ALAMEDA COUNTY
DELL TE PAYIRONMENTAL HEALTH
MAZARDOUS MATERIALS

#### **Harding Lawson Associates**

#### Transmittal/Memorandum

To:

Alameda County Department of Environmental Health

470 27th Street, Room 322 Oakland, California 94612

Attention: Erin Levy

From: Date: Michelle Watson September 26, 1989

Subject:

Exxon Alameda

Job No.:

04167,284.02

Remarks:

Enclosed please find a copy of our report titled Phase II Evaluation of Petroleum Hydrocarbons, Exxon Service Station R/S #7-0104, 1725 Park Street, Alameda, California. We are forwarding this report to you at Exxon's request

Please call me at 415/892-0821 if you have any questions or require any further information.

LMW/gh/B119

cc:

A Report Prepared for

Exxon Company, USA P.O. Box 4415 Houston, Texas 77210-4415

PHASE II EVALUATION OF PETROLEUM HYDROCARBONS **EXXON SERVICE STATION R/S# 7-0104** 1725 PARK STREET ALAMEDA, CALIFORNIA

HLA Job No. 04167,249.02

by

S. Michelle Watson Staff Geologist

Michael L. Siembieda

Associate Geologist

Harding Lawson Associates 7655 Redwood Boulevard, P.O. Box 578 Novato, California 94948 415/892-0821

March 21, 1989

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#### I INTRODUCTION

This report presents the results of Harding Lawson Associates' (HLA) Phase II Evaluation of Petroleum Hydrocarbons at Exxon Service Station R/S# 7-0104, 1725 Park Street, Alameda, California. The work was authorized by Exxon Contract No. 88946914, dated December 1, 1988.

The Exxon Station is located on the northwest corner of Eagle Avenue and Park Street in Alameda, California. The location of the site is shown on Plate 1. The site is located in a mixed commercial and residential district of Alameda.

#### A. Background

The site was formerly occupied by a Regal Service Station owned by Wickland Oil Company, Sacramento, California. In 1986, the station was remodeled and three double walled fiberglass tanks were installed. The tanks were used to store regular, unleaded, and premium unleaded gasoline. No information regarding soil and/or ground-water quality at the time of the tank removal could be obtained by HLA.

A Sensitive Receptor-Risk Assessment Survey for the site was prepared by EA Engineering Science and Technology, Inc. (EA). The EA engineering study identified 5 monitoring wells, an industrial water well and an irrigation well within 1/2 mile of the site.

On May 17, 1988, HLA was contracted to perform a Phase I Evaluation of Petroleum Hydrocarbons at the site. The results of the evaluation were presented in a letter report to Exxon dated June 24, 1988. As part of the evaluation, three monitoring wells were installed at the site on June 2, 1988, as shown on Plate 2. One soil sample was selected for laboratory analysis from each well boring and analyzed for total

petroleum hydrocarbons (TPH) as gasoline, and benzene, toluene, ethylbenzene and xylenes (BTEX). Results of these analyses are listed in Table 1. One round of water samples was collected from each well on June 7, 1988 and analyzed for TPH as gasoline, and BTEX. Analytical results are listed in Table 2. Wells at the site were surveyed to a common datum, water levels measured, and the ground-water gradient at the site was evaluated.

Review of water level data showed that ground-water flow at the site was directed east toward the Oakland Estuary. Petroleum hydrocarbon constituents were detected in soil and ground-water samples collected from the site. TPH as gasoline was detected in soil at concentrations ranging from 11 to 1400 parts per million (ppm). A maximum concentration of 110,000 parts per billion (ppb) of TPH as gasoline was detected in water sampled from monitoring well MW-2, located downgradient of the tank field. In addition, review of laboratory analyses of water sampled from Well MW-1, located upgradient of the tank and pump islands, showed that TPH as gasoline was present at a concentration of 27,000 ppb.

#### B. Scope of Services

Based on the results of the Phase I investigation, state and local regulations require that further site investigative work be conducted to evaluate the magnitude and extent of petroleum hydrocarbon contamination at the site. Based on these regulations, HLA's understanding of site conditions, and specific requests by Exxon, HLA completed the following tasks:

- Conducted a brief site survey of the surrounding area to identify potential sources of subsurface contamination.
- Reviewed California Regional Water Quality Control Board San Francisco
  Bay Region (RWQCB) and Alameda County Environmental Health

Department files for information on other subsurface contamination investigations in the area.

- Conducted a site survey of subsurface conditions to evaluate the extent of on-site petroleum contamination.
- Installed and developed three additional 4-inch-diameter ground-water monitoring wells.
- Sampled the six monitoring wells and analyzed water samples for total petroleum hydrocarbons (TPH) as gasoline, and benzene, ethylbenzene, toluene, and xylenes (BTEX).
- Prepared a report detailing site impact on local ground-water quality.
- Arranged for transport and disposal of drummed soil and water generated during monitoring well installation and sampling.

#### II HLA FIELD WORK

#### A. Petroleum Hydrocarbon Survey

On December 29, 1988, HLA supervised a survey of subsurface conditions at the site. A soil gas survey was originally scheduled to be performed, but due to the shallow depth to ground water at the site, water samples were collected for field analysis instead of soil gas samples.

Six ground-water samples were collected for field analysis by National Environmental Testing, Inc., (NET) Pacific, Santa Rosa, California. Water sample locations are shown on Plate 3. Samples were collected by pneumatically driving 3/4 inch probes to depths of 8 to 12 feet. Ground-water samples were collected with a stainless steel bailer and decanted into 40 milliliter volatile organic analysis (VOA) vials. Ground-water samples were analyzed on site in a mobile laboratory equipped with a gas chromatograph/photo ionization detector (GC/PID). Each sample was analyzed for peaks eluting prior to benzene, toluene, xylenes, ethyl benzene, and TPH as gasoline.

Table 3 presents analytical results of ground-water samples collected during the survey. Copies of original analytical results are presented in Appendix B.

#### B. Drilling and Soil Sampling

Prior to the start of the drilling, HLA obtained a permit to construct monitoring wells from the Alameda County Flood Control and Water Conservation District.

Monitoring well locations were checked for underground utilities by contacting Underground Service Alert (U.S.A.).

On January 9, 1989, HLA drilled three soil borings to a maximum depth of 20.5 feet using a CME 75 truck-mounted drill rig equipped with 10-inch-diameter

hollow-stem augers. To avoid damaging any subsurface lines not identified by U.S.A., the borings were hand augered to an approximate depth of 2.5 feet. The borings were logged by an HLA geologist under the supervision of a California-registered geologist. The soil was classified using the Unified Soil Classification System (USCS). The boring logs and a copy of the USCS are included in Appendix A.

Soil samples were collected at approximately 5 foot intervals using a 3-inch outside diameter modified California sampler equipped with 6-inch-long stainless steel liners. Soil samples were screened for organic vapors using an organic vapor analyzer (OVA). Soil samples selected for laboratory analysis were covered with aluminum foil-lined plastic caps, taped, labeled, stored in a refrigerated environment and transported under chain of custody to Med-Tox Associates, Incorporated (Med-Tox), Pleasant Hill, California. Med-Tox is a state-certified analytical laboratory for the analyses requested. Soil cuttings derived from well installation activities were stored in 55-gallon drums on site pending receipt of laboratory analytical results.

# C. Monitoring Well Installation and Development

Each of the three borings were completed as ground-water monitoring wells (Wells MW-4, MW-5, and MW-6). Four-inch-diameter flush-threaded Schedule 40 PVC well casing and .020 inch machine slotted well screen was inserted through the augers from the ground surface to the bottom of each boring. The screened interval extended from approximately 4.0 feet below ground surface to the bottom of the boring. Blank PVC casing extended from 4.0 feet to approximately 0.5 feet below ground surface. Number 3 Lonestar sand filter material was placed in the annular space between the well casing and the borehole. The filter pack extended from the bottom of the boring to approximately 6 inches above the screened interval. An approximate 6 inch thick layer

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of bentonite pellets was placed above the filter pack and hydrated with water. The remaining annular space was backfilled to ground surface with a cement/bentonite grout mixture to approximately I foot below ground surface. A locking aluminum well cap was connected to the top of the 4-inch well casing. A Christy box was set in cement around the top of the well to protect it from surface traffic. Monitoring well construction details are presented in Appendix A. Monitoring well locations are shown on Plate 4.

Monitoring wells were developed by bailing a minimum of 8 casing volumes of water or until discharge water was visibly clear, and pH, conductivity, and temperature has stabilized. Water development data is included in Appendix A. Water generated during well development was stored in 55-gallon drums on site pending receipt of laboratory analysis.

# D. Water Level Measurement and Ground-Water Sampling

HLA surveyed all six monitoring wells on site to a common datum of 100 feet on January 17, 1989. On January 17 and 24, 1989, depth to ground water was measured using a chalked steel tape. Water levels are considered to be accurate to within 0.01 feet. Water level data are presented in Table 4.

After water level measurements were taken on January 17, 1989, the ground water was visually inspected for evidence of a floating petroleum hydrocarbon layer (free product). No free product was present.

Prior to sample collection, 2.5 to 5 casing volumes were purged from each well.

PH, conductivity and temperature were measured while purging each well. Water sampling data is included in Appendix A. Water generated during water sampling

activities was stored in 55-gallon drums on site pending receipt of laboratory analytical results.

All water samples were collected with a stainless steel bailer. Water samples were decanted from the bailer into 40 milliliter VOA vials, labeled, put in a refrigerated environment, and transported under chain of custody to Trace Analysis Laboratories (Trace), Hayward, California. Trace is a state-certified hazardous waste analytical laboratory for the analysis requested.

#### E. Equipment Decontamination

To minimize the possibility of cross contamination, all downhole drilling and sampling equipment was decontaminated prior to use. The augers were steam cleaned prior to drilling each boring. The soil and water sampling equipment was washed in a low-phosphorous soap solution and double rinsed with tap water between wells.

#### F. Soil and Water Disposal

Following receipt of laboratory analyses, the drummed soil and water remaining on site was disposed of in accordance with state and local regulations by Decon Environmental Services, Inc., Hayward, California.

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#### III LABORATORY ANALYSES

#### A. Soil Sample Analysis

One soil sample was selected for laboratory analysis from each of the borings drilled by HLA. Samples collected just above the saturated zone (4.5 to 5.0 feet below grade) were selected for laboratory analysis. Soil samples were analyzed for TPH as gasoline and BTEX. The laboratory analytical results for the soil samples analyzed are listed in Table 5. Copies of original laboratory reports are presented in Appendix B.

#### B. Water Sample Analysis

One round of water samples were collected from each of the six wells on site on January 17 and 18, 1989. Ground-water samples were analyzed for TPH as gasoline and BTEX. The laboratory analytical results for the ground-water samples are listed in Table 6. Copies of the original laboratory analytical reports are presented in Appendix B.

#### IV DISCUSSION

#### A. <u>Subsurface Conditions</u>

All three borings drilled at the site encountered similar subsurface conditions. Review of boring logs indicates that 2 to 4.5 feet of fill overlies dark grey sand or silty sand. Below this horizon, a bed of green clayey sand to silty sand was encountered between 5 and 9 feet. The silty sand is underlain by 5 feet of green, poorly graded, medium grained sand. At a depth of 14 feet, a one to three inch layer of gravel was encountered. Yellowish brown silty sand or sandy silt underlies the gravel layer in all three borings drilled at the site. During drilling, a strong petroleum odor was noted in the soil between 2.5 and 9 feet.

Ground water was measured at the site at depths between 5 and 6 feet. On the basis of ground-water measurements and the well elevation survey, it appears that ground-water flow at the site is directed to the east towards the Alameda Estuary, located approximately 1,000 feet from the site. Slope of the ground-water gradient is 0.016 ft/ft. Ground-water contours and elevations are shown on Plate 5.

Ground water in the East Bay is not used as drinking water. Although there currently is no use for the shallow ground water, there is possibly a hydraulic connection between the shallow ground water and the deeper, confined aquifers. Deeper aquifers in the area are reportedly being used as a source for industrial water supplies and irrigation.

# B. Off-Site Reconnaissance and Agency File Review

A brief survey of the surrounding area was conducted by HLA personnel on February 15, 1989. During this survey, HLA identified several businesses where

#### C. Petroleum Hydrocarbon Survey

Review of mobile laboratory analytical results of December 1988 ground-water sampling indicates that petroleum hydrocarbons were present in ground-water samples collected east of the service station building. Significant levels of contamination (20,000 to 76,000 ppb TPH as gasoline) were present in ground water sampled north and east of the tank field.

#### D. <u>Laboratory Results</u>

Review of laboratory analyses of soil samples collected from the site on June 2, 1988, and January 9, 1989; indicates that petroleum hydrocarbons are present at significant levels in all soil samples collected from the site. The highest levels of petroleum hydrocarbons were detected in soil collected from boring B-2 (1,400 ppm), located east (or downgradient) of the pump islands, and Boring B-6 (490 ppm), which is situated east of the tank field.

Review of laboratory analyses of water samples collected on January 17, 1989, indicates that petroleum hydrocarbons are present at significant levels in ground water collected from all wells at the site. Water sampled from all six wells exceed California Department of Health Services (DOHS) action levels for benzene and xylenes. Water samples collected from Wells MW-1, MW-2, MW-5, and MW-6 exceed DOHS action levels for ethylbenzene, and water collected from Wells MW-2, MW-3, MW-4, MW-5, and MW-6 exceed DOHS action levels for toluene.

A comparison of June 7, 1988 and January 17, 1989 ground-water analyses shows that concentrations of petroleum hydrocarbons have decreased in monitoring wells MW-1, MW-2, and MW-3.

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#### V CONCLUSIONS

On the basis of work performed to date, it appears that past or present practices have caused degradation of soil and ground-water quality at the site. Petroleum hydrocarbons may have been released from leaks in the petroleum storage or distribution system, from surface spillage, or from possible off-site sources. It appears that petroleum hydrocarbon contamination is present north, east and southeast of the USTs and pump islands. To date, the boundary of the plume of contamination has not been defined. Ground-water flow at the site is directed towards the east at a gradient of 0.016 ft/ft. Due to the relatively high permeability of soils and high levels of petroleum constituents detected at the site, it is likely that petroleum hydrocarbons have migrated off site.

Table 1. Analytical Results
HLA Soil Sampling
June 2, 1988
(ppm)<sup>1</sup>

| Boring | Sample<br>Depth<br>(feet) | TPH as gasoline | Benzene | Toluene         | Ethylbenzene | Xylenes |  |
|--------|---------------------------|-----------------|---------|-----------------|--------------|---------|--|
| B-1    | 10                        | 11              | 0.67    | ND <sup>2</sup> | 0.15         | 0.37    |  |
| B-2    | 5                         | 1,400           | ND      | 32              | 25           | 150     |  |
| B-3    | 5                         | 74              | ND      | ND              | ND           | 2.4     |  |

ppm - parts per million

ND - Not Detected

Table 2. Analytical Results HLA Ground-Water Sampling June 7, 1988 (ppb)<sup>1</sup>

| Weil<br>Number | TPH as gasoline | Benzene | Toluene | Ethylbenzene | Xylenes |
|----------------|-----------------|---------|---------|--------------|---------|
| MW-1           | 27,000          | 5,000   | 77      | 1,100        | 2,700   |
| MW-2           | 110,000         | 12,000  | 12,000  | 2,100        | 12,000  |
| MW-3           | 28,000          | 6,000   | 80      | 940          | 1,900   |

ppb - parts per billion

Table 3. Mobile Laboratory HLA Ground-Water Sampling December 30, 1988 (ppb)<sup>1</sup>

| Probe<br>Number | TPH as gasoline | Benzene | Toluene | Ethylbenzene | Xylenes |
|-----------------|-----------------|---------|---------|--------------|---------|
| P-1             | ND²             | ND      | ND      | ND           | ND      |
| P-2             | 20,000          | 4,400   | 3,000   | 2,500        | 6,100   |
| P-3             | 650             | 200     | 6.2     | <b>5</b> 1   | 76      |
| P-4             | 45,000          | 11,000  | 5,200   | 3,200        | 8,000   |
| P-5             | 76,000          | 16,000  | 10,000  | 1,500        | 69      |
| P-6             | 800             | 51      | 69      | 30           | 160     |
|                 |                 |         |         |              |         |

ppb - parts per billion

ND - Not Detected

Table 4. Water-Level Data

| Well<br>Number | Date    | Depth to Water BTOC (feet) | Well<br>Elevation<br>(feet) | Ground-Water<br>Elevation<br>(feet) |
|----------------|---------|----------------------------|-----------------------------|-------------------------------------|
| MW-I           | 1/17/89 | 5.81                       | 98.81                       | 93.00                               |
|                | 1/24/89 | 5.16                       | 98.81                       | 93.65                               |
| MW-2           | 1/17/89 | 5.96                       | 97.94                       | 91.98                               |
|                | 1/24/89 | 5.04                       | 97.94                       | 92.90                               |
| MW-3           | 1/17/89 | 5.49                       | 98.47                       | 92.98                               |
|                | 1/24/89 | 5.38                       | 98.47                       | 93.09                               |
| MW-4           | 1/17/89 | 5.36                       | 98.69                       | 93.33                               |
|                | 1/24/89 | 5.46                       | 98.69                       | 93.23                               |
| MW-5           | 1/17/89 | 5.39                       | 98.30                       | 92.91                               |
|                | 1/24/89 | 5.51                       | 98.30                       | 92.79                               |
| MW-6           | 1/17/89 | 5.59                       | 98.96                       | 93.37                               |
|                | 1/24/89 | 5.27                       | 98.96                       | 93.69                               |

BTOC - Below Top of Casing

Table 5. Analytical Results
HLA Soil Sampling
January 9, 1989
(ppm)<sup>1</sup>

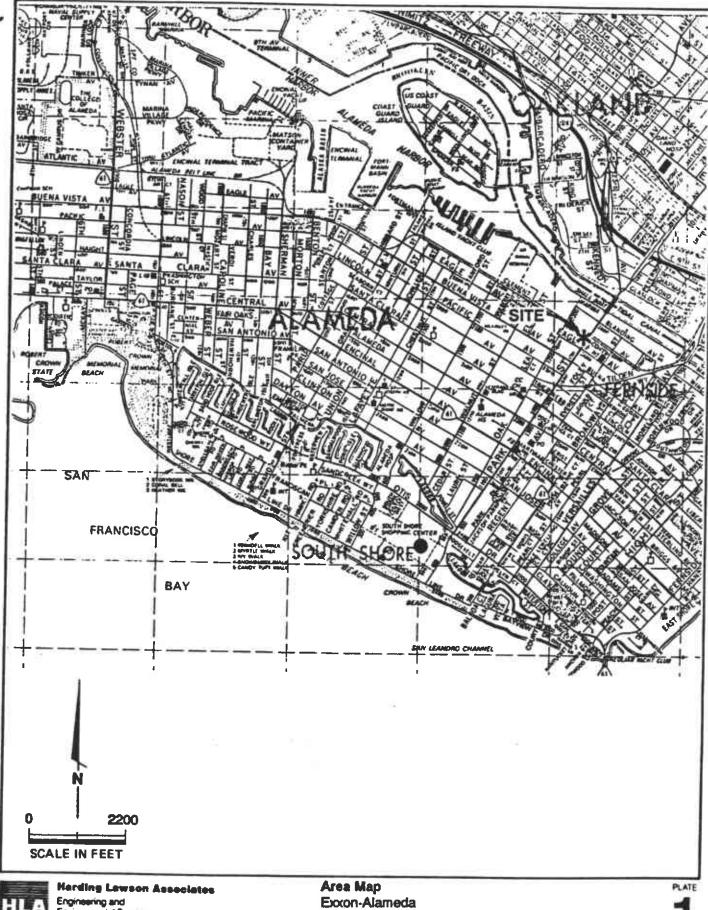
| Boring | Sample<br>Depth<br>(feet) | TPH as gasoline | Benzene | Toluene | Ethylbenzene | Xylenes |
|--------|---------------------------|-----------------|---------|---------|--------------|---------|
| B-4    | 5                         | 0.6             | 0.017   | 0.002   | 0.007        | 0.012   |
| B-5    | 4.5                       | 2.0             | 0.055   | 0.007   | 0.066        | 0.240   |
| B-6    | 5.0                       | 490             | 3.7     | 0.970   | 23.0         | 94.0    |

ppm - parts per million

Table 6. Analytical Results HLA Ground-Water Sampling January 17-18, 1988 (ppb)<sup>1</sup>

| Well<br>Number | TPH as gasoline | Benzene | Toluene | Ethylbenzene | Xylenes |
|----------------|-----------------|---------|---------|--------------|---------|
| MW-1           | 6,800           | 2,000   | 91      | 800          | 1,600   |
| MW-2           | 30,000          | 6,600   | 3,300   | 1,600        | 7,700   |
| MW-3           | 5,300           | 2,500   | 230     | 590          | 1,100   |
| MW-4           | 19,000          | 1,000   | 1,500   | 360          | 2,200   |
| MW-5           | 26,000          | 8,700   | 3,900   | 990          | 5,900   |
| MW-6           | 38,000          | 7,400   | 9,300   | 2,000        | 9,900   |
|                |                 |         |         |              |         |

ppb - parts per billion





Engineering and Environmental Services

Phase II Evaluation of Petroluem Hydrocarbons

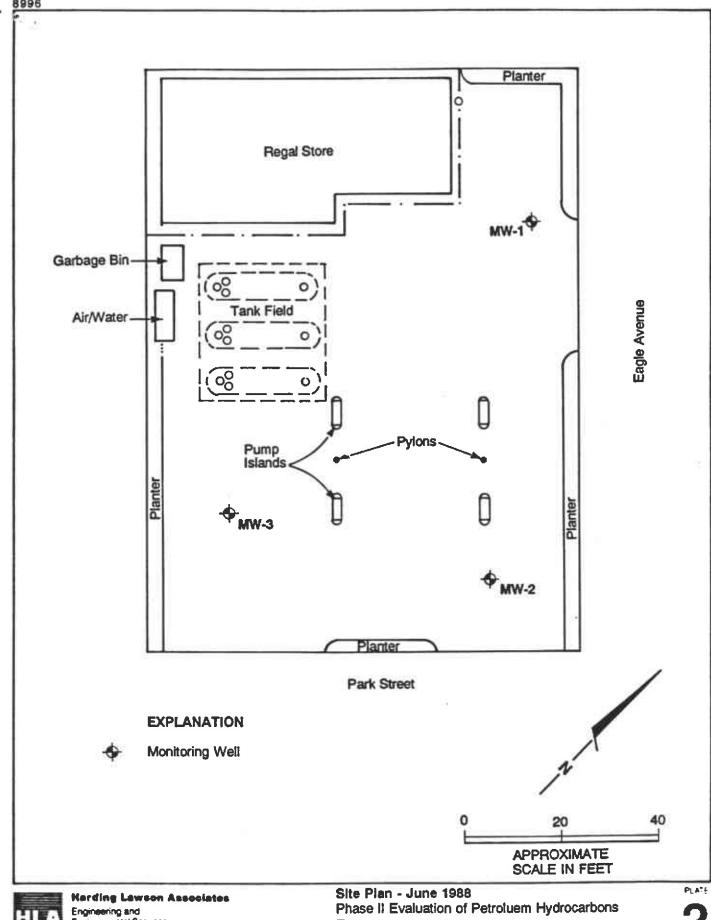
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DATE





