pink** to Biology, **Gold** to submitter.