SDMS DOCID # 1149824

State of California
Environmental Protection Agency

# SITE CLEANUP CASE REVIEW FORM

Los Angeles Regional
Water Quality Control Board

| Date:December 10, 1999 | SLIC File No.:883 | Case Reviewer: Mr. Jimmie Woo | |
|---|---|---|---|
| Site Name/Address:<br>**Los Nietos Business Center**<br>**9120-9160 S. Norwalk Blvd.**<br>**11925-11930 E. Los Nietos Rd.**<br>**Santa Fe Springs, CA** | Responsible Parties:<br>WHC-six Real Estate Limited Partnership<br>C/o Ms. Vera Ingram<br>Archon Group | Address:<br>600 E. Las Colinas Blvd. 400<br>Irving, TX 75039 | Phone No.:<br>(972)368-8447 |

## I. SITE CHARACTERIZATION INFORMATION (GW=groundwater, NR =Not Reported )

| | | | |
|---|---|---|---|
| GW Basin: Central | Beneficial uses: MUN, IND, PROC, & AGR | Depth to drinking water aquifer (feet): 80 | |
| Distance to nearest municipal supply well: 0.3 Miles (RB Map #127)(Santa Fe Spring Well #1) | | Dist. between shallow GW contamination and aquifer (feet): 37 | |
| GW highest depth: 36 | GW lowest depth: 50 | Well screen interval: 40-60 | Flow direction: SW |
| Soil types: Silty Sand, Clay, Silty Clay, Sandy Silt, Sand, & Gravel. | | Maximum soil depth sampled (feet): 60 | |

## II. MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS -- Initial and Latest (ND=Non-detect; NR=Not reported)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 76 | 4.4 | 82 | 81.1 | ND | ND | 10 | 2.3 |
| | ND | ND | 78 | 13.2 | ND | ND | 0.51 | ND |
| | ND | ND | 4.2 | 1.9 | ND | ND | 17 | 6.2 |
| | ND | ND | 33 | 4.6 | ND | ND | ND | ND |
| | ND | ND | 13 | 25.6 | 87,000 | 370(88) | NR | NR |
| | NR | NR | NR | NR | 1,620 | 37.6(88) | 0.070 | 163 |
| | ND | ND | ND | ND | ND | ND(88) | 0.013 | 83 |
| | NR | NR | NR | NR | 0.25 | 0.17(88) | ND | 176 |

## III. SOIL REMEDIATION

| | |
|---|---|
| Method:Excavation (10,000 cubic yards) | Duration of remediation: (April – May 1988) |

## IV. GROUNDWATER REMEDIATION

| | |
|---|---|
| Method:None | Duration of remediation:N/A |

## V. FREE PRODUCT:

| | |
|---|---|
| Was free product encountered? No | Has free product been totally recovered? N/A |
| When was free product recovery project completed? N/A | |

## VI. RECOMMENDED ACTION:

| | | |
|---|---|---|
| Soil Closure only: Yes | Case Closure: No | Solvent Case? Yes |
| Additional Action Required (i.e.: additional site assessment, remediation, monitoring):Groundwater monitoring | | |

## VII. COMMENTS AND JUSTIFICATION FOR RECOMMENDED ACTION:

The site is approximately 12 acres and currently used as an office/industrial park for commercial and light industrial activities. From 1924 to 1953 the subject site was 3.7 acres and was occupied by California Fishing Tool and Machine Company, which manufactured down-hole oil well production equipment. In 1959 the site was sold to National Supply Company, who added 8 acres, while expanding its warehouse, machining, and testing facilities. In 1987, Armco, Inc. purchased the property. During the period of July 11, to October 30, 1987, soil borings were advanced to 60 feet below ground surface (bgs) and samples obtained in the northern, southern, eastern, and central areas of the site. The samples in the northern area were obtained adjacent to a former oil storage house, machine shop, welding shed, and site boundary. The samples in the eastern area were obtained adjacent to the second machine shop and the site boundary. The samples collected from the southern area in proximity of a raw material warehouse, grinding department, and the parking lot. The samples collected in the western area were adjacent to the grinding department and office area. The samples collected in the central area were in the proximity of the heating department, and the center of point of the site. The soil samples were analyzed for total petroleum hydrocarbons (EPA Method 418.1), VOCs (EPA Method 8240), Base Neutral Acids (EPA Method 9010), and CAM metals (EPA Method 6020). The analytical results identified TPH up to 87,000 @ 0.5 feet bgs., PCE up to 76 ppb @ 1 foot bgs., and chromium up to 1,620 ppb. In April 1988, approximately 10,000 cubic yards were excavated (ranging 25 to 47 feet bgs) to a clean up criteria of 100 ppm TPH and 10 times STLC at the northern area, central area, and southern area. Four underground tanks are registered on-site. The first registered tank was a sump located in the south area. The second was a clarifier located west of the former heat Honing Department. The third tank was a 3,600 gallon kerosene tank located within the basement of the former Honing Department. The Fourth was a sump and was located in the former Machine Shop II building in the East Area. In 1988, the four underground storage tanks were removed and under the oversight of the Department of Public Works (DPW). Subsequently, the DPW issued a closure letter dated

| Date:December 10, 1999 | SLIC File No.:883 | Case Reviewer: Mr. Jimmie Woo | |
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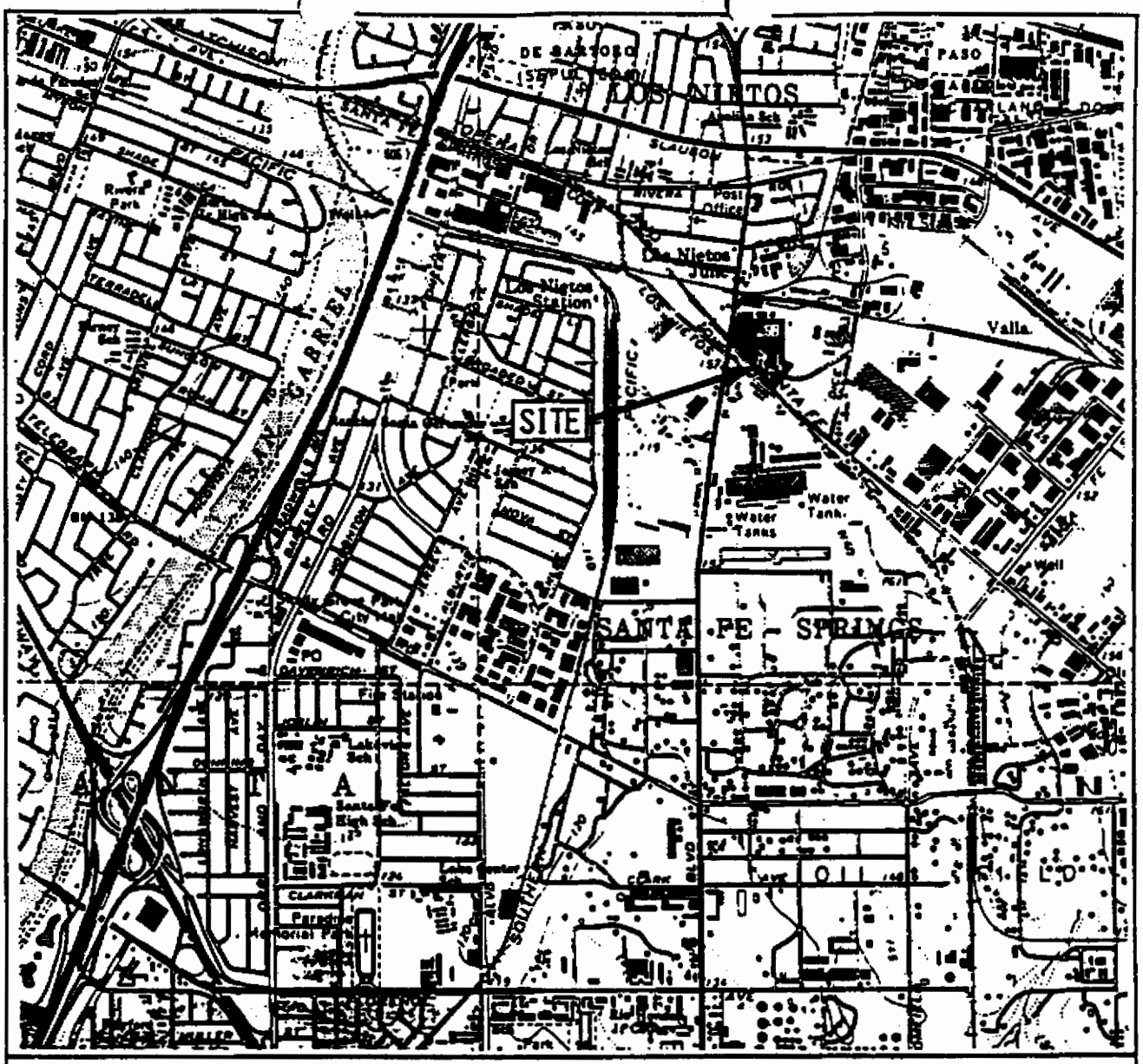
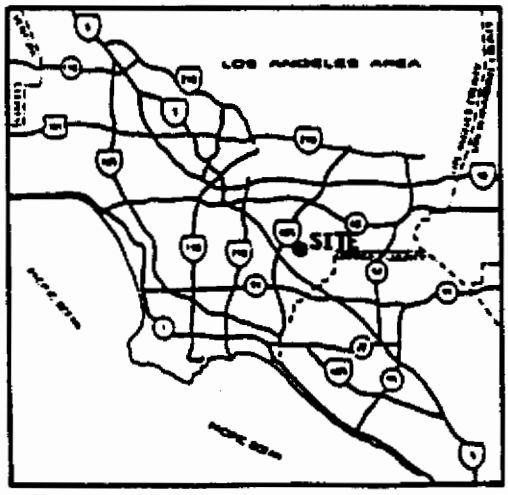
February 13, 1990. In April 22, 1994, four borings were advanced to 15 feet bgs. and soil samples collected in areas not previously investigated. No VOCs were identified but, the analytical results identified TRPH up to 9,400 at 1.5 feet below ground surface. However, the deeper soil sample at 15 feet bgs. did not detect TRPH. On November 4, 1999, the Regional Board required a sufficient number of soil samples to be obtained in the northern area to verify cleanup of VOCs. Subsequently, their workplan dated November 5, 1999 was approved and soil results (November 19, 1999 report) submitted. The analytical results identified only PCE-4.4 ppb @ 40 feet bgs. Also, their report dated November 19, 1999 request soil closure. The site is a pending $10 million real estate transaction and request our prompt attention. Based on the soils data submitted to date the facility appears to have remediated the VOC, TPH, and metals contaminated soils to levels satisfactory to Regional Boards cleanup criteria, U.S. EPA Region IX Preliminary Remedial Goals, and CCRs, Title 22, hazardous materials classification. Therefore, the soils should be considered low risk and soils closed only. In regards to AB 681, the Archon Group is the titleholder.

In regards to the groundwater, there are three facilities upgradient from the subject site, which have detected VOCs in the groundwater beneath the site. During groundwater sampling (09/99) upgradient groundwater monitoring well MW-6 detected PCE-75.5 ppb and TCE-7.2 ppb, while downgradient well MW-5 detected PCE-81.1 ppb and TCE-4.8 ppb. Upgradient groundwater well MW-3 detected PCE-ND, TCE-ND, chromium-ND, while downgradient well MW-4 identified PCE-17.5 ppb (MCL-5ppb). TCE-13.2 ppb (MCL-5 ppb), and chromium-163 ppb (MCL-58 ppb). Further downgradient well MW-2 detected PCE-15.9 ppb, TCE-7.7 ppb and chromium 24 ppb. Based on the groundwater information, there is contribution from the site to the groundwater contamination. The greater part of the VOC groundwater contamination is coming from off-site, however, the chromium appears to be from the site. On November 4, 1999, the Regional Board sent a letter requesting additional groundwater monitoring events. The site was requested to monitor the groundwater for VOCs, CAM metals, Cr+6, and MTBE to determine the trend. Based on the additional groundwater sampling events a determination will be made regarding closure for the groundwater. According to Mr. Ron Hughes (562) 868-0511 from the City of Santa Fe Springs, Well #1, which is 0.3 miles away, is screened from 200-288 feet bgs. and 300-900 feet bgs. Also Santa Fe Springs Well #4, which is approximately 1 mile away is screened at 620-760 feet bgs.

# FX-9: Wells




NOTE:
BASE MAP IS TAKEN FROM USGS WHITTIER QUADRANGLE, CALIFORNIA, 7.5 MINUTE SERIES (TOPOGRAPHIC), 1965, PHOTOREVISED 1981

NORTH

000023

0 ½ 1

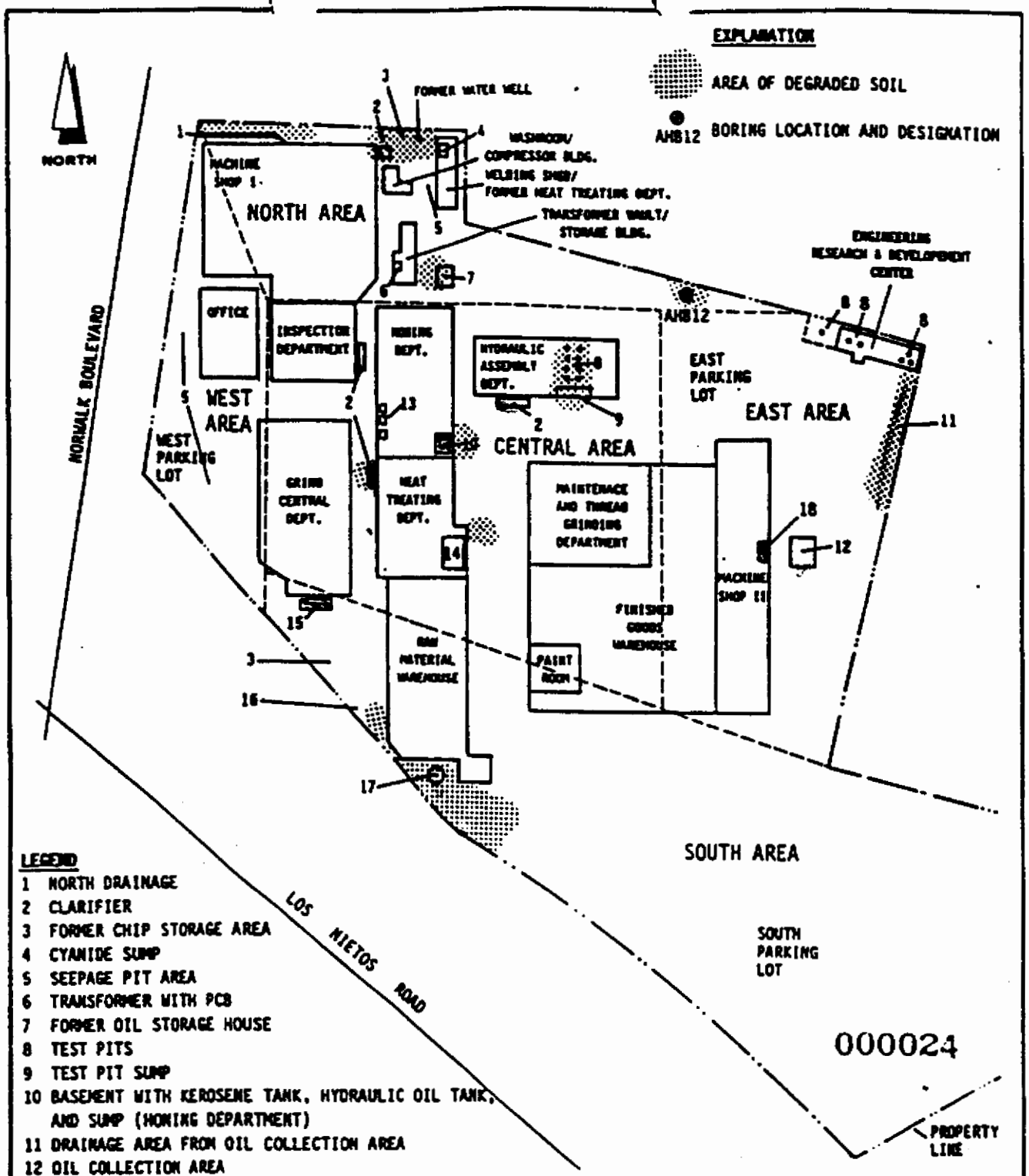
SCALE, MILES

**APPLIED GEOSCIENCES INC.**

*Engineering Geology and Hazardous Materials Consultants*

SITE VICINITY MAP

| PROJECT NUMBER AGI1142 | FIGURE 1 |
|---|---|




**LEGEND**

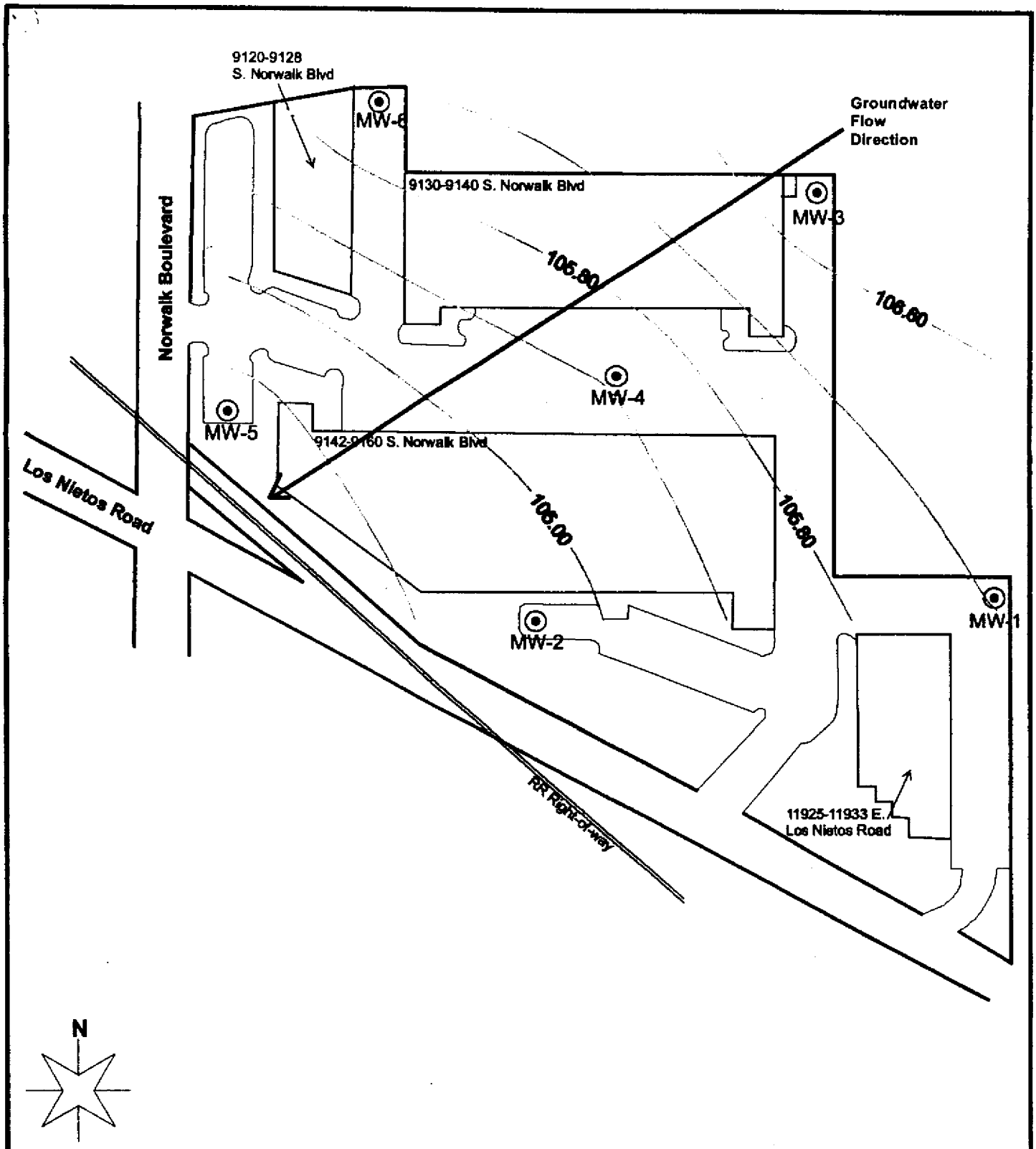
1 NORTH DRAINAGE
2 CLARIFIER
3 FORMER CHIP STORAGE AREA
4 CYANIDE SUMP
5 SEEPAGE PIT AREA
6 TRANSFORMER WITH PCB
7 FORMER OIL STORAGE HOUSE
8 TEST PITS
9 TEST PIT SUMP
10 BASEMENT WITH KEROSENE TANK, HYDRAULIC OIL TANK, AND SUMP (HONING DEPARTMENT)
11 DRAINAGE AREA FROM OIL COLLECTION AREA
12 OIL COLLECTION AREA
13 CAPACITORS WITH PCB
14 BASEMENT WITH SUMP (HEAT TREATING DEPARTMENT)
15 CIRCULATION SUMP
16 FORMER SLUDGE TANK STORAGE AREA
17 FORMER FRENCH DRAIN
18 MACHINE SHOP II SUMP
□ (REGISTERED WITH DPW)

NOTES:
1) NO SCALE IS IMPLIED
2) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE

APPLIED GEOSCIENCES INC.
Engineering Geology and Hazardous Materials Consultants

SITE PLAN WITH ESTIMATED AREAS OF DEGRADED SOIL

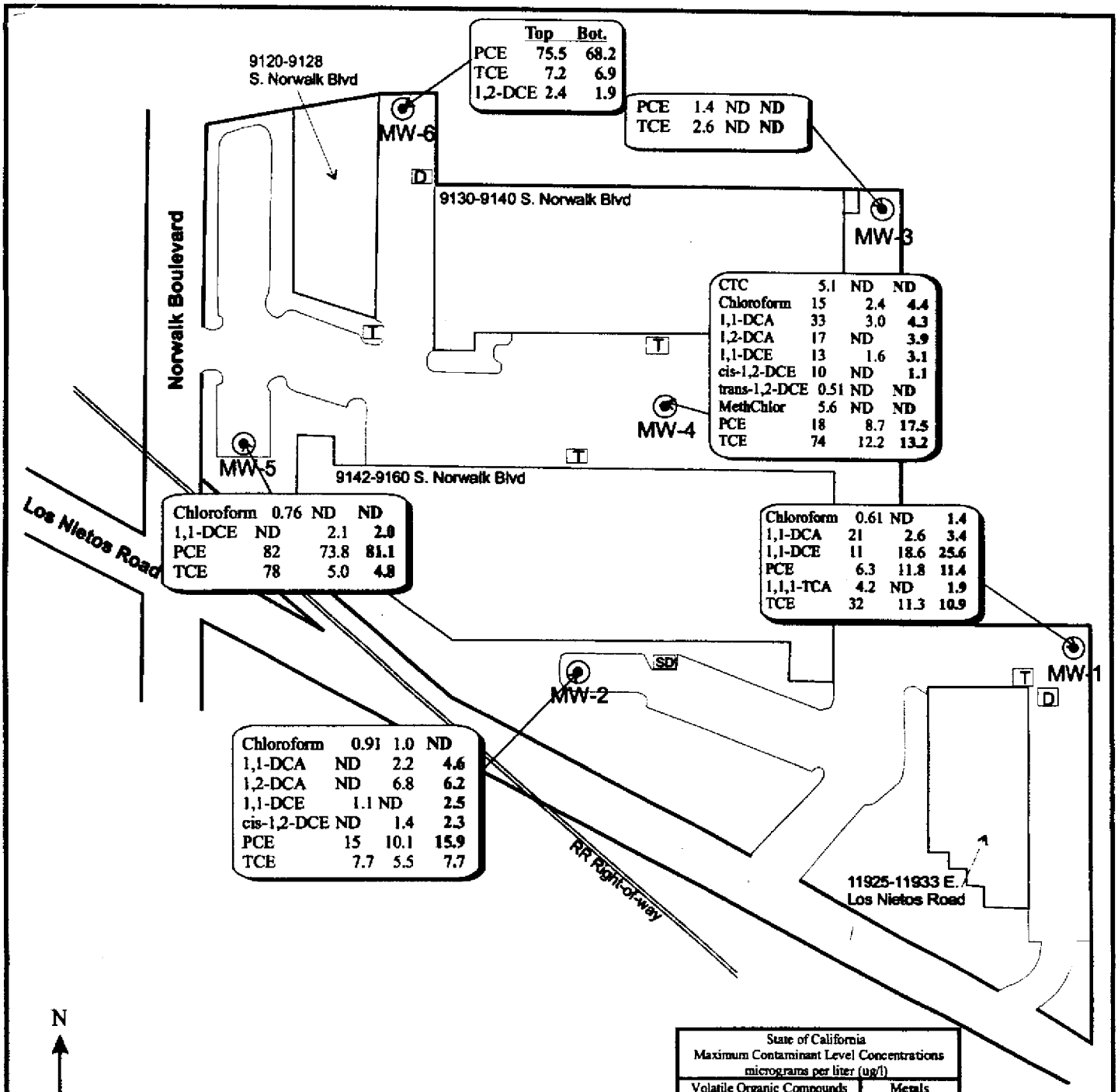
PROJECT NUMBER AGI1142 | FIGURE 2




Groundwater elevations in feet above mean sea level

Groundwater elevations are based on measurements collected on September 12 and 13, 1999.

| LEGEND | GROUNDWATER ELEVATIONS | FIGURE | Clayton |
|---|---|---|---|
| SD Storm Drain<br>D Dumpster Enclosure<br>T Transformer<br>Monitoring Well | Los Nietos Business Center<br>9120-9160 South Norwalk Boulevard<br>Santa Fe Springs, California<br><br>Client: Archon Group<br>Clayton Project No. 70-00302.00 | 3 | ENVIRONMENTAL CONSULTANTS |




| State of California Maximum Contaminant Level Concentrations micrograms per liter (ug/l) | | | |
|---|---|---|---|
| Volatile Organic Compounds | | Metals | |
| CTC | 0.5 | Ag | 100 |
| Chloroform | 100 | Ba | 1,000 |
| 1,1-DCA | 5.0 | Cd | 5 |
| 1,2-DCA | 0.5 | Cr | 50 |
| 1,1-DCE | 6.0 | Cu | 1,300 |
| 1,2-DCE | N/A | Mo | N/A |
| cis-1,2-DCE | 6.0 | Ni | 150 |
| trans-1,2-DCE | 10.0 | Se | 50 |
| Methylene Chloride | N/A | Tl | 2 |
| PCE | 5.0 | V | N/A |
| 1,1,1-TCA | 200 | Zn | 5,000 |
| TCE | 5.0 | | |