Engineering and Environmental Services

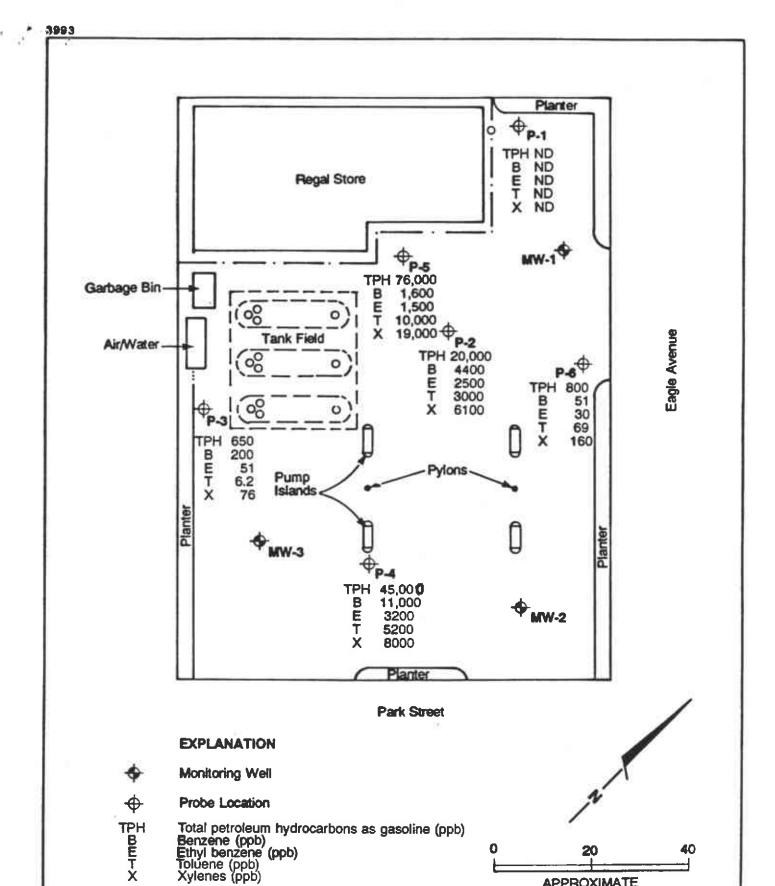
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Alameda, California

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DATE 2/89 PEVISED

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Engineering and Environmental Services Mobile Laboratory Ground-water Sampling Phase II Evaluation of Petroluem Hydrocarbons Exxon

**APPROXIMATE** SCALE IN FEET

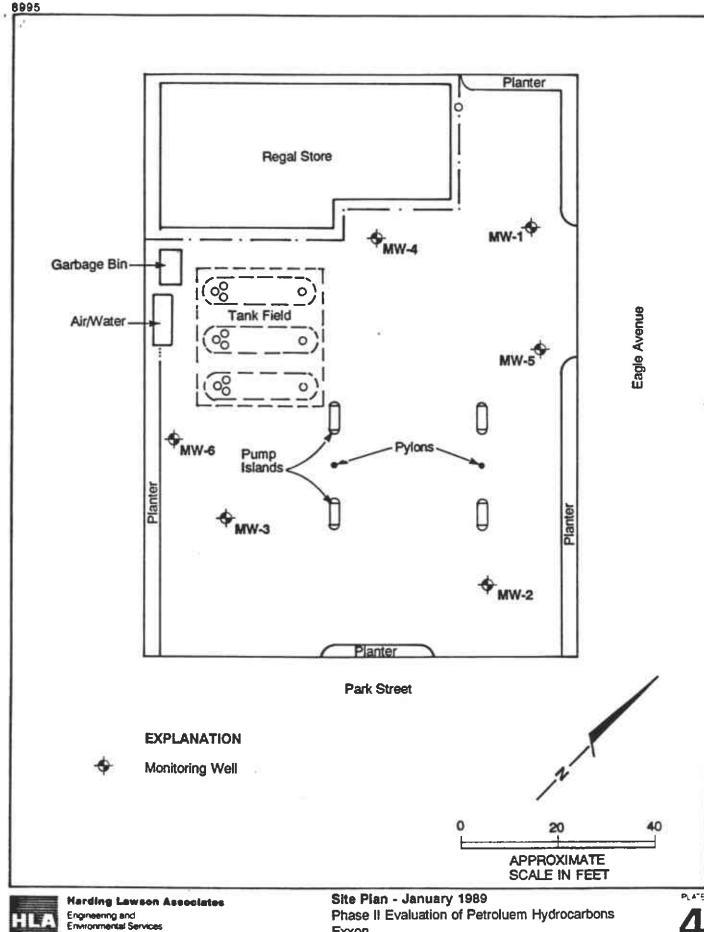
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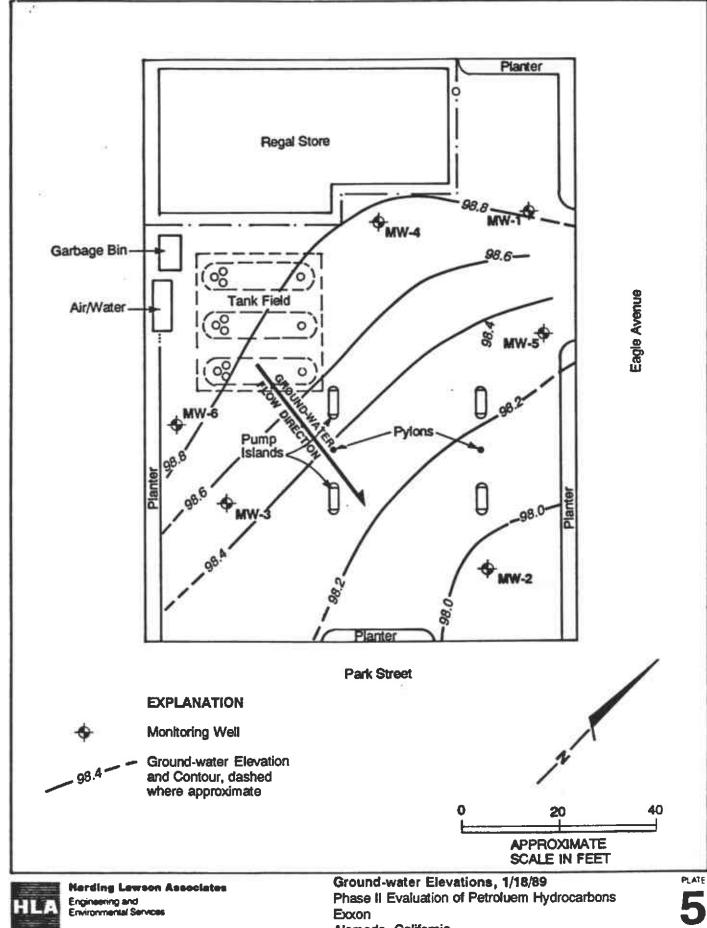
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**Harding Lawson Associates** Engineering and Environmental Services

Sites with Known or Potential Subsurface Contamination

Exxon-Alameda

Phase II Évaluation of Petroleum Hydrocarbons

Alameda, California

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DATE

# APPENDIX A BORING LOGS/WELL CONSTRUCTION DETAILS, WELL DEVELOPMENT DATA



Herding Lewson Associates

Engineering and Environmental Services Log of Boring and Well Completion Detail B4/MM4

Exxon - Alameda

Alameda, California

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**Karding Lawson Associates** 

Engineering and **Environmental Services**  Log of Boring and Well Completion Detail B5/MW5

Exxon - Alameda

Alameda, California

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DATE

| 893   |         |            |           |                      |   |
|---|---------|------------|-----------|----------------------|---|
| Top of PVC Casing<br>Elevation <u>ft</u>  |         | Blows/foot | OVA (ppm) | Depth (ft)<br>Sample | EquipmentCME-75 ElevationDate   |
| GROUND SURFACE  | i       | 8          | 8         | 62                   |   |
| LO IN. DIAMETER BORING to 20.5 ft IN. DIAMETER SCHEDULE 40 PVC MELL CASING 0.5 below ground to 4.0 ft BENTONITE-CEMENT SEAL 0.5 to 3.0 ft BENTONITE PELLET SEAL |         | 5          | 100       | 5-8                  | ASPHALT BLACK SILTY CLAY WITH GRAVEL (CL) (fill) etrong petroleum odor  GREEN TO GREENISH DARK GRAY SILTY SAND (SM) |
| 1.0 to 3.5 ft   |         |            |           |                      | loose, moist, medium-grained, subangular,<br>very strong petroleum odor   |
|   |         | 17         | 600       | 10-8                 | GREEN SAND (SP) medium dense, caturated, medium-grained   |
| ONESTAR #3 SANDPACK<br>8.5 to 20.5 ft   |         |            |           | 1                    |   |
| IN. DIAMETER WELL SCREEN<br>(0.020 in. slot size)<br>1.0 to 19.0 ft   |         | 11         | 0         | 15                   | 1° gravel leyer at 14.0 ft YELLOWISH BROWN SANDY SILT (ML) 10YR 5/6 stiff, saturated, 25% send                      |
| NOTION WELL CAP to 19.0 ft<br>NOREHOLE CLEANED DUT  |         | 15         |           | _ X                  | increase in sand content YELLOWISH BROWN SILTY SAND (SM) 10YR 5/6 medium dense, saturated, medium-grained           |
| NOTTOM OF BOREHOLE 20.5 ft  | -HEAL - |            |           | 20-12(1):            | bottom of boring at 20.5 ft converted to monitoring well MW-6   |
|   |         |            |           | 25-                  |   |
|   |         |            |           | 30-                  |   |
| 4)  |         |            |           | 35-                  |   |
|   |         |            |           |                      |   |



Harding Lawson Associates

Engineering and Environmental Services Log of Boring and Well Completion Detail B6/MM6 PLATE

Exxon - Alameda

Alameda, California

DRAWN

REBMUN BOL

04167, 249.02



DATE

REVISED

DATE

2/89

|   | MAJOR DIV  | ISIONS                     |    |   | TYPICAL NAMES   |
|---|--|----------------------------|----|---|---|
|   |  | CLEAN GRAVELS WITH         | GW | 1 | WELL GRADED GRAVELS WITH OR<br>WITHOUT SAND, LITTLE OR NO FINES                             |
| 2E  | GRAVELS  | LITTLE OR NO FINES         | GP | , | POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES                              |
| O SO<br>SOARS   | MORE THAN HALF<br>COARSE FRACTION<br>IS LARGER THAN<br>NO. 4 SIEVE SIZE  | GRAVELS WITH OVER          | GM |   | SILTY GRAVELS, SILTY GRAVELS<br>WITH SAND   |
| SE-GRAINED SO<br>THAN HALF IS COARS<br>THAN NO. 200 SIEVE |  | 12% FINES                  | GC |   | CLAYEY GRAVELS, CLAYEY<br>GRAVELS WITH SAND   |
| AN HA   |  | CLEAN SANDS WITH           | sw |   | WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES                                |
|   | SANDS  | LITTLE OR NO FINES         | SP |   | POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES                              |
| MORE  | MORE THAN HALF<br>COARSE FRACTION<br>IS SMALLER THAN<br>NO. 4 SIEVE SIZE | SANDS WITH OVER            | SM |   | SILTY SANDS WITH OR WITHOUT GRAVEL  |
|   |  | 12% FINES                  | sc |   | CLAYEY SANDS WITH OR<br>WITHOUT GRAVEL  |
| ×2.   |  |                            | ML |   | INORGANIC SILTS AND VERY FINE<br>SANDS, ROCK FLOUR, SILTS WITH<br>SANDS AND GRAVELS         |
| D SOILS<br>IS FINER<br>SIEVE                              | SILTS AN   | ID CLAYS<br>50% OR LESS    | CL |   | INORGANIC CLAYS OF LOW TO<br>MEDIUM PLASTICITY, CLAYS WITH<br>SANDS AND GRAVELS, LEAN CLAYS |
| ALF IS  |  |                            | OL |   | ORGANIC SILTS OF CLAYS<br>OF LOW PLASTICITY   |
| -GHAINED<br>THAN HALF IS<br>HAN NO. 200 SIE               |  |                            | МН |   | INORGANIC SILTS, MICACEOUS OR<br>DIATOMACIOUS, FINE SANDY OR<br>SILTY SOILS, ELASTIC SILTS  |
| MORET   |  | ID CLAYS<br>EATER THAN 50% | СН |   | INORGANIC CLAYS OF HIGH<br>PLASTICITY, FAT CLAYS  |
| L   |  |                            |    |   | ORGANIC SILTS OR CLAYS<br>OF MEDIUM TO HIGH PLASTICITY                                      |
|   | HIGHLY ORGA  | ANIC SOILS                 | Pl |   | PEAT AND OTHER HIGHLY ORGANIC SOILS   |

# UNIFIED SOIL CLASSIFICATION - ASTM D2487-85

| erm.   | _ | Permeability                  | Shear Strength | (psf)        | _ T_Co           | nfinir | ng Pressure  |
|--------|---|-------------------------------|----------------|--------------|------------------|--------|--|
| Consol | _ | Consolidation                 | TxUU           | 3200         | (2600)           | _      | Unconsolidated Undrained Triaxial Shear                                    |
| L      | _ | Liquid Limit (%)              | (FM            | ) or (S)     |                  |        | (field moisture or saturated)  |
| 9      | _ | Plastic Index (%)             | TxCU           | 3200         | (2600)           | -      | Consolidated Undrained Triaxial Shear                                      |
| 3,     | _ | Specific Gravity              | (P)            | 2000         | (0000)           |        | (with or without pore pressure measurement                                 |
| MA     | - | Particle Size Analysis        | TxCD<br>SSCU   | 3200<br>3200 | (2600)<br>(2600) | _      | Consolidated Drained Triaxial Shear<br>Simple Shear Consolidated Undrained |
|        | _ | "Undisturbed" Sample          | (P)            |              | ,,               |        | (with or without pore pressure measuremen                                  |
| X      | _ | Bulk or Classification Sample | SSCD           | 3200         | (2600)           | _      | Simple Shear Consolidated Drained  |
|        |   | ·                             | DSCD           | 2700         | (2000)           | _      | Consolidated Drained Direct Shear  |
|        |   |                               | UC             | 470          |                  | _      | Unconfined Compression   |
|        |   |                               | LVS            | 700          |                  | _      | Laboratory Vane Shear  |

## **KEY TO TEST DATA**



Harding Lawson Associates Engineers and Geoscientists PLATE

mi

| КLА     | Karding Lawson<br>Engineers and Geo |       |
|---------|-------------------------------------|-------|
| Job Nam | BEKKON                              | ALAME |

| 111-1-1-1   |   |                        |                |           | Well No                         | MW               | <u>-4</u>  |                 |                 |
|---|---|------------------------|----------------|-----------|---------------------------------|------------------|--|-----------------|-----------------|
|   | -1 .                                    |                        |                |           | Well Type:                      | Mon              | itor DExtrac   | tion 🗆 🔾        | ther            |
| Job Name <u>Ev</u>  | CKON ALI                                | AMEDA                  |                |           |                                 |                  | VC St. St  | eel □O          | ther            |
|   | 04167 2                                 | 4903                   | . 0            | _         | Date ///-                       | 7/89             |  | Time            |                 |
| Recorded by   | mary g                                  | Wea                    | sseer          |           | Sampled by                      |                  |  | (Initials)      |                 |
| 可能使到杨瑟  |   |                        | <b>公司</b>      | TIDI      | IRGING                          | 2003             |  | 122363E         | SCHOOL STATE    |
|   |   | BEECH FURTHER          | INVESTMENT     | dala d. A | DI JOHN CO.                     | E TRACE          | 母性關係的  | n) distribution | Manager Street  |
| TRUE VOLU   |   |                        |                |           | SECTION                         |                  |  |                 |                 |
| Casing Diameter   |   | 10th                   |                |           | Bailer - Type                   |                  |  |                 |                 |
| Total Daoth of C  | inch 06-inch 0<br>asing (TD in feet ST  | 00. 19                 |                |           | 1.4                             |                  | ntrifugal Blad   | der; Pump       | No.:            |
|   | th (WL in feet BTOC                     |                        | 12             |           | Other - Type                    | with the same of | 3.5  |                 |                 |
| 1   | Volumes to be purg                      | •                      |                |           | .7                              |                  | BARBASA<br>Bear Top □ □ O  | uh              |                 |
|   | Voidines to be pury                     | 8                      |                |           |                                 |                  |  |                 | in feet (BTOC): |
|   | ME CALUDIAN                             | 790                    |                |           | Debut in sear (c                | 5100):_          |  |                 | 100             |
| 110   |   | <u>2009</u>            | 2 .            | 5         |                                 |                  | THE RESERVE THE PARTY OF THE PA | }               | _ 10            |
| TD (feet)   | - <u>5.4</u> 2 X                        | D forber               | _ X <u>_ Z</u> | ₹ Vols    | X 0.0408                        | -                | 70.92  |                 | gallons         |
| ( SD (reed)   | The second accordance                   | D fuction              |                |           |                                 |                  | Calculated P   |                 |                 |
|   | Disentinuous                            |                        |                |           |                                 |                  |  | W PUR           | <b>GE YOUME</b> |
|   | 6:36 Stop                               |                        |                | 2         | _gpm Final_2                    | gp               | m  | <u>~</u>        | gallons         |
|   | ETER MEASURE                            |                        |                |           | GALLINS                         |                  |  |                 |                 |
| - Minutes Since<br>Pumping Began  | pH Cond.                                | m) T                   | Other_         | DITY      | -Minutes Since<br>Pumping Began | pH               | Cond.<br>(µmhos/cm)  | T PSE           | Other           |
| 3   | 6.83 1600                               | 16                     | V THE          | 90        | Co5 GALLON                      |                  | The same of the sa | 16.5            | St. turbu       |
| 25  | 6.71 1000                               | 17                     | V-MOD          | A.O       | 80                              | 6.75             | 500  | 15.0            | SI. turbia      |
| 40  | 6.75 1150                               | 17                     | HODT           | OB        |                                 |                  |  |                 | ====            |
| 52  | 6.79 620                                | 17                     | MOP-SI         | CBID      | 1                               |                  |  |                 |                 |
| 57  | 6.70 550                                | 17.5                   |                |           | Meter Nos.                      |                  |  |                 |                 |
| Observations Du   | ring Purging (Well C                    | Condition. Tur         | bidity. Color  | . Odor):  | Slight to                       | mod              | lerate pet   | nleur           | noder           |
|   | Disposal: Sanit                         |                        |                |           | Ø Other 55                      | 901              | Ion dour   | ~               |                 |
|   | V-3000000000000000000000000000000000000 | AND THE PART OF STREET |                | T CA      | UDI ING                         | <b>元</b>         | S-SIN NO.  |                 | PARKET SALES    |
| MANAGE TO SERVICE THE PARTY OF | en en en                                | Mes Trong              |                | F-50      | HOL THE ACAPTERS                | State No.        |  | The state of    | Table 1         |
| AMPLINGIN   |   |                        |                |           | Same As Ab                      |                  |  |                 |                 |
| ☐ Bailer - Type:  |   |                        |                |           |                                 |                  |  |                 |                 |
|   | ☐ Centrifugal ☐ Bla                     |                        |                |           | Other - Type                    | :                |  |                 |                 |
| Sample No.  | Volume/Cont.                            | ample Series           | Requested      |           |                                 | -                | 126  | 1 6             | omments         |
| gampie No.  | Volume/Cont.                            | Analysis r             | -wquested      | -         | reservatives                    | _                | Lab  | +               | omments         |
|   |   |                        |                |           |                                 |                  |  | 1               |                 |
|   |   |                        |                |           |                                 |                  |  | _               |                 |
|   | 1                                       |                        |                | _         |                                 | _                |  | +               |                 |
|   |   |                        |                | _         |                                 | _                |  | +               |                 |
|   |   |                        |                |           |                                 | _                |  | +               |                 |
|   |   |                        |                |           |                                 | _                |  | +               |                 |
|   | +                                       |                        |                | -         |                                 | _                |  | +               |                 |
| Parar me no:  | mno. *****                              |                        |                |           |                                 |                  |  |                 |                 |
|   | TROL SAMPLES                            | 5                      | o n            | Black C   | amples                          |                  | 01   | ner Sample      |                 |
|   | No. Duplicate San                       | nole No.               | Type           | DIRING S  | Sample No.                      |                  | Type   | -               | Sample No.      |
|   | - Spillante Oall                        | -                      | .,,,,,         |           | J-1. p. 1.00                    | $\dashv$         | .,,,,,   | -1-             |                 |
|   |   |                        |                |           |                                 | 7                |  |                 |                 |
|   |   |                        |                |           |                                 |                  |  |                 |                 |
|   |   | -                      |                |           |                                 |                  |  |                 |                 |

GROUN' WATER SAMPLING FORM

|   | iraine Lew                                       | rson Associr¶   |   |   | 200   | -           | - D  | MUL         | JEIG EN 1     |
|---|--|---|---|---|---|-------------|--|-------------|---------------|
| 3   |  | Geoscientists   |   |   | GHU   | JMI I       | WATER S  | SAMP        | ING FO        |
|   |  |   |   |   | Well No   | MI          | <u>0-5</u>   |             |               |
|   | _  |   |   |   | Well Type:  | Mon         | itor DExtra  | ction 🗆 (   | Other         |
| Job Name _  | Ex   | CYON A  | LAME  | 04  | . Well Materia  | ı ZE        | VC DSL S   | teel 🗆 C    | Other         |
|   |  | 67249   |   |   | Date/   | 1121        | 89   | Time        |               |
| Recorded by   |  | ary   | Olea  | seen  |   |             |  | (Initials)  |               |
| <b>建筑建筑设</b>  |  | ngejo ()  | Section 1   |   |   | 90 A 6      | No. of the latest and | (initials)  |               |
| *2 W  |  |   | A Children  | WELL  | PURGING 3   | 100         | ALL PARTY  | 200         | 240           |
| 国的GE VO   | The Person Named In                              |   |   |   | Ki Bailer - Typ   |             |  |             |               |
| Casing Diame  | ter (D in in                                     | ches):  |   |   | 🔀 Bailer - Typ  | e: <u>7</u> | " PVC  |             |               |
| 2-inch  | 4-inch [   | 6-inch DOM  | her   |   | ☐ Submersible   | e 🗆 Ce      | ntrifugal Blac   | ider; Pump  | No.:          |
|   |  | D in feet BTOC  |   | ,   | Other - Typ   |             |  |             |               |
|   |  | n feet BTOC):_  |   | /   | गाँच अस   | (a)         | n de   |             |               |
|   |  | to be purged (  | # Vols)   |   | ☐ Near Botton   | m 🗆 N       | ear Top 🔲 C  | ther        |               |
| □3 □4 □   |  |   | λ   |   | Depth in feet (   | BTOC):_     | Sore   | en interval | In feet (BTOC |
| BRGE VO   | 即原於  | to Union  |   | e ~)  |   |             |  |             | _ to          |
| (19.  | 5.   | 4/_\x_  | 4   | ²x_8  | X 0.0408  | =           | 70.95  | 1           |               |
| (TD (Teet)  |  |   | (inches)  | # Vo  | 9   |             | Calculated F   | Purge Volu  | me galic      |
| THE STI   | E dise   | Darling   | . ٤   | CE  |   |             | -  |             | GE VOLUM      |
| 1210 Start  | 1556 s   | top E   | Sapsed  | Initial   | gpm Final   |             | E S  | O GO        | LUNGallo      |
| MELD PARA   | METER A  | MEASUREME   | NT  | ***************************************                     |   | <b>9</b> Pi | n  | 0 0/7       | gallo         |
| Pumping Beg   | oe pH  | _   | TE SE   | OtherTuseIDI  | GALLENS<br>Minutes Since  | I           | Cond   | - 1X°C      | TURALL        |
| 6   |  |   | - Bered   |   | Louibud pedan   |             | Cond.<br>(µmhos/cm)  | TA:C        | Other RESIG   |
| 20  | 6.79   |   | 15  | NO TURB   | 100000  | -           | THE STATE OF THE S |             |               |
|   | 16.401   | 1150  | 15  | Y. THEBIO   | 80  | 6.62        | 610  | 14.0        | SL-HUO.T      |
|   |  | 1000  | 11 6  | 11 4  |   |             |  |             |               |
| 40  | 6.89   | -   | 16.5  | V. TURBID   | 1   |             |  |             |               |
| 40<br>50  | 6.80   | 910   | 14.0  | V. TURBID   |   |             |  |             |               |
| 40<br>50<br>65  | 6.89   | 910<br>650  | 16.0  | V. THRBID<br>SLIGHTLY TH                                    | Meter Nos.  |             |  |             |               |
| 40<br>50<br>65<br>Observations D  | 6.80<br>6.65<br>During Purg                      | 910<br>650<br>ing (Well Cond  | / (4.0<br>/ (4.0<br>ition, Turbic                               | V. TURBID<br>SLIGHTLY THE<br>dity, Color, Ode               | Meter Nos.  | oder        | + sheen  | on 43       |               |
| 40<br>50<br>65<br>Observations Discharge Water                              | 6.80<br>6.65<br>During Purg                      | 910<br>650<br>ing (Well Cond  | /(C.D.) /(C.D.) ition, Turbic                                   | V. TURBID<br>SLIBHTLY TU<br>dity, Color, Odd<br>Storm Sewer | Meter Nos.  petroleum  Other 55   | GAZ         | LON DRU  | н.          |               |
| 40<br>50<br>65<br>Observations Discharge Water                              | 6.80<br>6.65<br>During Purg                      | 910<br>650<br>ing (Well Cond  | /(C.D.) /(C.D.) ition, Turbic                                   | V. TURBID<br>SLIBHTLY TU<br>dity, Color, Odd<br>Storm Sewer | Meter Nos.  petroleum  Other 55   | GAZ         | LON DRU  | н.          |               |
| 40<br>50<br>65<br>Observations Discharge Water                              | 6.80<br>6.65<br>During Purg<br>er Disposal:      | 910<br>650<br>ing (Well Cond  | /(C.D.) /(C.D.) ition, Turbic                                   | V. TURBID<br>SLIBHTLY TU<br>dity, Color, Odd<br>Storm Sewer | Meter Nos.  Petroleum Other 55  | GAL         | LON DRU  | н.          |               |
| 40<br>50<br>65<br>Observations Discharge Water                              | 6.80<br>6.65<br>During Purg<br>er Disposal:      | 910<br>650<br>ing (Well Cond  | /(C.D.) /(C.D.) ition, Turbic                                   | V. TURBID<br>SLIBHTLY TU<br>dity, Color, Odd<br>Storm Sewer | Meter Nos.  petrolum  Other 55  MPLING  Same As Ab  | GAL         | LON DRU  | н.          |               |
| 40<br>50<br>65<br>Observations Discharge Water                              | 6.80<br>6.65<br>During Purg<br>er Disposal:      | 910<br>650<br>ing (Well Cond  | /(C.D.<br>/(C.D.)<br>ition, Turbic<br>Sewer                     | V. TURBID<br>SUBHTLY THE<br>dity, Color, Odd<br>Storm Sewer | Meter Nos.  Detroleum Other 55  MPLING  Same As Ab Grab - Type:                             | GAL.        | LON DRU  | H.          |               |
| 40<br>50<br>65<br>Observations Discharge Wate<br>Discharge Wate             | 6.80 6.65 During Purger Disposal:                | 910<br>650<br>ing (Well Cond<br>: Sanitary S  | /(J.D.) /(J.D.) ition, Turbic sewer                             | V. Turbi D  Sibh TLY Thi  dity, Color, Odd  Storm Sewer     | Meter Nos.  petrolum  Other 55  MPLING  Same As Ab  | GAL.        | LON DRU  | H.          |               |
| 40<br>50<br>65<br>Observations Discharge Water                              | 6.80 6.65  Ouring Purger Disposal:               | 910 650 ing (Well Cond : Sanitary S   | /(C.D.<br>/(C.D.)<br>ition, Turbic<br>Sewer                     | V. TURBID SUBHTLY THE dity, Color, Odd Storm Sewer          | Meter Nos.  Detroleum Other 55  MPLING  Same As Ab Grab - Type:                             | GAL.        | LON DRU  | н.          | * * * * * *   |
| Observations Discharge Water  APPING  Baller - Type  Submersible            | 6.80 6.65  Ouring Purger Disposal:               | 910 650 ing (Well Cond : Sanitary S   | /(J.D.) ition, Turbic Sewer   ; Pump No                         | V. TURBID SUBHTLY THE dity, Color, Odd Storm Sewer          | Meter Nos.  Detroleum Other 55  MPUNG  Same As Ab Grab - Type:                              | GAL.        | LON DRU  | н.          |               |
| Observations Discharge Water  APPING  Baller - Type  Submersible            | 6.80 6.65  Ouring Purger Disposal:               | 910 650 ing (Well Cond : Sanitary S   | /(J.D.) ition, Turbic Sewer   ; Pump No                         | V. TURBID SUBHTLY THE dity, Color, Odd Storm Sewer          | Meter Nos.  Detroleum Other 55  MPUNG  Same As Ab Grab - Type:                              | GAL.        | LON DRU  | н.          | * * * * * *   |
| Observations Discharge Water  APPING  Baller - Type  Submersible            | 6.80 6.65  Ouring Purger Disposal:               | 910 650 ing (Well Cond : Sanitary S   | /(J.D.) ition, Turbic Sewer   ; Pump No                         | V. TURBID<br>SUBHTLY THE<br>dity, Color, Odd<br>Storm Sewer | Meter Nos.  Detroleum Other 55  MPUNG  Same As Ab Grab - Type:                              | GAL.        | LON DRU  | н.          | *****         |
| Observations Discharge Water  APPING  Baller - Type  Submersible            | 6.80 6.65  Ouring Purger Disposal:               | 910 650 ing (Well Cond : Sanitary S   | /(J.D.) ition, Turbic Sewer   ; Pump No                         | V. TURBID<br>SUBHTLY THE<br>dity, Color, Odd<br>Storm Sewer | Meter Nos.  Detroleum Other 55  MPUNG  Same As Ab Grab - Type:                              | GAL.        | LON DRU  | н.          | * * * * * *   |
| Observations Discharge Water  APPING  Baller - Type  Submersible            | 6.80 6.65  Ouring Purger Disposal:               | 910 650 ing (Well Cond : Sanitary S   | /(J.D.) ition, Turbic Sewer   ; Pump No                         | V. TURBID<br>SUBHTLY THE<br>dity, Color, Odd<br>Storm Sewer | Meter Nos.  Detroleum Other 55  MPUNG  Same As Ab Grab - Type:                              | GAL.        | LON DRU  | н.          | * * * * * *   |
| Observations Discharge Water  APPING  Baller - Type  Submersible            | 6.80 6.65  Ouring Purger Disposal:               | 910 650 ing (Well Cond : Sanitary S   | /(J.D.) ition, Turbic Sewer   ; Pump No                         | V. TURBID<br>SUBHTLY THE<br>dity, Color, Odd<br>Storm Sewer | Meter Nos.  Detroleum Other 55  MPUNG  Same As Ab Grab - Type:                              | GAL.        | LON DRU  | н.          | * * * * * *   |
| Observations Discharge Water  APPING  Baller - Type  Submersible            | 6.80 6.65  Ouring Purger Disposal:               | 910 650 ing (Well Cond : Sanitary S   | /(J.D.) ition, Turbic Sewer   ; Pump No                         | V. TURBID<br>SUBHTLY THE<br>dity, Color, Odd<br>Storm Sewer | Meter Nos.  Detroleum Other 55  MPUNG  Same As Ab Grab - Type:                              | GAL.        | LON DRU  | н.          | * * * * * *   |
| Observations Discharge Water  APPING  Baller - Type  Submersible            | 6.80 6.65  Ouring Purger Disposal:               | 910 650 ing (Well Cond : Sanitary S   | /(J.D.) ition, Turbic Sewer   ; Pump No                         | V. TURBID<br>SUBHTLY THE<br>dity, Color, Odd<br>Storm Sewer | Meter Nos.  Detroleum Other 55  MPUNG  Same As Ab Grab - Type:                              | GAL.        | LON DRU  | н.          | * * * * * *   |
| Observations Discharge Water  APPING  Baller - Type  Submersible            | 6.80 6.65  During Purger Disposal:               | 910 650 ing (Well Cond: Sanitary S ugal Bladder N Samp  | /(J.D.) ition, Turbic Sewer   ; Pump No                         | V. TURBID<br>SUBHTLY THE<br>dity, Color, Odd<br>Storm Sewer | Meter Nos.  Detroleum Other 55  MPUNG  Same As Ab Grab - Type:                              | GAL.        | LON DRU  | н.          | * * * * * *   |
| Observations Discharge Water  AMPUNG  Baller - Type  Submersible  Sample No | 0.80 0.63 During Purger Disposal: Centrifus Volu | 9   0 6 50  ing (Well Cond : Sanitary S  agai Bladder  ON Samp me/Cont. A   | /(J.D.) ition, Turbio sewer  ; Pump No le Series: _ nalysis Reg | V. Turbi D Subh TLY Thi dity, Color, Odd Storm Sewer        | Meter Nos.  Detroleum Other 55  MPUNG  Same As Ab Grab - Type:                              | GAL.        | Lab  | н.          | omments       |
| Observations Discharge Water  AMPUNG  Baller - Type  Submersible  Sample No | 0.80 0.63 During Purger Disposal: Centrifus Volu | 910 650 ing (Well Cond: Sanitary S  January | /(J.D.) ition, Turbio sewer  ; Pump No le Series: _ nalysis Reg | V. Turbi D Subh TLY Thi dity, Color, Odd Storm Sewer        | Meter Nos.  Detrolaum Other 55  MPLING  Same As Ab Grab - Type: Other - Type  Preservatives | GAL.        | Lab  | CO CO       | omments       |

Job Name Exxon Assecte
Job Number DHILT 24902

Recorded by Mary Op Hassler

| WELL DEVELOPMENT  GROUNT WATER SAMPLING FORM                                       |
|--|
| Well No. HW  |
| Well Type: ☑ Monitor ☐ Extraction ☐ Other Well Material: ☑ PVC ☐ St. Steel ☐ Other |
| Date 1/12/89 Time  |

| Recorded by  |
|--|
| Casing Diameter (D in Inches):    2-inch   X4-inch   6-inch   Other     Submersible   Centrifugal   Bladder; Pump No.:     Total Depth of Casing (TD in feet BTOC):   9   Other - Type:     Water Level Depth (WL in feet BTOC):   5.66     Near Bottom   Near Top   Other     Number of Well Volumes to be purged (# Vole)   Depth in feet (BTOC):   Screen Interval in feet (BTOC)     3   4   5   10   Other   Depth in feet (BTOC):   Screen Interval in feet (BTOC)     TD (feet)   WL (feet)   X   4   2   X   8   X   0.0408   Calculated Purge Volume     16-1   E DSCLNTINUOUS PUHPLEX   III   3   gpm   Final   3   5   gpm   70   gallot     19   Start   1546   Stop   Elapsed   Initial   3   gpm   Final   3   5   gpm   70   gallot     19   PARAMETER MEASUREMENT   Calculated Purge Volume   Gallot   Start   |
| Casing Diameter (D in Inches):    2-inch   Diameter (D in Inches):   2-inch   Diameter (D in Inches):   3-inch   Diameter (D in Inches):   5-inch   Diameter (D in Inches):   5-inch   Diameter (D in Inches):   6-inch   Diameter (D inches):   6-in |
| Submersible   Centrifugal   Bladder; Pump No.:   Total Depth of Casing (TD in feet BTOC):   9  |
| Total Depth of Casing (TD in feet BTOC):   |
| Water Level Depth (WL in feet BTOC): 5.66  Number of Well Volumes to be purged (# Vole)    3   |
| Number of Well Volumes to be purged (# Vole)    3  |
| Depth in feet (BTOC): Screen Interval in feet (BTOC)  from to  (19 - 5,66) X 4 2 X 8 X 0.0408 = 69.67 galk  TD (feet) WL (feet) X D (inches) Vois Calculated Purge Volume  U:10 Start 1546 Stop Elapsed Initial 3 gpm Final 3.5 gpm 70 galk  ELD PARAMETER MEASUREMENT  Depth in feet (BTOC): Screen Interval in feet (BTOC)  from to  Calculated Purge Volume  GALLONS  |
| TD (feet) WL (feet) X U S X O.0408 = GALLONS  from to gallo from to gall |
| (19 - 5.66) X 4 2 X 8 X 0.0408 = 69.67 galle  TD (feet) WL (feet) X D (inches) & Vois Calculated Purge Volume  LIGHT LE DISCLINTINUOUS PLANDLE TO GALLONS  GALLONS  GALLONS  |
| U:10 Start 1546 Stop Elapsed Initial 3 gpm Final 2.5 gpm 70 gallo  |
| U:10 Start 1546 Stop Elapsed Initial 3 gpm Final 2.5 gpm 70 gallo  |
| U:10 Start 1546 Stop Elapsed Initial 3 gpm Final 2.5 gpm 70 gallo  |
| MELD PARAMETER MEASUREMENT GALLONS   |
| GALLING  |
| Territories Since   Long.   PN "C   PN DA NOTAL Minutes Since   Cond   Clark   |
| The state of the s |
| 10 6.75 1320 16.0 V. THEBIO 70 6.65 610 15.0 SLIGHTLY  |
| 18 6.71 870 16.5 V-NOO TUEB  |
| 40 664 690 16.0 MODTHEBID  |
| 52 6.59 680 15.0 MOD-SLIGHTLY  |
| 65 6.58 600 15.0 \$16HTLY TURE Meter Nos.  |
| Observations During Purging (Well Condition, Turbidity, Color, Odor):  |
| Discharge Water Disposal: Sanitary Sewer Storm Sewer Storm Sewer Storm Sewer   |
| THE PARTY OF THE P |
| AMPLING METHOD Same As Above   |
| ☐ Baller - Type: ☐ Grab - Type:  |
| Submersible Centrifugal Bladder; Pump No.: Other - Type:   |
| AMPLE DISTRIBUTION Sample Series:  |
| Sample No. Volume/Cont. Analysis Requested Preservatives Lab Comments  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
| Burning and a second se |
| DUALITY CONTROL SAMPLES  Duality Control Samples  Plant Constant   |
| Duplicate Samples Blank Samples Other Samples  |
| A TO A T   |
| Duplicate Samples Blank Samples Other Samples  |
| Duplicate Samples Blank Samples Other Samples  |

34 LONS

| ,   | ers and Geoscientist   |  |  | Well No   | MW-  | -/                  |  | ING FC  |
|---|--|--|--|---|--|---------------------|--|---------|
| 6.6   |  |  |  | Well Type:  |  |                     | tion 🗆 🗅   | ther    |
| Job NameE   | xxon Ale   | meda   | _  | Well Materia  |  |                     |  |         |
| Job NumberC   | 1416724  | 4902   |  | Date/ -   |  |                     |  |         |
| Job Number<br>Recorded by   | mary   | Binner   | slen   | Sampled by  |  | <i>H</i>            |  |         |
|   |  | W. 15 (10)   | SEWIE  | PURGING SE  |  |                     | protein)   |         |
| FREENON   | 阻  |  |  | 1762116   | 7575   |                     | No. of Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of |         |
| Casing Diameter (   | D in inches);  |  |  | ☐ Bailer - Typ  | Contraction of the last of the |                     |  |         |
| 2-inoh 🗷 4-in   | nch 6-Inch [   | Other  |  | Dubmersible   | - /  | fucal DiBlad        | der Pumo   | No :    |
| Total Depth of Car  | sing (TD in feet BT  | roc): 21.  | 5  | Other - Typ   | •  | =                   |  |         |
|   | (WL in feet BTOC   |  |  |   |  |                     |  |         |
| Number of Well Vo   | blumes to be purg  | ed (# Vols)  |  | Near Botton   | m 🗆 Near   | Top DO              | ther   |         |
| Ø3 □4 □5 I  | ☐ 10 ☐ Other   |  |  | Depth in feet (                                       |  |                     |  |         |
| Tile at the first   | · · · · · · · · · · · · · · · · · · ·  | • **   |  |   |  | form                |  | 40      |
| 1 21.5 -  | 5.81 14  | 4  | ² y 3  | Vols X 0.0408   | - 3  | 0.73                |  |         |
| TD (feet)   | WL (feet)  | D (Inches)   | -^ <del>-</del>                                  | Vols  |  | Calculated P        | urpe Volum   | ne 91   |
| 1550 Start 16   | 36 Stop  | — Eapsed   | Initial 3  | 3 gpm Final 5   | gpm  | 30                  | S  | SE YOU  |
| Minutes Since<br>Pumping Began  |  |  | Ton-Turb   | Minutes Since<br>Pumping Began                        | рН   | Cond.<br>(µmhos/cm) | ⊤R:°¢  | lo.     |
|   | 6.84 GOU   |  |  |   | pri  | (µmhos/cm)          | 'D°F   | Other   |
|   | 6.85 620   |  |  |   | +  |                     |  | -       |
| 30  | 6.94 570   |  | clea   |   | + +  |                     |  | -       |
|   | 370  | 16.5   | · LACA   |   | +  |                     |  |         |
|   |  |  | <del>                                     </del> | Meter Nos.  | + +  |                     | _  |         |
| Observation 5 :   | Dunion Matrix  | N. 104 W 11  |  |   |  |                     |  |         |
|   |  |  |  |   |  |                     | _  |         |
| Observations Durin  |  |  |  |   |  |                     | 120 - F -  |         |
| Discharge Water D   |  | THE PERSON OF LABOR.   | SE INC.  |   | STATE OF THE PARTY |                     | CHOMESTARIO  |         |
| Discharge Water D   | 1.0  |  |  | SAMPLING  | 1  |                     | A STATE OF   |         |
| Discharge Water D   | neon   |  |  | □ Same As Ab  | XOV8   |                     | and the same   |         |
| Discharge Water D   | i <b>HÖÖ</b><br>Fainles  | s steel  | 2.   | ☐ Same As Ab<br>☐ Grab - Type                         | :  |                     | Priza de sala  |         |
| Discharge Water D  AMPUNG ME  Baller - Type:  | THOO<br>Foundes<br>Centrifugal □Bla  | S Sheet  | <u>1</u>   | ☐ Same As Ab<br>☐ Grab - Type                         | :  |                     |  |         |
| AMPING ME  Baller - Type:  Submersible  | THOO<br>Fauntes<br>Centrifugal ☐ Bla   | S Sheet<br>adder; Pump No<br>Sample Series:                    | <u>)</u> .                                       | Same As Ab Grab - Type Other - Type                   | :  |                     |  |         |
| Discharge Water D  AMPLING ME  Baller - Type:  Submersible  Sample No.                              | THOO<br>FaunleS<br>Centrifugal □Bla<br>IBUTION S<br>Volume/Cont.                         | S Steel adder; Pump No Sample Series: Analysis Re              | o.:  | Same As Ab Grab - Type Other - Type Preservatives     | :<br>•:  | Lab                 |  | omments |
| Discharge Water D  AMPLING ME  Submersible □  AMPLE DISTR   | THOO<br>Fauntes<br>Centrifugal ☐ Bla   | S Steel adder; Pump No Sample Series: Analysis Re              | o.:  | Same As Ab Grab - Type Other - Type                   | :  | Lab                 | Q  | omments |
| Discharge Water D  AMPLING ME  Baller - Type:  Submersible   Sample No.                             | THOO<br>FaunleS<br>Centrifugal □Bla<br>IBUTION S<br>Volume/Cont.                         | S Steel adder; Pump No Sample Series: Analysis Re              | o.:  | Same As Ab Grab - Type Other - Type Preservatives     | Ne   | Lab                 | _  | omments |
| Discharge Water D  AMPTING ME  Baller - Type:  Submersible   Sample No.                             | Centrifugal Bla  | S Steel adder; Pump No Sample Series: Analysis Re              | o.:  | Same As Ab Grab - Type Other - Type Preservatives     | :<br>•:  | Lab                 | Q  | omments |
| Discharge Water D  AMPTING ME  Baller - Type:  Submersible   Sample No.                             | Centrifugal Bla  | S Steel adder; Pump No Sample Series: Analysis Re              | o.:  | Same As Ab Grab - Type Other - Type Preservatives     | Ne   | Lab                 | Q  | omments |
| Discharge Water D  AMPUNG ME  Baller - Type:   Submersible □  AMPLE DISTR  Sample No.  MW - I       | Centrifugal Bla    Burnion   S   Volume/Cont.   Humi VDA                                 | S Steel  Idder; Pump No  Sample Series:  Analysis Re  TPH (gas | quested b) BTKE                                  | Same As Ab Grab - Type Other - Type Preservatives HCL | Ne   | Lab                 |  |         |
| Discharge Water D  AMPUNG ME  Saller - Type:  Submersible □  Sample No.  MW-I  DUALITY CONT  Duplic | Centrifugal Bla    Burnies     Centrifugal   Bla   Burnies     Volume/Cont.     Humi Voa | S Steel  | quested b) BTKE                                  | Same As Ab Grab - Type Other - Type Preservatives     | Ne   | Lab                 | er Samples   |         |