1996 Data (Fugro West)
July 1999 Data (Clayton)
**September 1999 Data (Clayton)**
Concentrations are reported in parts per billion (ppb)

**LEGEND**

- SD Storm Drain
- D Dumpster Enclosure
- T Transformer
- Monitoring Well

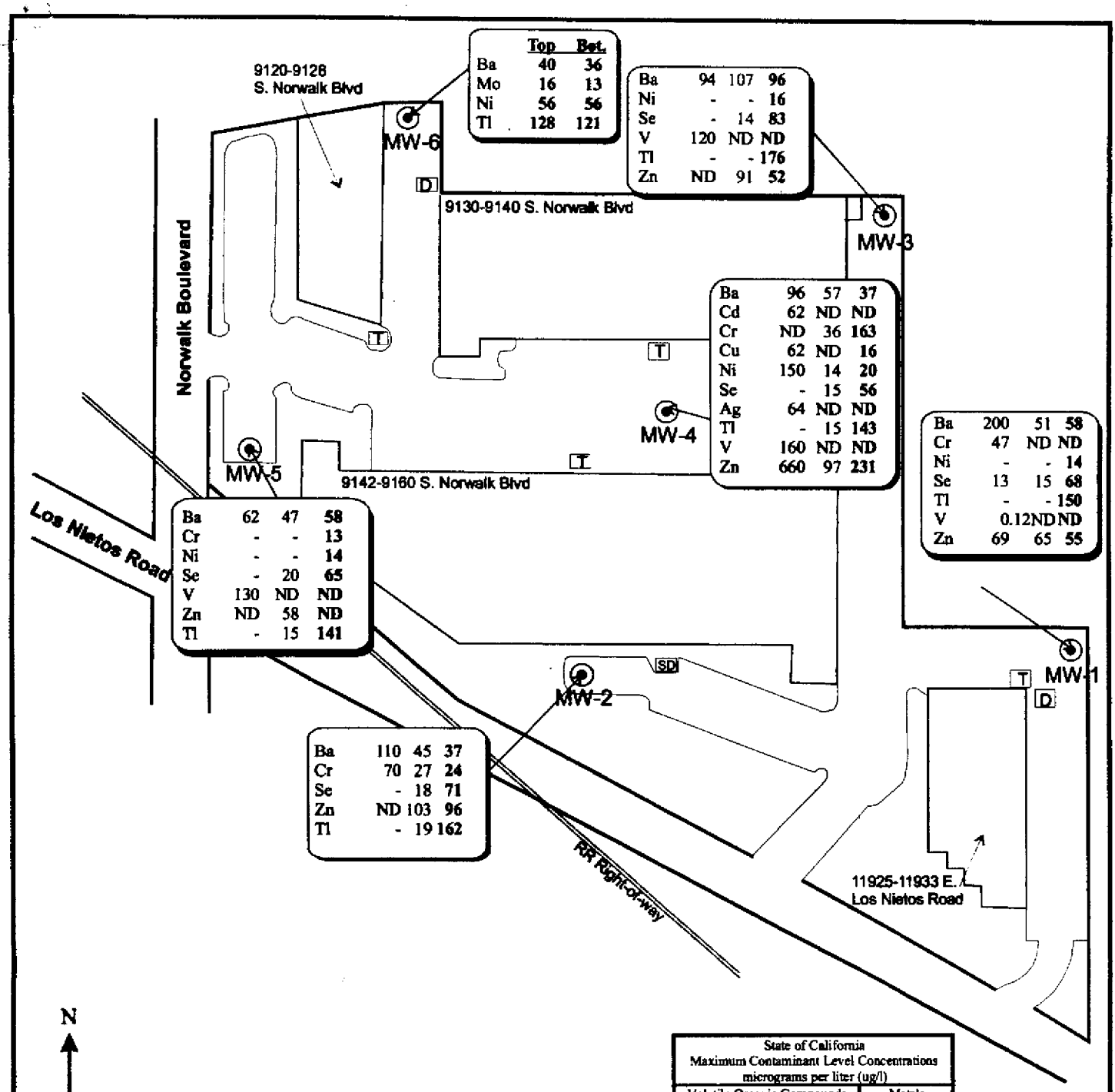
**GROUNDWATER SAMPLING RESULTS - VOCs**

Los Nietos Business Center
9120-9160 South Norwalk Boulevard
Santa Fe Springs, California

Client: Archon Group
Clayton Project No. 70-00302.00

**FIGURE 2a**

**Clayton**
ENVIRONMENTAL CONSULTANTS

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|---|---|---|---|
| Volatile Organic Compounds | | Metals | |
| CTC | 0.5 | Ag | 100 |
| Chloroform | 100 | Ba | 1,000 |
| 1,1-DCA | 5.0 | Cd | 5 |
| 1,2-DCA | 0.5 | Cr | 50 |
| 1,1-DCE | 6.0 | Cu | 1,300 |
| 1,2-DCE | N/A | Mo | N/A |
| cis-1,2-DCE | 6.0 | Ni | 150 |
| trans-1,2-DCE | 10.0 | Se | 50 |
| Methylene Chloride | N/A | Tl | 2 |
| PCE | 5.0 | V | N/A |
| 1,1,1-TCA | 200 | Zn | 5,000 |
| TCE | 5.0 | | |

1996 Data (Fugro West)
July 1999 Data (Clayton)
**September 1999 Data (Clayton)**
Concentrations are reported in parts per billion (ppb)

**LEGEND**

- SD Storm Drain
- D Dumpster Enclosure
- T Transformer
- Monitoring Well

**GROUNDWATER SAMPLING RESULTS - Metals**

Los Nietos Business Center
9120-9160 South Norwalk Boulevard
Santa Fe Springs, California

Client: Archon Group
Clayton Project No. 70-00302.00

**FIGURE 2b**

**Clayton** ENVIRONMENTAL CONSULTANTS

## Laboratory Analyses

Soil and groundwater samples were transported to American Scientific Laboratories, LLC. All soil and groundwater samples were analyzed for VOCs using USEPA Method 8260. In addition, the groundwater samples were also analyzed for Title 22 Metals from a sample filtered through a 0.45-micron filter.

### Volatile Organic Compounds in Soil

VOCs were not detected above their respective method detection limits in any of the soil samples, with the exception of the saturated soil sample collected at the groundwater interface (50 feet bgs), which contained 13 micrograms per kilogram (µg/kg) PCE.

### Volatile Organic Compounds in Groundwater

Various VOCs were detected in groundwater samples collected from the six onsite monitoring wells, as indicated in Table 2:

**Table 2**
**Groundwater VOC Results**
**September 1999**
**All results are in micrograms per liter**

| Compound | MW-1 | MW-2 | MW-3 | MW-4 | MW-5 | MW-6 Top | MW-6 Bottom | CA-MCL | Highest historic upgradient concentration |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 1.4 | ND | ND | 4.4 | ND | ND | ND | 100 | NK |
| 1,1-DCA | 3.4 | 4.6 | ND | 4.3 | ND | ND | ND | 5 | **63** |
| 1,2-DCA | ND | **6.2** | ND | **3.9** | ND | ND | ND | 0.5 | **2,600** |
| 1,1-DCE | **25.6** | 2.5 | ND | 3.1 | 2 | ND | ND | 6 | **1,600** |
| 1,2-DCE | ND | ND | ND | ND | ND | 2.4 | 1.9 | N/A | NK |
| cis-1,2-DCE | ND | 2.3 | ND | 1.1 | ND | ND | ND | 6 | **23** |
| PCE | **11.4** | **15.9** | ND | **17.5** | **81.1** | **75.5** | **68.2** | 5 | **14,000** |
| 1,1,1-TCA | 1.9 | ND | ND | ND | ND | ND | ND | 200 | 30 |
| TCE | **10.9** | **7.7** | ND | **13.2** | 4.8 | **7.2** | **6.9** | 5 | **710** |
| | | | | | | | | | |

NK - no known concentrations on upgradient Sites
Bold print identifies concentrations detected in excess of California Maximum Contaminant Level.

Groundwater sampling results for VOCs are attached and are depicted on Figure 2a – Groundwater Sampling Results-VOCs.

### Metals in Groundwater

Various metals were detected in groundwater samples collected from the six onsite monitoring wells, as shown in Table 3:

**Table 3**
**Groundwater Metals Results**
**September 1999**
**All results are in micrograms per liter**

| Compound | MW-1 | MW-2 | MW-3 | MW-4 | MW-5 | MW-6 Top | MW-6 Bottom | CA-MCL |
|---|---|---|---|---|---|---|---|---|
| Ba | 58 | 37 | 96 | 37 | 58 | 40 | 36 | 1000 |
| Cr | ND | 24 | ND | **163** | 13 | ND | ND | 50 |
| Cu | ND | ND | ND | 16 | ND | ND | ND | 1300 |
| Mo | ND | ND | ND | ND | ND | 16 | 13 | N/A |
| Ni | 14 | ND | 16 | 20 | 14 | 56 | 56 | 150 |
| Se | **68** | **71** | **83** | **56** | **65** | ND | ND | 50 |
| Tl | **150** | **162** | **176** | **143** | **141** | **128** | **121** | 2 |
| Zn | 55 | 96 | 52 | 231 | ND | ND | ND | 5000 |

NK - no known concentrations on upgradient Sites
Bold print identifies concentrations detected in excess of California Maximum Contaminant Level.

Groundwater sampling results for metals are attached and are depicted on Figure 2b – Groundwater Sampling Results-Metals.

## Soils and Hydrology

Soils encountered during drilling activities ranged from dry, brown clay silt to grey, coarse gravelly sand. Depth to water ranged from 43.1 feet bgs in MW-3 to 50.8 feet bgs in MW-5.

Based on groundwater level measurements and well survey data, groundwater gradient under the subject property was calculated to be to the west-southwest. Refer to Figure 3 – Groundwater Elevations. Based on data collected by others and reviewed by Clayton, groundwater gradient at and around the subject property has historically ranged from south-southwest to west-southwest.

## Agency File Reviews

Clayton reviewed files for the following sites at the RWQCB and the Department of Toxic Substances Control (DTSC):

- Diversey Wyandote
- Phibro-Tech
- Burdette Oxygen/Liquid Air Corporation
- Pilot Chemical

included Ba, Cr, Zn, As Se, Th, and Ni. Please refer to the attached laboratory report and Figure 2 for specific results in each well. Shallow groundwater gradient was found to be south to southwest which is consistent with previous findings (Figure 3).

## Recent Sampling Results

In July 1999, Clayton collected groundwater samples from the monitoring wells on the site, which were analyzed for VOCs and metals. The results are listed in the table below and are shown on Figure 2.

| Constituent[1] | MCL | MW-1 | | MW-2 | | MW-3 | | MW-4 | | MW-5 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | '96 | '99 | '96 | '99 | '96 | '99 | '96 | '99 | '96 | '99 |
| **Volatile Organic Compounds (8260) (µg/l)** | | | | | | | | | | | |
| Carbon Tetrachloride | 0.5 | ND | ND | ND | ND | ND | ND | 5.1 | ND | ND | ND |
| Chloroform | 100 | 0.61 | ND | 0.91 | 1.0 | ND | ND | 15 | 2.4 | 0.76 | ND |
| 1,1 Dichloroethane | 5.0 | 21 | 2.6 | ND | 2.2 | ND | ND | 33 | 3.0 | ND | ND |
| 1,2 Dichloroethane | 0.5 | ND | ND | ND | **6.8** | ND | ND | 17 | ND | ND | ND |
| 1,1 Dichloroethene | 6.0 | 11 | **18.6** | 1.1 | ND | ND | ND | 13 | 1.6 | ND | 2.1 |
| cis-1,2 dichloroethene | 6.0 | ND | ND | ND | 1.4 | ND | ND | 10 | ND | ND | ND |
| trans-1,2 dichloroethene | | ND | ND | ND | ND | ND | ND | 0.51 | ND | ND | ND |
| Methylene Chloride | | ND | ND | ND | ND | ND | ND | 5.6 | ND | ND | ND |
| Tetrachloroethene | 5.0 | 6.3 | **11.8** | 15 | **10.1** | 1.4 | ND | 18 | **8.7** | 82 | **73.8** |
| 1,1,1 trichloroethane | | 4.2 | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Trichloroethene | 5.0 | 32 | **11.3** | 7.7 | **5.5** | 2.6 | ND | 74 | **12.2** | 78 | **5.0** |
| **CCR Title 22 Metals (mg/l)** | | | | | | | | | | | |
| Barium (Ba) | 1 | 0.20 | 0.051 | 0.11 | 0.045 | 0.094 | 0.107 | 0.096 | 0.057 | 0.062 | 0.047 |
| Cadmium (Cd) | | ND | ND | ND | ND | ND | ND | 0.062 | ND | ND | ND |
| Chromium (Cr) | 0.050 | 0.047 | ND | 0.070 | 0.027 | ND | ND | ND | 0.036 | ND | ND |
| Copper (Cu) | | ND | ND | ND | ND | ND | ND | 0.062 | ND | ND | ND |
| Mercury (Hg) | | ND | ND | 0.00068 | ND | ND | ND | 0.0016 | ND | ND | ND |
| Nickel (Ni) | 0.150 | ND | ND | ND | ND | ND | ND | 0.15 | 0.014 | ND | ND |
| Selenium (Se) | 0.050 | 0.013 | 0.015 | ND | 0.018 | ND | 0.014 | ND | 0.015 | ND | 0.020 |
| Silver (Ag) | | ND | ND | ND | ND | ND | ND | 0.064 | ND | ND | ND |
| Thallium (Tl) | 0.002 | ND | ND | ND | **0.019** | ND | ND | ND | **0.015** | ND | ND |
| Vanadium (V) | | 0.12 | ND | 0.12 | ND | 0.12 | ND | 0.16 | ND | 0.13 | ND |
| Zinc (Zn) | 5 | 0.069 | 0.065 | ND | 0.103 | ND | 0.091 | 0.66 | 0.097 | ND | 0.058 |

1. Only analytes detected in one or more wells were included in the table.
2. Bold numbers indicate those values exceeding MCLs.
3. 1996 data collected by Fugro West
4. 1999 data collected by Clayton

As indicated in the above table, concentrations of PCE and TCE in all wells decreased from 1996 to 1999, with the exception of MW-1, which showed a slight increase in PCE. Furthermore, for those analytes whose concentrations exceeded their MCLs during the 1999 sampling round, the difference between the reported concentration and the MCL was marginal.

Detected concentrations of metals during 1999 appeared consistent with background concentrations.

# Monitoring Well No. LNMW-6

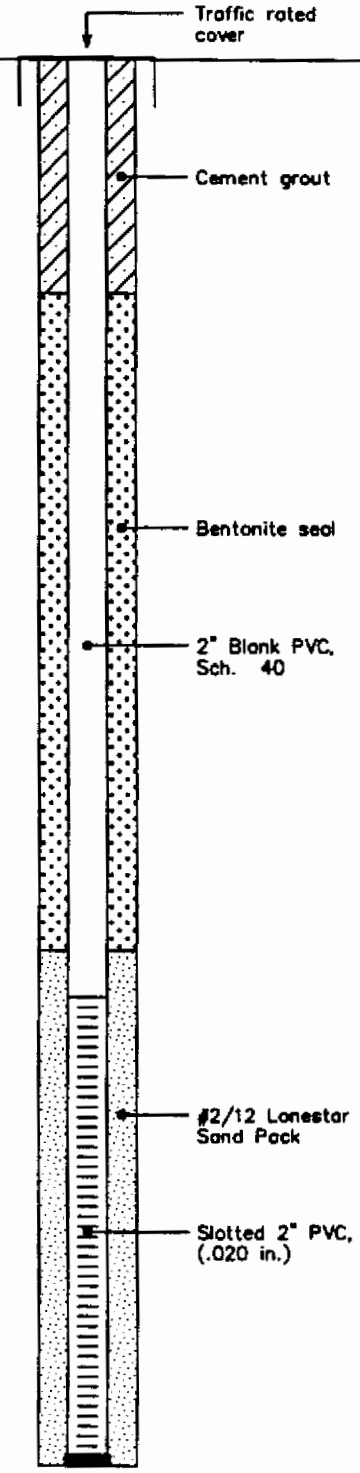
PROJECT: LOS NIETOS BUSINESS CENTER
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: 50 ft.

DATE: 9/8/99
HOLE DIA.: 8 in.
FINAL GW: -- ft.

LOGGED BY: George Wissig
SAMPLER:
HOLE ELEV.: --

| DESCRIPTION | USCS CLASS | GRAPHIC LOG | DEPTH | SAMPLE | BLOWS/FT. |
|---|---|---|---|---|---|
| Asphalt | Asp. | | 0 | | |
| | ML | | | | |
| CLAYEY SILT, brown, dry. PID = 45.0 ppm. | | | 5 | ☒ | 11,13 |
| CLAYEY SILT, chocolate brown, slightly moist. PID = 19.5 ppm. | | | 10 | ☒ | 8,14 |
| SAND, brown, slightly moist. PID = 2.7 ppm. | SP | | 15 | ☒ | 5,8 |
| SAND, medium-grained, brown, dry. PID = 0.0 ppm. | | | 20 | ☒ | 7,9 |
| SILTY/CLAYEY SAND, grey, hard, dry. PID = 0.0 ppm. | | | 25 | ☒ | 21,40 |
| SAND, grey, loose, dry. PID = 0.0 ppm. | | | 30 | ☒ | 16,27 |
| SAND, coarse-grained, some pebbles, grey, slightly moist. PID = 0.0 ppm. | | | 35 | ☒ | 37,42 |
| SAND, medium-grained, grey, slightly moist. PID = 0.0 ppm. | | | 40 | ☒ | 31,36 |
| GRAVELLY SAND, coarse-grained, grey. PID = 0.0 ppm. | | | 45 | ☒ | 49,70 |
| Same as above except wet. PID = 0.0 ppm. ▼ | | | 50 | ☒ | 16,30 |
| SAND, wet. | | | 55 | | |
| | | | 60 | | |

WELL CONSTRUCTION DETAIL



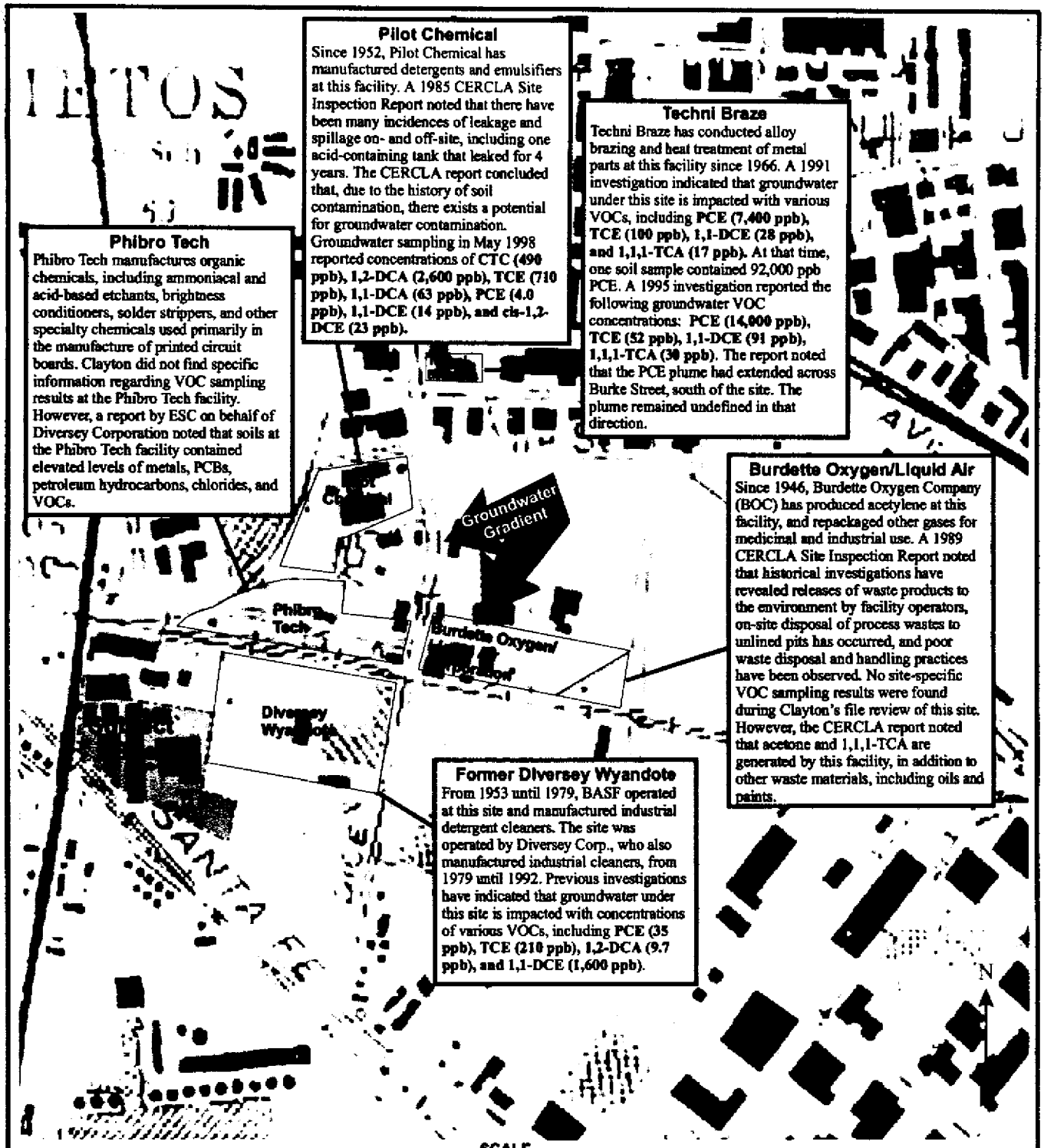


CLAYTON ENVIRONMENTAL CONSULTANTS
3611 South Harbor Blvd., Suite 260
Santa Ana, California 92704


Notes:

*LOS NIETOS BUSINESS CENTER*
*Sante Fe Springs, California*

Project No. 70-00302.00

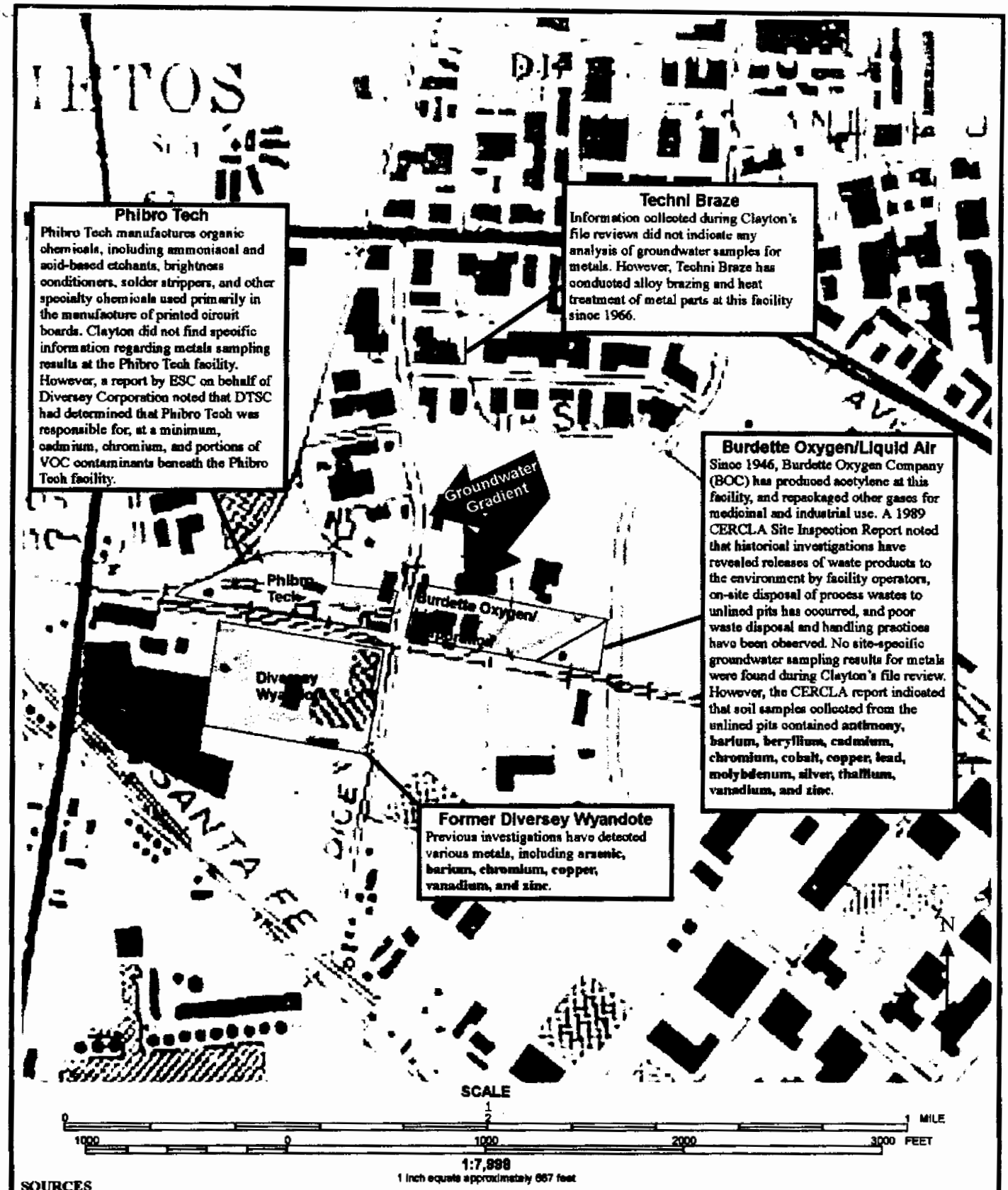



**SOURCES**

Base map: United States Geological Survey, 1965, *Santa Fe Springs Quadrangle, California - Los Angeles County,7.5-Minute Series (Topographic)*; photorevised 1981; original scale 1:24,000.