| TEREFE TUBELOO   | g Lawson Assor<br>rs and Geoscientis   |   |                   |           |   |             |             | SAMPL         | ING          |
|--|--|---|-------------------|-----------|---|-------------|-------------|---------------|--------------|
|  |  |   |                   |           | Well No   | · /         | _           |               |              |
|  |  | 2/-   |                   |           | Well Type:  |             |             |               |              |
| Job Name Ex  |  |   |                   | _         | Well Material: DEVC ☐ St. Steel ☐ Other               |             |             |               |              |
| Job Number $	ext{	ext{	ext{	ext{	ext{	ext{	ext{	ext$                   |  | 2470  | المه ا            | -         | Date  |             |             |               |              |
| Recorded by  | raripa   | (Signature)   |                   |           | Sampled by  | M;          | 2.H         | (Indials)     |              |
| W. 14 .  |  | 五届1000000   | GE TI             | 11 201    | DCINO MEN   |             |             | CARTERION AND | 100 SC 20025 |
| Inc North  |  | A   | - 41-1-11         | Table St. | THE PARTY OF  |             |             |               | ATT AND      |
| Casing Diameter (I   | Name of the last o |   |                   |           | C Poller To   |             | PUC         |               |              |
| 2-inch 104-in  | The state of the s | 7000  |                   |           | Bailer - Type   |             |             | ad. =         |              |
| Total Depth of Cas   | sing (TD in feet RI  | roc: 76   |                   |           | ☐ Submersible ☐ Other - Type                          |             | unvga (1818 | idaer; Pump   | No.:         |
| Water Level Depth  | (WL in feet BTOO   | 3.90  | 0                 |           | C Det Nation  |             | uv é        |               |              |
| Number of Well Vo  |  | 77.17   |                   |           | Near Botton   |             |             | Other         |              |
| M3 04 05 E   |  | , , , , , , ,   |                   |           | Depth in feet (E                                      |             |             |               | in fact /5   |
|  | Barter of  | 0.6   |                   |           |   |             |             | m             |              |
| 1 591-   | 596 x  | _ 4   | 2                 | 3         | _ X 0.0408  | _ /         |             |               |              |
| TD (feet)  | WL (feet)  | D (inches   |                   | Vols P    | _ ^ 0.0408  | _/          | Calculated  | Purge Volum   | me           |
| TREETINE   | BALL   | 47  |                   | es i      | <b>T</b>  |             | 250         |               |              |
| 10:08 Start 11:  |  | Flancad   |                   |           |   |             |             | UALTEUR<br>20 | GE.VOI       |
| ELD PARAME   |  |   | mittal            |           | gpm Final   | <b>S</b> bu | T           |               |              |
| -Minutes Since<br>Pumping Began  | pH Cond.   |   | C ON THE          | bd. W     | , Minutes Since<br>Pumping Began                      |             | Cond.       | T - □°C       | 198          |
| -  | 6.10 89  |   |                   |           |   |             | (umhos/cm)  | ⊤Biệ          | Other_       |
|  | 6.71 850   | -   | Cloud             | y.        | slight she  | 20          | ion         | -             | -            |
|  | 0.83 86  |   | D V. Sl. C        | Lay       |   |             |             |               | -            |
| 20 9   | 2.02   | 17,   | U. aric           | 2000      | 1   | -           |             |               | -            |
|  |  | +   |                   | — 4       | Meter Nos.  |             |             |               |              |
|  | a Buston for a f   |   |                   | الـــا    |   | 4,00        | 10.1        | ./            | oda          |
| Observations Puris-  | u Purging (Well (  | ondition, Tu  | roldity, Color,   | Odor):    | -3614   |             | - MCTY      | - Lecen       | _ 40         |
| Observations Durin   | enocal: Do   | Ana Carre   | □ 64 61           |           | 55  | 00          | 1 de        |               |              |
| Discharge Water Di   | sposal: Sanit  | ary Sewer   | ☐ Storm Se        | wer D     | Other 55  | ga          | 1 dru       | <u>~~</u>     |              |
| Discharge Water Di   | isposal: 🔲 Sanit   | ary Sewer   | Storm Se          | wer D     | Other 55  | ga          | 1 dru       |               |              |
| Discharge Water Di   | sposal: Sanit  |   | ME WES            | wer (     | Other 55  | ga.         | 1 dru       | ~             |              |
| Discharge Water Di   | sposal: □Sanit   | 14 st   | WEL               | wer (     | Other 55  | ga          | l' dru      |               |              |
| Discharge Water Di   | Sanit  | ad 5t   | WEL<br>WEL        | wer (     | Other 55  Same As Abo                                 | 9a.         | l' dru      |               |              |
| Discharge Water Di   | Sanitical Saniti | ad 5t<br>adder; Pump<br>Sample Serie                      | No.:              | LSAV      | Same As Abo   | 9a.         | l' dru      | ~~<br>(**, *) |              |
| Discharge Water Di  MPLING ME  Baller - Type:  Submersible  Sample No. | Sposal: Sanit  | adder; Pump<br>Sample Serie<br>Analysis I                 | No.:s:            | Pre       | Other 55  Same As Abo Grab - Type: Other - Type:      | ga<br>w     | Lab         | ~~<br>(**, *) |              |
| Discharge Water Di   | Sanitical Saniti | adder; Pump<br>Sample Serie<br>Analysis I                 | No.:              | Pre       | Other 55  Same As Abo Grab - Type: Other - Type:      | 9a.         | Lab         | ~~<br>(**, *) |              |
| Discharge Water Di  MPLING ME  Baller - Type:  Submersible  Sample No. | Sposal: Sanit  | adder; Pump<br>Sample Serie<br>Analysis I                 | No.:s:            | Pre       | Other 55  Same As Abo Grab - Type: Other - Type:      | ga<br>w     | Lab         | ~~<br>(**, *) |              |
| Discharge Water Di  MPLING ME  Baller - Type:  Submersible  Sample No. | Sposal: Sanit  | adder; Pump<br>Sample Serie<br>Analysis I                 | No.:s:            | Pre       | Other 55  Same As Abo Grab - Type: Other - Type:      | ga<br>w     | Lab         | ~~<br>(**, *) |              |
| Discharge Water Di  MPLING ME  Baller - Type:  Submersible  Sample No. | Sposal: Sanit  | adder; Pump<br>Sample Serie<br>Analysis I                 | No.:s:            | Pre       | Other 55  Same As Abo Grab - Type: Other - Type:      | ga<br>w     | Lab         | ~~<br>(**, *) |              |
| Discharge Water Di  MPLING ME  Baller - Type:  Submersible  Sample No. | Sposal: Sanit  | adder; Pump<br>Sample Serie<br>Analysis I                 | No.:s:            | Pre       | Other 55  Same As Abo Grab - Type: Other - Type:      | ga<br>w     | Lab         | ~~<br>(**, *) |              |
| Discharge Water Di  MPLING ME  Baller - Type:  Submersible  Sample No. | Sposal: Sanit  | adder; Pump<br>Sample Serie<br>Analysis I                 | No.:s:            | Pre       | Other 55  Same As Abo Grab - Type: Other - Type:      | ga<br>w     | Lab         | ~~<br>(**, *) |              |
| Discharge Water Di  MPLING ME  Baller - Type:  Submersible  Sample No. | Sposal: Sanit  | adder; Pump<br>Sample Serie<br>Analysis I                 | No.:s:            | Pre       | Other 55  Same As Abo Grab - Type: Other - Type:      | ga.         | Lab         | ~~<br>(**, *) |              |
| Baller - Type:  Submersible  Sample No.  HW-2                          | Sposal: Sanita  Sposal: Sposal: Sanita  Sposal: Sposal | ad Stadder; Pump<br>Sample Serie<br>Analysis I<br>7PH (ga | No.:Requested     | Pri HC    | Same As About Grab - Type: Other - Type:              | ga.         | Lab         |               | omments      |
| Discharge Water Di   | Sposal: Sanita  Sanita  Sanita  Sanita  Sanita  Sanita  Sanita  Sanita  Centrifugal Bla  Buron S  Volume/Cont.  40 m1. UCA  ROL SAMPLES  ate Samples   | ad St.  idder; Pump Sample Serie  Analysis I TPH(ga       | No.:<br>Requested | Pre       | Same As About Grab - Type:  Other - Type:  Servatives | ga.         | Lab         | her Sample    | omments      |
| Baller - Type:  Submersible  Sample No.  HW-2                          | Sposal: Sanita  Sanita  Sanita  Sanita  Sanita  Sanita  Sanita  Sanita  Centrifugal Bla  Buron S  Volume/Cont.  40 m1. UCA  ROL SAMPLES  ate Samples   | ad St.  idder; Pump Sample Serie  Analysis I TPH(ga       | No.:Requested     | Pri HC    | Same As About Grab - Type: Other - Type:              | ga.         | Lab         | her Sample    | omments      |
| Discharge Water Di   | Sposal: Sanita  Sanita  Sanita  Sanita  Sanita  Sanita  Sanita  Sanita  Centrifugal Bla  Buron S  Volume/Cont.  40 m1. UCA  ROL SAMPLES  ate Samples   | ad St.  idder; Pump Sample Serie  Analysis I TPH(ga       | No.:<br>Requested | Pri HC    | Same As About Grab - Type:  Other - Type:  Servatives | ga.         | Lab         | her Sample    | omments      |
| Discharge Water Di   | Sposal: Sanita  Sanita  Sanita  Sanita  Sanita  Sanita  Sanita  Sanita  Centrifugal Bla  Buron S  Volume/Cont.  40 m1. UCA  ROL SAMPLES  ate Samples   | ad St.  idder; Pump Sample Serie  Analysis I TPH(ga       | No.:<br>Requested | Pri HC    | Same As About Grab - Type:  Other - Type:  Servatives | ga.         | Lab         | her Sample    | omments      |

| Engine                               | ing Lawson Asso<br>ers and Geoscientis   |                                      |           |                | GROU                                  | INÍ.        | WATER      | SAM                  | PLING FOR           |
|--------------------------------------|--|--------------------------------------|-----------|----------------|---------------------------------------|-------------|------------|----------------------|---------------------|
|                                      |  |                                      |           |                | Well No/                              |             |            |                      |                     |
|                                      |  | 1                                    | lan.      |                | Well Type:                            | Moni        | tor DExt   | raction [            | Other               |
| Job Name <u>E</u>                    |  | Hame                                 |           |                | Well Material                         | l: XiP      | VC □ St.   | Steel [              | ☐ Other             |
| lob Number                           | 1  | 24902                                |           |                |                                       |             |            | Time                 | 4:06/16             |
| lecorded by _                        | Thany (  | (Signatura)                          |           |                | Sampled by                            | <u>LM</u>   | <u>H</u>   | (Initials)           |                     |
|                                      | 100  |                                      | H-W       | UP.            | IRGING                                |             |            |                      |                     |
| RECESOR                              | NE   |                                      |           |                | De de                                 | 966         |            | Brackley Line        | COMPTONE THE CITY   |
| Casing Diameter                      | (D in inches):   |                                      |           |                | ☐ Bailer - Type                       |             |            |                      |                     |
|                                      | inch 6-inch  | Other                                |           |                | Submersible                           |             | rifuget 🗀  | Diaddan B.           | and No.             |
|                                      | ssing (TD in feet B  |                                      | 5         |                | Other - Type                          | *           | nueğer 🗀 i | maddel; Pr           | mb 46"              |
| Water Level Dep                      | th (WL in feet BTO   | ci: 5.49                             | Į.        |                | · · · · · · · · · · · · · · · · · · · |             | dia-       |                      |                     |
|                                      | folumes to be pury   |                                      |           |                | Near Botton                           |             |            | 700                  |                     |
| 3 □4 □5                              |  | ,                                    |           |                |                                       |             |            |                      |                     |
|                                      | TERNETAL   | 6.5                                  |           |                | paper in test (c                      | 31 OOJ:     |            |                      | val in feet (BTOC): |
| 114.5 -                              | 5 HO 1   | 11                                   | 2         | 2              |                                       |             | N 55       | rom                  | to                  |
| TD (feet)                            | WI Wast  | 7                                    | _×        | <u>J</u>       | _ X 0.0408                            | - <u>17</u> |            |                      | gallor              |
|                                      | 1  | D (inches)                           |           |                |                                       |             | Calculate  | d Purge Vi           | olume               |
|                                      | discontin  |                                      | 1.1       | ( <b>4</b> ) ( | Œ                                     |             | 17         | JUALP                | JAGE VOLLAGE        |
| 330 Start L                          | the state of the s | Elapsed                              | initial   | 1.25           | gpm Final                             | gpm         |            | 30                   | gallon              |
|                                      | ETER MEASUR  | MENT                                 |           |                |                                       | 324         | (          | 5 cosi               | ng volumes)         |
| *Minutes Since<br>Pumping Began      | pH Cond.   | cm) TOC                              | Other741  | bdita          | Minutes Since<br>Pumping Began        | рН          | Cond.      | 1-0                  |                     |
| 5                                    | 6.55 596   |                                      | V.Slig    | ht.            | rumping began                         |             | (umhos/cr  | <u>ω)   . Π.</u>     | F Outer             |
| 8                                    | 699 550  |                                      | Sligh     |                |                                       |             |            | +                    |                     |
| 12                                   | 6.73 420   | -                                    | V. Slig   |                |                                       |             |            |                      |                     |
| 18                                   | 6.65 400   |                                      |           |                | tsheen                                | -           |            | _                    |                     |
| 30                                   | 6.70 416   |                                      |           | _              |                                       |             |            |                      |                     |
|                                      |  |                                      | clea      |                | Meter Nos.                            |             | ha. /      |                      | 1                   |
|                                      |  |                                      |           |                |                                       |             |            |                      | dorslight           |
|                                      | Disposal: Sani   |                                      | Storm Se  | ewer 1         | Other55_                              | galler      | n dru      | m                    |                     |
|                                      |  | - 17.50                              | WEL       | LSAN           | IPLING 2                              |             | A.         |                      |                     |
| AMPLING ME                           | 2212 2012 1 2  |                                      |           | -              | ☐ Same As Abo                         |             |            | Contract of the last |                     |
| Baller - Type:                       | Stainless.   | steel                                |           |                |                                       |             |            |                      |                     |
|                                      |  |                                      |           | _              | Grab - Type:                          |             |            |                      |                     |
| Submersible F                        | Centrifuset   Di-  | кочен, гиптр М                       |           |                | Other - Type:                         |             |            |                      |                     |
| Submersible [                        |  |                                      |           |                |                                       |             |            |                      |                     |
| PAMPLE DIST                          | RIBUTION   | Sample Series:                       |           |                | esecutives T                          |             | Leb        |                      | Comments            |
| Sample No.                           | Volume/Cont.   | Sample Series:<br>Analysis Re        | quested   |                | eservatives                           | Ton         | Lab        |                      | Comments            |
| Sample No.                           | RIBUTION   | Sample Series:<br>Analysis Re        | quested   | H C            |                                       | Tra         | Lab        |                      | Comments            |
| Sample No.                           | Volume/Cont.   | Sample Series:<br>Analysis Re        | quested   |                |                                       | Tra         |            |                      | Comments            |
| Sample No.                           | Volume/Cont.   | Sample Series:<br>Analysis Re        | quested   |                |                                       | Tra         |            |                      | Comments            |
| Sample No.                           | Volume/Cont.   | Sample Series:<br>Analysis Re        | quested   |                |                                       | Tra         |            |                      | Comments            |
| Sample No.                           | Volume/Cont.   | Sample Series:<br>Analysis Re        | quested   |                |                                       | Tra         |            |                      | Comments            |
| Sample No.                           | Volume/Cont.   | Sample Series:<br>Analysis Re        | quested   |                |                                       | Tra         |            |                      | Comments            |
| PAMPLE DIST                          | Volume/Cont.   | Sample Series:<br>Analysis Re        | quested   |                |                                       | Tra         |            |                      | Comments            |
| Sample No.                           | Volume/Cont.   | Sample Series: Analysis Re TPH Lga 5 | quested   |                |                                       | Tra         |            |                      | Comments            |
| Sample No.  MW-3  DUALITY CON        | Volume/Cont.  40 ml. V0 A  | Sample Series: Analysis Re TPH Lga 5 | quested   | He             | -1                                    | Tra         | ce         |                      |                     |
| Sample No.  MW-3  DUALITY CON  Dupli | Volume/Cont.  YO m.l. VO A  ROL SAMPLES cate Samples   | Sample Series: Analysis Re TPH Lga 5 | quested 5 |                | mples                                 | Tra         | ce         | Other Sami           | ples                |
| Sample No.  MW-3  DUALITY CON  Dupli | Volume/Cont.  40 ml. V0 A  | Sample Series: Analysis Re TPH Lga 5 | quested   | He             | -1                                    | Tra         | ce         | Other Samp           |                     |
| Sample No.  MW-3  DUALITY CON  Dupli | Volume/Cont.  YO m.l. VO A  ROL SAMPLES cate Samples   | Sample Series: Analysis Re TPH Lga 5 | quested 5 | He             | mples                                 | Tra         | ce         | Other Sami           | ples                |
| Sample No.  MW-3  DUALITY CON  Dupli | Volume/Cont.  YO m.l. VO A  ROL SAMPLES cate Samples   | Sample Series: Analysis Re TPH Lga 5 | quested 5 | He             | mples                                 | Tra         | ce         | Other Sami           | ples                |
| Sample No.  MW-3  DUALITY CON  Dupli | Volume/Cont.  YO m.l. VO A  ROL SAMPLES cate Samples   | Sample Series: Analysis Re TPH Lga 5 | quested 5 | He             | mples                                 | Tra         | ce         | Other Sam            | ples                |

| Engineers   | s and Geoscientists  |   |                        |                          |   | Alls)-     | . L.L.   |                    |         |
|---|--|---|------------------------|--------------------------|---|------------|--|--------------------|---------|
|   |  |   |                        |                          | Well No   |            |  |                    |         |
|   |  |   |                        |                          |   |            | itor DExtrac   |                    |         |
| ob Name Exy   | con Ala  | meda_   | <del></del>            | _                        | Well Materi   | al: ELF    | PVC St. St   | eel 🗆 C            | ther    |
| ob Number <u> </u>  |  |   |                        |                          |   |            | 9  |                    |         |
| ecorded by  | mary 7   | Signatura)  | N                      | _                        | Sampled b   | y 143      | <u> </u>   | (Initials)         |         |
|   |  | 母表生物  | S WE                   | LPU                      | IGING   |            |  |                    | erit.   |
| THE PORT  | Ë  |   |                        |                          | Trent   | 7.100      |  | H. West - Sec. 111 |         |
| Casing Diameter (D  | in inches):  |   |                        |                          | ☐ Bailer - Ty   | -          | )  |                    |         |
| □ 2-inch 🖾 4-inc  | th 🛮 6-inch 🖽  | Other   |                        |                          | ☐ Submersit   | le Rice    | ntrifugal 🔲 Blac   | ider: Pump         | No.:    |
| ☐ 2-inch  | ing (TD in feet BT   | oc): 19   |                        | _                        | Other - Ty  |            | -  |                    |         |
| Water Level Depth   | (WL in feet BTOC)  | 5.3   | 6                      |                          | SAP WIL   | Van Car    | res a  |                    |         |
| Number of Well Vol  | lumes to be purge  | d (# Vols)  |                        |                          |   |            | lear Top D   | ther               |         |
| Ď3 □4 □5 □  | 10 DOther  |   |                        | _                        |   |            | Scre   |                    |         |
|   | Establish (  |   |                        |                          |   | ,          |  |                    | _ to    |
| 119 -   | 530 X  | - 4   | 2 v 7                  | 3                        | Y 0.0400  | 2          | 26.71  |                    |         |
| TD (feet)   | WL (feet)  | D (Inches)  | -^- <del>~</del>       | Vols                     | _ ^ U.U4U8  | -          | Calculated F   |                    | ne 9    |
| MEDIE C   | liscontino   | اكتاضا  | 9500                   | ં≢્રોધ                   | E   |            | (managed to a control of the control |                    |         |
| 6:45 Start 17   | 260  |   |                        |                          |   |            |  | IAL PUR            | GE VOLU |
| ELD PARAMET   |  |   | initial _              |                          | pm Final  | 9P         | m 🚅  | 2                  |         |
|   | THE PERSON NAMED IN COLUMN TO PERSON NAMED IN  |   | 1 - 0                  | 0.04                     | Minutes Sino  |            | Cond   | Пес                |         |
|   |  | m) T -F   |                        |                          | Minutes Sinor<br>Pumping Bega                               | n pH       | (µmhos/cm)   | T B:°F             | Other   |
| 7 4   | 0.74 700   |   | V.Slic                 | ght 1                    |   |            |  |                    |         |
|   |  |   |                        |                          |   |            |  |                    |         |
| 25 4  | .78 600  | 15.2  | Sligh                  |                          |   |            |  |                    |         |
| 25 6  | .78 600  | 15.2  | Stigi                  |                          |   |            |  |                    |         |
| 25 4  | 78 600   | 15.2  | Stigi                  |                          |   |            |  |                    |         |
| 25 6  | 78 600   | 15.2  | Stigi                  |                          | Meter Nos.  |            |  |                    |         |
| Observations During   | Purging (Well C  | andition Turbi  | dity Color             | Orion):                  |   |            |  |                    |         |
| Observations During   | Purging (Well C  | andition Turbi  | dity Color             | Orion):                  |   | 5 ga       | llon dr  | rem                |         |
| Observations During   | Purging (Well C  | ondition, Turbi   | idity, Color,          | Odar): _                 | Other 5   | 5 ga       | llon de  | un                 |         |
| Observations During<br>Discharge Water Dis  | Purging (Well C  | ondition, Turbi   | dity, Color,           | Odor): _                 | Cother 5  | W          | llon dr  | un                 |         |
| Observations During<br>Discharge Water Dis  | Purging (Well C  | ondition, Turbi   | dity, Color,           | Odor): _<br>wer S        | Other5 PLING  | bove       | gayar.   | un                 |         |
| Observations During<br>Discharge Water Dis<br>AMPLING MET<br>Baller - Type:   | Purging (Well Cosposal: Sanita   | ondition, Turbi   | dity, Color, Storm Sev | Odar): _<br>wer S        | Other5  PLING  Same As A                                    | bove<br>e: | iga jene   | um                 |         |
| Observations During<br>Discharge Water Dis<br>Discharge Water Dis<br>Discharge Water Discharge Water Di | Purging (Well Cosposal: Sanita   | ondition, Turbi   | dity, Color, Storm Sev | Odar): _<br>wer S        | Other5 PLING  | bove<br>e: | iga jene   | un                 |         |
| Observations During Discharge Water Dis MPLING MET Saller - Type: Submersible [] (  | Purging (Well Coposal: Sanita  | ondition, Turbi   | dity, Color, Storm Sev | Odor): _<br>wer S        | Cother  | bove<br>e: |  |                    |         |
| Observations During Discharge Water Dis MPLING MET Saller - Type: Submersible [] ( AMPLE DISTRI Sample No.  | Purging (Well Cosposal: Sanita   | ondition, Turbing Sewer  Local Sewer  Idder; Pump Note ample Series:  Analysis Received   | Storm Sev              | Odor): _<br>wer S<br>SAM | Other5  PING Same As A  Grab - Typ  Other - Typ  servatives | bove<br>e: | igi i i i i i i i i i i i i i i i i i i  |                    | omments |
| Observations During Discharge Water Dis MPLING MET Saller - Type: Submersible [] (  | Purging (Well Coposal: Sanita  | ondition, Turbing Sewer  Local Sewer  der; Pump Note ample Series:  Analysis Rec  | Storm Sev              | Odor): _<br>wer S<br>SAM | Cother  | bove<br>e: |  |                    |         |
| Observations During Discharge Water Dis MPLING MET Saller - Type: Submersible [] ( AMPLE DISTRI Sample No.  | Purging (Well Cosposal: Sanita   | ondition, Turbing Sewer  Local Sewer  Idder; Pump Note ample Series:  Analysis Received   | Storm Sev              | Odor): _<br>wer S<br>SAM | Other5  PING Same As A  Grab - Typ  Other - Typ  servatives | bove<br>e: | igi i i i i i i i i i i i i i i i i i i  |                    |         |
| Observations During Discharge Water Dis MPLING MET Saller - Type: Submersible [] ( AMPLE DISTRI Sample No.  | Purging (Well Cosposal: Sanita   | ondition, Turbing Sewer  Local Sewer  Idder; Pump Note ample Series:  Analysis Received   | Storm Sev              | Odor): _<br>wer S<br>SAM | Other5  PING Same As A  Grab - Typ  Other - Typ  servatives | bove<br>e: | igi i i i i i i i i i i i i i i i i i i  |                    |         |
| Observations During Discharge Water Dis MPLING MET Saller - Type: Submersible [] ( AMPLE DISTRI Sample No.  | Purging (Well Cosposal: Sanita   | ondition, Turbing Sewer  Local Sewer  Idder; Pump Note ample Series:  Analysis Received   | Storm Sev              | Odor): _<br>wer S<br>SAM | Other5  PING Same As A  Grab - Typ  Other - Typ  servatives | bove<br>e: | igi i i i i i i i i i i i i i i i i i i  |                    |         |
| Observations During Discharge Water Dis MPLING MET Saller - Type: Submersible [] ( AMPLE DISTRI Sample No.  | Purging (Well Cosposal: Sanita   | ondition, Turbing Sewer  Local Sewer  Idder; Pump Note ample Series:  Analysis Received   | Storm Sev              | Odor): _<br>wer S<br>SAM | Other5  PING Same As A  Grab - Typ  Other - Typ  servatives | bove<br>e: | igi i i i i i i i i i i i i i i i i i i  |                    |         |
| Observations During Discharge Water Dis MPLING MET Saller - Type: Submersible [] ( AMPLE DISTRI Sample No.  | Purging (Well Cosposal: Sanita   | ondition, Turbing Sewer  Local Sewer  Idder; Pump Note ample Series:  Analysis Received   | Storm Sev              | Odor): _<br>wer S<br>SAM | Other5  PING Same As A  Grab - Typ  Other - Typ  servatives | bove<br>e: | igi i i i i i i i i i i i i i i i i i i  |                    |         |
| Observations During Discharge Water Dis MPLING MET Saller - Type: Submersible [] ( AMPLE DISTRI Sample No.  | Purging (Well Cosposal: Sanita   | ondition, Turbing Sewer  Local Sewer  Idder; Pump Note ample Series:  Analysis Received   | Storm Sev              | Odor): _<br>wer S<br>SAM | Other5  PING Same As A  Grab - Typ  Other - Typ  servatives | bove<br>e: | igi i i i i i i i i i i i i i i i i i i  |                    |         |
| Observations During Discharge Water Dis  AMPLING ME  Baller - Type:  Submersible  Sample No.  MW - 4  | Purging (Well Cosposal: Sanita  For Sanita  Centrifugal Black  Wolume/Cont.  40m   VOA | ondition, Turbing Sewer  Local Security Sewer  Analysis Recommendation of the series:  Analysis Recommendation of the series:  Analysis Recommendation of the series:   | Storm Sev              | Odor): _<br>wer S<br>SAM | Other5  PING Same As A  Grab - Typ  Other - Typ  servatives | bove<br>e: | igi i i i i i i i i i i i i i i i i i i  |                    |         |
| Discharge Water Discharge Water Discharge Water Discharge Water Discharge Water Discharge Water Discharge No.   | Purging (Well Caposal: Sanita  Contrifugal Slad  BUTION S  Volume/Cont.  40m   VOA     | ondition, Turbing Sewer  Local Security Sewer  Analysis Recommendation of the series:  Analysis Recommendation of the series:  Analysis Recommendation of the series:   | dity, Color, Storm Sev | Odor):<br>wer S<br>SAM   | Other   | bove<br>e: | Lab  | C                  | omments |
| Discharge Water Discharge Water Discharge Water Discharge Water Discharge Water Discharge Water Discharge No.    AMPLE DISTRICE   Control   Contro          | Purging (Well Cosposal: Sanita  Contrifugal Slad  BUTION S  Volume/Cont.  40m   VOA    | andition, Turbing Sewer  Language Series: Analysis Record TPH Lg and Lg | Storm Sev              | Odor): _<br>wer S<br>SAM | Other   | bove<br>e: | Lab<br>ET  | C C                | omments |
| Discharge Water Discharge Water Discharge Water Discharge Water Discharge Water Discharge Water Discharge No.   | Purging (Well Cosposal: Sanita  Contrifugal Slad  BUTION S  Volume/Cont.  40m   VOA    | andition, Turbing Sewer  Language Series: Analysis Record TPH Lg and Lg | dity, Color, Storm Sev | Odor):<br>wer S<br>SAM   | Other   | bove<br>e: | Lab  | C C                | omments |
| Discharge Water Discharge Water Discharge Water Discharge Water Discharge Water Discharge Water Discharge No.    AMPLE DISTRICE   Control   Contro          | Purging (Well Cosposal: Sanita  Contrifugal Slad  BUTION S  Volume/Cont.  40m   VOA    | andition, Turbing Sewer  Language Series: Analysis Record TPH Lg and Lg | Storm Sev              | Odor):<br>wer S<br>SAM   | Other   | bove<br>e: | Lab<br>ET  | C C                | omments |
| Discharge Water Discharge Water Discharge Water Discharge Water Discharge Water Discharge Water Discharge No.    AMPLE DISTRICE   Control   Contro          | Purging (Well Cosposal: Sanita  Contrifugal Slad  BUTION S  Volume/Cont.  40m   VOA    | andition, Turbing Sewer  Language Series: Analysis Record TPH Lg and Lg | Storm Sev              | Odor):<br>wer S<br>SAM   | Other   | bove<br>e: | Lab<br>ET  | C C                | omments |

|  | eers and Geoscienti  | ola<br>sts  |               |  | GROU<br>No^                                 | NC -     | YATE             | RSA       | MPI      | LING   | FOR    |
|--|--|---|---------------|--|---|----------|------------------|-----------|----------|--------|--------|
|  |  |   |               |  |   |          |                  |           |          |        |        |
| Joh Name   | exxon Ala  | da  |               |  | ell Type: k                                 |          |                  |           |          |        |        |
|  | 14167 24   |   |               | — . w                                      | eli Material                                |          | VC D             | St. Steel |          | Other_ | 1      |
|  | mary 5   | 14  | )             |  | te <u>1-1</u>                               |          |                  | T         | me 🚅     | 55     | / /7:  |
| necolded by _  | - any  | (Signature)   |               | \$8  | mpled by                                    | MJ       | H                | - Ini     | liefs)   |        |        |
| 217  | 30212  | TIES.   | SE ANT        | T PHIC                                     | Ma  |          |                  | <b>国力</b> | - NS -   |        | W 15   |
| THE VEST   | 42   | LENGTH CHOICE SAFE  | D. S. 11.     |  |   |          | MUNICIPAL STREET | 2 19 - 60 |          |        | 10 A   |
| Casing Diameter  | The same of the sa |   |               |  | ROE MED                                     |          |                  |           |          |        |        |
|  | (U in inches):<br>inch   | 764   |               |  | Bailer - Type                               |          |                  |           |          |        |        |
| Total Danth of C   | easing (TD in feet B   | TOO: 19   |               |  | Submersible                                 |          | trifugal [       | Bladder   | ; Pump   | No.:   |        |
| Water Lavel Dar  | th (WL in feet BTO   | a. 5.39   |               |  | Other - Type                                |          |                  |           |          | _      | _      |
|  | Volumes to be pur  |   |               |  | tice in w                                   |          | _                | _         |          |        |        |
|  |  |   |               |  | Near Bottom                                 |          |                  |           |          |        | _      |
| CO D4 D5   | □10 □ Other _  | POUS .  |               | Det  | th in feet (8                               | ITOC):_  |                  |           |          |        |        |
| A STATE OF THE STA | 2007/07/07   |   | 2             | 2  |   |          |                  | from      |          | _ to   |        |
| (  | - 5.39 x   |   | _ x           | <u>ろ</u> _x                                | 0.0408                                      | - 2      | 6.65             | 5         |          |        | oallon |
| ( ID (reet)  | WL (lest) /  | D (inches)  |               | F Vols                                     |   |          | Calcul           | ated Purg | • Volu   | me     |        |
| 。所谓411年  | discontine   | wos   | 117           | e Editie                                   |   |          |                  | ***       |          | - 10   | TAKE   |
| 1535 Start .   | 1755 Stop  | Eapsed  | Initial       | 2.5 gpm                                    | Final A                                     | <i>‡</i> | n (%)            | コン        | W.R.JESS |        | gallon |
| TELD PARAV   | ETER MEASURE   | MENT  |               | • 1  |   | Alvii    |                  | 2.5       | Lu       | sing   | Jul's  |
| -Minutes Since<br>Pumping Began  |  |   | modul         | bdut y Min                                 | utes Since                                  | -11      | Conc             |           |          |        |        |
| Fumping Began  | 7.00 8 20  |   |               |  | ping Began                                  | pH       | Conc             | /cm)      | □°F      | Other_ | _      |
| 18   |  | - 15  | V.Slic        | W. of                                      |   | _        |                  | -         |          | -      |        |
| 22   | 664 510  | 17.8  | Sligh         | 7  |   |          |                  |           |          | -      |        |
| - 25   |  | -   | +             | -  |   |          |                  | _         |          | -      |        |
| -  |  | _   | -             | $\dashv$                                   |   |          |                  |           |          |        |        |
|  |  |   |               |  | ter Nos.                                    |          |                  |           |          |        |        |
| Observations Dur   | ing Purging (Well  | Condition, Turb   | idity, Color, | Odor):                                     |   |          |                  |           |          |        |        |
|  | Disposal: 🔲 Cant   | tary Sewer [  | Storm Se      | wer A-Ott                                  |   |          | MAL DE           | 2         |          |        |        |
| Discharge Water  | proposer: [] Offi  |   |               |  | 01 22 0                                     | ALL      | J14 17           | LUM.      |          |        |        |
| Discharge Water  |  | 1.4   | WEL           | LSAMPL                                     | NO 33 P                                     | ALL      |                  | COM.      |          |        | 15.0   |
| AMPLING M  | 14-24-34<br>1100   |   | 製化            | LSAMPL                                     | To have                                     |          |                  | ON.       | , o      |        | Y.E.   |
| AMPLING M  | 14-24-34<br>1100   |   | 製化            | LSAMPL                                     | ame As Abo                                  | W.       |                  |           | . 0      | 深水     | ¥ E    |
| AMPUNG M   | inco<br>Stainle  | ss ste  |               | LSAMPL<br>DS                               | ame As Abo<br>Srab - Type:                  |          |                  | 20M       | ų o      | 清冷     |        |
| Baller - Type:   | THOO<br>Hainle<br>Centrifugal DBi  | 5 5 5/4<br>adder; Pump N  |               | LSAMPL<br>DS                               | ame As Abo                                  |          |                  | -UM.      | NO.      | A A    |        |
| Baller - Type:  Submersible [  Sample No.  | THOO<br>Hainle<br>Centrifugal DBi  | 55 5/c<br>adder; Pump N<br>Sample Series:                               | J<br>0.:      | 00<br>00                                   | ame As Abo<br>irab - Type:<br>Other - Type: |          |                  |           |          |        |        |
| Baller - Type:  Submersible [ AMPLE DIST   | Centrifugal Bit  | S S/c<br>adder; Pump N<br>Sample Series:<br>Analysis Re                 | o.:           | CSAMPU<br>CS<br>CS<br>CS<br>CS<br>Preserve | ame As Abo<br>irab - Type:<br>Other - Type: | we       | Lab              |           | 0        | omment |        |
| Baller - Type:  Submersible [  Sample No.  | THEO  Shainte  Centrifugal DBI  RIBUTION   | S S/c<br>adder; Pump N<br>Sample Series:<br>Analysis Re                 | o.:           | 00<br>00                                   | ame As Abo<br>irab - Type:<br>Other - Type: |          | Lab              |           | 0        | omment |        |
| Baller - Type:  Submersible [  Sample No.  | Centrifugal Bit  | S S/c<br>adder; Pump N<br>Sample Series:<br>Analysis Re                 | o.:           | CSAMPU<br>CS<br>CS<br>CS<br>CS<br>Preserve | ame As Abo<br>irab - Type:<br>Other - Type: | we       | Lab              |           | C        | omment |        |
| Baller - Type:  Submersible [  Sample No.  | Centrifugal Bit  | S S/c<br>adder; Pump N<br>Sample Series:<br>Analysis Re                 | o.:           | CSAMPU<br>CS<br>CS<br>CS<br>CS<br>Preserve | ame As Abo<br>irab - Type:<br>Other - Type: | we       | Lab              |           | 0        | omment |        |
| Baller - Type:  Submersible [  Sample No.  | Centrifugal Bit  | S S/c<br>adder; Pump N<br>Sample Series:<br>Analysis Re                 | o.:           | CSAMPU<br>CS<br>CS<br>CS<br>CS<br>Preserve | ame As Abo<br>irab - Type:<br>Other - Type: | we       | Lab              |           | C        | omment |        |
| Baller - Type:  Submersible [  Sample No.  | Centrifugal Bit  | S S/c<br>adder; Pump N<br>Sample Series:<br>Analysis Re                 | o.:           | CSAMPU<br>CS<br>CS<br>CS<br>CS<br>Preserve | ame As Abo<br>irab - Type:<br>Other - Type: | we       | Lab              |           | 0        | omment |        |
| Baller - Type:  Submersible [  Sample No.  | Centrifugal Bit  | S S/c<br>adder; Pump N<br>Sample Series:<br>Analysis Re                 | o.:           | CSAMPU<br>CS<br>CS<br>CS<br>CS<br>Preserve | ame As Abo<br>irab - Type:<br>Other - Type: | we       | Lab              |           | 0        | omment |        |
| Baller - Type:  Submersible [  Sample No.  | Centrifugal Bit  | S S/c<br>adder; Pump N<br>Sample Series:<br>Analysis Re                 | o.:           | CSAMPU<br>CS<br>CS<br>CS<br>CS<br>Preserve | ame As Abo<br>irab - Type:<br>Other - Type: | we       | Lab              |           | C        | omment |        |
| Baller - Type:  Submersible [  AMPLE DIST  Sample No.  MW-5  | Centrifugal Bis RIBUTION Volume/Cont. HUMI VUA   | ss ste<br>adder; Pump N<br>Sample Series:<br>Analysis Re<br>TPrt (gas)  | o.:           | CSAMPU<br>CS<br>CS<br>CS<br>CS<br>Preserve | ame As Abo<br>irab - Type:<br>Other - Type: | we       | Lab              |           | C        | omment |        |
| Baller - Type:  Submersible [ AMPLE DIST  Sample No.  YW-5   | Centrifugal Bis RIBUTION Volume/Cont. Hom! VoA   | ss ste<br>adder; Pump N<br>Sample Series:<br>Analysis Re<br>TPrt (gas)  | quested BTx & | Preservi                                   | ame As Abo<br>irab - Type:<br>Other - Type: | we       | Lab              |           |          |        |        |
| Baller - Type:  Baller - Type:  Submersible [  AMPLE DIST  Sample No.  AW - 5  | Centrifugal Bis RIBUTION  Volume/Cont.  #Um/ V u A  TROL SAMPLES icate Samples   | s s ste<br>adder; Pump N<br>Sample Series:<br>Analysis Re<br>TPrt (gas) | quested BTX E | Preserve HCJ                               | ame As Abo<br>irab - Type:<br>Other - Type: | we       | Lab              | Other S   | Sample   |        |        |
| Baller - Type:  Baller - Type:  Submersible [  AMPLE DIST  Sample No.  AW - 5  | Centrifugal Bis RIBUTION Volume/Cont. Hom! VoA   | s s ste<br>adder; Pump N<br>Sample Series:<br>Analysis Re<br>TPrt (gas) | quested BTx & | Preserve HCJ                               | ame As Abo<br>irab - Type:<br>Other - Type: | we       | Lab              | Other S   | Sample   |        |        |
| Baller - Type:  Baller - Type:  Submersible [  AMPLE DIST  Sample No.  AW - 5  | Centrifugal Bis RIBUTION  Volume/Cont.  #Um/ V u A  TROL SAMPLES icate Samples   | s s ste<br>adder; Pump N<br>Sample Series:<br>Analysis Re<br>TPrt(gas)  | quested BTX E | Preserve HCJ                               | ame As Abo<br>irab - Type:<br>Other - Type: | we       | Lab              | Other S   | Sample   |        |        |
| Baller - Type:  Baller - Type:  Submersible [  AMPLE DIST  Sample No.  YW-5  | Centrifugal Bis RIBUTION  Volume/Cont.  #Um/ V u A  TROL SAMPLES icate Samples   | s s ste<br>adder; Pump N<br>Sample Series:<br>Analysis Re<br>TPrt(gas)  | quested BTX E | Preserve HCJ                               | ame As Abo<br>irab - Type:<br>Other - Type: | we       | Lab              | Other S   | Sample   |        |        |