Offsite Source Data: Obtained from Agency File Reviews. Refer to List of References/Reviewed Documents.

| LEGEND | Map of Nearby VOC Sources | FIGURE | Clayton ENVIRONMENTAL CONSULTANTS |
|---|---|---|---|
| Subject Site<br>Offsite VOC sources | Los Nietos Business Center<br>9120-9160 South Norwalk Boulevard<br>Santa Fe Springs, California<br>Client: Archon Group<br>Clayton Project No. 70-00302.00 | 4a | |

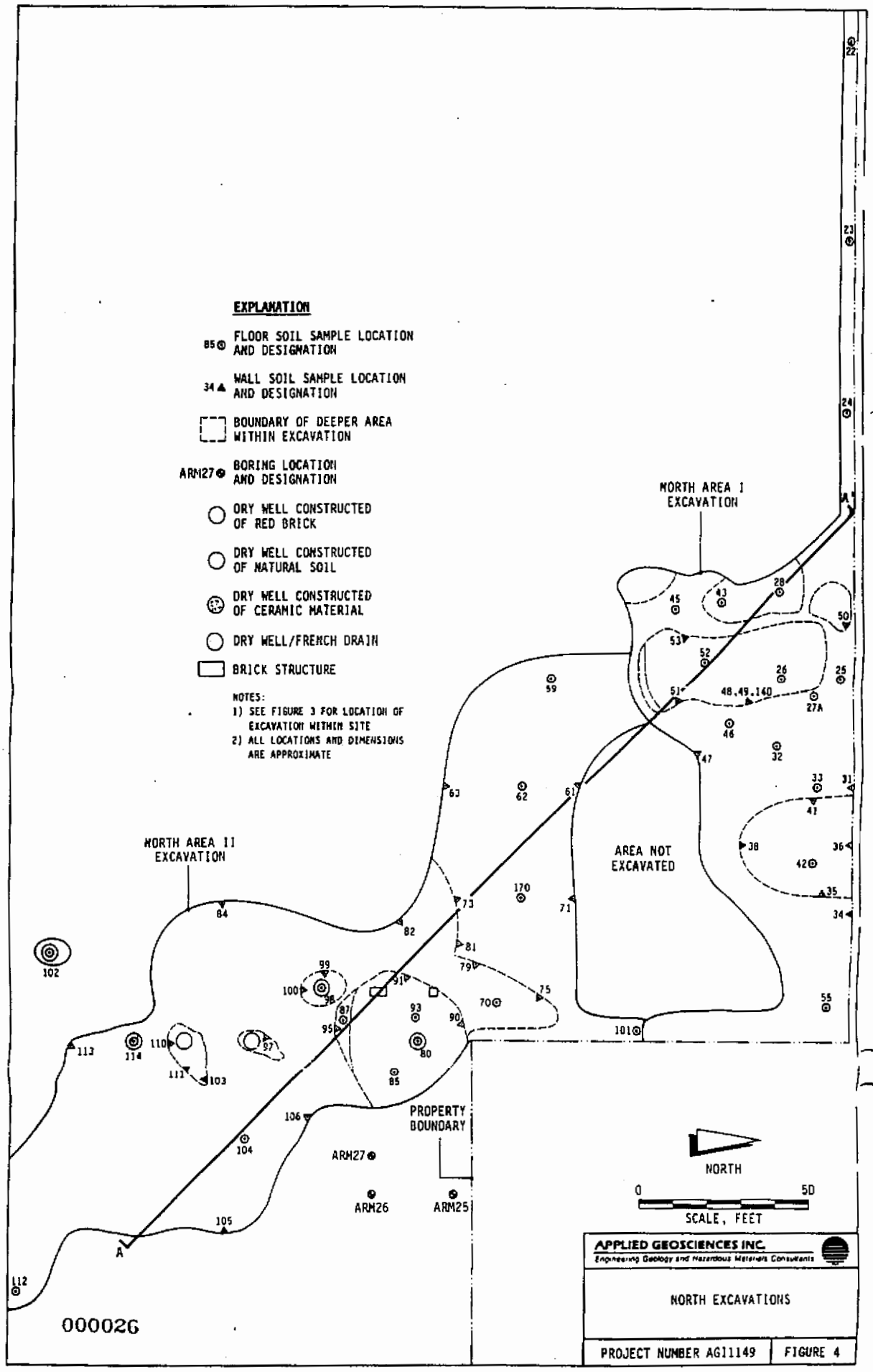


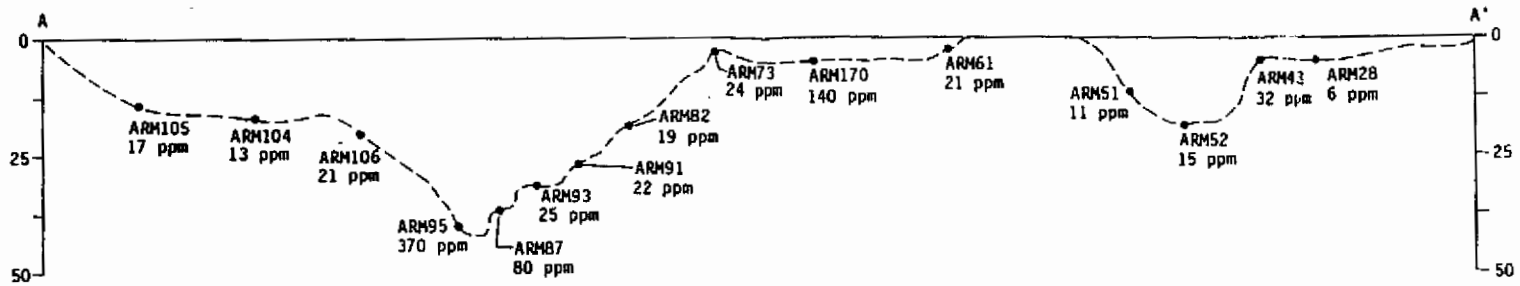

**SOURCES**

Base map: United States Geological Survey, 1965, *Santa Fe Springs Quadrangle, California - Los Angeles County, 7.5-Minute Series (Topographic)*, photorevised 1981, original scale 1:24,000.

Offsite Source Data: Obtained from Agency File Reviews. Refer to List of References/Reviewed Documents.

| LEGEND | Map of Nearby Metals Sources | FIGURE | Clayton ENVIRONMENTAL CONSULTANTS |
|---|---|---|---|
| Subject Site<br>Offsite Metals sources | Los Nietos Business Center<br>9120-9160 South Norwalk Boulevard<br>Santa Fe Springs, California<br>Client: Archon Group<br>Clayton Project No. 70-00302.00 | 4b | |


EXPLANATION
85 FLOOR SOIL SAMPLE LOCATION AND DESIGNATION
34 WALL SOIL SAMPLE LOCATION AND DESIGNATION
BOUNDARY OF DEEPER AREA WITHIN EXCAVATION
ARM27 BORING LOCATION AND DESIGNATION
DRY WELL CONSTRUCTED OF RED BRICK
DRY WELL CONSTRUCTED OF NATURAL SOIL
DRY WELL CONSTRUCTED OF CERAMIC MATERIAL
DRY WELL/FRENCH DRAIN
BRICK STRUCTURE
NOTES:
1) SEE FIGURE 3 FOR LOCATION OF EXCAVATION WITHIN SITE
2) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
NORTH AREA I EXCAVATION
NORTH AREA II EXCAVATION
AREA NOT EXCAVATED
PROPERTY BOUNDARY
ARM27
ARM26
ARM25
NORTH
0
50
SCALE, FEET
APPLIED GEOSCIENCES INC.
Engineering Geology and Hazardous Materials Consultants
NORTH EXCAVATIONS
PROJECT NUMBER AG11149
FIGURE 4
000026



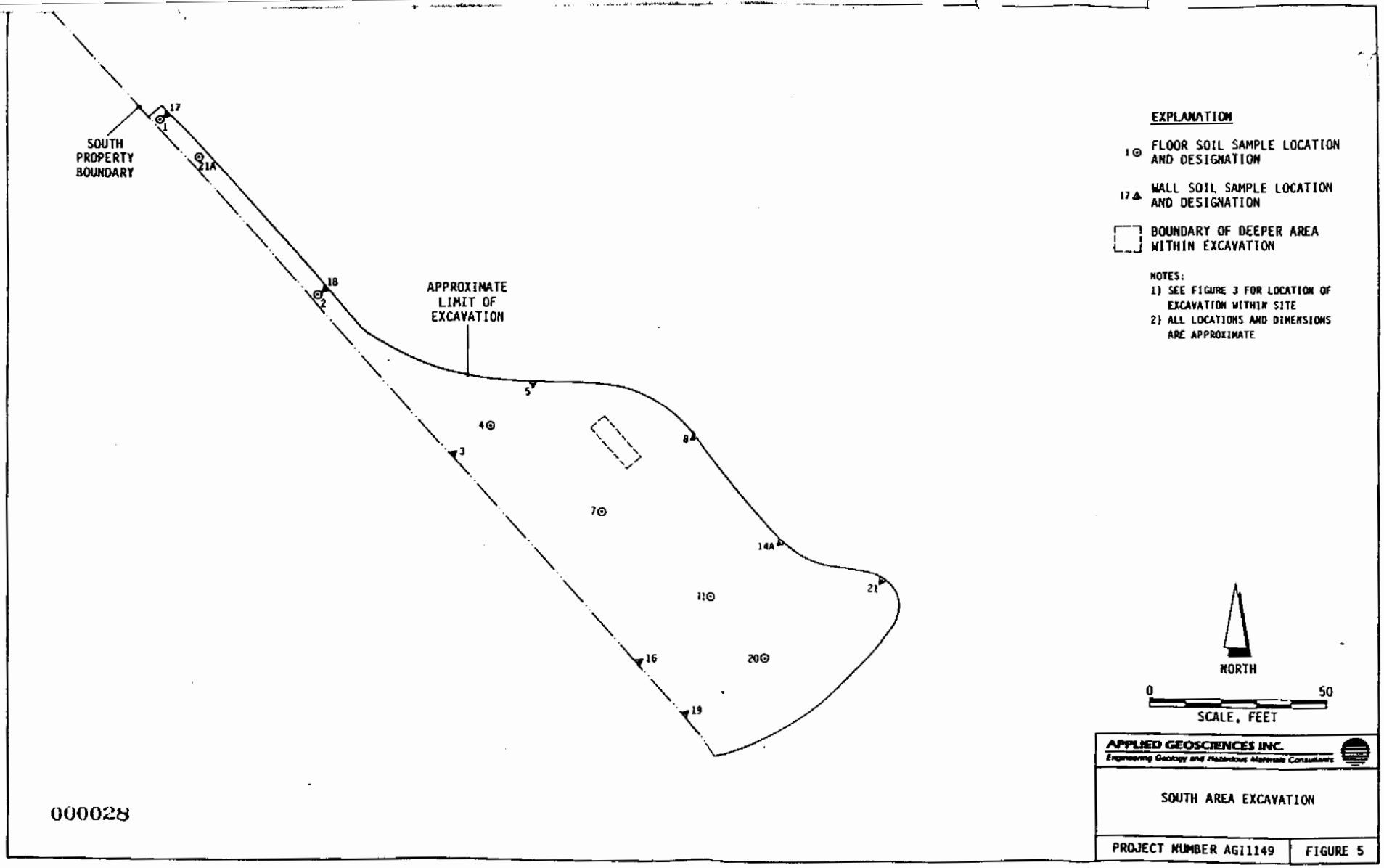

0 50
SCALE, FEET
VERTICAL/HORIZONTAL

APPLIED GEOSCIENCES INC.
Engineering Geology and Hazardous Materials Consultants

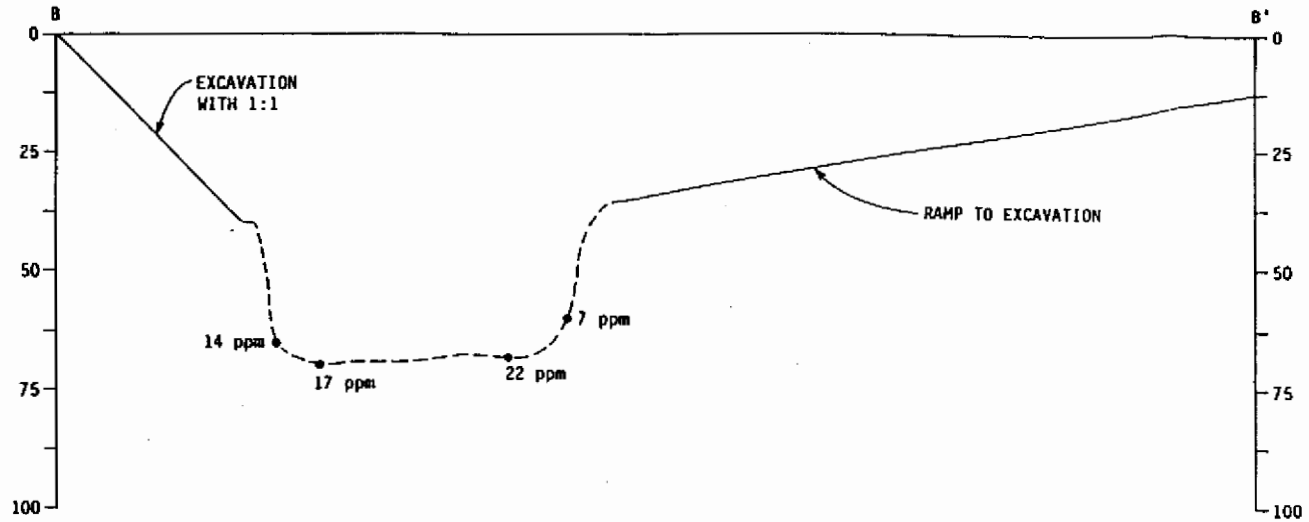
NORTH AREA CROSS SECTION

PROJECT NUMBER AGI1149 | FIGURE 4A

000027


SOUTH PROPERTY BOUNDARY
APPROXIMATE LIMIT OF EXCAVATION
17
1
21A
18
2
5
4
3
8
7
14A
21
11
16
20
19
EXPLANATION
1 FLOOR SOIL SAMPLE LOCATION AND DESIGNATION
17 WALL SOIL SAMPLE LOCATION AND DESIGNATION
BOUNDARY OF DEEPER AREA WITHIN EXCAVATION
NOTES:
1) SEE FIGURE 3 FOR LOCATION OF EXCAVATION WITHIN SITE
2) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
NORTH
0
50
SCALE, FEET
APPLIED GEOSCIENCES INC.
Engineering Geology and Hazardous Materials Consultants
SOUTH AREA EXCAVATION
PROJECT NUMBER AG11149
FIGURE 5

000028




0 50
SCALE, FEET
VERTICAL/HORIZONTAL

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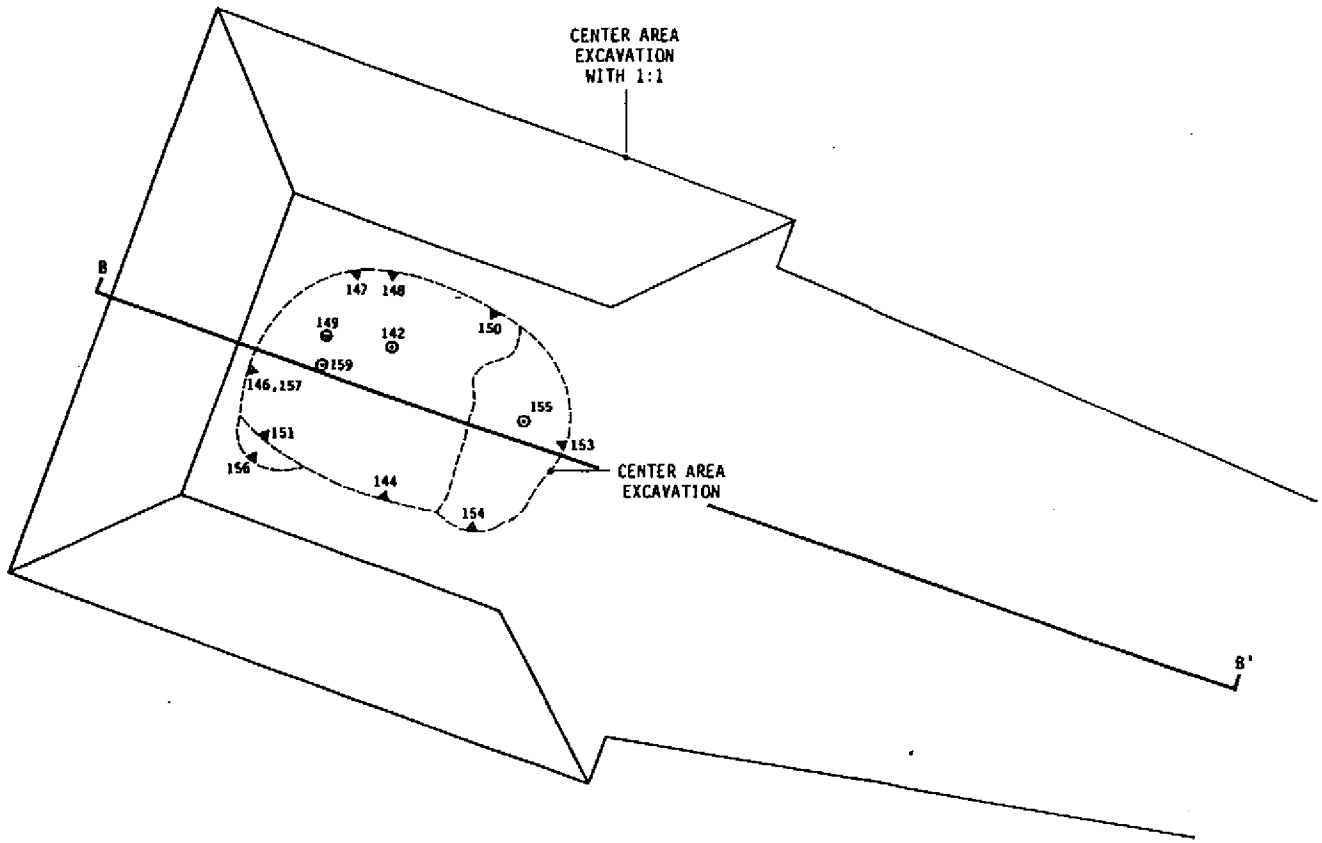
Engineering Geology and Hazardous Materials Consultants

CENTER AREA CROSS SECTION

PROJECT NUMBER AGI1149 | FIGURE 6A

000030




**EXPLANATION**

149⊙ FLOOR SOIL SAMPLE LOCATION AND DESIGNATION

148▲ WALL SOIL SAMPLE LOCATION AND DESIGNATION

BOUNDARY OF DEEPER AREA WITHIN EXCAVATION

NOTES:
1) SEE FIGURE 3 FOR LOCATION OF EXCAVATION WITHIN SITE
2) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE

NORTH

0 50
SCALE, FEET

APPLIED GEOSCIENCES INC.
Engineering Geology and Hazardous Materials Consultants

CENTER AREA EXCAVATION

PROJECT NUMBER AGI1149 | FIGURE 6

000029

TABLE 1

SAMPLES COLLECTED FROM SOIL FOLLOWING EXCAVATION

NORTH AREA I EXCAVATION (Figure 4)

| SAMPLE DESIGNATION[1] | SAMPLE LOCATION[2] | DEPTH[3] | TPH[4] |
|---|---|---|---|
| ARM22 | FLOOR | 2 | 50 |
| ARM23 | FLOOR | 2 | 88 |
| ARM24 | FLOOR | 2 | ND |
| ARM25 | FLOOR | 4 | 81 |
| ARM26 | FLOOR | 15 | ND |
| ARM27A | FLOOR | 5 | 5 |
| ARM28 | FLOOR | 5 | 6 |
| ARM31 | WALL | 5 | 18 |
| ARM32 | FLOOR | 5 | 33 |
| ARM33 | FLOOR | 5 | 37 |
| ARM34 | WALL | 5 | 32 |
| ARM35 | WALL | 10 | 20 |
| ARM36 | WALL | 10 | 102 |
| ARM38 | WALL | 10 | 32 |
| ARM41 | WALL | 10 | 18 |
| ARM42 | FLOOR | 18 | 29 |
| ARM43 | FLOOR | 5 | 32 |
| ARM45 | FLOOR | 10 | 48 |
| ARM46 | FLOOR | 5 | 99 |
| ARM47 | WALL | 3 | 36 |
| ARM48 | WALL | 14 | 14 |
| ARM49 | WALL | 16 | 26 |
| ARM50 | WALL | 15 | 14 |
| ARM51 | WALL | 12 | 11 |
| ARM52 | FLOOR | 18 | 15 |
| ARM53 | WALL | 16 | 57 |
| ARM55 | FLOOR | 1 | 140 |
| ARM140 | WALL | 15 | 8 |
| AVERAGE | | | 40 |

NOTES:

1. Soil samples were assigned identification numbers such as ARM3, where ARM3 indicates Armco Steel sample number 3. Soil sample numbering is not continuous due to resampling (i.e. ARM40 - 38,200 ppm; excavate and resample: ARM140 - 8 ppm).

2. Soil samples were collected from floor or wall surfaces in the excavation.

3. Soil samples were collected at depths designated in feet below the ground surface.

4. Total Petroleum Hydrocarbons (TPH) in general accordance with EPA Method No. 418.1. Analyses are presented in parts per million (ppm) and the detection limit is 1.0 ppm.

TABLE 2
SAMPLES COLLECTED FROM SOIL FOLLOWING EXCAVATION

NORTH AREA II EXCAVATION (Figure 4)

| SAMPLE DESIGNATION[1] | SAMPLE LOCATION[2] | DEPTH[3] | TPH[4] |
|---|---|---|---|
| ARM59 | FLOOR | 2 | 67 |
| ARM61 | WALL | 2 | 21 |
| ARM62 | FLOOR | 3 | 33 |
| ARM63 | WALL | 2 | 16 |
| ARM70 | FLOOR | 20 | 69 |
| ARM71 | WALL | 2 | 43 |
| ARM73 | WALL | 2 | 24 |
| ARM75 | WALL | 8 | 25 |
| ARM79 | WALL | 6 | 38 |
| ARM80 | FLOOR | 31 | 12 |
| ARM81 | WALL | 3 | 52 |
| ARM82 | WALL | 6 | 19 |
| ARM84 | WALL | 2 | 33 |
| ARM85 | FLOOR | 15 | 30 |
| ARM87 | FLOOR | 26 | 80 |
| ARM90 | WALL | 26 | 49 |
| ARM91 | WALL | 26 | 22 |
| ARM93 | FLOOR | 38 | 25 |
| ARM95 | WALL | 40 | 370 |
| ARM97 | FLOOR/WALL | 32 | 5 |
| ARM98 | FLOOR | 39 | 11 |
| ARM99 | WALL | 35 | 23 |
| ARM100 | WALL | 35 | 34 |
| ARM101 | FLOOR | 3 | 52 |
| ARM102 | FLOOR | 6 | 23 |
| ARM103 | WALL | 15 | 12 |
| ARM104 | FLOOR | 18 | 13 |
| ARM105 | WALL | 15 | 17 |
| ARM106 | WALL | 15 | 21 |
| ARM110 | WALL | 8 | 24 |
| ARM111 | WALL | 10 | 242 |
| ARM112 | FLOOR | 1 | 42 |
| ARM113 | WALL | 5 | 326 |
| ARM114 | FLOOR | 10 | 29 |
| ARM170 | FLOOR | 4 | 140 |
| AVERAGE | | | 58 |

NOTES:

1. Soil samples were assigned identification numbers such as ARM3, where ARM3 indicates Armco Steel sample Number 3. Soil sample numbering is not continuous due to resampling (i.e. ARM72 - 905 ppm; excavate and resample: ARM170 - 140 ppm).

2. Soil samples were collected from floor or wall surfaces in the excavation.

3. Soil samples were collected at depths designated in feet below the ground surface.

4. Total Petroleum Hydrocarbons (TPH) in general accordance with EPA Method No. 418.1. Analyses are presented in parts per million (ppm) and the detection limit is 1.0 ppm.

TABLE 3

NORTH AREA II BORINGS (FIGURE 4)

| SAMPLE DESIGNATION[1] | DEPTH[2] | TPH[3] |
|---|---|---|
| ARM25-5-1 | 25 | 19 |
| ARM25-8-1 | 40 | 17 |
| ARM25-9-1 | 45 | 13 |
| ARM26-5-1 | 25 | 23 |
| ARM26-8-1 | 40 | 23 |
| ARM26-9-1 | 45 | 17 |
| ARM27-5-1 | 25 | ND |
| ARM27-9-1 | 45 | ND |
| ARM27-10-1 | 50 | ND |
| AVERAGE | | 19 |

NOTE:

1. Soil samples were assigned identification numbers such as ARM25-8-1, where ARM25 indicates Armco Steel boring number 25, and 8-1 indicates the eighth sampling interval, first sample tube.

2. Soil samples were collected at depths designated in feet below the ground surface.

3. Total Petroleum Hydrocarbons (TPH) in general accordance with EPA Method No. 418.1. Analyses are presented in parts per million (ppm) and the detection limit is 10.0 ppm.

TABLE 4

SAMPLES COLLECTED FROM SOIL FOLLOWING EXCAVATION

SOUTH AREA EXCAVATION (Figure 5)

| SAMPLE DESIGNATION[1] | SAMPLE LOCATION[2] | DEPTH[3] | TPH[4] |
|---|---|---|---|
| ARM1 | FLOOR | 3 | 41 |
| ARM2 | FLOOR | 3 | 7 |
| ARM3 | WALL | 3 | 6 |
| ARM4 | FLOOR | 4 | 5 |
| ARM5 | WALL | 3 | 8 |
| ARM7 | FLOOR | 4 | 3 |
| ARM8 | WALL | 3.5 | 6 |
| ARM11 | FLOOR | 3 | 14 |
| ARM14A | WALL | 2 | 147 |
| ARM16 | WALL | 2 | 26 |
| ARM17 | WALL | 2 | 10 |
| ARM18 | WALL | 2 | 21 |
| ARM19 | WALL | 1.5 | 31 |
| ARM20 | FLOOR | 2.0 | 14 |
| ARM21 | WALL | 1.5 | 47 |
| ARM21A | FLOOR | 3.5 | 8 |
| AVERAGE | | | 25 |

NOTES:

1. Soil samples were assigned identification numbers such as ARM3, where ARM3 indicates Armco Steel sample Number 3. Soil sample numbering is not continuous due to resampling (i.e. ARM15 - 2,570 ppm; excavate and resample: ARM16 - 26 ppm).