| ~~: ·                         | ling Lawson Assi<br>eers and Geoscient |               |          |          |                                |       | WATER               | SAMP          | LING      | FO    |
|-------------------------------|--|---------------|----------|----------|--------------------------------|-------|---------------------|---------------|-----------|-------|
|                               |  |               |          |          | Well No. 🖰                     | w-    | 6                   |               |           |       |
|                               | Eury no 1                              |               |          |          | Well Type:                     | Mor   | itor DExtra         | iction 🗆      | Other _   |       |
| Job Name                      | Exxon 1                                | lameo         | la_      |          | Well Material                  | : 15É | PVC Dist S          | Steel 🗀 (     | Other     |       |
| Job Number _                  | 071017                                 | 779 02        |          |          | Date/                          | -1    | 7-89                | Time _3       | 34/       | 15    |
| Recorded by _                 | mary ?                                 | (Signature)   | ev_      | _        | Sampled by                     | 4     | 7/4                 | (Initials)    | 7         |       |
| 100000                        |  | <b>建</b> 精神 2 | W        | ILP      | IRGING SE                      |       | Z 20                | NA SAES       |           |       |
| () 产品()                       | 200                                    |               |          |          | 1768 '5                        | 100   |                     |               |           | Niche |
| Casing Diamete                | •                                      |               |          |          | ☐ Bailer - Type                | :     |                     |               |           |       |
|                               | inch 6-inch                            |               |          |          | Submersible                    | ZIC.  | ntrifugal 🗆 Bli     | dder; Pum     | No.:      |       |
| Total Depth of                | Casing (TD in feet E                   | STOC): 19     | 10       |          | Other - Type                   |       |                     |               |           |       |
|                               | oth (WL in feet BTC                    |               | <u> </u> |          | 112700                         |       |                     |               |           |       |
|                               | Volumes to be put                      | ged (# Vols)  |          |          | Near Bottom                    |       |                     |               |           |       |
| The second second             | □10 □ Other _                          | 5500          |          | _        | Depth in feet (B               | TOC): | Sc                  | reen Interval | in feet ( | втос  |
|                               | 金科學學科                                  |               | 2        | 71       |                                |       | fro                 | m             | _ to      |       |
| (19                           | - 5.59 ): WL (feet)                    | x             | _ x      | 8        | X 0.0408 ·                     |       | 26.26               |               |           | galic |
| TD (feet)                     | WL (feet)                              | D (inches     | 9        | # Vols   |                                |       | Calculated          | Purge Volu    | me        | Benic |
|                               | discontin                              |               | 10       | GE SA    | Œ                              |       | 4                   | UAL PLIP      | GE VO     | 30Wi  |
|                               | 1534 Stop                              |               | Initial  | 5        | gpm Final                      | gp    |                     | 35            |           |       |
|                               | FTER MEASUR                            | EMENT         |          |          |                                |       | (                   | + casii       | ng vol    | 3)    |
| Minutes Since<br>Pumping Bega | pH Conc                                | /cm) T C      | Other us | 18101    | Minutes Since<br>Pumping Began | pН    | Cond.<br>(µmhos/cm) | T-D°C         | Other_    | _     |
| 5                             | 667 600                                |               | V. SLK   | _        | rumping began                  | ,     | (µmnos/cm)          | , □°F         | Outer     |       |
| 18                            | 6.68 520                               |               | V.540    |          |                                |       |                     | +             | +         |       |
| 35                            | 6.76 521                               |               | V. SUE   | SHT-     | Slight shee                    |       |                     | 1             | +-        |       |
|                               |  |               |          |          | rigid bicco                    | _     |                     | 1             | +         |       |
|                               |  |               |          |          | Meter Nos.                     |       |                     | 1             | _         | _     |
| ALIP TRICK                    | Disposal: San                          |               | WEL      | LSAI     | Other 55<br>MPLING Same As Abo |       | on dru              | M.            | 沙红        | j s   |
| Baller - Type:                | stainl                                 | uss ste       | el       |          | Grab - Type:                   | -     |                     |               |           |       |
| ☐ Submersible                 | ☐ Centrifugal ☐ Bi                     | adder: Pump t | No.:     |          | Other - Type:                  |       |                     |               |           |       |
| AMPLE DIST                    | PRESENTED SERVICE SERVICE SERVICES     | Sample Series |          |          |                                |       |                     |               |           |       |
| Sample No.                    | Volume/Cont.                           | Analysis R    | equested | P        | reservatives                   |       | Lab                 | 0             | omments   |       |
| MW-6                          | 2 40ml VUAS                            | TPHgas        | BTXE     | tel      |                                | N     | T                   |               |           |       |
|                               |  |               |          |          |                                |       |                     |               |           |       |
|                               |  |               |          |          |                                |       |                     |               |           |       |
|                               |  |               |          |          |                                |       |                     |               |           |       |
|                               | -                                      |               |          |          |                                |       |                     |               |           |       |
|                               |  | -             |          |          |                                |       |                     |               |           |       |
|                               |  | -             |          |          |                                |       |                     |               |           |       |
| Busines con                   | TROL SAMPLE                            |               |          |          |                                |       |                     |               |           | _     |
| Dup                           | licate Samples                         |               |          | Blank Sa | mples                          |       | Ot                  | her Sample    | 5         |       |
| Original Sample               | No. Duplicate Sar                      | mple No.      | Type     |          | Sample No.                     |       | Туре                |               | Sample N  | lo.   |
|                               |  |               |          |          |                                |       |                     |               |           |       |
|                               |  |               |          |          |                                |       |                     |               |           |       |
|                               |  |               |          |          |                                |       |                     |               |           |       |
|                               |  |               |          |          |                                |       |                     |               |           |       |

# APPENDIX B LABORATORY ANALYTICAL RESULTS



Report date:

June 16, 1988

Wescojob #: HLA 08102 -L

Client: Harding Layson Associates

P.O Box 578 Novato, CA 94947

Date sampled:

June 1, 1988

Sampled by: M. Thompson

Site: Exxon Alameda Attn.: M. Thompson

Date received:

June 2, 1988

P.O.: 4167, 224, 02

Submitted by: M. Thompson

| Lab #   | Client ID | Matrix | Analysis      |
|---------|-----------|--------|---------------|
| 8- 5476 | BA2 05.0  | soil   | TPH with BTXE |
| 8- 5480 | BA3 05.0  | soil   | TPH with BTXE |
| 8- 5471 | BH1 25.0  | soil   | TPH with BTXE |
| 8- 5474 | BH2 15.0  | soil   | TPH with BTXE |

Dear Client,

No problems were encountered with the analysis of your samples. We will store samples for 30 days after the report date. the samples will be returned to you after the 30-day period, unless other arrangements are made. If you have any questions, please feel free to call, (415)883-6425.

Sample Controller

Report Date: 16-Jun-88
WESCO JOB #: HLA 08102-L

Extract/Purge Date:

15-Jun-88

Completion Date:

15-Jun-88

Analytical Method: EPA 5030/8015/8020 Analyst: Attia/Farah

MATRIX: SOIL

| LAB #:   | 8-5476               | CLIENT'S ID:      | BA2 05.0                  |
|----------|----------------------|-------------------|---------------------------|
| COMPOUND |                      | RESULT<br>(ug/kg) | Detection<br>Limit(ug/kg) |
| Toluene- | zene                 | 32000             | 2000<br>2000<br>2000      |
| Xylene   | troleum Hydrocarbons | 150000            | 2000<br>2000<br>20000     |
| QUALITY  | CONTROL DATA         | Surrogate Spike % | Recovery                  |

Fluorobenzene

89 %

| LAB #:     | 8-5480                      | CLIENT'S        |           | BA3 0.05                  |
|------------|-----------------------------|-----------------|-----------|---------------------------|
| COMPOUND   |                             | RESUI<br>(ug/kg | LT        | Detection<br>Limit(ug/kg) |
| Benzene    |                             | - N.1           | o.        | 500                       |
| Toluene    |                             | - <b>N.</b> 1   | D.        | 500                       |
| Ethylbenze | ene                         | - N.I           | <b>).</b> | 500                       |
| Xylene     |                             | - 2409          | 0         | 500                       |
| Total Pet: | roleum Hydrocarbons (light) | - 7400          | 0         | 50000                     |

QUALITY CONTROL DATA Fluorobenzene

Surrogate Spike % Recovery 108 %

N.D.: Not Detected

| OUAL | TTY | CONTROL. | DATA |
|------|-----|----------|------|
|------|-----|----------|------|

| METHOD:          | EPA 5030/8015/8020 | WESCO JOB #: |
|------------------|--------------------|--------------|
| Comple A. O EASE | 0 5400             | and don #.   |

HLA 08102-L

| Sample | #: | 8-5476, | 8-5480 |
|--------|----|---------|--------|
|--------|----|---------|--------|

| COMPOUND              | Blank<br>ug/l | Spike Duplicate \$ deviation | Spike<br>% recovery |
|-----------------------|---------------|------------------------------|---------------------|
| Benzene               | N.D.          | 5                            |                     |
| Toluene               | N.D.          | 10                           | 96                  |
| p-Xylene              | N.D.          | 17                           | 106                 |
| Gasoline              | N.D.          | 19                           | 84                  |
| QUALITY CONTROL DATA  |               |                              |                     |
| Surrogate Spike % Rec | overy         |                              |                     |
| Fluorobenzene         | ື93 <b>%</b>  | 85 %                         | 83 9                |

N.D.: Not Detected

wing 7655 Redwood Blvd. P.O. Box 578 Novato, CA 94948 (415) 892 0821

## CHAIN OF CUSTODY FORM HEI ORILE- C

|                   | (415) 892 0<br>Number: <u>&amp;</u> | 821<br><u>\$*4(67, 7</u> 7                        | 14.02<br>ALAMUM                         | Samplers:  | Truck THOMESON                | ANALYSIS REQUESTED   |
|-------------------|-------------------------------------|---|---|--|-------------------------------|--|
|                   |                                     | er: <u>\</u> 15                                   |   | Recorder:  | Whis Wingers                  | 10<br>20<br>20<br>10<br>70<br>1. Metals<br>L. Metals<br>Hydrocarb. |
| SOURCE<br>CODE    | Water<br>Sediment<br>Oii            | #CONTAINERS<br>& PRESERV.<br>ON IN OO<br>ON IN OO | SAMPLE<br>NUMBER<br>OR<br>LAB<br>NUMBER | DATE   | STATION DESCRIPTION/<br>NOTES | 601/80<br>602/802<br>626/824<br>625/82<br>rity Piltn<br>zene/Tolt  |
| 50<br>50          | X X X                               | Х<br>Д  | BA - 2 <b>c</b> 5 . c<br>BM - 21 S. c   | Yr Mo Dy Time  6 6 6 6 0 1 0 7 20  9 6 6 6 0 1 0 7 45  8 6 6 6 6 1 1 0 5 0 | HOLD TPHICATI BIXE HOLD HOLD  | EPA X X Total  |
| 5 c<br>5 c<br>5 c | X                                   |   | BA-305.0<br>BA-310.0                    | 10011100188  | TPH LIGHT 1 BEXE HOLD         |  |

| - | NUM<br>Wk |   | R | <br>1 | EP<br>IN<br>FEE | I | M        | OL<br>ITD<br>CD |   | CO | A<br>DDE | MISCELLANEOUS | CHAIN OF CUSTODY RECORD   |            | <del></del>  |                          |                       |
|---|-----------|---|---|-------|-----------------|---|----------|-----------------|---|----|----------|---------------|---|------------|--|--------------------------|-----------------------|
|   |           |   |   |       |                 |   |          |                 |   |    |          |               | RELINQUISHED BY: (Signature)  RELINQUISHED BY: (Signature)  RELINQUISHED BY (Signature) | RECE<br>OM | IVED BY: (Signature)  NED BY: (Signature)  NED BY: (Signature) | DATE  6-2-55  DATE  DATE | 8:00<br>TIME<br>10-20 |
|   |           |   |   |       | $\pm$           | 1 |          |                 |   | -  |          |               | RELINQUISHED BY: (Signature)  | AECE       | VED BY: (Signature)  | DATE/                    | TIME                  |
|   |           |   | ‡ |       |                 | + | -        |                 |   |    |          |               |   | E/TIME     | RECEIVED FOR LABBY: (Signature) Wichtelier Co.                 | DATE/                    | TIME                  |
| Ш |           | Ц |   |       | _L              |   | <u> </u> | Ц               | Ц | Ų  | ᆜ        | <br>Comp. P   | METHOD OF SHIPMENT  |            |  | <del>.</del>             |                       |



Report date:

June 16, 1988

Client: Harding Lavson Associates

P. 0 Box 578

Novato, CA 94947

Date sampled:

May 31, 1988

Sampled by: M. Thompson

Site: Exxon Alameda

Attn.: M. Thompson

Date received:

June 1, 1988

P.O.: 4167, 224.02

Submitted by: M. Thompson

Lab #

Client ID

Natrix

Analysis

8- 5427

BA1-10.0

soil

TPH with BTXE

Wescojob #: HLA 08100 -L

Dear Client,

No problems were encountered with the analysis of your samples. We will store samples for 30 days after the report date. the samples will be returned to you after the 30-day period, unless other arrangements are made. If you have any questions, please feel free to call, (415)883-6425.

Sample Controller

Report Date: 16-Jun-88
WESCO JOB #: HLA 08100-L

Extract/Purge Date:

10-Jun-88

Completion Date: Analytical Method: EPA 5030/8015/8020 Analyst: Attia

10-Jun-88

MATRIX: SOIL

| LAB #: 8-5427 C                      | LIENT'S ID:               | BA1-10.0                     |
|--------------------------------------|---------------------------|------------------------------|
| COMPOUND                             | RESULT<br>(ug/kg)         | Detection<br>Limit(ug/kg)    |
| Benzene Toluene Ethylbenzene Xylene  | 670<br>N.D.<br>150<br>370 | 25.0<br>25.0<br>25.0<br>25.0 |
| Total Petroleum Hydrocarbons (light) | 11000                     | 2,500.0                      |

QUALITY CONTROL DATA Fluorobenzene

Surrogate Spike % Recovery 96 %

N.D.: Not Detected

| METHOD:  | EPA 5030/8015/8020 | WESCO JOB #:                   | HLA 08100-L             |
|--|--------------------|--------------------------------|-------------------------|
| COMPOUND   | Blank<br>ug/l      | Spike Duplicate<br>& deviation | Spike<br>tecovery       |
| Benzene Toluene p-Xylene Gasoline                        | N.D.<br>N.D.       | 2<br>11<br>11<br>11<br>11      | 115<br>112<br>112<br>97 |
| QUALITY CONTROL DE<br>Surrogate Spike %<br>Fluorobenzene |                    | 97 %                           | 76 %                    |

N.D.: Not Detected

#### 7655 Redwood Bivo: P.O. Box 578 Novato, CA 94948

#### **CHAIN OF CUSTODY FORM**

|                      | (415) 892-0                           |   |  | Samplers:                             | Tichare June 200-                          | ANAUFSIS REQUESTED  |
|----------------------|---------------------------------------|---|--|---------------------------------------|--|---|
| Job<br>Name<br>Proje | Number: _:<br>e/Location<br>ect Manag | 4167, 22<br>n: Exxad<br>ger: M. T   | ALAMORA<br>THOMPSO                                   | 1 -                                   | STOLZMAN  Lichted Hirthey  ature Required) | Aetais<br>e/Xylene<br>drocarb./나/C  |
| SOURCE<br>CODE       | Water<br>Sediment<br>Soil<br>Oil      | #CONTAINERS<br>& PRESERV.<br>OO<br>OO<br>OO<br>OO<br>OO<br>OO<br>OO<br>OO<br>OO<br>OO<br>OO<br>OO<br>OO | SAMPLE<br>NUMBER<br>OR<br>LAB<br>NUMBER<br>Yr Wk Seq | DATE Yr Mo Dy Time                    | STATION DESCRIPTION/<br>NOTES              | EPA 601/8010 EPA 628/8020 EPA 624/8240 EPA 625/8270 Priority Plitnt. Metals Benzene/Toluene/Xylene Total Petrol. Hydrocarb. |
|                      |                                       |   | BAIL-OILS  | 8805311325                            | HoLD                                       |   |
| 30                   |                                       | 1   | BA1-05.0   | 8809311335                            |  |   |
| 50                   |                                       | 1   | BAI-11a.d  | 8875311350                            |  |   |
| 50                   |                                       | U   | VAI-115.0  | 8845311415                            | HOLD                                       |   |
| 50                   |                                       | 11  | BA1-20.0   | 8805311440                            | How  |   |
|                      | 1111                                  |   |  |                                       |  |   |
|                      |                                       |   |  |                                       |  |   |
|                      |                                       |   |  |                                       |  |   |
| Ш                    |                                       |   |  |                                       |  |   |
|                      |                                       |   |  |                                       |  |   |
|                      |                                       |   |  | · · · · · · · · · · · · · · · · · · · |  |   |

|     | L/<br>NUM | AB<br>MBE | Ŕ        |    |   | EP.   |     | M       |          |   | MTD   |   | MTD |  | MTD  |  |  |  | MTD |  | DTN |  | MTD |  | QA<br>CODE |  | MISCELLANEOUS | CHAIN OF CUSTODY RECORD |  |
|-----|-----------|-----------|----------|----|---|-------|-----|---------|----------|---|-------|---|-----|--|------|--|--|--|-----|--|-----|--|-----|--|-----|--|-----|--|-----|--|-----|--|-----|--|------------|--|---------------|-------------------------|--|
| 242 | Wk        |           | Sec      | 7  |   | FEE   | . 1 | Ľ       |          |   |       |   |     |  |      |  |  |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |            |  |               |                         |  |
| H   |           | _         | 4        | -  | Н | _     |     |         | $\Box$   | 1 | 1     | - |     | RELINQUISHED BY (Signature) RECEIVED BY: (Signature) DATE/TIM                                | -    |  |  |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |            |  |               |                         |  |
| 廿   |           |           | _        |    |   | $\pm$ | 1   |         |          |   | $\pm$ |   |     | RELINQUISHED BY: (Signature) RECEIVED BY: (Signature) DATE/TIM                               | IE . |  |  |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |            |  |               |                         |  |
|     |           | -         | $\dashv$ | +  | H | +     | +   | H       | H        | + | -     | - |     | RELINQUISHED BY: (Signature) RECEIVED BY: (Signature) DATE/TIM                               | ΙĒ   |  |  |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |            |  |               |                         |  |
| 井   |           |           |          |    |   | #     | 1   |         |          | 1 | 1     |   |     | RELINQUISHED BY: (Signature) RECEIVED BY: (Signature) DATE/TIM                               | ΙĒ   |  |  |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |            |  |               |                         |  |
|     |           |           |          | +- |   | 1     | 1   |         |          |   | -     | - |     | DISPATCHED BY: (Signature) DATE/TIME RECEIVED FOR LAB BY: DATE/TIME (Signature) Rushi (1) 90 |      |  |  |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |            |  |               |                         |  |
|     |           | H         |          | +  | H | +     | +   | $ar{1}$ | $\dashv$ | + | +     | + |     | METHOD OF SHIPMENT WASCO COURSER   | OA   |  |  |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |     |  |            |  |               |                         |  |



Report date:

June 16, 1988

Client: Harding Lavson Associates

200 Rush Landing Road Novato, CA 94947

Date sampled:

June 7, 1988

Sampled by: C. Larkin

Site: Exxon Alameda

Wescojob #: HLA 08104 -L

Attn.: M. Thompson

Date received:

June 8, 1988

P.O.: 4167, 224.02

Submitted by: C. Larkin

| Lab #   | Client ID | Natrix | Analysis      |
|---------|-----------|--------|---------------|
| 8- 5629 | 8823EXA1  | water  | TPH with BTXE |
| 8- 5630 | 8823EXA2  | water  | TPH with BTXE |
| 8- 5631 | 8823EXA3  | water  | TPH with BTME |
| 8- 5632 | 8823EXA4  | water  | TPH with BTXE |

Dear Client,

No problems were encountered with the analysis of your samples. We will store samples for 30 days after the report date. the samples will be returned to you after the 30-day period, unless other arrangements are made. If you have any questions, please feel free to call, (415)883-6425.

Sample Controller

Report Date: WESCO JOB #:

16-Jun-88

Extracted Date:

10-Jun-88

Analytical Method: EPA 5030/8015/602

HLA 08104-L

Completion Date:

)

10-Jun-88

MATRIX: WATER

Analyst: Lewis/Arntzen

| LAB #: 8-5629  | CLIENT'S ID:            | 23EXA1                             |
|--|-------------------------|------------------------------------|
| COMPOUND   | RESULT<br>(ug/1)        | Detection<br>Limit (ug/l)          |
| Benzene Toluene Ethylbenzene Xylene Total Petroleum Hydrocarbons (light) | - 80<br>- 940<br>- 1900 | 25<br>25<br>25<br>25<br>25<br>2500 |
| QUALITY CONTROL DATA<br>Surrogate Spike % Recovery<br>Fluorobenzene      | 91 %                    |                                    |

| LAB #: 8-5630  | CLIENT'S ID:           | 23EXA2                            |
|--|------------------------|-----------------------------------|
| COMPOUND   | RESULT<br>(ug/l)       | Detection<br>Limit (ug/1)         |
| Benzene Toluene Ethylbenzene Xylene Total Petroleum Hydrocarbons (light) | 12000<br>2100<br>12000 | 125<br>125<br>125<br>125<br>12500 |

QUALITY CONTROL DATA Surrogate Spike % Recovery Fluorobenzene

100 %

N.D.: Not Detected

Report Date:

16-Jun-88

Extracted Date: Completion Date: 10-Jun-88

WESCO JOB #: Analytical Method: EPA 5030/8015/602

HLA 08106-L

Analyst: Lewis

10-Jun-88

MATRIX: WATER

| CLIENT'S ID:         | 23EXA3                                |
|----------------------|---------------------------------------|
| RESULT<br>(ug/l)     | Detection<br>Limit (ug/1)             |
| N.D.<br>N.D.<br>N.D. | 0.5<br>0.5<br>0.5<br>0.5<br>50.0      |
|                      | RESULT (ug/1)  N.D.  N.D.  N.D.  N.D. |

QUALITY CONTROL DATA Surrogate Spike % Recovery Fluorobenzene

105 %

| LAB #:                         | 8-5632                                  | CLIENT'S ID:       | 23EXA4                       |
|--------------------------------|---|--------------------|------------------------------|
| COMPOUND                       | # = = = = = = = = = = = = = = = = = = = | RESULT<br>(ug/l)   | Detection<br>Limit (ug/1)    |
| Toluene<br>Ethylbenz<br>Xylene | eneroleum Hydrocarbons (light)          | 77<br>1100<br>2700 | 50<br>50<br>50<br>50<br>5000 |

QUALITY CONTROL DATA Surrogate Spike & Recovery Fluorobenzene

95 %

N.D.: Not Detected

QUALITY CONTROL DATA
BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 08104-L
METHOD: EPA 5030/8015/602

| =======================================                        |                              |                                | ======================================= |
|--|------------------------------|--------------------------------|---|
| COMPOUND   | Blank<br>ug/l                | Spike Duplicate<br>% deviation | Spike<br>% recovery                     |
| Benzene Toluene p-Xylene Gasoline                              | N.D.<br>N.D.<br>N.D.<br>N.D. | 2<br>11<br>11<br>11<br>11      | 115<br>112<br>112<br>97                 |
| QUALITY CONTROL DATA<br>Surrogate Spike & Rec<br>Fluorobenzene | overy<br>98 %                | 97 %                           | 76 %                                    |

N.D.: Not Detected

narding Lunson Associates **Environmental Services Division** 200 Rush Landing Road Novato, California 94947