2. Soil samples were collected from floor or wall surfaces in the excavation.

3. Soil samples were collected at depths designated in feet below the ground surface.

4. Total Petroleum Hydrocarbons (TPH) in general accordance with EPA Method No. 418.1. Analyses are presented in parts per million (ppm) and the detection limit is 1.0 ppm.

TABLE 5

SAMPLES COLLECTED FROM SOIL FOLLOWING EXCAVATION

CENTRAL AREA EXCAVATION (FIGURE 6)

| SAMPLE DESIGNATION[1] | SAMPLE LOCATION[2] | DEPTH[3] | TPH[4] |
|---|---|---|---|
| ARM144 | WALL | 35 | 11 |
| ARM146 | WALL | 35 | 7 |
| ARM147 | WALL | 55 | 8 |
| ARM148 | WALL | 50 | 3 |
| ARM150 | WALL | 55 | 6 |
| ARM153 | WALL | 60 | 7 |
| ARM154 | WALL | 60 | 7 |
| ARM155 | FLOOR | 68 | 22 |
| ARM156 | WALL | 60 | 5 |
| ARM157 | WALL | 55 | 14 |
| ARM159 | FLOOR | 69 | 17 |
| AVERAGE | | | 10 |

NOTES:

1. Soil samples were assigned identification numbers such as ARM3, where ARM3 indicates Armco Steel sample number 3. Soil sample numbering is not continuous due to resampling (i.e. ARM151 - 1,220 ppm; excavate area and resample: ARM156 - 5 ppm)

2. Soil samples were collected from floor or wall surfaces in the excavation.

3. Soil samples were collected at depths designated in feet below the ground surface.

4. Total Petroleum Hydrocarbons (TPH) in general accordance with EPA Method No. 418.1. Analyses are presented in parts per million (ppm) and the detection limit is 1.0 ppm.

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ANALYTICAL CHEMISTS

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17321 Irvine Blvd.
Tustin, CA 92680

Attn: Paul Roberts

JOB NO. 9141

"A"

## LABORATORY REPORT

Samples Received: One (1) soil sample
Date Received: 3-30-88
Purchase Order No: AGI 1142/Armco

The sample was analyzed as follows:

| Samples Analyzed | Analysis | Results |
|---|---|---|
| ARM 69 | Volatile Organics by EPA 8240 | Data Sheets |
| ARM 69 | Fuel Hydrocarbons by modified EPA 8015 (Luft Manual 1987, p.60) | Table I |

### TABLE I

Parts Per Million

| Sample No. | Kerosene | Mineral Spirits | Gasoline | Diesel Fuel | $C_{20}$-$C_{30+}$* Hydrocarbons |
|---|---|---|---|---|---|
| ARM 69 | ND | ND | ND | ND | 8000 |
| Detection Limit | 10 | 10 | 10 | 10 | 10 |

ND-Not Detected
*Heavy hydrocarbon, possibly motor oil

Date Analyzed: 4-1-88

Page 1 of 1

Mary Stordal
Analytical Chemist

D.J. Northington. Ph.D.
Technical Director

April 15, 1988

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ANALYTICAL CHEMISTS

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Tustin, CA 92680

Attn: Paul Roberts

JOB NO. 9291

## LABORATORY REPORT

Samples Received: Twenty (20) soil samples
Date Received: 4-11-88
Released for Analysis: 4-11-88
Purchase Order No: AGI 1142/Armco

The samples were analyzed as follows:

| Samples Analyzed | Analysis | Results |
|---|---|---|
| One soil | Fuel Hydrocarbons by modified EPA 8015 (Luft manual 1987, P.60) | Table I |
| Six soils | Total Petroleum Hydrocarbons by EPA 418.1 | Table II |



James Bonde
Senior Chemist

D.J. Northington, Ph.D.
Technical Director

000089

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WEST COAST ANALYTICAL SERVICE, INC.

Applied Geosciences, Inc.
Mr. Paul Roberts

Job # 9291
April, 15, 1988

## LABORATORY REPORT

### TABLE I

Parts Per Million

| Sample No. | Kerosene | Mineral Spirits | Gasoline | Diesel Fuel |
|---|---|---|---|---|
| ARM25-5-1 | ND | ND | ND | ND |
| Detection Limit | 10 | 10 | 10 | 10 |

Date Analyzed: 4-13-88

ND - Not Detected

### TABLE II

Parts Per Million

| Sample No. | Total Petroleum Hydrocarbons |
|---|---|
| ARM25-5-1 | 19 |
| ARM25-8-1 | 17 |
| ARM25-9-1 | 13 |
| ARM26-5-1 | 23 |
| ARM26-8-1 | 23 |
| ARM26-9-1 | 17 |
| Detection Limit | 10 |

Date Analyzed: 4-12-88

April 5, 1988

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ANALYTICAL CHEMISTS

APPLIED GEOSCIENCES, INC
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Tustin, CA 92680

Attn: Paul Roberts

JOB NO. 9135

## LABORATORY REPORT

Samples Received: Four (4) soil samples
Date Received: 3-29-88
Purchase Order No: AGI 1142/Armco

The samples were analyzed as follows:

| Samples Analyzed | Analysis | Results |
|---|---|---|
| One soil | Fuel Hydrocarbons by modified EPA 8015 (Luft manual 1987, P.60) | Table I |
| Three soils | CAM (17) metals by ICPMS | Quant Report |

### TABLE I

Parts Per Million

| Sample No. | Kerosene | Mineral Spirits | Gasoline | Diesel Fuel | $C_{15}$-$C_{30}$+* Hydrocarbons |
|---|---|---|---|---|---|
| ARM 66 | ND | ND | ND | ND | 10000 |
| Detection Limit | 10 | 10 | 10 | 10 | 10 |

ND - Not Detected
* - Heavy hydrocarbon oil; possibly tar or asphalt

Date Analyzed: 3-31-88

Page 1 of 1

B. Michael Hovanec
Senior Staff Chemist

D.J. Northington. Ph.D.
Technical Director

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Client: Applied Geosciences 9096
Job Number: 9135 33
Date Analyzed: 3-31-88

C.A.M. Metals
Quantitative Analysis Report
Inductively Coupled Plasma-Mass Spectrometry
Total Metals Concentration---Parts Per Million

**** Exceeds TTLC limits * May exceed STLC limits

| | TTLC Limits mg/Kg | ARM 64 | 10X STLC Limits mg/Kg | Detect. Limit |
|---|---|---|---|---|
| Antimony | 500 | 0.9 | 150 | 0.2 |
| Arsenic | 500 | ND<12 | 50 | 12 |
| Barium | 10000 | 109 | 1000 | 0.8 |
| Beryllium | 75 | 0.3 | 7.5 | 0.2 |
| Cadmium | 100 | 0.2 | 10 | 0.1 |
| Chromium (III/VI) | 2500/500 | 26 | 5600/50 | 2 |
| Cobalt | 8000 | 10.3 | 800 | 0.05 |
| Copper | 2500 | 27.7 | 250 | 0.6 |
| Lead | 1000 | 16.3 | 50 | 0.1 |
| Mercury | 20 | ND<0.3 | 2 | 0.3 |
| Molybdenum | 3500 | 1.42 | 3500 | 0.08 |
| Nickel | 2000 | 26.4 | 200 | 0.2 |
| Selenium | 100 | ND<7 | 10 | 7 |
| Silver | 500 | 0.03 | 50 | 0.03 |
| Thallium | 700 | 0.12 | 70 | 0.02 |
| Vanadium | 2400 | 45 | 240 | 7 |
| Zinc | 5000 | 107 | 2500 | 1 |

(1) ND-Not Detected. The Limit of Detection is reported above.
(2) Chromium reported above as total chromium in sample.
(3) 10X STLC Limits used as comparison takes into account dilution of the sample by 1/10 during leachate preparation.

Client: Applied Geosciences 9121

Job Number: 9135
Date Analyzed: 3-30-88



C.A.M. Metals
Quantitative Analysis Report
Inductively Coupled Plasma-Mass Spectrometry
Total Metals Concentration---Parts Per Million

**** Exceeds TTLC limits * May exceed STLC limits

| | | TTLC Limits mg/Kg | ARM 65 | 10X STLC Limits mg/Kg | Detect. Limit |
|---|---|---|---|---|---|
| Antimony | | 500 | 1.1 | 150 | 0.1 |
| Arsenic | | 500 | ND<17 | 50 | 17 |
| Barium | | 10000 | 146 | 1000 | 1 |
| Beryllium | | 75 | 0.6 | 7.5 | 0.1 |
| Cadmium | | 100 | ND<0.4 | 10 | 0.4 |
| Chromium | (III/VI) | 2500/500 | 37.6 | 5600/50 | 0.5 |
| Cobalt | | 8000 | 12.1 | 800 | 0.02 |
| Copper | | 2500 | 28 | 250 | 0.6 |
| Lead | | 1000 | 6.07 | 50 | 0.1 |
| Mercury | | 20 | ND<0.3 | 2 | 0.3 |
| Molybdenum | | 3500 | 3.51 | 3500 | 0.08 |
| Nickel | | 2000 | 26.2 | 200 | 0.2 |
| Selenium | | 100 | ND<10 | 10 | 10 |
| Silver | | 500 | ND<0.2 | 50 | 0.2 |
| Thallium | | 700 | 0.17 | 70 | 0.02 |
| Vanadium | | 2400 | 75 | 240 | .6 |
| Zinc | | 5000 | 79 | 2500 | 1 |

(1) ND-Not Detected. The Limit of Detection is reported above.
(2) Chromium reported above as total chromium in sample.
(3) 10X STLC Limits used as comparison takes into account dilution of the sample by 1/10 during leachate preparation.

Client: Applied Geosciences 9121
Job Number: 9135 15
Date Analyzed: 3-30-88

C.A.M. Metals
Quantitative Analysis Report
Inductively Coupled Plasma-Mass Spectrometry
Total Metals Concentration---Parts Per Million

**** Exceeds TTLC limits * May exceed STLC limits

| | | TTLC Limits mg/Kg | ARM 67 | 10X STLC Limits mg/Kg | Detect. Limit |
|---|---|---|---|---|---|
| Antimony | | 500 | 1.9 | 150 | 0.1 |
| Arsenic | | 500 | ND<15 | 50 | 15 |
| Barium | | 10000 | 136 | 1000 | 1 |
| Beryllium | | 75 | 0.3 | 7.5 | 0.1 |
| Cadmium | | 100 | ND<0.4 | 10 | 0.4 |
| Chromium | (III/VI) | 2500/500 | 26.6 | 5600/50 | 0.5 |
| Cobalt | | [illegible]00 | 9.72 | 800 | 0.02 |
| Copper | | 0 | 20.6 | 250 | 0.6 |
| Lead | | | 12.2 | 50 | 0.1 |
| Mercury | | | ND<0.3 | 2 | 0.3 |
| Molybdenu | | | 1.05 | 3500 | 0.08 |
| Nickel | | 2000 | 17.9 | 200 | 0.2 |
| Selenium | | 100 | ND<10 | 10 | 10 |
| Silver | | 500 | ND<0.2 | 50 | 0.2 |
| Thallium | | 700 | 0.11 | 70 | 0.02 |
| Vanadium | | 2400 | 49 | 240 | 7 |
| Zinc | | 5000 | 60 | 2500 | 1 |

ARM 67 is not on the table

(1) ND-Not Detected. The Limit of Detection is reported above.
(2) Chromium reported above as total chromium in sample.
(3) 10X STLC Limits used as comparison takes into account dilution of the sample by 1/10 during leachate preparation.

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Tustin, CA 92680

Attn: Paul Roberts

JOB NO. 9296

## LABORATORY REPORT

Samples Received: Ten (10) soil samples
Date Received: 4-11-88
Purchase Order No: AGI 1142/Armco

The samples were analyzed as follows:

| Samples Analyzed | Analysis | Results |
|---|---|---|
| Three soils | Total Petroleum Hydrocarbons by EPA 418.1 | Table I |

### TABLE I

Parts Per Million

| Sample No. | Total Petroleum Hydrocarbons |
|---|---|
| ARM 27-5-1 | ND |
| ARM 27-9-1 | ND |
| ARM 27-10-1 | ND |
| Detection Limit | 10 |

ND - Not Detected

Date Analyzed: 4-14-88

Page 1 of 1

Shelley Rinker
Shelley Rinker
Analytical Chemist

D.J. Northington, Ph.D.
Technical Director

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April 15, 1988

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Tustin, CA 92680

Attn: Paul Roberts

JOB NO. 9305

## LABORATORY REPORT

Samples Received: Two (2) soil samples
Date Received: 4-12-88
Purchase Order No: AGI 1142/Armco

The samples were analyzed as follows:

| Samples Analyzed | Analysis | Results |
|---|---|---|
| Two soils | Total Petroleum Hydrocarbons by EPA 418.1 | Table I |

### TABLE I

Parts Per Million

| Sample No. | Total Petroleum Hydrocarbons |
|---|---|
| ARM 28-1-1 | ND |
| ARM 28-2-1 | ND |
| Detection Limit | 10 |

ND - Not Detected

Date Analyzed: 4-14-88

Page 1 of 1

Shelley Rinker
Analytical Chemist

D.J. Northington, Ph.D.
Technical Director

TABLE 1A

HYDROCARBON CONCENTRATIONS IN SOIL SAMPLES COLLECTED FROM THE NORTH AREA[1]

| | NEAR SURFACE[2] | | SHALLOW SUBSURFACE[3] | |
|---|---|---|---|---|
| BORING DESIGNATION | SAMPLE DEPTH | CONC. (ppm) | SAMPLE DEPTH | CONC. (ppm) |
| ARM8 | 2 FT. | 7,800 | 5 FT. | 27 |
| ARM10 | 2 FT. | 5,900 | 10 FT. | 10 |
| ARM9 | 1 FT. | 24,000[4] | 5 FT. | 18 |
| AHB10 | 4 FT. | 5,100 | - | - |
| AHB11 | - | - | 2 FT. | 24 |
| AHB12 | 1 FT. | 2,200 | - | - |
| AHB14 | 1 FT. | 1,200 | - | - |
| AHB15 | - | - | 1 FT. | 24 |
| | - | - | 4 FT. | 24 |
| AHB31 | 1 FT. | 2,800 | 2 FT. | 33 |
| AHB33 | - | - | 2 FT. | 53 |

NOTES:

1. North Area shown in Figure 3.
2. Near surface is defined as below ground surface but above the visual line separating the degraded soil from the underlying clean soil.
3. Shallow subsurface is the soil lying below the near surface.
4. Other constituents detected in this sample:
   Tetrachloroethene 76 ppb
   Toluene 43 ppb

TABLE 1B

METAL CONCENTRATIONS (PPM) IN SOIL SAMPLES IN THE NORTH AREA[1]

| | | NEAR SURFACE[2] | | | SHALLOW SUBSURFACE[3] | | | | |
|---|---|---|---|---|---|---|---|---|---|
| BORING DESIG. | METAL | DEPTH | CAM CONC. | WET[4] CAM CONC. | DEPTH | CAM CONC. | WET CAM CONC. | TTLC | STLC |
| ARM9 | ZINC | 1 FT. | 126 | - | - | - | - | 500 | 250 |
| | LEAD | 1 FT. | 117 | - | - | - | - | 1000 | 5 |
| ARM10 | CHROMIUM | 2 FT. | 66 | 3.1 | 10 FT. | 28 | - | 500 | 5 |
| | ZINC | 2 FT. | 123 | 2.2 | 10 FT. | 122 | - | 5000 | 250 |
| | MOLYBDENUM | 2 FT. | 5.7 | 0.2 | 10 FT. | 0.22 | - | 3500 | 350 |
| | BARIUM | 2 FT. | 1,000 | 22 | 10 FT. | 252 | - | 10000 | 100 |
| | LEAD | 2 FT. | 152 | 2.6 | 10 FT. | 5.5 | - | 1000 | 5 |
| AHB31 | CHROMIUM | 1 FT. | 72 | - | - | - | - | 500 | 5 |
| | LEAD | 1 FT. | 166 | - | - | - | - | 1000 | 5 |
| AHB33 | ZINC | 2 FT. | 285 | - | - | - | - | 5000 | 250 |

NOTES:

1. North Area shown in Figure 3.
2. Near surface is defined as below ground surface but above the line separating the degraded soil from the underlying clean soil.
3. Shallow subsurface is the soil lying below the near surface.
4. WET CAM concentrations is the concentration of the soluble fraction of the metal as obtained via the Waste Extraction Test (WET).

TABLE 2A

HYDROCARBON CONCENTRATIONS IN SOIL SAMPLES IN THE EAST AREA[1]

| BORING DESIGNATION | NEAR SURFACE[2] | | SHALLOW SUBSURFACE[3] | |
|---|---|---|---|---|
| | DEPTH | CONC. (ppm) | DEPTH | CONC. (ppm) |
| AHB4 | 2 FT. | 3,500 | - | - |
| AHB5 | - | - | 4 FT. | 11 |
| AHB32 | 2 FT. | 490 | - | - |
| | 4 FT. | 1,500 | - | - |

NOTES:

1. East Area shown in Figure 3.
2. Near surface is defined as below ground surface but above the line separating the degraded soil from the underlying clean soil.
3. Shallow subsurface is the soil lying below the near surface.

TABLE 3A

HYDROCARBON CONCENTRATIONS IN SOIL SAMPLES IN THE SOUTH AREA[1]

| BORING DESIGNATION | NEAR SURFACE[2] DEPTH | NEAR SURFACE[2] CONC. (ppm) | SHALLOW SUBSURFACE[3] DEPTH | SHALLOW SUBSURFACE[3] CONC. (ppm) |
|---|---|---|---|---|
| ARM5 | 5 FT. | 2,500 | 15 FT. | 12 |
| ARM18 | - | - | 10 FT. | 15 |
| | - | - | 5 FT. | 20 |
| AHB1 | 2 FT. | 16,000 | - | - |
| AHB7 | - | - | 2 FT. | 35 |
| AHB8 | 3 FT. | 230 | - | - |
| AHB9 | - | - | 1.5 FT. | 46 |
| | - | - | 3 FT. | 86 |
| AHB21 | 1.5 FT. | 250 | - | - |
| AHB22 | - | - | 2 FT. | 100 |
| AHB23 | 2 FT. | 360 | - | - |
| AHB25 | - | - | 1.5 FT. | 15 |
| AHB26 | - | - | 2 FT. | 32 |
| AHB27 | 0.5 FT. | 87,000 | 4 FT. | 30 |
| AHB28 | - | - | 2 FT. | 59 |
| | - | - | 4 FT. | 14 |
| AHB29 | - | - | 2 FT. | 15 |
| AHB30 | - | - | 1 FT. | 16 |

NOTES:

1. South Area shown in Figure 3.
2. Near surface is defined as below ground surface but above the line separating the degraded soil from the underlying clean soil.
3. Shallow subsurface is the soil lying below the near surface.
4. Other components detected include: Acetone - 510 ppb; 2-Butanone - 85 ppb; Toluene - 9 ppb

TABLE 3B:

METAL CONCENTRATIONS (PPM) IN SOIL SAMPLES IN THE SOUTH AREA[1]

| | | NEAR SURFACE[2] | | | SHALLOW SUBSURFACE[3] | | | | |
|---|---|---|---|---|---|---|---|---|---|
| BORING DESIG. | METAL | DEPTH | CAM CONC. | WET CAM CONC. | DEPTH | CAM CONC. | WET CAM CONC. | TTLC | STLC |
| AHB27 | CHROMIUM | 0.5 FT. | 1620 | 8.8 | 4 FT. | 35 | - | 500 | 5 |
| | NICKEL | 0.5 FT. | 6300 | 81 | 4 FT. | 23 | - | 2000 | 20 |
| | COPPER | 0.5 FT. | 2400 | 0.1 | 4 FT. | 24 | - | 2500 | 25 |
| | ZINC | 0.5 FT. | 2730 | 64 | 4 FT. | 25 | - | 5000 | 250 |
| | LEAD | 0.5 FT. | 689 | 1.3 | 4 FT. | 7.9 | - | 1000 | 5 |

NOTES:

1. South Area shown in Figure 3.
2. Near surface is defined as below ground surface but above the line separating the degraded soil from the underlying clean soil.
3. Shallow subsurface is the soil lying below the near surface.
4. WET CAM concentrations is the concentration of the soluble fraction of the metal as obtained via the Waste Extraction Test (WET).

TABLE 4A

HYDROCARBON CONCENTRATIONS IN SOIL SAMPLES IN THE CENTRAL AREA[1]

| BORING DESIGNATION | DEPTH | CONC. (ppm) |
|---|---|---|
| ARM7[2] | 4 FT. | 3,700 |
| | 12 FT. | 2,500 |
| | 16 FT. | 57 |
| | 48 FT. | 11,000 |

NOTES:

1. Central Area shown in Figure 3.
2. This sample also detected to have 9 ppb Toluene.

TABLE 5A

SUMMARY OF LABORATORY ANALYSIS METHODS

| BORING DESIGNATION[1] | LOCATION[2] | REASON FOR SAMPLING[3] | LABORATORY METHODS[4] |
|---|---|---|---|
| NORTH AREA | | | |
| ARM8 | West of former Oil Storage house | Possible presence of petroleum hydrocarbons and volatile organic compounds in the subsurface adjacent to a former paint storage area and steam cleaning area. | 418.1, 8240 |
| ARM9 | East of Machine Shop I | Possible presence of petroleum hydrocarbons, volatile organic compounds, and metals in the subsurface adjacent to the clarifier. | 418.1, "CAM" metals |
| ARM10 | West of Welding Shed | Possible presence of petroleum hydrocarbons volatile organic compounds, metals, "base neutral acids, and cyanide in the subsurface adjacent to the cyanide sump and steam cleaning area. | 418.1, 8240, 8270, "CAM" metals, "WET" metals, cyanide |
| AHB10, AHB14 AHB15 AHB31 AHB33 | West of Welding Shed | Possible presence of petroleum hydrocarbons in the subsurface | 418.1, "CAM" metals |
| AHB11 AHB12 | Northeastern site boundary | Possible presence of petroleum hydrocarbons in the subsurface. | 418.1 |

TABLE 5 CONTINUED

| BORING DESIGNATION | LOCATION | REASON FOR SAMPLING | LABORATORY METHOD |
|---|---|---|---|
| **EAST AREA** | | | |
| ARM11 | East of Machine Shop II | Possible presence of petroleum hydrocarbons, and metals in the subsurface adjacent to the oil collection area. | 418.1, |
| AHB4, AHB5 AHB13 AHB32 | Northeastern site boundary | Possible presence of petroleum hydrocarbons in the subsurface. | 418.1, 8240, "CAM" metals |
| **SOUTH AREA** | | | |
| ARM5 | South of Raw Material Warehouse | Possible presence of petroleum hydrocarbons, and volatile organic compounds in the French drain. | 418.1, 8240 |
| ARM1 | South of Grind Central Dept. | Possible presence of petroleum hydrocarbons, volatile organic compounds, and metals in the subsurface adjacent to the clarifier. | 418.1, 8240, "CAM" metals |
| AHB1 AHB6 AHB7 AHB20 AHB27-AHB29 | South of Grind Central Dept. and Raw Material Warehouse | Possible presence of petroleum hydrocarbons, volatile organic compounds, base neutral acids, and metals in the subsurface. | 418.1, 8240, 8270, "CAM" metals "WET" metals |
| AHB8 AHB9 AHB19 AHB21-AHB26 | South Parking | Possible presence of petroleum hydrocarbons, volatile organic compounds, and in the metals subsurface. | 418.1, 8240, "CAM" metals |
| **WEST AREA** | | | |
| ARM15 | West of Grind Central Dept. | Possible presence of petroleum hydrocarbons in the subsurface where former sanitary sewage pits were apparently located. | 418.1 |

TABLE 5 CONTINUED

| BORING DESIGNATION | LOCATION | REASON FOR SAMPLING | LABORATORY METHOD |
|---|---|---|---|
| ARM16 | West of Office Area | Possible presence of petroleum hydrocarbons in the subsurface where former sanitary sewage pits were apparently located. | 418.1 |
| ARM17 | West of Grind Central Dept. | Possible presence of petroleum hydrocarbons in the subsurface where an anomaly was detected by a geophysical survey | 418.1 |
| CENTRAL AREA | | | |
| ARM1 | East of Heat Treating Dept. | Possible presence of petroleum hydrocarbons in the subsurface beneath the basement sump. | 418.1 |
| ARM2 | West of Heat Treating Dept. | Possible presence of petroleum hydrocarbons, volatile organic compounds, and metals in the metals subsurface adjacent to the clarifier. | 418.1<br>8240,<br>"CAM" |
| ARM3 | North of Hydraulic Assembly Dept. | Possible presence of petroleum hydrocarbons in the subsurface beneath the test pits. | 418.1 |
| ARM4 | East of Honing Dept. | Possible presence of petroleum hydrocarbons in the subsurface beneath the basement with two tanks and sump. | 418.1 |
| ARM6 | South of hydraulic Assembly Dept. | Possible presence of petroleum hydrocarbons in the subsurface adjacent to the clarifier. | 418.1 |
| ARM7 | South of Hydraulic Assembly Dept. | Possible presence of petroleum hydrocarbons, volatile organic compounds, and base neutral acids in the subsurface beneath the test pits. | 418.1<br>8240<br>8270 |

TABLE 5 CONTINUED

| BORING DESIGNATION | LOCATION | REASON FOR SAMPLING | LABORATORY METHOD |
|---|---|---|---|
| ARM12 | East of Inspection Department | Possible presence of petroleum hydrocarbons in the subsurface adjacent to the clarifier. | 418.1 |
| ARM13 | East of Heat Treating Dept | Possible presence of petroleum hydrocarbons, and volatile organic compounds in the subsurface beneath the basement with a sump and a vapor degreaser. | 418.1<br>8240 |
| ARM14 | South of Hydraulic Assembly Dept. | Possible presence of petroleum hydrocarbons in the subsurface adjacent to known petroleum hydrocarbons in boring ARM7. | 418.1 |
| AHB17<br>AHB18 | Center of site | Possible presents of petroleum hydrocarbons and metals in the subsurface. | 418.1<br>"CAM" metals |

NOTES:

1. Borings and hand auger borings were designated boring numbers, where ARM1 indicates Armco Steel boring number 1 and AHB1 indicates Armco Steel hand auger boring number 1.

2. Approximate location of borings and hand auger borings at the Armco Steel facility.

3. Reasons for boring locations and possible hazardous materials that could be present.

4. Laboratory methods used to analyze soil samples which include: Total Petroleum Hydrocarbons in general accordance with EPA Method No.418.1; Volatile Organic Compounds in general accordance with EPA Method No. 8240; Base Neutral Acids in general accordance with EPA Method No. 8270; "CAM" (California Assessment Manual) metals; WET (Waste Extraction Test) metals; and cyanide.

September 17, 1987

WCAS
WEST COAST ANALYTICAL SERVICE, INC.
ANALYTICAL CHEMISTS

APPLIED GEOSCIENCES, INC.
17321 Irvine Blvd.
Tustin, CA 92680

Attn: Paul Roberts

JOB NO. 7034

## LABORATORY REPORT

Samples Received: One-hundred-five (105) soil samples
Date Received: 9-3-87
Released for Analysis: 9-4-76
Purchase Order No: AGI 1142/Armco

The samples were analyzed as follows:

| Samples Analyzed | Analysis | Results |
|---|---|---|
| Twelve soils | Volatile Organics by EPA 8240 | Data Sheets |
| Three soils | Semi-volatile Organics by EPA 8270 | Data Sheets |
| Twenty-one soils | CAM metals by EPA 6020 | Data Sheets |
| Two soils | CAM metals on W.E.T. leachate by EPA 6020 | Data Sheets |
| One soil | Total Cyanide by EPA 9010 | Table I |
| Sixty-four soils | Total Petroleum Hydrocarbons by EPA 418.1 | Table II |



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WEST COAST ANALYTICAL SERVICE, INC.

Applied Geosciences, Inc.
Mr. Paul Roberts

Job # 7034
Sept. 17, 1987

LABORATORY REPORT

TABLE I

Parts Per Million

| Sample No. | Total Cyanide |
|---|---|
| ARM 10-2-4 | ND |
| Detection Limit | 10 |

Date Analyzed: 9-15-87

ND - Not Detected

WEST COAST ANALYTICAL SERVICE, INC.

Applied Geosciences, Inc.
Mr. Paul Roberts

Job # 7034
Sept. 17, 1987

LABORATORY REPORT

TABLE II

Parts Per Million

| Sample No. | Total Petroleum Hydrocarbons |
|---|---|
| AHB 7-1 | 35 |
| AHB 7-2 | 45 |
| AHB 8-1 | 230 |
| AHB 9-1 | 45 |
| AHB 9-2 | 86 |
| AHB 10-1 | 17 |
| AHB 10-2 | 5100 |
| AHB 11-1 | 420 |
| AHB 12-1 | 2200 |
| AHB 13-1 | 17 |
| AHB 14-1 | 1200 |
| AHB 15-1 | 24 |
| AHB 15-2 | 24 |
| AHB 17-1 | 120 |
| AHB 17-1 DUP. | 100 |
| AHB 18-1 | 130 |
| AHB 18-2 | 190 |
| AHB 20-1 | 170 |
| AHB 21-1 | 250 |
| AHB 22-1 | 100 |
| AHB 22-1 DUP. | 60 |
| AHB 23-1 | 360 |
| AHB 25-1 | 15 |
| AHB 26-1 | 32 |
| AHB 27-1 | 87000 |
| AHB 27-1 DUP. | 110000 |
| AHB 27-2 | 30 |
| AHB 28-1 | 59 |
| AHB 28-2 | 14 |
| AHB 29-1 | 15 |
| AHB 30-1 | 16 |
| AHB 31-1 | 28000 |
| AHB 31-2 | 33 |
| AHB 32-1 | 490 |
| AHB 32-2 | 1500 |
| AHB 33-1 | 53 |

WEST COAST ANALYTICAL SERVICE, INC.

Applied Geosciences, Inc.
Mr. Paul Roberts

Job # 7034
Sept. 17, 1987

LABORATORY REPORT

TABLE I CONT.

Parts Per Million

| Sample No. | Total Petroleum Hydrocarbons |
|---|---|
| ARM 8-A | 7800 |
| ARM 9-A | 24000 |
| ARM 10-A | 5900 |
| ARM 13-A | 110 |
| ARM 5-1-3 | 20 |
| ARM 5-2-3 | 15 |
| ARM 6-1-3 | 10 |
| ARM 6-2-3 | 250 |
| ARM 7-1-3 | 3700 |
| ARM 7-3-3 | 2500 |
| ARM 7-3-3 DUP. | 2800 |
| ARM 7-4-3 | 57 |
| ARM 7-12-3 | 11000 |
| ARM 8-1-4 | 27 |
| ARM 9-1-4 | 18 |
| ARM 9-1-4 DUP. | 23 |
| ARM 10-2-4 | 10 |
| ARM 11-1-4 | 18 |
| ARM 11-2-4 | 14 |
| ARM 12-1-3 | 20 |
| ARM 13-1-3 | 26 |
| ARM 13-12-3 | 41 |
| ARM 14-1-3 | 22 |
| ARM 14-2-3 | 19 |
| ARM 15-1-3 | 17 |
| ARM 16-1-3 | 27 |
| ARM 17-2-4 | 12 |
| ARM 17-2-4 DUP. | TR<10 |
| Detection Limit | 10 |

Date Analyzed: 9/8-10/87

TR - Trace

Client: Applied Geoscience
Job Number: 7034
Date Analyzed: 9-9-87

Quantitative Analysis Report
Inductively Coupled Plasma-Mass Spectrometry

Parts Per Million (mg/Kg)
Soil Samples

| | AHB 7-1 | AHB 7-2 | AHB 9-1 | AHB 9-2 | AHB 10-1 | AHB 13-1 | Detect. Limit |
|---|---|---|---|---|---|---|---|
| Beryllium | 0.59 | 1.1 | 0.62 | 0.65 | 0.5 | 0.73 | 0.1 |
| Vanadium | 44 | 75 | 48 | 54 | 44 | 54 | 38 |
| Chromium | 28 | 51 | 34 | 35 | 33 | 33 | 2 |
| Cobalt | 11 | 16 | 12 | 13 | 8.3 | 7.3 | 0.02 |
| Nickel | 21 | 34 | 22 | 24 | 33 | 21 | 2 |
| Copper | 23 | 37 | 27 | 29 | 22 | 17 | 0.5 |
| Zinc | 53 | 81 | 81 | 64 | 52 | 48 | 2 |
| Arsenic | ND | ND | ND | ND | 107 | ND | 15 |
| Selenium | ND | ND | ND | ND | ND | ND | 2 |
| Molybdenum | 0.26 | 0.31 | 0.33 | 0.33 | 1.7 | 0.98 | 0.1 |
| Silver | ND | ND | ND | ND | ND | ND | 0.1 |
| Cadmium | ND | ND | 0.3 | ND | ND | 0.6 | 0.1 |
| Antimony | 0.9 | 1.5 | 1.9 | 1.1 | 0.7 | 0.4 | 0.1 |
| Barium | 125 | 208 | 150 | 164 | 127 | 161 | 0.7 |
| Mercury | ND | ND | ND | ND | ND | ND | 0.1 |
| Thallium | 0.15 | 0.18 | 0.16 | 0.15 | 0.12 | 0.23 | 0.02 |
| Lead | 15 | 20 | 67 | 13 | 6.7 | 8.4 | 0.2 |

ND-Not Detected. The detection limit is stated above.

Client: Applied Geoscience
Job Number: 7034
Date Analyzed: 9-9-87

## Quantitative Analysis Report
## Inductively Coupled Plasma-Mass Spectrometry

### Parts Per Million (mg/Kg)
### Soil Samples

| | AHB 18-2 | AHB 20-1 | AHB 27-1 | AHB 27-2 | AHB 28-1 | AHB 28-2 | Detect. Limit |
|---|---|---|---|---|---|---|---|
| Beryllium | 0.46 | 0.47 | 0.17 | 0.7 | 0.46 | 0.78 | 0.08 |
| Vanadium | 51 | 42 | ND | 53 | 30 | 62 | 27 |
| Chromium | 25 | 23 | 1620 | 35 | 23 | 38 | 2 |
| Cobalt | 8.6 | 7.8 | 128 | 11 | 8.3 | 12 | 0.02 |
| Nickel | 18 | 17 | 6300 | 23 | 17 | 25 | 2 |
| Copper | 23 | 46 | 2400 | 24 | 21 | 26 | 0.4 |
| Zinc | 77 | 52 | 2730 | 65 | 53 | 65 | 2 |
| Arsenic | ND | ND | ND | ND | ND | ND | 13 |
| Selenium | ND | ND | ND | ND | ND | ND | 2 |
| Molybdenum | 1.1 | 1.3 | 136 | 0.46 | 0.54 | 0.33 | 0.09 |
| Silver | ND | ND | 3.2 | ND | ND | ND | 0.1 |
| Cadmium | 0.3 | 0.3 | 7.6 | ND | ND | ND | 0.1 |
| Antimony | 0.8 | 0.6 | 9.8 | 0.9 | 0.6 | 0.8 | 0.1 |
| Barium | 160 | 148 | 93 | 167 | 121 | 139 | 0.7 |
| Mercury | ND | ND | 5.4 | ND | ND | ND | 0.1 |
| Thallium | 0.21 | 0.25 | 0.1 | 0.2 | 0.19 | 0.2 | 0.02 |
| Lead | 27 | 8.2 | 689 | 7.9 | 23 | 8.7 | 0.2 |

ND-Not Detected. The detection limit is stated above.



WCAS

Client: Applied Geoscience
Job Number: 7034
Date Analyzed: 9-9-87

## Quantitative Analysis Report
## Inductively Coupled Plasma-Mass Spectrometry

### Parts Per Million (mg/Kg)
### Soil Samples

| | AHB 29-1 | AHB 31-1 | AHB 33-1 | ARM5-1-3 | ARM5-2-3 | ARM 9A | Detect. Limit |
|---|---|---|---|---|---|---|---|
| Beryllium | 0.56 | 0.37 | 0.34 | 0.81 | 0.75 | 0.16 | 0.09 |
| Vanadium | 42 | 30 | ND | 72 | 53 | 25 | 8 |
| Chromium | 28 | 72 | 19 | 45 | 40 | 24 | 2 |
| Cobalt | 9.9 | 9.9 | 7.3 | 16 | 14 | 14 | 0.02 |
| Nickel | 20 | 124 | 13 | 32 | 29 | 45 | 2 |
| Copper | 22 | 49 | 20 | 38 | 36 | 67 | 0.6 |
| Zinc | 55 | 104 | 285 | 84 | 70 | 126 | 2 |
| Arsenic | ND | ND | ND | ND | ND | ND | 14 |
| Selenium | ND | ND | ND | ND | ND | ND | 2 |
| Molybdenum | 0.21 | 6.4 | 0.15 | 0.31 | 0.34 | 3.8 | 0.09 |
| Silver | ND | ND | ND | ND | ND | ND | 0.1 |
| Cadmium | ND | 0.2 | 0.6 | ND | ND | 0.6 | 0.1 |
| Antimony | 0.9 | 8.1 | 0.4 | 1 | 0.9 | 1.2 | 0.1 |
| Barium | 153 | 242 | 107 | 155 | 145 | 90 | 0.7 |
| Mercury | ND | 0.1 | ND | ND | ND | 0.6 | 0.1 |
| Thallium | 0.18 | 0.12 | 0.09 | 0.21 | 0.19 | 0.19 | 0.02 |
| Lead | 6.1 | 166 | 39 | 9.1 | 7.9 | 117 | 0.2 |

ND-Not Detected. The detection limit is stated above.

Client: Applied Geoscience
Job Number: 7034
Date Analyzed: 9-9-87

Quantitative Analysis Report
Inductively Coupled Plasma-Mass Spectrometry

Parts Per Million (mg/Kg)
Soil Samples

| | ARM10-2-4 | ARM10A | ARM11-1-4 | Detect. Limit |
|---|---|---|---|---|
| Beryllium | 0.52 | 0.2 | 0.46 | 0.09 |
| Vanadium | 42 | 43 | 45 | .26 |
| Chromium | 28 | 66 | 29 | 2 |
| Cobalt | 9.5 | 6.5 | 9.9 | 0.02 |
| Nickel | 22 | 31 | 20 | 2 |
| Copper | 24 | 67 | 25 | 0.6 |
| Zinc | 122 | 123 | 53 | 2 |
| Arsenic | ND | ND | ND | 14 |
| Selenium | ND | ND | ND | 2 |
| Molybdenum | 0.22 | 5.7 | 0.23 | 0.09 |
| Silver | ND | ND | ND | 0.1 |
| Cadmium | ND | 0.2 | ND | 0.1 |
| Antimony | 0.9 | 4.8 | 0.6 | 0.1 |
| Barium | 252 | 1110 | 132 | 0.7 |
| Mercury | ND | ND | ND | 0.1 |
| Thallium | 0.11 | 0.11 | 0.15 | 0.02 |
| Lead | 5.5 | 152 | 5.8 | 0.2 |

ND-Not Detected. The detection limit is stated above.

Client: Applied Geoscience
Job Number: 7034
Date Analyzed: 9-9-87

Quantitative Analysis Report
Inductively Coupled Plasma-Mass Spectrometry

Parts Per Million (mg/L)
Soil Sample Leachates

| | ARM10A | AHB 27-1 | Detect. Limit |
|---|---|---|---|
| Beryllium | ND | ND | 0.03 |
| Vanadium | 1.2 | 0.39 | 0.06 |
| Chromium | 3.1 | 8.8 | 0.2 |
| Cobalt | 0.1 | 4.2 | 0.02 |
| Nickel | ND | 81 | 1 |
| Copper | 0.04 | 0.1 | 0.03 |
| Zinc | 2.2 | 64 | 0.6 |
| Arsenic | ND | ND | 0.4 |
| Selenium | ND | ND | 0.9 |
| Molybdenum | 0.2 | 2.3 | 0.03 |
| Silver | ND | ND | 0.01 |
| Cadmium | ND | ND | 0.02 |
| Antimony | ND | 0.24 | 0.08 |
| Barium | 22 | 9.6 | 0.05 |
| Mercury | ND | 0.49 | 0.05 |
| Thallium | ND | ND | 0.01 |
| Lead | 2.6 | 1.3 | 0.02 |

ND-Not Detected. The detection limit is stated above.

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: AHB9-1
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V2 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 30. |
| 74-83-9 | BROMOMETHANE | ND | 30. |
| 75-01-4 | VINYL CHLORIDE | ND | 30. |
| 75-00-3 | CHLOROETHANE | ND | 30. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 50. |
| 67-64-1 | ACETONE | ND | 50. |
| 107-02-8 | ACROLEIN | ND | 50. |
| 107-13-1 | ACRYLONITRILE | ND | 50. |
| 75-15-0 | CARBON DISULFIDE | ND | 5. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 5. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 5. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 5. |
| 109-99-9 | TETRAHYDROFURAN | ND | 5. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 5. |
| 76-13-1 | FREON-TF | ND | 5. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 5. |
| 123-91-1 | 1,4-DIOXANE | ND | 5. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 5. |
| 67-66-3 | CHLOROFORM | ND | 5. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 5. |
| 78-93-3 | 2-BUTANONE | ND | 50. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 5. |
| 16-23-5 | CARBON TETRACHLORIDE | ND | 5. |
| 108-05-4 | VINYL ACETATE | ND | 30. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 5. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 5. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 5. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 5. |
| 79-01-6 | TRICHLOROETHENE | ND | 5. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 5. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 5. |
| 71-43-2 | BENZENE | ND | 5. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 5. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 50. |
| 75-25-2 | BROMOFORM | ND | 5. |
| 119-78-6 | 2-HEXANONE | ND | 30. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 30. |
| 127-18-4 | TETRACHLOROETHENE | ND | 5. |
| 108-88-3 | TOLUENE | ND | 5. |



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WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: AHB9-1
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V2 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS #. | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-90-7 | CHLOROBENZENE | ND | 5. |
| 100-41-4 | ETHYLBENZENE | ND | 5. |
| 100-42-5 | STYRENE | ND | 5. |
| 95-47-6 | TOTAL XYLENES | ND | 5. |
| 108-41-8 | M-CHLOROTOLUENE | ND | 5. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 5. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 5. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: METHOD BLANK

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/KG (PPB) |
|---|---|---|---|
| 1 | NONE FOUND | BNA | |

## Data Reporting Qualifiers

Value - If the result is a value greater than or equal to the Detection Limit (DL), the value is reported.

ND - Indicates that the compound was analyzed for but not detected. The minimum DL for the sample with the ND is reported based on necessary concentration or dilution actions.

TR - Indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified DL but greater than zero.

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: METHOD BLANK
ANALYSIS TYPE: EPA METHOD 625 (8270)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034B1 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/09/87 | DATE ANALYZED: | 09/10/87 |
| STANDARD ID: | BNAZ206 | GCMS TUNING: | DFTPP56 |
| INSTRUMENT ID: | 4500 | | |
| SAMPLE AMOUNT: | 30G:1ML | | |

| CAS # | COMPOUND | CONC: UG/KG (PPB) | DETECTION LIMIT |
|---|---|---|---|
| 84-66-2 | DIETHYL PHTHALATE | ND | 30. |
| 7005-72-3 | 4-CHLOROPHENYL PHENYL ETHER | ND | 30. |
| 86-73-7 | FLUORENE | ND | 30. |
| 100-01-6 | 4-NITROANILINE | ND | 200. |
| 534-52-1 | 4,6-DINITRO-2-METHYLPHENOL | ND | 200. |
| 86-30-6 | N-NITROSODIPHENYLAMINE | ND | 30. |
| 101-55-3 | 4-BROMOPHENYL PHENYL ETHER | ND | 30. |
| 118-74-1 | HEXACHLOROBENZENE | ND | 30. |
| 87-86-5 | PENTACHLOROPHENOL | ND | 200. |
| 85-01-8 | PHENANTHRENE | ND | 30. |
| 120-12-7 | ANTHRACENE | ND | 30. |
| 84-74-2 | DI-N-BUTYL PHTHALATE | ND | 30. |
| 206-44-0 | FLUORANTHENE | ND | 30. |
| 129-00-0 | PYRENE | ND | 30. |
| 85-68-7 | BUTYL BENZYL PHTHALATE | ND | 30. |
| 91-94-1 | 3,3'-DICHLOROBENZIDINE | ND | 70. |
| 56-55-3 | BENZO(A)ANTHRACENE | ND | 30. |
| 117-81-7 | BIS(2-ETHYLHEXYL)PHTHALATE | ND | 30. |
| 218-01-9 | CHRYSENE | ND | 30. |
| 117-84-0 | DI-N-OCTYL PHTHALATE | ND | 30. |
| 205-99-2 | BENZO(B & K)FLUORANTHENES | ND | 30. |
| 50-32-8 | BENZO(A)PYRENE | ND | 30. |
| 193-39-5 | INDENO(1,2,3-CD)PYRENE | ND | 30. |
| 53-70-3 | DIBENZO(A,H)ANTHRACENE | ND | 30. |
| 191-24-2 | BENZO(GHI)PERYLENE | ND | 30. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: METHOD BLANK
ANALYSIS TYPE: EPA METHOD 625 (8270)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034B1 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/09/87 | DATE ANALYZED: | 09/10/87 |
| STANDARD ID: | BNAZ206 | GCMS TUNING: | DFTPP56 |
| INSTRUMENT ID: | 4500 | | |
| SAMPLE AMOUNT: | 30G:1ML | | |

| CAS # | COMPOUND | CONC: UG/KG (PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-95-2 | PHENOL | ND | 30. |
| 111-44-4 | BIS(2-CHLOROETHYL)ETHER | ND | 30. |
| 95-57-8 | 2-CHLOROPHENOL | ND | 30. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 30. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 30. |
| 100-51-6 | BENZYL ALCOHOL | ND | 30. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 30. |
| 95-48-7 | 2-METHYLPHENOL | ND | 30. |
| 39638-32-9 | BIS(2-CHLOROISOPROPYL)ETHER | ND | 30. |
| 106-44-5 | 4-METHYLPHENOL | ND | 30. |
| 621-64-7 | N-NITROSODIPROPYLAMINE | ND | 30. |
| 67-72-1 | HEXACHLOROETHANE | ND | 30. |
| 98-95-3 | NITROBENZENE | ND | 30. |
| 78-59-1 | ISOPHORONE | ND | 30. |
| 88-75-5 | 2-NITROPHENOL | ND | 30. |
| 105-67-9 | 2,4-DIMETHYLPHENOL | ND | 30. |
| 65-85-0 | BENZOIC ACID | ND | 200. |
| 111-91-1 | BIS(2-CHLOROETHOXY)METHANE | ND | 30. |
| 120-33-2 | 2,4-DICHLOROPHENOL | ND | 30. |
| 120-82-1 | 1,2,4-TRICHLOROBENZENE | ND | 30. |
| 91-20-3 | NAPHTHALENE | ND | 30. |
| 106-47-8 | 4-CHLOROANILINE | ND | 30. |
| 87-68-3 | HEXACHLOROBUTADIENE | ND | 30. |
| 59-50-7 | 4-CHLORO-3-METHYLPHENOL | ND | 30. |
| 91-57-6 | 2-METHYLNAPHTHALENE | ND | 30. |
| 77-47-4 | HEXACHLOROCYCLOPENTADIENE | ND | 30. |
| 88-06-2 | 2,4,6-TRICHLOROPHENOL | ND | 30. |
| 95-95-4 | 2,4,5-TRICHLOROPHENOL | ND | 200. |
| 91-58-7 | 2-CHLORONAPHTHALENE | ND | 30. |
| 88-74-4 | 2-NITROANILINE | ND | 200. |
| 131-11-3 | DIMETHYL PHTHALATE | ND | 30. |
| 208-96-8 | ACENAPHTHYLENE | ND | 30. |
| 99-09-2 | 3-NITROANILINE | ND | 200. |
| 83-32-9 | ACENAPHTHENE | ND | 30. |
| 51-28-5 | 2,4-DINITROPHENOL | ND | 200. |
| 100-02-7 | 4-NITROPHENOL | ND | 200. |
| 132-64-9 | DIBENZOFURAN | ND | 30. |
| 121-14-2 | 2,4-DINITROTOLUENE | ND | 30. |
| 606-20-2 | 2,6-DINITROTOLUENE | ND | 30. |

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WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: LAB BLANK

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/L(PPB) |
|---|---|---|---|
| 1 | NONE FOUND | VOA | |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: LAB BLANK
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | VBLK656 |
| LEVEL: | LOW | MATRIX: | WATER |
| DATE PREPARED: | 09/16/87 | DATE ANALYZED: | 09/16/87 |
| STANDARD ID: | VOA566 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 5.0MLS | | |

| CAS # | COMPOUND | CONC: UG/L(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-90-7 | CHLOROBENZENE | ND | 1. |
| 100-41-4 | ETHYLBENZENE | ND | 1. |
| 100-42-5 | STYRENE | ND | 1. |
| 95-47-6 | TOTAL XYLENES | ND | 1. |
| 108-41-8 | M-CHLOROTOLUENE | ND | 1. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 1. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 1. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 1. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: LAB BLANK
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | VBLK656 |
| LEVEL: | LOW | MATRIX: | WATER |
| DATE PREPARED: | 09/16/87 | DATE ANALYZED: | 09/16/87 |
| STANDARD ID: | VOA566 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 5.0MLS | | |

| CAS # | COMPOUND | CONC: UG/L(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 5. |
| 74-83-9 | BROMOMETHANE | ND | 5. |
| 75-01-4 | VINYL CHLORIDE | ND | 5. |
| 75-00-3 | CHLOROETHANE | ND | 5. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 10. |
| 67-64-1 | ACETONE | ND | 10. |
| 107-02-8 | ACROLEIN | ND | 10. |
| 107-13-1 | ACRYLONITRILE | ND | 10. |
| 75-15-0 | CARBON DISULFIDE | ND | 1. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 1. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 1. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 1. |
| 109-99-9 | TETRAHYDROFURAN | ND | 1. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 1. |
| 76-13-1 | FREON-TF | ND | 1. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 1. |
| 123-91-1 | 1,4-DIOXANE | ND | 1. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 1. |
| 67-66-3 | CHLOROFORM | ND | 1. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 1. |
| 78-93-3 | 2-BUTANONE | ND | 10. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 1. |
| 16-23-5 | CARBON TETRACHLORIDE | ND | 1. |
| 108-05-4 | VINYL ACETATE | ND | 5. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 1. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 1. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 1. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 1. |
| 79-01-6 | TRICHLOROETHENE | ND | 1. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 1. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 1. |
| 71-43-2 | BENZENE | ND | 1. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 1. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 10. |
| 75-25-2 | BROMOFORM | ND | 1. |
| 119-78-6 | 2-HEXANONE | ND | 5. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 5. |
| 127-18-4 | TETRACHLOROETHENE | ND | 1. |
| 108-88-3 | TOLUENE | ND | 1. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: LAB BLANK

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/L(PPB) |
|---|---|---|---|
| 1 | NONE FOUND | VOA | |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: LAB BLANK
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | VBLK655 |
| LEVEL: | LOW | MATRIX: | WATER |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | GCMS TUNING: | -- |
| INSTRUMENT ID: | 5100 | | |
| SAMPLE AMOUNT: | 5.0MLS | | |

| CAS # | COMPOUND | CONC: UG/L(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-90-7 | CHLOROBENZENE | ND | 1. |
| 100-41-4 | ETHYLBENZENE | ND | 1. |
| 100-42-5 | STYRENE | ND | 1. |
| 95-47-6 | TOTAL XYLENES | ND | 1. |
| 108-41-8 | M-CHLOROTOLUENE | ND | 1. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 1. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 1. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 1. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: LAB BLANK
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | VBLK655 |
| LEVEL: | LOW | MATRIX: | WATER |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | GCMS TUNING: | -- |
| INSTRUMENT ID: | 5100 | | |
| SAMPLE AMOUNT: | 5.0MLS | | |

| CAS # | COMPOUND | CONC: UG/L(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 5. |
| 74-83-9 | BROMOMETHANE | ND | 5. |
| 75-01-4 | VINYL CHLORIDE | ND | 5. |
| 75-00-3 | CHLOROETHANE | ND | 5. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 10. |
| 67-64-1 | ACETONE | ND | 10. |
| 107-02-8 | ACROLEIN | ND | 10. |
| 107-13-1 | ACRYLONITRILE | ND | 10. |
| 75-15-0 | CARBON DISULFIDE | ND | 1. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 1. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 1. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 1. |
| 109-99-9 | TETRAHYDROFURAN | ND | 1. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 1. |
| 76-13-1 | FREON-TF | ND | 1. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 1. |
| 123-91-1 | 1,4-DIOXANE | ND | 1. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 1. |
| 67-66-3 | CHLOROFORM | ND | 1. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 1. |
| 78-93-3 | 2-BUTANONE | ND | 10. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 1. |
| 16-23-5 | CARBON TETRACHLORIDE | ND | 1. |
| 108-05-4 | VINYL ACETATE | ND | 5. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 1. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 1. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 1. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 1. |
| 79-01-6 | TRICHLOROETHENE | ND | 1. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 1. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 1. |
| 71-43-2 | BENZENE | ND | 1. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 1. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 10. |
| 75-25-2 | BROMOFORM | ND | 1. |
| 119-78-6 | 2-HEXANONE | ND | 5. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 5. |
| 127-18-4 | TETRACHLOROETHENE | ND | 1. |
| 108-88-3 | TOLUENE | ND | 1. |