#### CHAIN OF CUSTODY FORM

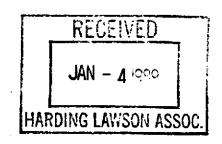
|                  |  | (415    | 892-   | 082 | ı      |         |    |          |   |          |    |          |                     |          |         |            |              |              | S                | an            | np                          | te | ۲S | ::  | CH          | 12    | LIS LARKIN | ഥ   | <u> </u> |         | A   |           |          | iis f  | REQ    | UES     | TEC     | 2       |          |   |
|------------------|--|---------|--------|-----|--------|---------|----|----------|---|----------|----|----------|---------------------|----------|---------|------------|--------------|--------------|------------------|---------------|-----------------------------|----|----|-----|-------------|-------|------------|-----|----------|---------|-----|-----------|----------|--|--------|---------|---------|---------|----------|---|
| Job<br>Name      | e/I  | Loc     | ati    | on  | -      | E.      | ΧX | <u> </u> |   |          | ۱, | <u></u>  |                     |          |         |            |              | -<br>-       | _                |               |                             |    |    |     |             |       |            |     |          |         | ٠   | viene /E) | arb. (L) |  |        |         |         |         |          | , |
| Proje            | €C.  | t M     | ana    | ag  | er:    |         | ڪ  | HA       |   |          | Lq | <b>~</b> | <u> </u>            | ~        | <u></u> |            |              | -            | R                | ec            | 0                           | rđ | er | : 7 | Sign.       | iarui | tophe Lal. |     |          |         | 200 | ×         | gro      |  |        |         | -       |         |          |   |
| SOURCE<br>SOURCE | MATRIX #CONTAINERS SAMPLE STATION DESCRIPTION/ |         |        |     |        |         |    |          |   |          |    |          |                     |          |         | A 601/8010 | EPA 602/8020 | EPA 624/8240 | ingity Pilling I | inzene/Toluen | Total Petrol. Hydrocarb. (1 |    |    |     | i.          |       |            |     |          |         |     |           |          |  |        |         |         |         |          |   |
| <u> 88</u>       |  |         | တို့ လ | Ц   | בֿן בֿ | 囯       |    | _        | L | <u> </u> | 8  | k        |                     | Se       | q       | 1          | Yr           | 4            | Mο               | 1             | Qγ                          | ļ  | Ti | me  | _           | _     |            | EPA | E        |         | م م | . 6       | ۴        | $oldsymbol{\perp}$                           | $\bot$ | Ц       | 4       | 1       | $\sqcup$ | 4 |
| 2:               | <u> </u>                                       | $\Box$  |        | Ш   | 2      |         |    |          | 8 | Ø        | 2  | 3        | 6                   | ×        | A.      | 4          | 2            | 0            | 96               | 20            | 12                          | 1  | 5  | 0   | ٥           | lL    |            | Ц   | Ă        |         |     | X         | -        | <u>.                                    </u> | 丄      | Ц       | 丄       |         |          | ┸ |
| 23               | >  |         |        |     | 2      |         |    |          | 8 | 3        | 2  | 3        | $\mathbf{\epsilon}$ | $\times$ | A 2     | 2          | હ્યું        | 3 0          | <u> </u>         | ٥             | 17                          | 1  | 8  | 0   | 3           |       |            |     | 1        |         |     | X         | X        | L  |        |         | $\perp$ |         |          | , |
| 23               | >  | 1       |        |     | 2      |         |    |          | 8 | 8        | Z  | 3        | E.                  | X        | A.      | 3          | ଧ            | 3            | 36               | c             | 17                          | 1  | 9  | 5   | 4           |       |            |     | 2        |         |     | ×         | X        |  | T      | П       | Т       | T       | П        |   |
| 23               | >  | 1       | -      |     | 2      | $\prod$ | -  |          | E | 8        | 2  | 3        | ε                   | ×        | 4       | 4          | 3 9          | 3            | 26               | 0             | 7                           | 2  | 0  | 0   | S           |       |            | H   | Ł        | $\perp$ | +   | ×         | ×        | $\overline{+}$                               | Ŧ      | $\prod$ | 7       | -       |          | 1 |
|                  | 1  |         |        |     |        |         |    | $\pm$    |   |          |    |          | 1                   |          | $\pm$   | 1          |              | †            | 1                |               | L                           |    |    |     |             |       |            | Н   |          | 1       |     |           |          | 士  | 士      |         | 士       |         |          | Ţ |
|                  | ļ  |         |        |     |        |         |    |          | L |          |    |          |                     |          |         |            |              |              |                  |               |                             |    |    |     | $\bigsqcup$ |       |            | Ш   |          |         |     |           |          |  |        |         | $\perp$ | $\perp$ |          |   |
|                  | Ι  |         |        |     |        |         |    |          |   |          |    |          |                     | $\Box$   |         |            | $\prod$      | Τ            | T                |               | Π                           |    |    |     |             |       |            |     |          |         |     |           |          |  | T      | П       | T       |         | $\prod$  | Τ |
|                  |  |         |        |     |        |         |    |          |   |          |    |          |                     |          | Т       | Ī          | T            | Т            | T                | Τ             | Γ                           | Γ  |    |     |             | ŀГ    |            | П   |          |         |     |           | П        | Т  | T      | П       | Т       |         | П        | Τ |
|                  |  | $\prod$ |        |     |        |         |    | Τ        | Γ |          |    |          | 1                   | 1        | T       |            | T            | T            |                  |               | Γ                           |    |    |     |             |       |            | П   |          | T       |     |           | П        |  |        | П       | T       |         | П        |   |
|                  |  |         |        |     |        |         |    |          |   |          |    |          |                     | -        |         |            | -            | •            |                  |               | -                           | -  |    |     |             | _     |            | _   |          |         |     |           |          |  |        |         |         | -       |          | • |
|                  |  |         |        | _   |        |         |    |          | _ |          |    | -        | _                   | _        |         | _          |              |              |                  |               |                             | _  | _  | _   | _           |       |            |     |          |         |     |           |          |  |        |         |         | _       |          |   |

| LAB DEPTH COL QA NUMBER IN MTD CODE FEET CD |   |    |          |          |          |   |               | М             | TD       |   |         |          |          | MISCELLANEOUS | CHAIN OF CUSTODY RECORD |  |                                |        |                      |       |          |  |  |
|---|---|----|----------|----------|----------|---|---------------|---------------|----------|---|---------|----------|----------|---------------|-------------------------|--|--------------------------------|--------|----------------------|-------|----------|--|--|
| Yr  | ľ | ٧k |          | Sec      | 1        |   | F1            | EE'           | <u> </u> | ľ | טג      |          |          |               |                         |  | BELLINGUISE DA GO              | Dearw  | 100 htt 100 mm 1     |       | 17.000   |  |  |
|   | Ţ | -  |          | 4        | $\perp$  | Ţ | lacksquare    | Ţ             |          | L |         | L        |          | Ĺ             |                         |  | RELINQUISHED BY: (Signature)   | MECEL  | VED BY: (Signature)  | DATE  | / I TIME |  |  |
|   | + | +  | $\vdash$ | $\dashv$ | +        | ╁ | ╀             | +             | ╅        | - | -       | ┞        | ┞        | $\vdash$      | $\vdash$                |  | RELINGUISHED BY: (Signature)   | RECEI  | VED BY: (Signature)  | DATE/ | /TIME    |  |  |
|   | + |    |          |          | ‡        | 1 | +             | 1             | 1        | 1 | 1       | L        | T        |               |                         |  | RELINQUISHED BY: (Signature)   | RECEI  | VED BY: (Signature)  | DATE  | TIME     |  |  |
|   | + |    |          |          | +        | ‡ | †             | $\frac{1}{4}$ | 1        | 1 | ‡       |          | L        |               |                         |  | RELINQUISHED BY: (Signature)   | RECÉI  | VED BY: (Signature)  | DATE  | /TIME    |  |  |
|   |   |    |          |          | $\pm$    | 1 | $\frac{1}{1}$ | 1             | +        | 1 | $\perp$ | ig       |          |               |                         |  | DISPATCHED BY: (Signature) DAT | E/TIME | HECEIVED FOR LAB BY: |       |          |  |  |
| H   | + | -  | _        |          | +        | + | +             | ╁             | +        | ╁ | ╀       | $\vdash$ | $\vdash$ | $\vdash$      | -                       |  | METHOD OF SHIPMENT             |        |                      |       |          |  |  |
|   | 1 |    |          |          | <u>†</u> | 1 | <u>t</u>      |               | 1        | 1 |         |          | Ļ        | aton          | rate                    | ry Copy - Project Office Copy - Field or | METHOD OF SHIPMENT Office Capy |        | 11 Ji Co. 16/        | 2/33  |          |  |  |

White Yellow Pink

NET Pacific, Inc. 435 Tesconi Circle Santa Rosa, CA 95401 Tel: (707) 526-7200 Fax: (707) 526-9623

Formerly: ANATEC Labs, Inc.



Mary Jo Hessler Harding Lawson Associates 200 Rush Landing Rd. PO Box 6107 Novato. CA 94947 12-30-88

NET Pacific Log No: 5164 (1-6)

Series No: 281

Client Ref: Mary Jo Hessler

Subject: Analytical Results for Six Water Samples Collected at 1725 Park St.,

Alameda, CA Received 12-29-88.

Dear Ms. Hessler:

Analysis of the samples referenced above has been completed. Results are presented on the following pages.

Please feel welcome to contact us should you have questions regarding procedures or results.

Submitted by:

Approved by:

Fred Choske

Project Chemist

William G. Rotz

Project Manager

#### **KEY TO ABBREVIATIONS**

mg/Kg (ppm): Concentration in units of milligrams of analyte per

kilogram of sample, wet-weight basis (parts per million).

mg/L : Concentration in units of milligrams of analyte per

liter of sample, unless noted otherwise.

mL/L/hr : Milliliters per liter per hour.

MPN/100 mL : Most probable number of bacteria per one hundred milliliters

of sample.

NA : Not analyzed; see cover letter for details.

ND : Not detected; the analyte concentration is less than the listed

reporting limit.

NR : Not requested.

NTU : Nephelometric turbidity units.

RL : Reporting limit.

RPD : Relative percent deviation.

SNA : Standard not available.

ug/Kg (ppb) : Concentration in units of micrograms of analyte per

kilogram of sample, wet-weight basis (parts per billion).

ug/L : Concentration in units of micrograms of analyte per

liter of sample.

ug/filter : Concentration in units of micrograms of analyte per

filter.

umhos/cm : Micromhos per centimeter.

\* : See cover letter for details.

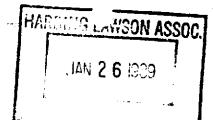
- 3 -



|  |                                | Descriptor, L                      | ab No. and Res                             | sults (ug/L)                  |
|--|--------------------------------|------------------------------------|--|-------------------------------|
|  | Reporting<br>Limit             | #1 8'<br>12-28-88<br>0900          | #2 8°<br>12-28-88<br>1000                  | #3 8'<br>12-28-88<br>1140     |
| Parameter  | (ug/L )                        | (-20472 )                          | (-20473 ) <sup>a</sup>                     | (-20474 )                     |
| PETROLEUM HYDROCARBONS<br>Volatile, as Gasoline<br>Benzene<br>Ethyl benzene<br>Toluene<br>Xylenes, total | 50<br>0.5<br>0.6<br>0.5<br>1.5 | ND<br>ND<br>ND<br>ND<br>ND         | 20,000<br>4,400<br>2,500<br>3,000<br>6,100 | 650<br>200<br>51<br>6.2<br>76 |
|  |                                | Descriptor, L                      | ab No. and Res                             | ults (ug/L)                   |
|  | Reporting                      | #4 8'<br>12-28-88<br>1250          | #5 8'<br>12-28-88<br>1430                  | #6<br>12-28-88                |
| Parameter  | Limit<br><u>(ug/L</u> )        | (-20475 ) <sup>a</sup>             | (-20476 ) <sup>a</sup>                     | <u>(-20477</u> )              |
| PETROLEUM HYDROCARBONS<br>Volatile, as Gasoline<br>Benzene<br>Ethyl benzene<br>Toluene<br>Xylenes, total | 50<br>0.5<br>0.6<br>0.5        | 45,000<br>11,000<br>3,200<br>5,200 | 76,000<br>1,600<br>1,500<br>10,000         | 800<br>51<br>30<br>69         |

 $<sup>^{\</sup>rm a}{\rm The}$  reporting limits for this sample are 10 times the listed reporting limits.





PACE 1 OF 6

#### ENVIRONMENTAL & OCCUPATIONAL HEALTH SERVICES

3440 Vincent Road Pleasant Hill, CA 94523 • (415) 930-9090 • FAX# (415) 930-0256

#### LABORATORY ANALYSIS REPORT

HARDING LAWSON ASSOCIATES 200 RUSH LANDING ROAD

P.O. BOX 6107

NOVATO, CA 94948

ATTN: Mike Siembieda

CLIENT PROJECT ID: 04167,249.02

**REPORT DATE: 01/25/89** 

DATE SAMPLED: 01/09/89

DATE RECEIVED: 01/10/89

MED-TOX JOB NO: 8801037

ANALYSIS OF: THREE SOIL SAMPLES FOR BENZENE, TOLUENE,

ETHYLBENZENE, TOTAL XYLENES, AND TOTAL

PETROLEUM HYDROCARBONS

NOTE: INDIVIDUAL LABORATORY METHOD BLANKS,

APPROPRIATE TO EACH APPLICABLE METHOD, WERE PROCESSED IN THE SAME MANNER AS ACTUAL SAMPLES. NONE OF THESE METHOD BLANKS CONTAINED A DETECTABLE QUANTITY

OF ANY ANALYTE

See attached for results

Michael J. Jaeger, Manager Organic Laboratory

Results FAXed to Mike Siembieda 01/23/89

SAN DIEGO

LOS ANGELES

SAN FRANCISCO

SEATTLE

WASHINGTON, D.C.



PAGE 2 OF 6

#### HARDING LAWSON ASSOCIATES

CLIENT ID: B-4-05.0

CLIENT JOB NO: 04167,249.02

DATE SAMPLED: 01/09/89 DATE RECEIVED: 01/10/89

MED-TOX LAB NO: 8901037-01A MED-TOX JOB NO: 8901037

DATE ANALYZED: 01/13/89 REPORT DATE: 01/25/89

#### TOTAL PETROLEUM HYDROCARBONS WITH PURGEABLE AROMATICS

METHOD: EPA 8020, 8015 (PURGE & TRAP)

|              | CONCENTRATION (ug/kg) | DETECTION<br>LIMIT<br>(ug/kg) |
|--------------|-----------------------|-------------------------------|
| Benzene      | 17                    | 1                             |
| Toluene      | 2                     | 1                             |
| Ethylbenzene | 7                     | 1                             |
| Xylenes      | 12                    | 3                             |

Total Petroleum Hydrocarbons as:

Gasoline

0.6 mg/kg

0.2 mg/kg

ND = Not detected at or above indicated method detection limit



PAGE 3 OF 6

#### HARDING LAWSON ASSOCIATES

CLIENT ID: B-5-04.5 CLIENT JOB NO: 04167,249.02

DATE SAMPLED: 01/09/89 DATE RECEIVED: 01/10/89 MED-TOX LAB NO: 8901037-02A MED-TOX JOB NO: 8901037

DATE ANALYZED: 01/13/89 **REPORT DATE: 01/25/89** 

#### TOTAL PETROLEUM HYDROCARBONS WITH PURGEABLE AROMATICS

METHOD: EPA 8020, 8015 (PURGE & TRAP)

|              | CONCENTRATION<br>(ug/kg) | DETECTION<br>LIMIT<br>(ug/kg) |
|--------------|--------------------------|-------------------------------|
| Benzene      | 55                       | 1                             |
| Toluene      | 7                        | 1                             |
| Ethylbenzene | <b>6</b> 6               | 1                             |
| Xylenes      | 240                      | 3                             |

Total Petroleum Hydrocarbons as:

Gasoline

2 mg/kg 0.2 mg/kg

ND = Not detected at or above indicated method detection limit



PAGE 4 OF 6

#### HARDING LAWSON ASSOCIATES

CLIENT ID: B-6-05.0 CLIENT JOB NO: 04167,249.02

MED-TOX LAB NO: 8901037-03A

MED-TOX JOB NO: 8901037

DATE SAMPLED: 01/09/89

DATE ANALYZED: 01/13-17/89 REPORT DATE: 01/25/89 DATE RECEIVED: 01/10/89

#### TOTAL PETROLEUM HYDROCARBONS WITH PURGEABLE AROMATICS

METHOD: EPA 8020, 8015 (PURGE & TRAP)

|              | CONCENTRATION<br>(ug/kg) | DETECTION<br>LIMIT<br>(ug/kg) |
|--------------|--------------------------|-------------------------------|
| Benzene      | . 3,700                  | 10                            |
| Toluene      | . 970                    | 10                            |
| Ethylbenzene | . 23,000                 | 10                            |
| Xylenes      | . 94,000                 | 30                            |

Total Petroleum Hydrocarbons as:

Gasoline

490 mg/kg

2 mg/kg

ND = Not detected at or above indicated method detection limit



MED-TOX JOB NO: 8901037 HLA JOB NO: 04167,249.02

PAGE 5 OF 6

### MATRIX SPIKE RECOVERY SUMMARY METHOD 8020/8015 (PURGE & TRAP)

| ANALYTE         | Spike<br>Conc.<br>(ug/kg) | Sample<br>Result<br>(ug/kg) | MS<br>Result<br>(ug/kg) | MSD<br>Result<br>(ug/kg) | Average<br>Percent<br>Recovery | RPD |
|-----------------|---------------------------|-----------------------------|-------------------------|--------------------------|--------------------------------|-----|
| Benzene         | 18.1                      | 3.2                         | 19.8                    | 19.8                     | 91.7                           | 0.0 |
| Toluene         | 86.8                      | 9.7                         | 97.2                    | 94.2                     | 91.1                           | 3.1 |
| TPH as Gasoline | 1140                      | ND                          | 1050                    | 998                      | 89.8                           | 5.5 |

#### CURRENT QC LIMITS

| <u>Analyte</u>     | Percent Recovery     | <u>RPD</u> |
|--------------------|----------------------|------------|
| Benzene<br>Toluene | (60-142)<br>(60-137) | 24<br>25   |
| TPH as Gasoline    | (60-137)             | 26         |

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference
ND = Not Detected



MED-TOX JOB NO: 8901037 HLA JOB NO: 04167,249.02

PAGE 6 OF 6

### MATRIX SPIKE RECOVERY SUMMARY METHOD 8020/8015 (PURGE & TRAP)

| ANALYTE         | Spike<br>Conc.<br>(ug/kg) | Sample<br>Result<br>(ug/kg) | MS<br>Result<br>(ug/kg) | MSD<br>Result<br>(ug/kg) | Average<br>Percent<br>Recovery | RPD |
|-----------------|---------------------------|-----------------------------|-------------------------|--------------------------|--------------------------------|-----|
| Benzene         | 20.2                      | 54.8                        | 39.4                    | 51.1                     |                                |     |
| Toluene         | 101                       | 7.2                         | 91.3                    | 89.3                     | 82.7                           | 2.4 |
| TPH as Gasoline | 1140                      | 1550                        | 1850                    | 2010                     | 40.0                           | 42  |

In the event that Matrix Spike Compound concentration in the discrete sample exceeds the amount spiked, recovery data is not compiled.

#### CURRENT QC LIMITS

| <u>Analyte</u>     | Percent Recovery                 | <u>RPD</u> |
|--------------------|----------------------------------|------------|
| Benzene<br>Toluene | (60-142)<br>(60-137)<br>(60-131) | 24<br>25   |
| TPH as Gasoline    | (60-131)                         | 26         |

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference

ND = Not Detected

| Job<br>Nam<br>Proje | Nu e/L        | .00 | Box Ho, Co<br>892-0<br>copy:<br>er | Lank<br>6107<br>alifor<br>0821<br>415/ | fing of nia 9 892- | 1586<br>1586 | 5 6 X | 7,<br>X | <u>5</u> | ب<br><u>۱</u><br>ا | 9.<br><i>Y</i> | 10<br>H  | AL                             | ·           | - P      | <u>n</u> |    | ;<br> | Sa<br> | m              | ole            | ers | <b>:</b> | <u>S</u> _ |  | nichellehatson   | - [- | .ab          | : <u>1</u>   |              | AN   | IAL<br>U | YS                        | TE |              |             | STED       |      | 7  |
|---------------------|---------------|-----|------------------------------------|--|--------------------|--------------|-------|---------|----------|--------------------|----------------|----------|--------------------------------|-------------|----------|----------|----|-------|--------|----------------|----------------|-----|----------|------------|--|--|------|--------------|--------------|--------------|------|----------|---------------------------|----|--------------|-------------|------------|------|----|
| Sounce<br>C C CODE  | <del></del> - | MAT |                                    | ,<br>                                  | #0                 | ON<br>k PI   | TON   | INE     | - AS     |                    | r              | SA<br>NU | MPI<br>MBI<br>OR<br>LAB<br>MBI | E<br>E<br>R | q<br>• ( | 080      | Yr | 200   | 101    | D <sub>1</sub> | TE<br>ソ<br>ラ / | Ti  | ime      | (Sign      | nat  | STATION DESCRIPTION/ NOTES  / A  |      | EPA 601/8010 | EPA 624/8240 | EPA 625/8270 |      | ne/Tot   | XXX Total Petrol. Hydroca |    |              |             |            |      |    |
|                     |               |     |                                    |  |                    |              |       |         |          |                    |                |          |                                |             |          |          |    |       |        |                |                |     |          |            |  |  |      |              |              |              |      |          |                           | +  | <br> -<br> - |             |            |      |    |
| Vr                  | Wk            | ,   | R                                  | 1                                      |                    | PEP          | •     | М       | COL      |                    | QA             | •        |                                | 2           | w        | ۳        |    |       | עד     | EOU<br>2L      | _              |     |          | C RE       | <u>〉</u><br>** ** ** ** ** ** ** ** ** ** ** ** ** | INQUISHED BY: (Signature)  With Church Church (Signature)  INQUISHED BY: (Signature) | REC  | St John Of   |              |              |      |          |                           |    | DAT          | * 3<br>E/TI | , 30<br>ME |      |    |
|                     |               |     | $\overline{+}$                     | 1                                      |                    |              |       | $ar{1}$ | F        | $\prod$            | 7              | -        |                                |             |          |          |    |       |        |                |                |     |          | RE         | EL   | INQUISHED BY: (Signature)  | REC  | EIV          | ED (         | BY:          | (Sig | met      | ure)                      | i  | -            | <del></del> | DAT        | E/TI | ME |

DISPATCHED BY: (Signature)

METHOD OF SHIPMENT

DATE/TIME

....