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WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM13-12-3

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/KG(PPB) |
|---|---|---|---|
| 1 | NONE FOUND | VOA | |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM13-12-3
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V12 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/16/87 | DATE ANALYZED: | 09/16/87 |
| STANDARD ID: | VOA566 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-90-7 | CHLOROBENZENE | ND | 5. |
| 100-41-4 | ETHYLBENZENE | ND | 5. |
| 100-42-5 | STYRENE | ND | 5. |
| 95-47-6 | TOTAL XYLENES | ND | 5. |
| 108-41-8 | M-CHLOROTOLUENE | ND | 5. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 5. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 5. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM13-12-3
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V12 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/16/87 | DATE ANALYZED: | 09/16/87 |
| STANDARD ID: | VOA566 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 30. |
| 74-83-9 | BROMOMETHANE | ND | 30. |
| 75-01-4 | VINYL CHLORIDE | ND | 30. |
| 75-00-3 | CHLOROETHANE | ND | 30. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 50. |
| 67-64-1 | ACETONE | ND | 50. |
| 107-02-8 | ACROLEIN | ND | 50. |
| 107-13-1 | ACRYLONITRILE | ND | 50. |
| 75-15-0 | CARBON DISULFIDE | ND | 5. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 5. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 5. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 5. |
| 109-99-9 | TETRAHYDROFURAN | ND | 5. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 5. |
| 76-13-1 | FREON-TF | ND | 5. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 5. |
| 123-91-1 | 1,4-DIOXANE | ND | 5. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 5. |
| 67-66-3 | CHLOROFORM | ND | 5. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 5. |
| 78-93-3 | 2-BUTANONE | ND | 50. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 5. |
| 16-23-5 | CARBON TETRACHLORIDE | ND | 5. |
| 108-05-4 | VINYL ACETATE | ND | 30. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 5. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 5. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 5. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 5. |
| 79-01-6 | TRICHLOROETHENE | ND | 5. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 5. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 5. |
| 71-43-2 | BENZENE | ND | 5. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 5. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 50. |
| 75-25-2 | BROMOFORM | ND | 5. |
| 119-78-6 | 2-HEXANONE | ND | 30. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 30. |
| 127-18-4 | TETRACHLOROETHENE | ND | 5. |
| 108-88-3 | TOLUENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: ARM10-A

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/KG (PPB) |
|---|---|---|---|
| 1 | C8-C35 HYDROCARBON MATRIX | VOA/BNA | 10000000. |
| 2 | C9-C10 ALKYLBENZENES | VOA | 500. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: ARM10-A
ANALYSIS TYPE: EPA METHOD 625 (8270)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034B4 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/09/87 | DATE ANALYZED: | 09/11/87 |
| STANDARD ID: | BNAZ207 | GCMS TUNING: | DFTPP56 |
| INSTRUMENT ID: | 4500 | | |
| SAMPLE AMOUNT: | 30G:1ML,1:10 | | |

| CAS # | COMPOUND | CONC: UG/KG (PPB) | DETECTION LIMIT |
|---|---|---|---|
| 84-66-2 | DIETHYL PHTHALATE | ND | 300. |
| 7005-72-3 | 4-CHLOROPHENYL PHENYL ETHER | ND | 300. |
| 86-73-7 | FLUORENE | ND | 300. |
| 100-01-6 | 4-NITROANILINE | ND | 2000. |
| 534-52-1 | 4,6-DINITRO-2-METHYLPHENOL | ND | 2000. |
| 86-30-6 | N-NITROSODIPHENYLAMINE | ND | 300. |
| 101-55-3 | 4-BROMOPHENYL PHENYL ETHER | ND | 300. |
| 118-74-1 | HEXACHLOROBENZENE | ND | 300. |
| 87-86-5 | PENTACHLOROPHENOL | ND | 2000. |
| 85-01-8 | PHENANTHRENE | ND | 300. |
| 120-12-7 | ANTHRACENE | ND | 300. |
| 84-74-2 | DI-N-BUTYL PHTHALATE | ND | 300. |
| 206-44-0 | FLUORANTHENE | ND | 300. |
| 129-00-0 | PYRENE | ND | 300. |
| 85-68-7 | BUTYL BENZYL PHTHALATE | ND | 300. |
| 91-94-1 | 3,3'-DICHLOROBENZIDINE | ND | 700. |
| 56-55-3 | BENZO(A)ANTHRACENE | ND | 300. |
| 117-81-7 | BIS(2-ETHYLHEXYL)PHTHALATE | ND | 300. |
| 218-01-9 | CHRYSENE | ND | 300. |
| 117-84-0 | DI-N-OCTYL PHTHALATE | ND | 300. |
| 205-99-2 | BENZO(B & K)FLUORANTHENES | ND | 300. |
| 50-32-8 | BENZO(A)PYRENE | ND | 300. |
| 193-39-5 | INDENO(1,2,3-CD)PYRENE | ND | 300. |
| 53-70-3 | DIBENZO(A,H)ANTHRACENE | ND | 300. |
| 191-24-2 | BENZO(GHI)PERYLENE | ND | 300. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: ARM10-A
ANALYSIS TYPE: EPA METHOD 625 (8270)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034B4 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/09/87 | DATE ANALYZED: | 09/11/87 |
| STANDARD ID: | BNAZ207 | GCMS TUNING: | DFTPP56 |
| INSTRUMENT ID: | 4500 | | |
| SAMPLE AMOUNT: | 30G:1ML,1:10 | | |

| CAS # | COMPOUND | CONC: UG/KG (PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-95-2 | PHENOL | ND | 300. |
| 111-44-4 | BIS(2-CHLOROETHYL)ETHER | ND | 300. |
| 95-57-8 | 2-CHLOROPHENOL | ND | 300. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 300. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 300. |
| 100-51-6 | BENZYL ALCOHOL | ND | 300. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 300. |
| 95-48-7 | 2-METHYLPHENOL | ND | 300. |
| 39638-32-9 | BIS(2-CHLOROISOPROPYL)ETHER | ND | 300. |
| 106-44-5 | 4-METHYLPHENOL | ND | 300. |
| 621-64-7 | N-NITROSODIPROPYLAMINE | ND | 300. |
| 67-72-1 | HEXACHLOROETHANE | ND | 300. |
| 98-95-3 | NITROBENZENE | ND | 300. |
| 78-59-1 | ISOPHORONE | ND | 300. |
| 88-75-5 | 2-NITROPHENOL | ND | 300. |
| 105-67-9 | 2,4-DIMETHYLPHENOL | ND | 300. |
| 65-85-0 | BENZOIC ACID | ND | 2000. |
| 111-91-1 | BIS(2-CHLOROETHOXY)METHANE | ND | 300. |
| 120-33-2 | 2,4-DICHLOROPHENOL | ND | 300. |
| 120-82-1 | 1,2,4-TRICHLOROBENZENE | ND | 300. |
| 91-20-3 | NAPHTHALENE | ND | 300. |
| 106-47-8 | 4-CHLOROANILINE | ND | 300. |
| 87-68-3 | HEXACHLOROBUTADIENE | ND | 300. |
| 59-50-7 | 4-CHLORO-3-METHYLPHENOL | ND | 300. |
| 91-57-6 | 2-METHYLNAPHTHALENE | ND | 300. |
| 77-47-4 | HEXACHLOROCYCLOPENTADIENE | ND | 300. |
| 88-06-2 | 2,4,6-TRICHLOROPHENOL | ND | 300. |
| 95-95-4 | 2,4,5-TRICHLOROPHENOL | ND | 2000. |
| 91-58-7 | 2-CHLORONAPHTHALENE | ND | 300. |
| 88-74-4 | 2-NITROANILINE | ND | 2000. |
| 131-11-3 | DIMETHYL PHTHALATE | ND | 300. |
| 208-96-8 | ACENAPHTHYLENE | ND | 300. |
| 99-09-2 | 3-NITROANILINE | ND | 2000. |
| 83-32-9 | ACENAPHTHENE | ND | 300. |
| 51-28-5 | 2,4-DINITROPHENOL | ND | 2000. |
| 100-02-7 | 4-NITROPHENOL | ND | 2000. |
| 132-64-9 | DIBENZOFURAN | ND | 300. |
| 121-14-2 | 2,4-DINITROTOLUENE | ND | 300. |
| 606-20-2 | 2,6-DINITROTOLUENE | ND | 300. |



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WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM10-A
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V9 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-90-7 | CHLOROBENZENE | ND | 5. |
| 100-41-4 | ETHYLBENZENE | ND | 5. |
| 100-42-5 | STYRENE | ND | 5. |
| 95-47-6 | TOTAL XYLENES | ND | 5. |
| 108-41-8 | M-CHLOROTOLUENE | ND | 5. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 5. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 5. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM10-A
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V9 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 30. |
| 74-83-9 | BROMOMETHANE | ND | 30. |
| 75-01-4 | VINYL CHLORIDE | ND | 30. |
| 75-00-3 | CHLOROETHANE | ND | 30. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 50. |
| 67-64-1 | ACETONE | ND | 50. |
| 107-02-8 | ACROLEIN | ND | 50. |
| 107-13-1 | ACRYLONITRILE | ND | 50. |
| 75-15-0 | CARBON DISULFIDE | ND | 5. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 5. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 5. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 5. |
| 109-99-9 | TETRAHYDROFURAN | ND | 5. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 5. |
| 76-13-1 | FREON-TF | ND | 5. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 5. |
| 123-91-1 | 1,4-DIOXANE | ND | 5. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 5. |
| 67-66-3 | CHLOROFORM | ND | 5. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 5. |
| 78-93-3 | 2-BUTANONE | ND | 50. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 5. |
| 16-23-5 | CARBON TETPACHLORIDE | ND | 5. |
| 108-05-4 | VINYL ACETATE | ND | 30. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 5. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 5. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 5. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 5. |
| 79-01-6 | TRICHLOROETHENE | ND | 5. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 5. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 5. |
| 71-43-2 | BENZENE | ND | 5. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 5. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 50. |
| 75-25-2 | BROMOFORM | ND | 5. |
| 119-78-6 | 2-HEXANONE | ND | 30. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 30. |
| 127-18-4 | TETRACHLOROETHENE | ND | 5. |
| 108-88-3 | TOLUENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM9-A

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/KG(PPB) |
|---|---|---|---|
| 1 | C9-C11 ALIPHATIC & ALICYCLIC HYDROCARBONS | VOA | 2000. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM9-A
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V6 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-90-7 | CHLOROBENZENE | ND | 5. |
| 100-41-4 | ETHYLBENZENE | ND | 5. |
| 100-42-5 | STYRENE | ND | 5. |
| 95-47-6 | TOTAL XYLENES | ND | 5. |
| 108-41-8 | M-CHLOROTOLUENE | ND | 5. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 5. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 5. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM9-A
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V6 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 30. |
| 74-83-9 | BROMOMETHANE | ND | 30. |
| 75-01-4 | VINYL CHLORIDE | ND | 30. |
| 75-00-3 | CHLOROETHANE | ND | 30. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 50. |
| 67-64-1 | ACETONE | ND | 50. |
| 107-02-8 | ACROLEIN | ND | 50. |
| 107-13-1 | ACRYLONITRILE | ND | 50. |
| 75-15-0 | CARBON DISULFIDE | ND | 5. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 5. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 5. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 5. |
| 109-99-9 | TETRAHYDROFURAN | ND | 5. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 5. |
| 76-13-1 | FREON-TF | ND | 5. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 5. |
| 123-91-1 | 1,4-DIOXANE | ND | 5. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 5. |
| 67-66-3 | CHLOROFORM | ND | 5. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 5. |
| 78-93-3 | 2-BUTANONE | ND | 50. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 5. |
| 16-23-5 | CARBON TETRACHLORIDE | ND | 5. |
| 108-05-4 | VINYL ACETATE | ND | 30. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 5. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 5. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 5. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 5. |
| 79-01-6 | TRICHLOROETHENE | ND | 5. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 5. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 5. |
| 71-43-2 | BENZENE | ND | 5. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 5. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 50. |
| 75-25-2 | BROMOFORM | ND | 5. |
| 119-78-6 | 2-HEXANONE | ND | 30. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 30. |
| 127-18-4 | TETRACHLOROETHENE | 76. | 5. |
| 108-88-3 | TOLUENE | 45. | 5. |

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WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM8-A

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/KG(PPB) |
|---|---|---|---|
| 1 | NONE FOUND | VOA | |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM8-A
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V4 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-90-7 | CHLOROBENZENE | ND | 5. |
| 100-41-4 | ETHYLBENZENE | ND | 5. |
| 100-42-5 | STYRENE | ND | 5. |
| 95-47-6 | TOTAL XYLENES | ND | 5. |
| 108-41-8 | M-CHLOROTOLUENE | ND | 5. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 5. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 5. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM8-A
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V4 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 30. |
| 74-83-9 | BROMOMETHANE | ND | 30. |
| 75-01-4 | VINYL CHLORIDE | ND | 30. |
| 75-00-3 | CHLOROETHANE | ND | 30. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 50. |
| 67-64-1 | ACETONE | ND | 50. |
| 107-02-8 | ACROLEIN | ND | 50. |
| 107-13-1 | ACRYLONITRILE | ND | 50. |
| 75-15-0 | CARBON DISULFIDE | ND | 5. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 5. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 5. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 5. |
| 109-99-9 | TETRAHYDROFURAN | ND | 5. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 5. |
| 76-13-1 | FREON-TF | ND | 5. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 5. |
| 123-91-1 | 1,4-DIOXANE | ND | 5. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 5. |
| 67-66-3 | CHLOROFORM | ND | 5. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 5. |
| 78-93-3 | 2-BUTANONE | ND | 50. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 5. |
| 16-23-5 | CARBON TETRACHLORIDE | ND | 5. |
| 108-05-4 | VINYL ACETATE | ND | 30. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 5. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 5. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 5. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 5. |
| 79-01-6 | TRICHLOROETHENE | ND | 5. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 5. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 5. |
| 71-43-2 | BENZENE | ND | 5. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 5. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 50. |
| 75-25-2 | BROMOFORM | ND | 5. |
| 119-78-6 | 2-HEXANONE | ND | 30. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 30. |
| 127-18-4 | TETRACHLOROETHENE | ND | 5. |
| 108-88-3 | TOLUENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM7-12-3

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/KG(PPB) |
|---|---|---|---|
| 1 | C9-C11 ALIPHATIC & ALICYCLIC HYDROCARBONS | VOA | 1000. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM7-12-3
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V3 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-90-7 | CHLOROBENZENE | ND | 5. |
| 100-41-4 | ETHYLBENZENE | ND | 5. |
| 100-42-5 | STYRENE | ND | 5. |
| 95-47-6 | TOTAL XYLENES | ND | 5. |
| 108-41-8 | M-CHLOROTOLUENE | ND | 5. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 5. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 5. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM7-12-3
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V3 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 30. |
| 74-83-9 | BROMOMETHANE | ND | 30. |
| 75-01-4 | VINYL CHLORIDE | ND | 30. |
| 75-00-3 | CHLOROETHANE | ND | 30. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 50. |
| 67-64-1 | ACETONE | ND | 50. |
| 107-02-8 | ACROLEIN | ND | 50. |
| 107-13-1 | ACRYLONITRILE | ND | 50. |
| 75-15-0 | CARBON DISULFIDE | ND | 5. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 5. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 5. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 5. |
| 109-99-9 | TETRAHYDROFURAN | ND | 5. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 5. |
| 76-13-1 | FREON-TF | ND | 5. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 5. |
| 123-91-1 | 1,4-DIOXANE | ND | 5. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 5. |
| 67-66-3 | CHLOROFORM | ND | 5. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 5. |
| 78-93-3 | 2-BUTANONE | ND | 50. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 5. |
| 16-23-5 | CARBON TETRACHLORIDE | ND | 5. |
| 108-05-4 | VINYL ACETATE | ND | 30. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 5. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 5. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 5. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 5. |
| 79-01-6 | TRICHLOROETHENE | ND | 5. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 5. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 5. |
| 71-43-2 | BENZENE | ND | 5. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 5. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 50. |
| 75-25-2 | BROMOFORM | ND | 5. |
| 119-78-6 | 2-HEXANONE | ND | 30. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 30. |
| 127-18-4 | TETRACHLOROETHENE | ND | 5. |
| 108-88-3 | TOLUENE | ND | 5. |



WCAS

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: ARM7-3-3

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/KG (PPB) |
|---|---|---|---|
| 1 | C9-C12 HYDROCARBON MATRIX | VOA/BNA | 80000. |
| 2 | C16-C35 HYDROCARBON MATRIX | BNA | 1000000. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: ARM7-3-3
ANALYSIS TYPE: EPA METHOD 625 (8270)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034B3 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/09/87 | DATE ANALYZED: | 09/11/87 |
| STANDARD ID: | BNAZ207 | GCMS TUNING: | DFTPP56 |
| INSTRUMENT ID: | 4500 | | |
| SAMPLE AMOUNT: | 30G:1ML,1:5 | | |

| CAS # | COMPOUND | CONC: UG/KG (PPB) | DETECTION LIMIT |
|---|---|---|---|
| 84-66-2 | DIETHYL PHTHALATE | ND | 200. |
| 7005-72-3 | 4-CHLOROPHENYL PHENYL ETHER | ND | 200. |
| 86-73-7 | FLUORENE | ND | 200. |
| 100-01-6 | 4-NITROANILINE | ND | 800. |
| 534-52-1 | 4,6-DINITRO-2-METHYLPHENOL | ND | 800. |
| 86-30-6 | N-NITROSODIPHENYLAMINE | ND | 200. |
| 101-55-3 | 4-BROMOPHENYL PHENYL ETHER | ND | 200. |
| 118-74-1 | HEXACHLOROBENZENE | ND | 200. |
| 87-86-5 | PENTACHLOROPHENOL | ND | 800. |
| 85-01-8 | PHENANTHRENE | ND | 200. |
| 120-12-7 | ANTHRACENE | ND | 200. |
| 84-74-2 | DI-N-BUTYL PHTHALATE | ND | 200. |
| 206-44-0 | FLUORANTHENE | ND | 200. |
| 129-00-0 | PYRENE | ND | 200. |
| 85-68-7 | BUTYL BENZYL PHTHALATE | ND | 200. |
| 91-94-1 | 3,3'-DICHLOROBENZIDINE | ND | 300. |
| 56-55-3 | BENZO(A)ANTHRACENE | ND | 200. |
| 117-81-7 | BIS(2-ETHYLHEXYL)PHTHALATE | ND | 200. |
| 218-01-9 | CHRYSENE | ND | 200. |
| 117-84-0 | DI-N-OCTYL PHTHALATE | ND | 200. |
| 205-99-2 | BENZO(B & K)FLUORANTHENES | ND | 200. |
| 50-32-8 | BENZO(A)PYRENE | ND | 200. |
| 193-39-5 | INDENO(1,2,3-CD)PYRENE | ND | 200. |
| 53-70-3 | DIBENZO(A,H)ANTHRACENE | ND | 200. |
| 191-24-2 | BENZO(GHI)PERYLENE | ND | 200. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: ARM7-3-3
ANALYSIS TYPE: EPA METHOD 625 (8270)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034B3 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/09/87 | DATE ANALYZED: | 09/11/87 |
| STANDARD ID: | BNAZ207 | GCMS TUNING: | DFTPP56 |
| INSTRUMENT ID: | 4500 | | |
| SAMPLE AMOUNT: | 30G:1ML,1:5 | | |

| CAS # | COMPOUND | CONC: UG/KG (PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-95-2 | PHENOL | ND | 200. |
| 111-44-4 | BIS(2-CHLOROETHYL)ETHER | ND | 200. |
| 95-57-8 | 2-CHLOROPHENOL | ND | 200. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 200. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 200. |
| 100-51-6 | BENZYL ALCOHOL | ND | 200. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 200. |
| 95-48-7 | 2-METHYLPHENOL | ND | 200. |
| 39638-32-9 | BIS(2-CHLOROISOPROPYL)ETHER | ND | 200. |
| 106-44-5 | 4-METHYLPHENOL | ND | 200. |
| 621-64-7 | N-NITROSODIPROPYLAMINE | ND | 200. |
| 67-72-1 | HEXACHLOROETHANE | ND | 200. |
| 98-95-3 | NITROBENZENE | ND | 200. |
| 78-59-1 | ISOPHORONE | ND | 200. |
| 88-75-5 | 2-NITROPHENOL | ND | 200. |
| 105-67-9 | 2,4-DIMETHYLPHENOL | ND | 200. |
| 65-85-0 | BENZOIC ACID | ND | 800. |
| 111-91-1 | BIS(2-CHLOROETHOXY)METHANE | ND | 200. |
| 120-33-2 | 2,4-DICHLOROPHENOL | ND | 200. |
| 120-82-1 | 1,2,4-TRICHLOROBENZENE | ND | 200. |
| 91-20-3 | NAPHTHALENE | ND | 200. |
| 106-47-8 | 4-CHLOROANILINE | ND | 200. |
| 87-68-3 | HEXACHLOROBUTADIENE | ND | 200. |
| 59-50-7 | 4-CHLORO-3-METHYLPHENOL | ND | 200. |
| 91-57-6 | 2-METHYLNAPHTHALENE | ND | 200. |
| 77-47-4 | HEXACHLOROCYCLOPENTADIENE | ND | 200. |
| 88-06-2 | 2,4,6-TRICHLOROPHENOL | ND | 200. |
| 95-95-4 | 2,4,5-TRICHLOROPHENOL | ND | 800. |
| 91-58-7 | 2-CHLORONAPHTHALENE | ND | 200. |
| 88-74-4 | 2-NITROANILINE | ND | 800. |
| 131-11-3 | DIMETHYL PHTHALATE | ND | 200. |
| 208-96-8 | ACENAPHTHYLENE | ND | 200. |
| 99-09-2 | 3-NITROANILINE | ND | 800. |
| 83-32-9 | ACENAPHTHENE | ND | 200. |
| 51-28-5 | 2,4-DINITROPHENOL | ND | 800. |
| 100-02-7 | 4-NITROPHENOL | ND | 800. |
| 132-64-9 | DIBENZOFURAN | ND | 200. |
| 121-14-2 | 2,4-DINITROTOLUENE | ND | 200. |
| 606-20-2 | 2,6-DINITROTOLUENE | ND | 200. |

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WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM7-3-3
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V10 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/16/87 | DATE ANALYZED: | 09/16/87 |
| STANDARD ID: | VOA566 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-90-7 | CHLOROBENZENE | ND | 5. |
| 100-41-4 | ETHYLBENZENE | ND | 5. |
| 100-42-5 | STYRENE | ND | 5. |
| 95-47-6 | TOTAL XYLENES | ND | 5. |
| 108-41-8 | M-CHLOROTOLUENE | ND | 5. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 5. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 5. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM7-3-3
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V10 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/16/87 | DATE ANALYZED: | 09/16/87 |
| STANDARD ID: | VOA566 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 30. |
| 74-83-9 | BROMOMETHANE | ND | 30. |
| 75-01-4 | VINYL CHLORIDE | ND | 30. |
| 75-00-3 | CHLOROETHANE | ND | 30. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 50. |
| 67-64-1 | ACETONE | ND | 50. |
| 107-02-8 | ACROLEIN | ND | 50. |
| 107-13-1 | ACRYLONITRILE | ND | 50. |
| 75-15-0 | CARBON DISULFIDE | ND | 5. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 5. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 5. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 5. |
| 109-99-9 | TETRAHYDROFURAN | ND | 5. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 5. |
| 76-13-1 | FREON-TF | ND | 5. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 5. |
| 123-91-1 | 1,4-DIOXANE | ND | 5. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 5. |
| 67-66-3 | CHLOROFORM | ND | 5. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 5. |
| 78-93-3 | 2-BUTANONE | ND | 50. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 5. |
| 16-23-5 | CARBON TETRACHLORIDE | ND | 5. |
| 108-05-4 | VINYL ACETATE | ND | 30. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 5. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 5. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 5. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 5. |
| 79-01-6 | TRICHLOROETHENE | ND | 5. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 5. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 5. |
| 71-43-2 | BENZENE | ND | 5. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 5. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 50. |
| 75-25-2 | BROMOFORM | ND | 5. |
| 119-78-6 | 2-HEXANONE | ND | 30. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 30. |
| 127-18-4 | TETRACHLOROETHENE | ND | 5. |
| 108-88-3 | TOLUENE | ND | 5. |

000220

WCAS

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM5-1-3

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/KG(PPB) |
|---|---|---|---|
| 1 | NONE FOUND | VOA | |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM5-1-3
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V8 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-90-7 | CHLOROBENZENE | ND | 5. |
| 100-41-4 | ETHYLBENZENE | ND | 5. |
| 100-42-5 | STYRENE | ND | 5. |
| 95-47-6 | TOTAL XYLENES | ND | 5. |
| 108-41-8 | M-CHLOROTOLUENE | ND | 5. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 5. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 5. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: ARM5-1-3
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V8 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 30. |
| 74-83-9 | BROMOMETHANE | ND | 30. |
| 75-01-4 | VINYL CHLORIDE | ND | 30. |
| 75-00-3 | CHLOROETHANE | ND | 30. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 50. |
| 67-64-1 | ACETONE | ND | 50. |
| 107-02-8 | ACROLEIN | ND | 50. |
| 107-13-1 | ACRYLONITRILE | ND | 50. |
| 75-15-0 | CARBON DISULFIDE | ND | 5. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 5. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 5. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 5. |
| 109-99-9 | TETRAHYDROFURAN | ND | 5. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 5. |
| 76-13-1 | FREON-TF | ND | 5. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 5. |
| 123-91-1 | 1,4-DIOXANE | ND | 5. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 5. |
| 67-66-3 | CHLOROFORM | ND | 5. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 5. |
| 78-93-3 | 2-BUTANONE | ND | 50. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 5. |
| 16-23-5 | CARBON TETRACHLORIDE | ND | 5. |
| 108-05-4 | VINYL ACETATE | ND | 30. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 5. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 5. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 5. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 5. |
| 79-01-6 | TRICHLOROETHENE | ND | 5. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 5. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 5. |
| 71-43-2 | BENZENE | ND | 5. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 5. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 50. |
| 75-25-2 | BROMOFORM | ND | 5. |
| 119-78-6 | 2-HEXANONE | ND | 30. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 30. |
| 127-18-4 | TETRACHLOROETHENE | ND | 5. |
| 108-88-3 | TOLUENE | ND | 5. |



000223

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: AHB-27-2

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/KG(PPB) |
|---|---|---|---|
| 1 | NONE FOUND | VOA | |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: AHB-27-2
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V1 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-90-7 | CHLOROBENZENE | ND | 5. |
| 100-41-4 | ETHYLBENZENE | ND | 5. |
| 100-42-5 | STYRENE | ND | 5. |
| 95-47-6 | TOTAL XYLENES | ND | 5. |
| 108-41-8 | M-CHLOROTOLUENE | ND | 5. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 5. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 5. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: AHB-27-2
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V1 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 30. |
| 74-83-9 | BROMOMETHANE | ND | 30. |
| 75-01-4 | VINYL CHLORIDE | ND | 30. |
| 75-00-3 | CHLOROETHANE | ND | 30. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 50. |
| 67-64-1 | ACETONE | ND | 50. |
| 107-02-8 | ACROLEIN | ND | 50. |
| 107-13-1 | ACRYLONITRILE | ND | 50. |
| 75-15-0 | CARBON DISULFIDE | ND | 5. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 5. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 5. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 5. |
| 109-99-9 | TETRAHYDROFURAN | ND | 5. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 5. |
| 76-13-1 | FREON-TF | ND | 5. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 5. |
| 123-91-1 | 1,4-DIOXANE | ND | 5. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 5. |
| 67-66-3 | CHLOROFORM | ND | 5. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 5. |
| 78-93-3 | 2-BUTANONE | ND | 50. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 5. |
| 16-23-5 | CARBON TETRACHLORIDE | ND | 5. |
| 108-05-4 | VINYL ACETATE | ND | 30. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 5. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 5. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 5. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 5. |
| 79-01-6 | TRICHLOROETHENE | ND | 5. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 5. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 5. |
| 71-43-2 | BENZENE | ND | 5. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 5. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 50. |
| 75-25-2 | BROMOFORM | ND | 5. |
| 119-78-6 | 2-HEXANONE | ND | 30. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 30. |
| 127-18-4 | TETRACHLOROETHENE | ND | 5. |
| 108-88-3 | TOLUENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: AHB27-1

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/G(PPM) |
|---|---|---|---|
| 1 | C9-C35 HYDROCARBON MATRIX | VOA/BNA | 100000. |
| 2 | C9-C10 ALKYLBENZENES | VOA | 0.5 |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: AHB27-1
ANALYSIS TYPE: EPA METHOD 625 (8270)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034B5 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/09/87 | DATE ANALYZED: | 09/11/87 |
| STANDARD ID: | BNAZ207 | GCMS TUNING: | DFTPP56 |
| INSTRUMENT ID: | 4500 | | |
| SAMPLE AMOUNT: | 1G:1ML, 1:5 | | |

| CAS # | COMPOUND | CONC: UG/G(PPM) | DETECTION LIMIT |
|---|---|---|---|
| 84-66-2 | DIETHYL PHTHALATE | ND | 5. |
| 7005-72-3 | 4-CHLOROPHENYL PHENYL ETHER | ND | 5. |
| 86-73-7 | FLUORENE | ND | 5. |
| 100-01-6 | 4-NITROANILINE | ND | 30. |
| 534-52-1 | 4,6-DINITRO-2-METHYLPHENOL | ND | 30. |
| 86-30-6 | N-NITROSODIPHENYLAMINE | ND | 5. |
| 101-55-3 | 4-BROMOPHENYL PHENYL ETHER | ND | 5. |
| 118-74-1 | HEXACHLOROBENZENE | ND | 5. |
| 87-86-5 | PENTACHLOROPHENOL | ND | 30. |
| 85-01-8 | PHENANTHRENE | ND | 5. |
| 120-12-7 | ANTHRACENE | ND | 5. |
| 84-74-2 | DI-N-BUTYL PHTHALATE | ND | 5. |
| 206-44-0 | FLUORANTHENE | ND | 5. |
| 129-00-0 | PYRENE | ND | 5. |
| 85-68-7 | BUTYL BENZYL PHTHALATE | ND | 5. |
| 91-94-1 | 3,3'-DICHLOROBENZIDINE | ND | 10. |
| 56-55-3 | BENZO(A)ANTHRACENE | ND | 5. |
| 117-81-7 | BIS(2-ETHYLHEXYL)PHTHALATE | ND | 5. |
| 218-01-9 | CHRYSENE | ND | 5. |
| 117-84-0 | DI-N-OCTYL PHTHALATE | ND | 5. |
| 205-99-2 | BENZO(B & K)FLUORANTHENES | ND | 5. |
| 50-32-8 | BENZO(A)PYRENE | ND | 5. |
| 193-39-5 | INDENO(1,2,3-CD)PYRENE | ND | 5. |
| 53-70-3 | DIBENZO(A,H)ANTHRACENE | ND | 5. |
| 191-24-2 | BENZO(GHI)PERYLENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: AHB27-1
ANALYSIS TYPE: EPA METHOD 625 (8270)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034B5 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/09/87 | DATE ANALYZED: | 09/11/87 |
| STANDARD ID: | BNAZ207 | GCMS TUNING: | DFTPP56 |
| INSTRUMENT ID: | 4500 | | |
| SAMPLE AMOUNT: | 1G:1ML, 1:5 | | |

| CAS # | COMPOUND | CONC: UG/G(PPM) | DETECTION LIMIT |
|---|---|---|---|
| 108-95-2 | PHENOL | ND | 5. |
| 111-44-4 | BIS(2-CHLOROETHYL)ETHER | ND | 5. |
| 95-57-8 | 2-CHLOROPHENOL | ND | 5. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 5. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 5. |
| 100-51-6 | BENZYL ALCOHOL | ND | 5. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 5. |
| 95-48-7 | 2-METHYLPHENOL | ND | 5. |
| 39638-32-9 | BIS(2-CHLOROISOPROPYL)ETHER | ND | 5. |
| 106-44-5 | 4-METHYLPHENOL | ND | 5. |
| 621-64-7 | N-NITROSODIPROPYLAMINE | ND | 5. |
| 67-72-1 | HEXACHLOROETHANE | ND | 5. |
| 98-95-3 | NITROBENZENE | ND | 5. |
| 78-59-1 | ISOPHORONE | ND | 5. |
| 88-75-5 | 2-NITROPHENOL | ND | 5. |
| 105-67-9 | 2,4-DIMETHYLPHENOL | ND | 5. |
| 65-85-0 | BENZOIC ACID | ND | 30. |
| 111-91-1 | BIS(2-CHLOROETHOXY)METHANE | ND | 5. |
| 120-33-2 | 2,4-DICHLOROPHENOL | ND | 5. |
| 120-82-1 | 1,2,4-TRICHLOROBENZENE | ND | 5. |
| 91-20-3 | NAPHTHALENE | ND | 5. |
| 106-47-8 | 4-CHLOROANILINE | ND | 5. |
| 87-68-3 | HEXACHLOROBUTADIENE | ND | 5. |
| 59-50-7 | 4-CHLORO-3-METHYLPHENOL | ND | 5. |
| 91-57-6 | 2-METHYLNAPHTHALENE | ND | 5. |
| 77-47-4 | HEXACHLOROCYCLOPENTADIENE | ND | 5. |
| 88-06-2 | 2,4,6-TRICHLOROPHENOL | ND | 5. |
| 95-95-4 | 2,4,5-TRICHLOROPHENOL | ND | 30. |
| 91-58-7 | 2-CHLORONAPHTHALENE | ND | 5. |
| 88-74-4 | 2-NITROANILINE | ND | 30. |
| 131-11-3 | DIMETHYL PHTHALATE | ND | 5. |
| 208-96-8 | ACENAPHTHYLENE | ND | 5. |
| 99-09-2 | 3-NITROANILINE | ND | 30. |
| 83-32-9 | ACENAPHTHENE | ND | 5. |
| 51-28-5 | 2,4-DINITROPHENOL | ND | 30. |
| 100-02-7 | 4-NITROPHENOL | ND | 30. |
| 132-64-9 | DIBENZOFURAN | ND | 5. |
| 121-14-2 | 2,4-DINITROTOLUENE | ND | 5. |
| 606-20-2 | 2,6-DINITROTOLUENE | ND | 5. |

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WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: AHB27-1
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V5 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-90-7 | CHLOROBENZENE | ND | 5. |
| 100-41-4 | ETHYLBENZENE | ND | 5. |
| 100-42-5 | STYRENE | ND | 5. |
| 95-47-6 | TOTAL XYLENES | ND | 5. |
| 108-41-8 | M-CHLOROTOLUENE | ND | 5. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 5. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 5. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: AHB27-1
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V5 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 30. |
| 74-83-9 | BROMOMETHANE | ND | 30. |
| 75-01-4 | VINYL CHLORIDE | ND | 30. |
| 75-00-3 | CHLOROETHANE | ND | 30. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 50. |
| 67-64-1 | ACETONE | [illegible] | 50. |
| 107-02-8 | ACROLEIN | ND | 50. |
| 107-13-1 | ACRYLONITRILE | ND | 50. |
| 75-15-0 | CARBON DISULFIDE | ND | 5. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 5. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 5. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 5. |
| 109-99-9 | TETRAHYDROFURAN | ND | 5. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 5. |
| 76-13-1 | FREON-TF | ND | 5. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 5. |
| 123-91-1 | 1,4-DIOXANE | ND | 5. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 5. |
| 67-66-3 | CHLOROFORM | ND | 5. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 5. |
| 78-93-3 | 2-BUTANONE | 85. | 50. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 5. |
| 16-23-5 | CARBON TETRACHLORIDE | ND | 5. |
| 108-05-4 | VINYL ACETATE | ND | 30. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 5. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 5. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 5. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 5. |
| 79-01-6 | TRICHLOROETHENE | ND | 5. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 5. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 5. |
| 71-43-2 | BENZENE | ND | 5. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 5. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 50. |
| 75-25-2 | BROMOFORM | ND | 5. |
| 119-78-6 | 2-HEXANONE | ND | 30. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 30. |
| 127-18-4 | TETRACHLOROETHENE | ND | 5. |
| 108-88-3 | TOLUENE | [illegible] | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: AHB20-1

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/KG(PPB) |
|---|---|---|---|
| 1 | NONE FOUND | VOA | |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: AHB20-1
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V11 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/16/87 | DATE ANALYZED: | 09/16/87 |
| STANDARD ID: | VOA566 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 30. |
| 74-83-9 | BROMOMETHANE | ND | 30. |
| 75-01-4 | VINYL CHLORIDE | ND | 30. |
| 75-00-3 | CHLOROETHANE | ND | 30. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 50. |
| 67-64-1 | ACETONE | ND | 50. |
| 107-02-8 | ACROLEIN | ND | 50. |
| 107-13-1 | ACRYLONITRILE | ND | 50. |
| 75-15-0 | CARBON DISULFIDE | ND | 5. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 5. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 5. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 5. |
| 109-99-9 | TETRAHYDROFURAN | ND | 5. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 5. |
| 76-13-1 | FREON-TF | ND | 5. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 5. |
| 123-91-1 | 1,4-DIOXANE | ND | 5. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 5. |
| 67-66-3 | CHLOROFORM | ND | 5. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 5. |
| 78-93-3 | 2-BUTANONE | ND | 50. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 5. |
| 16-23-5 | CARBON TETRACHLORIDE | ND | 5. |
| 108-05-4 | VINYL ACETATE | ND | 30. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 5. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 5. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 5. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 5. |
| 79-01-6 | TRICHLOROETHENE | ND | 5. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 5. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 5. |
| 71-43-2 | BENZENE | ND | 5. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 5. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 50. |
| 75-25-2 | BROMOFORM | ND | 5. |
| 119-78-6 | 2-HEXANONE | ND | 30. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 30. |
| 127-18-4 | TETRACHLOROETHENE | ND | 5. |
| 108-88-3 | TOLUENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: AHB13-1
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 09/03/87 | GCMS FILENAME: | 7034V7 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 09/15/87 | DATE ANALYZED: | 09/15/87 |
| STANDARD ID: | VOA565 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.0GMS | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 30. |
| 74-83-9 | BROMOMETHANE | ND | 30. |
| 75-01-4 | VINYL CHLORIDE | ND | 30. |
| 75-00-3 | CHLOROETHANE | ND | 30. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 50. |
| 67-64-1 | ACETONE | ND | 50. |
| 107-02-8 | ACROLEIN | ND | 50. |
| 107-13-1 | ACRYLONITRILE | ND | 50. |
| 75-15-0 | CARBON DISULFIDE | ND | 5. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 5. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 5. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 5. |
| 109-99-9 | TETRAHYDROFURAN | ND | 5. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 5. |
| 76-13-1 | FREON-TF | ND | 5. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 5. |
| 123-91-1 | 1,4-DIOXANE | ND | 5. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 5. |
| 67-66-3 | CHLOROFORM | ND | 5. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 5. |
| 78-93-3 | 2-BUTANONE | ND | 50. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 5. |
| 16-23-5 | CARBON TETRACHLORIDE | ND | 5. |
| 108-05-4 | VINYL ACETATE | ND | 30. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 5. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 5. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 5. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 5. |
| 79-01-6 | TRICHLOROETHENE | ND | 5. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 5. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 5. |
| 71-43-2 | BENZENE | ND | 5. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 5. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 50. |
| 75-25-2 | BROMOFORM | ND | 5. |
| 119-78-6 | 2-HEXANONE | ND | 30. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 30. |
| 127-18-4 | TETRACHLOROETHENE | ND | 5. |
| 108-88-3 | TOLUENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SAMPLE: AHB9-1

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/KG(PPB) |
|---|---|---|---|
| 1 | NONE FOUND | VOA | |

August 13, 1987

RECEIVED
AUG 14 1987
APPLIED GEOSCIENCES

WCAS
WEST COAST ANALYTICAL SERVICE, INC.
ANALYTICAL CHEMISTS

APPLIED GEOSCIENCES, INC.
17321 Irvine Blvd.
Tustin, CA 92680

Attn: Greg Van Hook

JOB NO. 6694

## FINAL LABORATORY REPORT

Samples Received: Forty-four (44) soil samples
Date Received: 8-3-87
Released for Analysis: 8-4-87
Purchase Order No: AGI 1142

The samples were analyzed as follows:

| Samples Analyzed | Analysis | Results |
|---|---|---|
| Three soils | CAM metals by EPA 6020 | Quant. Report |
| Fourteen soils | Total Petroleum Hydrocarbons by EPA 418.1 | Table I |
| Two soils | Volatile Organic Compounds by EPA 8240 | Data Sheets |



B. Michael Hovanec
Senior Staff Chemist

D.J. Northington, Ph.D.
Technical Director

000237

9840 Alburtis Avenue • Santa Fe Springs, California 90670 • 213/948-2225

Client: Applied Geoscience
Job Number: 6694
Date Analyzed: 8-5-87

## Quantitative Analysis Report
## Inductively Coupled Plasma-Mass Spectrometry

### Parts Per Million (mg/Kg)
### Soil Samples

| | AHB2-1 | AHB6-1 | ARM2-1-4 | Detection Limit |
|---|---|---|---|---|
| Beryllium | 0.46 | 0.31 | 0.61 | 0.08 |
| Vanadium | 28 | 44 | 71 | 4 |
| Chromium | 57 | 28 | 42 | 0.9 |
| Cobalt | 4.8 | 8.9 | 15 | 0.08 |
| Nickel | 54 | 21 | 31 | 0.8 |
| Copper | 76 | 30 | 33 | 0.8 |
| Zinc | 3100 | 150 | 74 | 1 |
| Arsenic | ND | ND | ND | 3 |
| Selenium | ND | ND | ND | 2 |
| Molybdenum | 2.2 | 0.44 | 0.24 | 0.1 |
| Silver | 1.1 | 0.06 | 0.08 | 0.04 |
| Cadmium | 14 | 0.34 | ND | 0.07 |
| Antimony | 22 | ND | ND | 2 |
| Barium | 260 | 160 | 140 | 0.8 |
| Mercury | ND | ND | ND | 0.3 |
| Thallium | ND | ND | ND | 0.5 |
| Lead | 4100 | 48 | 10 | 3 |

ND-Not Detected. The Limit of Detection is reported above.

WEST COAST ANALYTICAL SERVICE, INC.

Applied Geosciences, Inc
Mr. Greg Van Hook

Job # 6694
August 11, 1987

## FINAL LABORATORY REPORT

### TABLE I

Parts Per Million

| Sample I.D. | Total Petroleum Hydrocarbons |
|---|---|
| AHB 1-1 | 16000 |
| AHB 4-1 | 3500 |
| AHB 5-2 | 11 |
| AHB 6-1 | ND |
| ARM 1-1-4 | 12 |
| ARM 1-8-4 | 110 |
| ARM 2-1-4 | ND |
| ARM 2-3-4 | ND |
| ARM 3-1-4 | ND |
| ARM 3-7-4 | 24 |
| ARM 4-1-4 | ND |
| ARM 4-6-4 | 12 |
| ARM 5-1-4 | 2500 |
| ARM 5-3-4 | 12 |
| Detection Limit | 10 |

Date Analyzed: 8-5-87

ND - Not Detected

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: ARM2-1-4
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 08/03/87 | GCMS FILENAME: | 6694V1 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 08/12/87 | DATE ANALYZED: | 08/12/87 |
| STANDARD ID: | VOA538 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.00G | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 30. |
| 74-83-9 | BROMOMETHANE | ND | 30. |
| 75-01-4 | VINYL CHLORIDE | ND | 30. |
| 75-00-3 | CHLOROETHANE | ND | 30. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 50. |
| 67-64-1 | ACETONE | ND | 50. |
| 107-02-8 | ACROLEIN | ND | 50. |
| 107-13-1 | ACRYLONITRILE | ND | 50. |
| 75-15-0 | CARBON DISULFIDE | ND | 5. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 5. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 5. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 5. |
| 109-99-9 | TETRAHYDROFURAN | ND | 5. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 5. |
| 76-13-1 | FREON-TF | ND | 5. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 5. |
| 123-91-1 | 1,4-DIOXANE | ND | 5. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 5. |
| 67-66-3 | CHLOROFORM | ND | 5. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 5. |
| 78-93-3 | 2-BUTANONE | ND | 50. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 5. |
| 16-23-5 | CARBON TETRACHLORIDE | ND | 5. |
| 108-05-4 | VINYL ACETATE | ND | 30. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 5. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 5. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 5. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 5. |
| 79-01-6 | TRICHLOROETHENE | ND | 5. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 5. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 5. |
| 71-43-2 | BENZENE | ND | 5. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 5. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 50. |
| 75-25-2 | BROMOFORM | ND | 5. |
| 119-78-6 | 2-HEXANONE | ND | 30. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 30. |
| 127-18-4 | TETRACHLOROETHENE | ND | 5. |
| 108-88-3 | TOLUENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: ARM2-1-4
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 08/03/87 | GCMS FILENAME: | 6694V1 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 08/12/87 | DATE ANALYZED: | 08/12/87 |
| STANDARD ID: | VOA538 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.00G | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-90-7 | CHLOROBENZENE | ND | 5. |
| 100-41-4 | ETHYLBENZENE | ND | 5. |
| 100-42-5 | STYRENE | ND | 5. |
| 95-47-6 | TOTAL XYLENES | ND | 5. |
| 108-41-8 | M-CHLOROTOLUENE | ND | 5. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 5. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 5. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: ARM2-1-4

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/KG(PPB) |
|---|---|---|---|
| 1 | NONE FOUND | VOA | |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: ARM5-1-4
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 08/03/87 | GCMS FILENAME: | 6694V2 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 08/12/87 | DATE ANALYZED: | 08/12/87 |
| STANDARD ID: | VOA538 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.00G | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 74-87-3 | CHLOROMETHANE | ND | 30. |
| 74-83-9 | BROMOMETHANE | ND | 30. |
| 75-01-4 | VINYL CHLORIDE | ND | 30. |
| 75-00-3 | CHLOROETHANE | ND | 30. |
| 75-09-2 | METHYLENE CHLORIDE | ND | 50. |
| 67-64-1 | ACETONE | ND | 50. |
| 107-02-8 | ACROLEIN | ND | 50. |
| 107-13-1 | ACRYLONITRILE | ND | 50. |
| 75-15-0 | CARBON DISULFIDE | ND | 5. |
| 75-35-4 | 1,1-DICHLOROETHENE | ND | 5. |
| 75-34-3 | 1,1-DICHLOROETHANE | ND | 5. |
| 156-60-5 | TRANS-1,2-DICHLOROETHENE | ND | 5. |
| 109-99-9 | TETRAHYDROFURAN | ND | 5. |
| 75-69-4 | TRICHLOROFLUOROMETHANE | ND | 5. |
| 76-13-1 | FREON-TF | ND | 5. |
| 106-93-4 | ETHYLENE DIBROMIDE | ND | 5. |
| 123-91-1 | 1,4-DIOXANE | ND | 5. |
| 96-12-8 | 1,2-DIBROMO-3-CHLOROPROPANE | ND | 5. |
| 67-66-3 | CHLOROFORM | ND | 5. |
| 107-06-2 | 1,2-DICHLOROETHANE | ND | 5. |
| 78-93-3 | 2-BUTANONE | 76. | 50. |
| 71-55-6 | 1,1,1-TRICHLOROETHANE | ND | 5. |
| 16-23-5 | CARBON TETRACHLORIDE | ND | 5. |
| 108-05-4 | VINYL ACETATE | ND | 30. |
| 75-27-4 | BROMODICHLOROMETHANE | ND | 5. |
| 79-34-5 | 1,1,2,2-TETRACHLOROETHANE | ND | 5. |
| 78-87-5 | 1,2-DICHLOROPROPANE | ND | 5. |
| 10061-02-6 | TRANS-1,3-DICHLOROPROPENE | ND | 5. |
| 79-01-6 | TRICHLOROETHENE | ND | 5. |
| 124-48-1 | CHLORODIBROMOMETHANE | ND | 5. |
| 79-00-5 | 1,1,2-TRICHLOROETHANE | ND | 5. |
| 71-43-2 | BENZENE | ND | 5. |
| 10061-01-5 | CIS-1,3-DICHLOROPROPENE | ND | 5. |
| 110-75-8 | 2-CHLOROETHYLVINYLETHER | ND | 50. |
| 75-25-2 | BROMOFORM | ND | 5. |
| 119-78-6 | 2-HEXANONE | ND | 30. |
| 108-10-1 | 4-METHYL-2-PENTANONE | ND | 30. |
| 127-18-4 | TETRACHLOROETHENE | ND | 5. |
| 108-88-3 | TOLUENE | 93. | 5. |

WCAS

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: ARM5-1-4
ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

| | | | |
|---|---|---|---|
| DATE RECEIVED: | 08/03/87 | GCMS FILENAME: | 6694V2 |
| LEVEL: | LOW | MATRIX: | SOIL |
| DATE PREPARED: | 08/12/87 | DATE ANALYZED: | 08/12/87 |
| STANDARD ID: | VOA538 | INSTRUMENT ID: | 5100 |
| SAMPLE AMOUNT: | 1.00G | | |

| CAS # | COMPOUND | CONC: UG/KG(PPB) | DETECTION LIMIT |
|---|---|---|---|
| 108-90-7 | CHLOROBENZENE | ND | 5. |
| 100-41-4 | ETHYLBENZENE | ND | 5. |
| 100-42-5 | STYRENE | ND | 5. |
| 95-47-6 | TOTAL XYLENES | ND | 5. |
| 108-41-8 | M-CHLOROTOLUENE | ND | 5. |
| 541-73-1 | 1,3-DICHLOROBENZENE | ND | 5. |
| 106-46-7 | 1,4-DICHLOROBENZENE | ND | 5. |
| 95-50-1 | 1,2-DICHLOROBENZENE | ND | 5. |

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: APPLIED GEOSCIENCES
SITE: ARMCO
SAMPLE: ARM5-1-4

TENTATIVELY IDENTIFIED COMPOUNDS

| | COMPOUND NAME | FRACTION | CONCENTRATION UG/KG(PPB) |
|---|---|---|---|
| 1 | C10-C11 ALIPHATIC AND ALICYCLIC HYDROCARBONS | VOA | 5000. |
| 2 | C9-C10 ALKYLBENZENES | VOA | 500. |

APPLIED GEOSCIENCES INC.