RECEIVED FOR LABBY: DATE/TIME (Signature) Van Vluk 1-10/7+5

TAL

DATE:

2/15/89

LOG NO.:

6915

DATE SAMPLED:

1/17/89

DATE RECEIVED:

1/18/89

CUSTOMER:

Harding Lawson Associates

REQUESTER:

Mary Jo Heassler

PROJECT:

No. 04167, 249.02, Exxon Alameda

|   |       |                    | Samp               | le Type:           | Water              |                    | ·                  |
|---|-------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|   |       | M                  | W-1                | м                  | W-2                | M                  | W-3                |
| Method and<br><u>Constituent</u>              | Units | Concen-<br>tration | Detection<br>Limit | Concen-<br>tration | Detection<br>Limit | Concen-<br>tration | Detection<br>Limit |
| DHS Method:                                   |       |                    |                    |                    |                    |                    |                    |
| Total Petroleum Hydro-<br>carbons as Gasoline | ug/l  | 6,800              | 300                | 30,000             | 2,000              | 5,300              | <b>30</b> 0        |
| Modified EPA Method 8020:                     |       |                    |                    |                    |                    |                    |                    |
| Benzene                                       | ug/l  | 2,000              | 30                 | 6,600              | 200                | 2,500              | 30                 |
| Toluene                                       | ug/l  | 91                 | 30                 | 3,300              | 200                | 230                | 30                 |
| Xylenes                                       | ug/l  | 1,600              | 60                 | 7,700              | 300                | 1,100              | 60                 |
| Ethyl Benzene                                 | ug/l  | 800                | 40                 | 1,600              | 200                | 590                | 40                 |

DATE: LOG NO.: 2/15/89 6915 1/17/89

DATE SAMPLED: DATE RECEIVED:

1/1//89

PAGE:

Two

Sample Type: Water

|   |              | M                  | W-4                | M                  | W-5                | MW-6               |                           |  |  |
|---|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------------|--|--|
| Method and<br>Constituent                     | <u>Units</u> | Concen-<br>tration | Detection<br>Limit | Concen-<br>tration | Detection<br>Limit | Concen-<br>tration | Detection<br><u>Limit</u> |  |  |
| DHS Method:                                   |              |                    |                    |                    |                    |                    |                           |  |  |
| Total Petroleum Hydro-<br>carbons as Gasoline | ug/l         | 19,000             | 300                | 26,000             | 300                | 38,000             | 4,000                     |  |  |
| Modified EPA Method 8020:                     |              |                    |                    |                    |                    |                    |                           |  |  |
| Benzene                                       | ug/l         | 1,000              | 10                 | 8,700              | 200                | 7,400              | 400                       |  |  |
| Toluene                                       | ug/l         | 1,500              | 10                 | 3,900              | 200                | 9,300              | 400                       |  |  |
| Xylenes                                       | ug/1         | 2,200              | 20                 | 5,900              | 300                | 9,900              | 600                       |  |  |
| Ethyl Benzene                                 | ug/l         | 360                | 20                 | <b>9</b> 90        | 200                | 2,000              | 400                       |  |  |

Dan Farah

Dan Farah, Ph.D. Supervisory Chemist

DF:mln

| 7655 Redwood Boulevard P.O. Box 578 Novato, California 94948 415/892-0821 Telecopy: 415/892-0831 Telex: 340523 |          |              |   |   |   |   |   |  |  | Samplers: MARY JOHRASSUER  |  |  |  |  |  |  |   |   | Lab: TRACE ANALYSES  ANALYSIS REQUESTED   |  |                        |  |  |  |  |  |  |  |   |   |  |  |  |   |   |   |   |  |  |   |   |  |  |  |  |
|--|----------|--------------|---|---|---|---|---|--|--|--|--|--|--|--|--|--|---|---|---|--|------------------------|--|--|--|--|--|--|--|---|---|--|--|--|---|---|---|---|--|--|---|---|--|--|--|--|
| Job Number: 04/67,249,02   |          |              |   |   |   |   |   |  |  |  |  |  |  |  |  |  |   |   |   |  | ן ו                    | +  | 66)  | <b>,</b>   |  |  |  |  | '   |   | l  |  |  |   |   |   |   |  |  |   |   |  |  |  |  |
| Name/Location: Exxon, Alameda  |          |              |   |   |   |   |   |  |  |  |  |  |  |  |  |  | <u></u>   | /lene   | ė   |  |                        |  | 1  |  |  |  | Ì  |  |   |   |  |  |  |   |   |   |   |  |  |   |   |  |  |  |  |
| Project Manager: Michael Sternbieda Recorder: Manager: Michael Sternbied Recorder: (Signature Required)        |          |              |   |   |   |   |   |  |  |  |  |  |  |  |  |  |   | Seta  | ×××   | dro<br>o   |                        |  | Ιl   | 1  | İ  |  |  | ١  |   |   |  |  |  |   |   |   |   |  |  |   |   |  |  |  |  |
| #CONTAINERS SAMPLE   |          |              |   |   |   |   |   | T  |  |  |  |  |  |  |  |  |   | -   | 7   |  |                        |  | 240  | 270  | 빌  | oluer  | £  |  |   |   |  |  |  | ],,   | ļ   |   |   |  |  |   |   |  |  |  |  |
|  |          | tent         |   |   | 1   | Π   | Τ   |  |  |  | 1  |  | •  | O<br>L   | R<br>AB  |  |   |   |   |  |                        |  | D  | AT   | E  |  |  |  |   | STATION DESCRIPTION/<br>NOTES   | 801/8  | 602/8  | 824/8  | 625/8   | ty PII  | ne/T  | Petro   |  |  |   |   |  |  |  |  |
|  | Water    | Sedin        | Soil  | 7   | Š   | F, 80   | ·SE   | 1100   |  |  | 5  | <br>′r   | _  |  | IRE  |  |   | $\dagger$   | Υ   | r I  | М                      | o  | ε  | ) v  |  | Tj   | ime  |  | ł   |   | EPA  | EPA  | EPA  | EPA   | Prior   | Benz  | Total   |  |  |   |   |  |  |  |  |
| †  | X        | <b>†</b>     |   | 7   | 1   | T   |   | Z  | T  |  | M  | W  | <b>†</b>   | 7  |  | П  | Ì   | 7   | 3   | R  | 0                      | 7  | 7  | 7  | 0  | _  |  |  | 1   | STANDARD TURN AROUND TIME   |  |  | 1  | 7   | 7   | K   | X   |  | П  | П   | 1   | Ť  | ╁  | T  | t  |
|  | x        |              |   | $oxed{\Box}$  | I   |   |   | 2  |  |  | W  | W  | · -  | ر  |  |  |   | m I   | न्न   | 8  | 0                      | 1  | 1  | 8  | 1  | 2  | 40   | S  | 1   | "   |  |  |  |   |   | $\overline{X}$  | X   |  |  | П   |   |  |  | T  | Ì  |
|  | X        |              |   |   |   |   |   | 2  |  |  | M  | W  | _  | 3  | L  |  |   | $\perp$   | 2   | 8  | 0                      | _  | /  | 1  | 0  | 4  | 0  | 6  |   | it .  |  |  |  | $\Box$  |   | X   | X   |  |  | $\Box$  |   |  |  | $oxed{\mathbb{L}}$   | I  |
| ┸  | X        |              |   | $\perp$   | 1   | L   |   | 2  | L  |  | Μ  | И  | 4-   | 4  | L  |  |   | _ֈ՝   | Z   | 3  | 0                      | L  | L  | 1  | 0  | 6  | 3  | 4  | 1   | 1/  |  | Ц  |  | ┙   |   | X   | X   | $\bigsqcup$  | Ш  | Ц   |   |  |  | L  |  |
| L  | X.       |              | Щ   |   | 1   | L   | _   | 2  | L  | L.   | 4  | W  | <u> </u>   | 5  | L  | Ш  | _   | ╝   | X   | 8  |                        | L  | 1  | 7  | 10   | 15   | 3  | 5  | 1   | 16  |  | Ш  |  |   | السا  | X   | X   | Ш  |  | Ц   |   |  | ┸  | L  | l  |
| <u>iL</u>  | X        |              |   |   | ┸   | L   | L   | 2  | L  |  | XI   | W  | 1-   | 4  | L  | Ц  | ┙   | 1   | Ŋ   | 8  |                        | Ĺ  | <u>_</u>   | 1  | 1  | 3  | _=   | 占  | 4   | "   |  | Ц  |  |   |   | X   | X   |  | $\sqcup$   | Ц   |   |  | L  | L  | L  |
|  | L        | L            |   |   |   | L   | L   | <u> </u>   | <u> </u>   | <u>.</u>   | <b> </b>   | L  | L  |  | L  |  |   | ┙   |   |  |                        |  | L  | Ľ  |  | L  |  | L  |   |   |  | Ц  |  |   |   |   |   | Ш  |  | Ц   |   | $\perp$  | Ĺ  | L  |  |
| 1  | ╁        | <u> </u>     |   | _   |   | L   | 1   | L  | L  | L  | <u> </u>   | L  | L  | <u> </u>   | <u> </u> _   |  | _   | ┵   |   | _  | ┙                      |  | L  |  | L  | L  | ╽  | L  |   |   |  | Ц  | _  | _   | $\dashv$  | _   |   | Ш  |  | Ц   |   |  |  | L  | Ĺ  |
| 1  | ╄        | L            | Ц   | $\perp$   | 1   | Ļ   | ╀   | ╀  | L  | ╙  | L  | L  | ╀  | L  | L  | Ц  | 4   | 4   | 4   | 4  | _                      | _  | L  | _  | L  | ┸  | ↓_   | ↓_   |   |   |  | Ц  | 4  | ┙   | ┙   | ╝   |   | Ш  | Ш  | Ц   | $\bot$  | _  | $\perp$  | L  | L  |
| 1  | <u> </u> |              |   | $\perp$   |   |   |   | <u>L</u>   | L  | L  |  | L  | L  |  | <u> </u>   | Ш  |   | 上   | _   |  |                        |  |  |  | Ļ  | <u>_</u>   | 1  | <u> </u>   |   |   |  |  |  |   |   |   |   |  |  | Ц   |   |  |  |  | L  |
| EEST CD  |          |              |   |   |   |   |   | Mi:  | MISCELLANEOUS  |  |  |  |  |  |  |  |   |   | CHAIN OF CUSTODY RECORD   |  |                        |  |  |  |  | _  |  |  |   |   |  |  |  |   |   |   |   |  |  |   |   |  |  |  |  |
|  |          | Nu ne/L ject | 7655 P.O. Nova 415/8 Telex Telex Telex Numb ne/Loc ject N MAT Javen Nova Nova Nova Nova Nova Nova Nova Nova | 7655 Red P.O. Box Novato, C. 415/892-Telecopy. Telex: 34 Number ne/Localiect Mai MATRI Late page 25 S X X X X X X X X X X X X X X X X X X | 7655 Redwood P.O. Box 578 Novato, Califor 15/892-0821 Telecopy: 415 Telex: 340523 Number: ne/Locatio ject Manae  MATRIX  WATRIX  LAB NUMBER | 7655 Redwood Bot P.O. Box 578 Novato, California 9 415/892-0821 Telecopy: 415/892- Telex: 340523 Number: ne/Location:- ject Manage  MATRIX  ### ### ### ### ### ### ### ### ### # | 7655 Redwood Boulever P.O. Box 578 Novato, California 9494 415/892-0821 Telecopy: 415/892-083 Telex: 340523 Number: | 7655 Redwood Boulevard P.O. Box 578 Novato, California 94948 415/892-0821 Telecopy: 415/892-0831 Telex: 340523 Number: | 7655 Redwood Boulevard P.O. Box 578 Novato, California 94948 415/892-0821 Telecopy: 415/892-0831 Telex: 340523 Number: | 7655 Redwood Boulevard P.O. Box 578 Novato, California 94948 415/892-0821 Telecopy: 415/892-0831 Telex: 340523 Number: | 7655 Redwood Boulevard P.O. Box 578 Novato, California 94948 415/892-0821 Telecopy: 415/892-0831 Telex: 340523 Number: | 7655 Redwood Boulevard P.O. Box 578 Novato, California 94948 415/892-0821 Telecopy: 415/892-0831 Telex: 340523 Number: | 7655 Redwood Boulevard P.O. Box 578 Novato, California 94948 415/892-0821 Telecopy: 415/892-0831 Telex: 340523 Number: | 7655 Redwood Boulevard P.O. Box 578 Novato, California 94948 415/892-0821 Telecopy: 415/892-0831 Telex: 340523 Number: | 7655 Redwood Boulevard P.O. Box 578 Novato, California 94948 415/892-0821 Telecopy: 415/892-0831 Telex: 340523 Number: | 7655 Redwood Boulevard P.O. Box 578 Novato, California 94948 415/892-0821 Telecopy: 415/892-0831 Telex: 340523 Number: | 7655 Redwood Boulevard P.O. Box 1578 Novato, California 94948 415/892-0821 Telecopy: 415/892-0831 Telex: 340523 Number: | 7655 Redwood Boulevard P.O. Box 578 Novato, California 94948 415/892-0821 Telecopy: 415/892-0831 Telex: 340523 Number: QHICT 249.02  ne/Location: Exxon, Alcunedae  ject Manager: Michael Steinbie  MATRIX #CONTAINERS SAMPLE NUMBER OR LAB NUMBER Yr Wk Seq  X 2 MW-1  X 2 MW-3  X 2 MW-4  X 2 MW-6  S X 3 MR 2 MR | 7655 Redwood Boulevard P.O. Box 578 No. Box 578 No. Box 578 No. Box 578 No. Box 578 Number: | 7655 Redwood Boulevard P.O. Box 578 Novato, California 94948 415/892-0821 Telecopy: 415/892-0831 Telex: 340523 Number: | 7655 Redwood Boulevard | 7655 Redwood Boulevard   P.O. Box 578   Novato, California 94948   415/892-0821   Telecopy: 415/892-0831   Telecopy: 41 | 7655 Redwood Boulevard P.O. Box 578 P.O. Box 578 A15/892-0821 Telecx 340523 Number:  Deficit J. 49. 0. 2  MATRIX #CONTAINERS & PRESERV.  MATRIX #CONTAINERS & PRESERV.  MATRIX #CONTAINERS & NUMBER OR LAB NUMBER Vr Wk Seq Yr Mo  X | Telecopy: 415/892-0831 Telecopy: 415/892-0831 Telex: 340523  Number: | Teles Redwood Boulevard P.O. Bon 578 Novato, California 94948 415/892-0821 Teles: 340523 Number:  Dett Manager: Michael Steinbreda Recording Recor | Telex: 340523  Number: OHAIN OF P.O. Box 578  Number: OHAIN OF Sample  Telex: 340523  Number: OHAIN OF Sample  Te | P.O. BOX 578 Novalo, California 94948 415/892-0821 Telex: 340523 Number: Q1+16-1, 2+17, 0-2  ne/Location: Exxon, Algune day  ject Manager: Michael Stemble day  MATRIX #CONTAINERS & PRESERV. Number  OR LAB NUMBER  TOR LAB NUMBER  DEPTH COL LAB NUMBER  LAB NUM | P.O. BOX 578 Novato, California 94948 415/892-0821 Telex: 340523 Number: QHICT 247.07  ne/Location: Exxon, Hamedae  ject Manager: Michael Steinbiedae  MATRIX #CONTAINERS SAMPLE NUMBER  NUMBER  NUMBER  NUMBER  NUMBER  A PRESERV.  NUMBER  N | 7655 Redwood Boulevard P.O. Box 578 Robusto California 94948 415/892-0821 Telex: 340523 Number: OHICA 249, 02 ne/Location: Exxon, Algunedae ject Manager: Michael Sternbiedae Recorder: Zisig MATRIX #CONTAINERS SAMPLE NUMBER OR LAB NUMBER Vr Wk Seq Yr Mo Dy Time LAB NUMBER X | P.O. Box 578 P.O. | CHAIN OF CUSTODY FORM  POBOS 78 Novato, California 94948 415/962-0821 Telecopy 415/962-0 | CHAIN OF CUSTODY FORM  So 578  PO Box 578  Novato, California 99484 415/92-0821 Telecopy 415/ | CHAIN OF CUSTODY FORM  Lab:  10-08 bits 78  Novato, California 94-94  415/805-20821  Telecopy 415/892-0831  Teleco | CHAIN OF CUSTODY FORM  Lab: III  PO.BOS 78  Novato, California 9948 415/982-0821 Teleccopy | Telecopy 415/892-0831 | TESS Retword Bothward  PO. Bot 878  PO. Bot | TESS Retwood Bollward PO. Bot 73 PO. Bot 73 PO. Bot 74 | CHAIN OF CUSTODY FORM  Lab: TRACE  PO. Box 578  Samplers: Mary Johras Lee  Treicropy 415/892-0831  Telex 306/833  Number: Other Stemberg Recorder: 776 April 10 Stemberg Recorder: 776 | TESS Retwood Bollward PO Bot 78 PO B | CHAIN OF CUSTODY FORM  Lab: TRACE AMA  PO. 80s 578  PO. 80s 578  PO. 80s 578  PO. 80s 578  Number: Differ 34948  415992-0831  Number: Differ 3494.07  MATRIX #CONTAINERS SAMPLE NUMBER NUMBER  PO. 80 578  Number: Differ 3494.07  MATRIX #CONTAINERS SAMPLE NUMBER NUMBER  PO. 80 578  Number: Differ 3494.07  NOTES  PO. 80 578  NUMBER  NOTES  STATION DESCRIPTION/ NOTES  STATION DESCRIPTION/ NOTES  STANDARD TURK ARGUND TIME  XX | TRACE AMAGE  P.O. Box 578 P.O. | TABLE DEPTH COL DA MISCELLANEOUS  CHAIN OF CUSTODY FORM  Lab: TRACE ANALYSIS REQUES  TO BOST 38 19498  ANALYSIS REQUES  Samplers: Mary Johnseles  ANALYSIS REQUES  ANALYSIS REQUES  ANALYSIS REQUES  ANALYSIS REQUES  Samplers: Mary Johnseles  Samplers: Ma | CHAIN OF CUSTODY FORM  PO. Best 294948 41-5992-0831 Telescopy of 5992-0831 Telescopy of 599 | TRACE AMAZISE  CHAIN OF CUSTODY FORM  Lab: TRACE AMAZISES  PO. Bos 578   CHAIN OF CUSTODY FORM  Lab: TRACE ALREASES  PO. Bost 78  

|   |          | NUI |     |               | - | PTH<br>N<br>ET | · [ | CO<br>MT<br>CE | D             |              | DA<br>DDI | E | MISCELLANEOUS | CHAIN C   | F CUST   | ODY RECORD  | 46*                         |                |
|---|----------|-----|-----|---------------|---|----------------|-----|----------------|---------------|--------------|-----------|---|---------------|---|----------|---|-----------------------------|----------------|
| - | <u>-</u> | Wk  | Sec |               |   |                |     |                |               | <del> </del> |           |   |               | RELINQUISHED BY: (Signature)  MANA 10 Thans (22  RELINQUISHED BY: (Signature) |          | VED BY: (Signature) TAL<br>CXS DLUSH<br>VED BY: (Signature) | DATE<br>///\\$/\$\f<br>DATE | 14.31          |
| - |          |     |     | <u> </u>      |   |                |     |                |               |              |           |   |               | RELINQUISHED BY: (Signature)  |          | VED BY: (Signature)   | DATE                        |                |
| - |          |     |     |               |   |                |     | -              | +             | -            |           |   |               | RELINQUISHED BY: (Signature)  DISPATCHED BY: (Signature)  DATE                | RECEI    | VED BY: (Signature)  RECEIVED FOR LAB BY: (Signature)       |                             | /TIME<br>/TIME |
| ł |          |     |     | $\frac{1}{1}$ |   |                |     |                | $\frac{1}{1}$ | $\pm$        | $\perp$   |   | ř.            | METHOD OF SHIPMENT  | <u> </u> |   |                             |                |

#### GROUND-WATER SAMPLING FORM **Harding Lawson Associates** Engineers and Geoscientists Well Type: Monitor □ Extraction □ Other \_\_\_\_\_ Well Material: ⊠PVC □ St. Steel □ Other \_\_\_ JOB Name EXXON ALA MEDA Date <u>6/1/89</u> Job Number 04/16/7 Sampled by \_\_\_\_\_\_\_\_ Recorded by \_ WELLPURGING PURGEMETHOD PURGENOLUME Bailer - Type: \_ Casing Diameter (D in inches): 2-inch (14-inch 6-inch Other \_\_ Other - Type: \_ Total Depth of Casing (TD in feet BTOC):\_\_\_\_ PUMP INTAKE SET ING Water Level Depth (WL in feet BTOC):\_\_\_\_ ☐ Near Bottom ☐ Near Top ☐ Other \_\_\_ Number of Well Volumes to be purged (# Vols) Depth in feet (BTOC): \_\_\_\_\_ Screen Interval in feet (BTOC): X 3 □4 □5 □10 □ Other\_ from \_\_\_\_\_ to \_\_ PURGEWOLUME CALCULATION: ACTUAL PURGE VOLUME PURGE RATE PURGE TIME 1428 Start 1448 Stop 20 Elapsed Initial 1.2 gpm Final 1.2 gpm FIELD PARAMETER MEASUREMENT LAURES Cond. (µmhos/cm) TRE Other WTY Minutes Since Pumping Began Minutes Since Pumping Began Other NTU Cond. ρН 820 フロ 74 GAL. 6.4 O GAL 880 Zb. 18 16 870 Meter Nos. 20 860 16 Observations During Purging (Well Condition, Turbidity, Color, Odor): SLIGHT HYDROCARBOLL GROER, AND SHEEL MOTHER 55 GAL DRUM (CN SITE) Discharge Water Disposal: Sanitary Sewer Sewer WELL SAMPLING SAMPLING METHOD Same As Above Grab - Type: \_\_\_ 🔀 Bailer - Type: \_ SAMPLEDISTRIBUTION Sample Series: Other - Type: \_\_\_ SAMPLE DISTRIBUTION Comments Analysis Requested Preservatives Volume/Cont. Sample No. MET TPH AS GASOLLIE 3 VOAS 0101. BIXE QUALITY CONTROL SAMPLES Other Samples Blank Samples **Duplicate Samples** Sample No. Sample No. Original Sample No. Duplicate Sample No. Туре

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