SHIPMENT NO.: 1

# CHAIN OF CUSTODY RECORD

PAGE 1 OF 3

DATE 8/13/87

PROJECT NAME: Armco

PROJECT NO.: A611142

| Sample Number | Location | Type of Sample: Material | Type of Sample: Method | Type of Container | Type of Preservation: Temp | Type of Preservation: Chemical | Analysis Required* |
|---|---|---|---|---|---|---|---|
| ARM1-1-4 | ARM1 | Soil | Mod CA | Stainless Steel | 4°C | Ice | 418.1 |
| ARM1-2-4 | | | | | | | |
| ARM1-3-4 | | | | | | | |
| ARM1-4-4 | | | | | | | |
| ARM1-5-4 | | | | | | | |
| ARM1-6-4 | | | | | | | |
| ARM1-7-4 | | | | | | | |
| ARM1-8-4 | | | | | | | 418.1 |
| ARM2-1-4 | ARM2 | | | | | | 418.1 8240 CAM |
| ARM2-2-4 | | | | | | | |
| ARM2-3-4 | | | | | | | 418.1 |
| ARM2-4-4 | | | | | | | |
| ARM2-5-4 | | | | | | | |
| ARM3-1-4 | ARM3 | | | | | | 418.1 |
| ARM3-2-4 | | | | | | | |
| ARM3-3-4 | | | | | | | |
| ARM3-4-4 | | | | | | | |
| ARM3-5-3 | | | | | | | |
| ARM3-6-4 | | | | | | | |
| ARM3-7-4 | | | | | | | 418.1 |

Total Number of Samples Shipped: 44 | Sampler's Signature: P. Roberts

| Relinquished By | Received By | Date / Time |
|---|---|---|
| Signature: P. Roberts<br>Printed Name: Paul Roberts<br>Company: Applied Geosciences Inc.<br>Reason: To Lab | Signature: Mary Cedarwall<br>Printed Name: Mary Cedarwall<br>Company: WCS #6694 | Date: 8/3/87<br>Time: 9:10 Am |
| Signature:<br>Printed Name:<br>Company:<br>Reason: | Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Signature:<br>Printed Name:<br>Company:<br>Reason: | Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Signature:<br>Printed Name:<br>Company:<br>Reason: | Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |

Special Shipment / Handling / Storage Requirements:

000247

* Note — This does not constitute authorization to proceed with analysis

APPLIED GEOSCIENCES INC.

CHAIN OF CUSTODY RECORD

SHIPMENT NO.: 1

PAGE 2 OF 3

DATE 8/3/87

PROJECT NAME: Armco

PROJECT NO.: A61 1142

| Sample Number | Location | Type of Sample: Material | Type of Sample: Method | Type of Container | Type of Preservation: Temp | Type of Preservation: Chemical | Analysis Required* |
|---|---|---|---|---|---|---|---|
| ARM4-1-4 | ARM4 | Soil | Mod. CA | Stainless Steel | 4°C | Ice | 418.1 |
| ARM4-2-4 | | | | | | | |
| ARM4-3-4 | | | | | | | |
| ARM4-4-4 | | | | | | | |
| ARM4-5-4 | | | | | | | |
| ARM4-6-4 | | | | | | | 418.1 |
| ARM4-7-4 | | | | | | | |
| ARM4-8-4 | | | | | | | |
| ARM5-1-4 | ARM5 | | | | | | 418.1, 8240 |
| ARM5-2-4 | | | | | | | |
| ARM5-3-4 | | | | | | | 418.1 |
| ARM5-4-4 | | | | | | | |
| ARM5-5-4 | | | | | | | |
| AHB1-1 | AHB1 | | Grab | Glass | | | 418.1 |
| AHB2-1 | AHB2 | | | | | | Cam metals |
| AHB2-2 | | | | | | | |
| AHB3-1 | AHB3 | | | | | | |
| AHB4-1 | AHB4 | | | | | | 418.1 |
| AHB4-2 | | | | | | | |
| AHB5-1 | AHB5 | | | | | | |

Total Number of Samples Shipped: 44 | Sampler's Signature: P. Roberts

| Relinquished By | Received By | Date / Time |
|---|---|---|
| Signature: P. Roberts<br>Printed Name: Paul Roberts<br>Company: Applied Geosciences Inc.<br>Reason: To Lab. | Signature: Mary Cedenwall<br>Printed Name: Mary Cedenwall<br>Company: WCRS #6694 | Date: 8/3/87<br>Time: 9:05 AM |
| Signature:<br>Printed Name:<br>Company:<br>Reason: | Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Signature:<br>Printed Name:<br>Company:<br>Reason: | Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Signature:<br>Printed Name:<br>Company:<br>Reason: | Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |

Special Shipment / Handling / Storage Requirements:

000248

* Note – This does not constitute authorization to proceed with analysis

AMPLE GENERATOR Applied Geos ences Inc.
DDRESS 17321 Irvine
Tustin, CA
ELEPHONE (714) 838-8545

DATE 8-3-87
PROJECT NO. AG11142
PROJECT NAME Armco
CONTACT

| Sample No. | SAMPLE INFORMATION Type of Sample Material/Container | Analysis Required | | |
|---|---|---|---|---|
| AHB5-2 | Soil / Glass | 418.1 | | |
| AHB6-1 | | 418.1 | Cam metals | |
| AHB6-2 | | | | |
| ARMW-1 | Water / Glass | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| TOTAL NO. OF SAMPLES RECEIVED: 44 | | | | |

SAMPLE CONDITION

rcle/Fill-in appropriate response:
Custody Seal Present/Absent
Intact/Not Intact
Agency Seal, _____
(name of agency)

2. S eived damaged and/or missing, back.

SAMPLE ALLOCATION

WEST COAST ANALYTICAL SERVICE, INC.

9840 Alburtis Avenue Santa Fe Springs, CA 90670 213/948-2225

AS, Inc. Job No. # 6694 Results requested by _____ phone/written
(date)

| linguished By: | Received By: | Date/Time |
|---|---|---|
| Signature Paul Roberts | Signature Mary Cederwall | 8-3-87 |
| rinted Name Paul Roberts | Printed Name Mary Cederwall | 9:05 AM |
| Company Applied Geosciences Inc. | Company WCAS | |

ecial Shipment/Handling/Storage Requirements: # 6694

000249

APPLIED GEOSCIENCES INC.

CHAIN OF CUSTODY RECORD

SHIPMENT NO.: 1

PAGE 1 OF 6

DATE 9/12/87

PROJECT NAME: ARMCO

PROJECT NO.: AGI 1142

| Sample Number | Location | Type of Sample: Material | Type of Sample: Method | Type of Container | Type of Preservation: Temp | Type of Preservation: Chemical | Analysis Required* |
|---|---|---|---|---|---|---|---|
| AHB7-1 | AHB7 | SOIL | GRAB | GLASS JAR | 40°-50°A | ICE | 418.1, CAM |
| AHB7-2 | ↓ | | | | | | 418.1, CAM |
| AHB8-1 | AHB8 | | | | | | 418.1 |
| AHB8-2 | ↓ | | | | | | |
| AHB9-1 | AHB9 | | | | | | 418.1, CAM; 8240 |
| AHB9-2 | ↓ | | | | | | 418.1, CAM |
| AHB9-3 | ↓ | | | | | | |
| AHB10-1 | AHB10 | | | | | | 418.1, CAM |
| AHB10-2 | ↓ | | | | | | 418.1 |
| AHB11-1 | AHB11 | | | | | | 418.1 |
| AHB12-1 | AHB12 | | | | | | 418.1 |
| AHB13-1 | AHB13 | | | | | | 418.1, 8240 CAM |
| AHB14-1 | AHB14 | | | | | | 418.1 |
| AHB15-1 | AHB15 | | | | | | 418.1 |
| AHB15-2 | ↓ | | | | | | 418.1 |
| AHB17-1 | AHB17 | | | | | | 418.1 |
| AHB18-1 | AHB18 | | | | | | 418.1 |
| AHB18-2 | ↓ | | | | | | 418.1, CAM |
| AHB19-1 | AHB19 | | | | | | |
| AHB19-2 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |

Total Number of Samples Shipped: 105 | Sampler's Signature: Paul Roberts

| Relinquished By | Received By | Date / Time |
|---|---|---|
| Signature: Paul Roberts<br>Printed Name: Paul Roberts<br>Company: Applied Geosciences Inc<br>Reason: To Lab | Signature: [illegible]<br>Printed Name: [illegible]<br>Company: [illegible] #7034 | Date: 9/13/87<br>Time: 4:30 pm |
| Signature:<br>Printed Name:<br>Company:<br>Reason: | Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Signature:<br>Printed Name:<br>Company:<br>Reason: | Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Signature:<br>Printed Name:<br>Company:<br>Reason: | Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |

Special Shipment / Handling / Storage Requirements:

* RUSH

(2) - Run 418.1 twice

000250

* Note — This does not constitute authorization to proceed with analysis

APPL GEOSCIENCES INC.

CHAIN OF CUSTODY RECORD

SHIPMENT NO.: 1

PAGE 2 OF 6

DATE 9/2/87

PROJECT NAME: ARMCO

PROJECT NO.: AGI 1142

| Sample Number | Location | Type of Sample: Material | Type of Sample: Method | Type of Container | Type of Preservation: Temp | Type of Preservation: Chemical | Analysis Required* |
|---|---|---|---|---|---|---|---|
| AHB20-1 | AHB20 | soil | GRAB | glass Jar | 40°-50°F | ICE | 418.1, 8240, CAM |
| AHB21-1 | AHB21 | | | | | | 418.1 |
| AHB22-1 | AHB22 | | | | | | (2) 418.1 |
| AHB22-2 | ↓ | | | | | | |
| AHB23-1 | AHB23 | | | | | | 418.1 |
| AHB23-2 | ↓ | | | | | | |
| AHB24-1 | AHB24 | | | | | | |
| AHB24-2 | ↓ | | | | | | |
| AHB25-1 | AHB25 | | | | | | 418.1 |
| AHB25-2 | ↓ | | | | | | |
| AHB26-1 | AHB26 | | | | | | 418.1 |
| AHB26-2 | ↓ | | | | | | |
| AHB27-1 | AHB27 | | | | | | (2) 418.1, 8240, CAM, WET |
| AHB27-2 | ↓ | | | | | | 418.1, 8240, CAM |
| AHB28-1 | AHB28 | | | | | | 418.1, CAM |
| AHB28-2 | ↓ | | | | | | 418.1, CAM |
| AHB29-1 | AHB29 | | | | | | 418.1, CAM |
| AHB30-1 | AHB30 | | | | | | 418.1 |
| AHB30-2 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |

Total Number of Samples Shipped: 105 | Sampler's Signature: Paul Roberts

| Relinquished By: | Received By: | Date / Time |
|---|---|---|
| Signature: Paul Roberts<br>Printed Name: Paul Roberts<br>Company: Applied Geosciences Inc<br>Reason: I. Lab | Signature: Mary C.<br>Printed Name: M Treyc<br>Company: WCTS<br>#7034 | Date: 9/3/87<br>Time: 9:30 a.m. |
| Signature:<br>Printed Name:<br>Company:<br>Reason: | Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Signature:<br>Printed Name:<br>Company:<br>Reason: | Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Signature:<br>Printed Name:<br>Company:<br>Reason: | Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |

Special Shipment / Handling / Storage Requirements:

* RUSH

(2) - Run 418.1 twice

000251

* Note — This does not constitute authorization to proceed with analysis

**APPLIED GEOSCIENCES INC.**

SHIPMENT NO.: 1

CHAIN OF CUSTODY RECORD

PAGE 3 OF 6

DATE 9/12/87

PROJECT NAME: ARMCO

PROJECT NO.: AGI1142

| Sample Number | Location | Type of Sample: Material | Type of Sample: Method | Type of Container | Type of Preservation: Temp | Type of Preservation: Chemical | Analysis Required* | |
|---|---|---|---|---|---|---|---|---|
| AHB31-1 | AHB31 | SOIL | GRAB | GLASS JAR | 40°-50°F | ICE | 418.1, CAM | * |
| AHB31-2 | ↓ | | | | | | 418.1 | * |
| AHB31-3 | ↓ | | | | | | | |
| AHB32-1 | AHB32 | | | | | | 418.1 | |
| AHB32-2 | ↓ | | | | | | 418.1 | |
| AHB29-2 | AHB29 | | | | | | | |
| ARM8-A | ARM8 | | | | | | 418.1, 8240 | |
| ARM9-A | ARM9 | | | | | | 418.1, 8240, CAM | * |
| ARM10-A | ARM10 | | | | | | 418.1, 8240, 8270, CAM | * |
| AHB33-1 | AHB33 | | | | | | 418.1, CAM | * |
| AHB33-2 | ↓ | | | | | | | |
| ARM13-A | ARM13 | | | | | | 418.1 | |
| ARM14-A | ARM14 | | | ↓ | | | | |
| ARM5-1-3 | | | CA. MOD. | Stainless Steel | | | 418.1, 8240, CAM | |
| ARM5-2-3 | | | | | | | 418.1, CAM | |
| ARM6-1-3 | | | | | | | 418.1 | |
| ARM6-2-3 | | | | | | | 418.1 | |
| ARM7-1-3 | | | | | | | 418.1 | * |
| ARM7-2-3 | | | | | | | | |
| ARM7-3-3 | | ↓ | ↓ | ↓ | ↓ | ↓ | (2) 418.1, 8240, 8270 | * |

Total Number of Samples Shipped: 105 | Sampler's Signature: Paul Roberts

| Relinquished By: | Received By: | Date / Time |
|---|---|---|
| Signature: Paul Roberts<br>Printed Name: Paul Roberts<br>Company: Applied Geosciences Inc.<br>Reason: To Lab | Signature: Mary C.<br>Printed Name: Mary C.<br>Company: WCAS<br>#7034 | Date: 9/13/87<br>Time: 9:30 A.M. |
| Relinquished By:<br>Signature:<br>Printed Name:<br>Company:<br>Reason: | Received By:<br>Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Relinquished By:<br>Signature:<br>Printed Name:<br>Company:<br>Reason: | Received By:<br>Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Relinquished By:<br>Signature:<br>Printed Name:<br>Company:<br>Reason: | Received By:<br>Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |

Special Shipment / Handling / Storage Requirements:

* RUSH

(2) - Run 418.1 twice

000252

* Note — This does not constitute authorization to proceed with analysis

APPLIED GEOSCIENCES INC.

CHAIN OF CUSTODY RECORD

SHIPMENT NO.: 1

PAGE 4 OF 6

DATE 9/2/87

PROJECT NAME: ARMCO

PROJECT NO.: AGI 1142

| Sample Number | Location | Type of Sample: Material | Type of Sample: Method | Type of Container | Type of Preservation: Temp | Type of Preservation: Chemical | Analysis Required* |
|---|---|---|---|---|---|---|---|
| ARM7-4-3 | ARM7 | Soil | CA, MOD | Stainless Steel | 40°-50°F | Ice | 418.1 * |
| ARM7-6-3 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| ARM7-7-3 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| ARM7-7-4 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| ARM7-8-4 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| ARM7-8-3 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| ARM7-9-4 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| ARM7-10-4 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| ARM7-11-4 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| ARM7-12-3 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | 418.1, 8240 * |
| ARM8-1-4 | ARM8 | ↓ | ↓ | ↓ | ↓ | ↓ | 418.1 |
| ARM8-2-4 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| ARM9-1-4 | ARM9 | ↓ | ↓ | ↓ | ↓ | ↓ | (2) 418.1 * |
| ARM9-2-4 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| ARM9-3-3 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| ARM10-1-4 | ARM10 | ↓ | ↓ | ↓ | ↓ | ↓ | |
| ARM10-2-4 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | 418.1, Total Cyanide, CAM |
| ARM11-1-4 | ARM11 | ↓ | ↓ | ↓ | ↓ | ↓ | 418.1, CAM |
| ARM11-2-4 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | 418.1 |
| ARM12-1-3 | ARM12 | ↓ | ↓ | ↓ | ↓ | ↓ | 418.1 |

Total Number of Samples Shipped: 105 | Sampler's Signature: Paul Roberts

| Relinquished By: | Received By: | Date / Time |
|---|---|---|
| Signature: Paul Roberts<br>Printed Name: Paul Roberts<br>Company: Applied Geosciences Inc.<br>Reason: To Lab | Signature: Mary C.<br>Printed Name: Mary C.<br>Company: WCAS<br>#7034 | Date: 9/3/87<br>Time: 9:30 am |
| Signature:<br>Printed Name:<br>Company:<br>Reason: | Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Signature:<br>Printed Name:<br>Company:<br>Reason: | Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Signature:<br>Printed Name:<br>Company:<br>Reason: | Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |

Special Shipment / Handling / Storage Requirements:

* RUSH

(2) – Run 418.1 twice

000253

* Note – This does not constitute authorization to proceed with analysis

APPLIED GEOSCIENCES INC.

CHAIN OF CUSTODY RECORD

SHIPMENT NO.: 1

PAGE 5 OF 6

DATE 9/2/87

PROJECT NAME: ARMCO

PROJECT NO.: AGI1142

| Sample Number | Location | Type of Sample: Material | Type of Sample: Method | Type of Container | Type of Preservation: Temp | Type of Preservation: Chemical | Analysis Required* |
|---|---|---|---|---|---|---|---|
| ARM12-2-4 | ARM12 | Soil | CA MOD | Stainless Steel | 40°-50°F | Ice | |
| ARM13-1-3 | ARM13 | | | | | | 418.1 |
| ARM13-2-3 | | | | | | | |
| ARM13-3-4 | | | | | | | |
| ARM13-4-4 | | | | | | | |
| ARM13-5-4 | | | | | | | |
| ARM13-6-4 | | | | | | | |
| ARM13-7-4 | | | | | | | |
| ARM13-8-3 | | | | | | | |
| ARM13-9-4 | | | | | | | |
| ARM13-10-4 | | | | | | | |
| ARM13-11-4 | | | | | | | |
| ARM13-12-3 | | | | | | | 418.1, 8240 |
| ARM14-1-3 | ARM14 | | | | | | 418.1 |
| ARM14-2-3 | | | | | | | 418.1 |
| ARM15-1-3 | ARM15 | | | | | | 418.1 |
| ARM15-2-3 | | | | | | | |
| ARM15-3-3 | | | | | | | |
| ARM15-4-3 | | | | | | | |
| ARM16-1-3 | ARM16 | | | | | | 418.1 |

Total Number of Samples Shipped: 105 | Sampler's Signature: Paul Roberts

| Relinquished By | Received By | Date / Time |
|---|---|---|
| Signature: Paul Roberts<br>Printed Name: Paul Roberts<br>Company: Applied Geosciences Inc.<br>Reason: To Lab | Signature: [illegible]<br>Printed Name: [illegible]<br>Company: [illegible]<br>#7034 | Date: 9/3/87<br>Time: 9:30 pm |
| Relinquished By:<br>Signature:<br>Printed Name:<br>Company:<br>Reason: | Received By:<br>Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Relinquished By:<br>Signature:<br>Printed Name:<br>Company:<br>Reason: | Received By:<br>Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Relinquished By:<br>Signature:<br>Printed Name:<br>Company:<br>Reason: | Received By:<br>Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |

cial Shipment / Handling / Storage Requirements:

000254

– This does not constitute authorization to proceed with analysis

APPLIED GEOSCIENCES INC.

SHIPMENT NO.: 1

# CHAIN OF CUSTODY RECORD

PAGE 6 OF 6

DATE 9/2/87

PROJECT NAME: ARMCO

PROJECT NO.: 46I1142

| Sample Number | Location | Type of Sample | | Type of Container | Type of Preservation | | Analysis Required* |
|---|---|---|---|---|---|---|---|
| | | Material | Method | | Temp | Chemical | |
| ARM16-2-3 | ARM16 | Soil | CA MCD | Stainless Steel | 40-50°F | Ice | |
| ARM16-3-3 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |
| ARM16-4-4 | ↓ | | | | | | |
| ARM17-1-4 | ARM17 | | | | | | |
| ARM17-2-4 | ↓ | | | | | | (2) 418.1 |
| ARM17-3-4 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | |

Total Number of Samples Shipped: 105 | Sampler's Signature: Paul Roberts

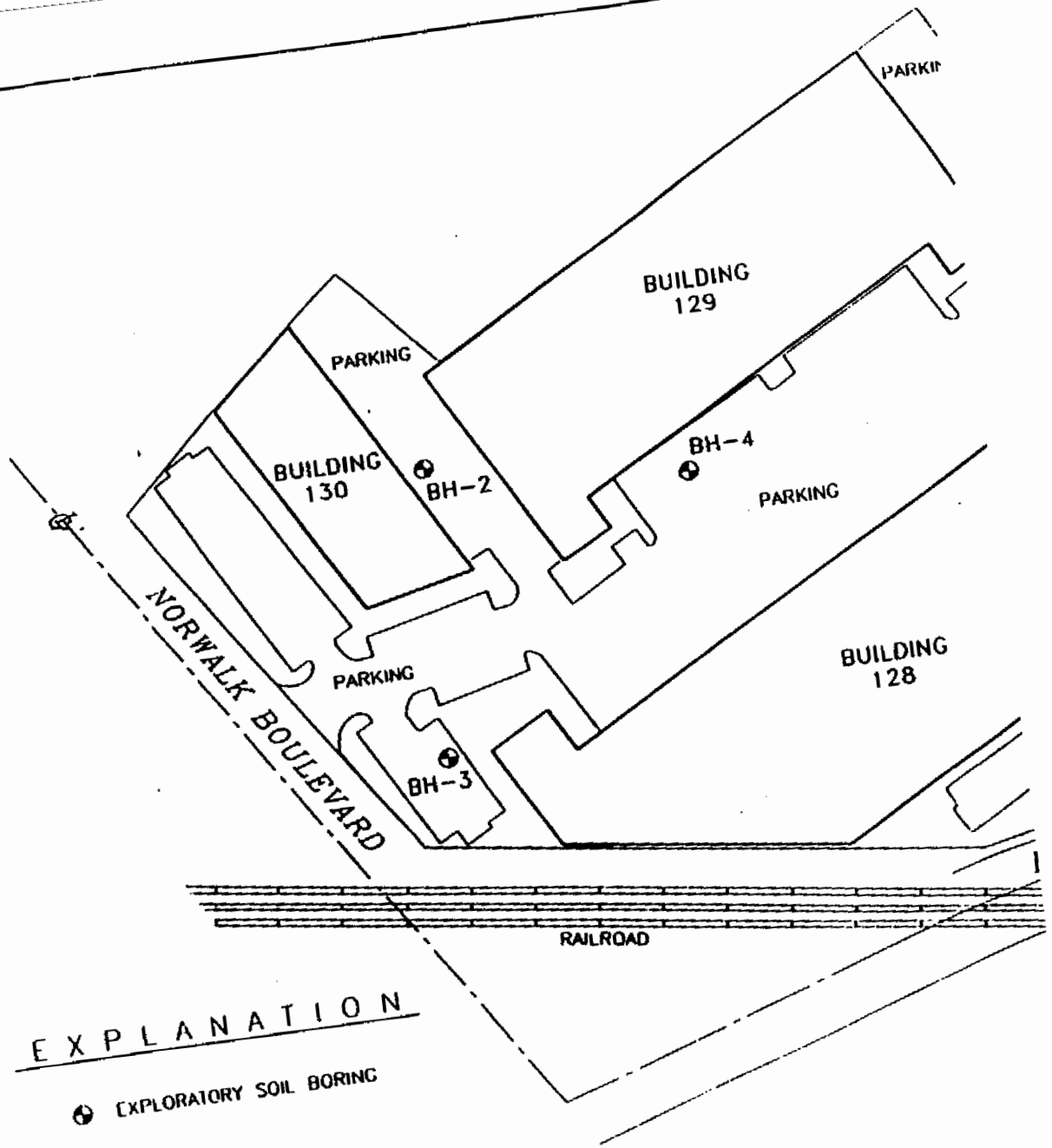
| Relinquished By | Received By | Date / Time |
|---|---|---|
| Signature: Paul Roberts<br>Printed Name: Paul Roberts<br>Company: Applied Geosciences Inc.<br>Reason: To Lab | Signature: Mary C.<br>Printed Name: [illegible]<br>Company: WLAS #7034 | Date: 9/3/87<br>Time: 9 30 A.M. |
| Relinquished By:<br>Signature:<br>Printed Name:<br>Company:<br>Reason: | Received By:<br>Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Relinquished By:<br>Signature:<br>Printed Name:<br>Company:<br>Reason: | Received By:<br>Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |
| Relinquished By:<br>Signature:<br>Printed Name:<br>Company:<br>Reason: | Received By:<br>Signature:<br>Printed Name:<br>Company: | Date: / /<br>Time: |

Special Shipment / Handling / Storage Requirements:

(2) - Run 418.1 twice

000255

* Note — This does not constitute authorization to proceed with analysis




PROJECT: V0004-0

SEACOR

## TABLE 1
## SUMMARY OF ANALYTICAL RESULTS

| Sample Number | BH-1 | | BH-2 | | BH-3 | | BH-4 | | Detection Limits |
|---|---|---|---|---|---|---|---|---|---|
| Depth (Feet) | 1.5 | 15 | 1.5 | 15 | 1.5 | 15 | 1.5 | 15 | |
| TRPH, ppm[1] | 9,400 | ND | 8,800 | ND | 2,600 | ND | 28 | ND | 5 |
| Depth (feet) | 6.5 | | 6.5 | | 6.5 | | 6.5 | | |
| Volatile Organic Compounds (ppm)[3] | ND[2] | | ND | | ND | | ND | | Compound Specific |
| Depth (feet) | 6.5 | | 6.5 | | 6.5 | | 6.5 | | |
| Priority Pollutant Metals[4] | | | | | | | | | |
| Antimony, ppm | 11 | | 22 | | 14 | | 14 | | 10 |
| Arsenic, ppm | ND | | ND | | ND | | ND | | 10 |
| Barium, ppm | 180 | | 130 | | 350 | | 240 | | .10 |
| Beryllium, ppm | ND | | ND | | ND | | ND | | .20 |
| Cadmium, ppm | ND | | ND | | ND | | ND | | 2.0 |
| Chromium, ppm | 31 | | 27 | | 33 | | 39 | | 1.5 |
| Cobalt, ppm | 23 | | 13 | | 20 | | 23 | | 2.5 |
| Copper, ppm | 20 | | 36 | | 16 | | 44 | | 1.0 |
| Lead, ppm | 7.6 | | 190 | | 12 | | 11 | | 5.0 |
| Mercury, ppm | 1.3 | | 1.0 | | ND | | .29 | | .20 |
| Molybdenum, ppm | ND | | ND | | ND | | ND | | 2.6 |
| Nickel, ppm | 30 | | 41 | | 29 | | 36 | | 2.5 |
| Selenium, ppm | ND | | ND | | ND | | ND | | 10 |
| Silver, ppm | ND | | ND | | ND | | ND | | 1.5 |
| Thallium, ppm | ND | | ND | | ND | | ND | | 30 |
| Vanadium, ppm | 60 | | 31 | | 57 | | 68 | | 3.8 |
| Zinc, ppm | 63 | | 160 | | 62 | | 77 | | 2.0 |

(1) TRPH - Total Recoverable Petroleum Hydrocarbons by EPA Method 418.1
ppm - parts per million
(2) ND - Not Detected
(3) Volatile organic compound analysis by EPA Method 8260
(4) Priority Pollutant Metals analysis by EPA Method AA/ICP