SDMS DOCID# 1120780

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: **Los Nietos Business Center** **9120-9160 S. Norwalk Blvd.** **11925-11930 E. Los Nietos Rd.** **Santa Fe Springs, CA**	Responsible Parties: WHC-six Real Estate Limited Partnership C/o Ms. Vera Ingram Archon Group	Address: 600 E. Las Colinas Blvd. 400 Irving, TX 75039	Phone No.: (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		

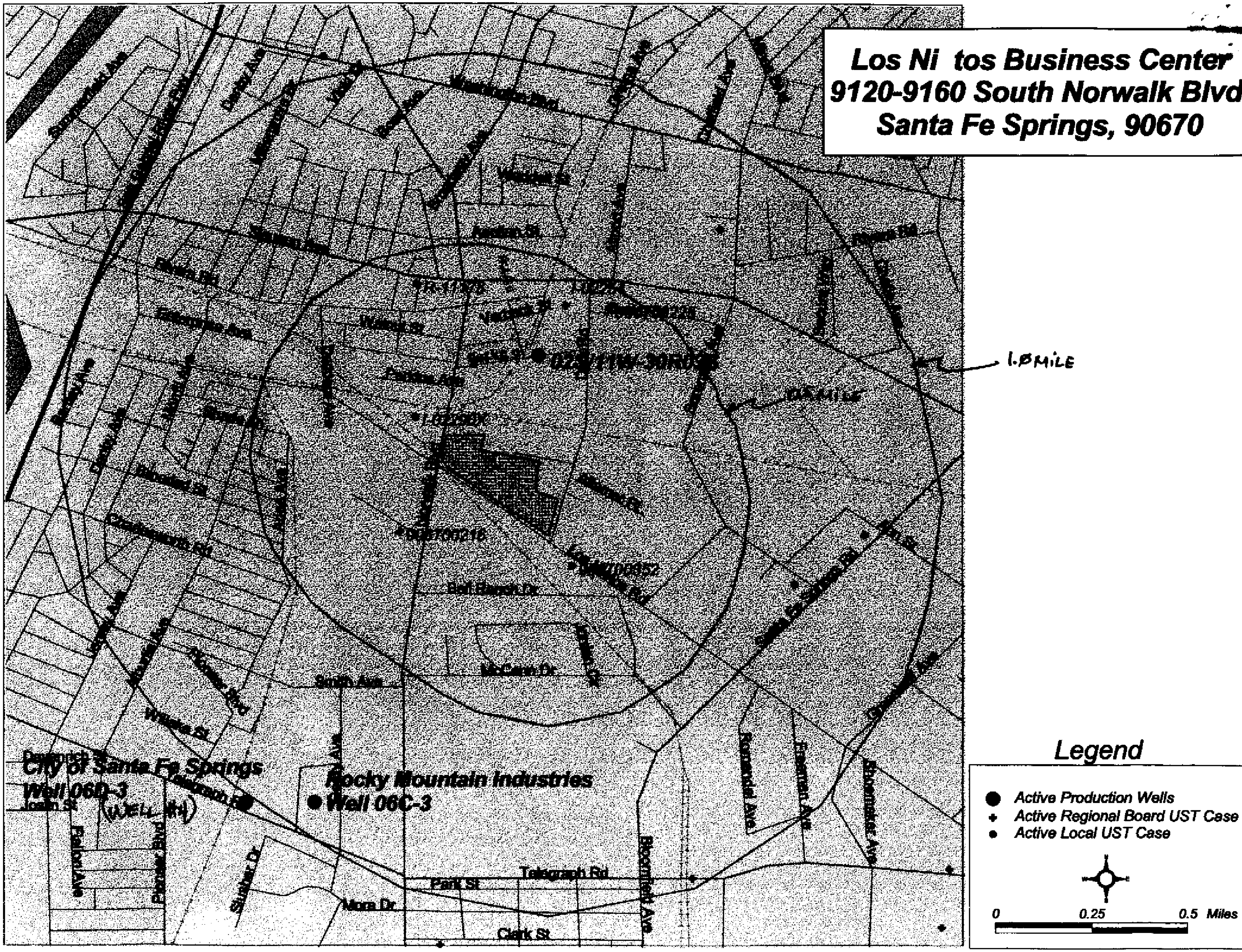
VII. COMMENTS AND JUSTIFICATION FOR RECOMMENDED ACTION:

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

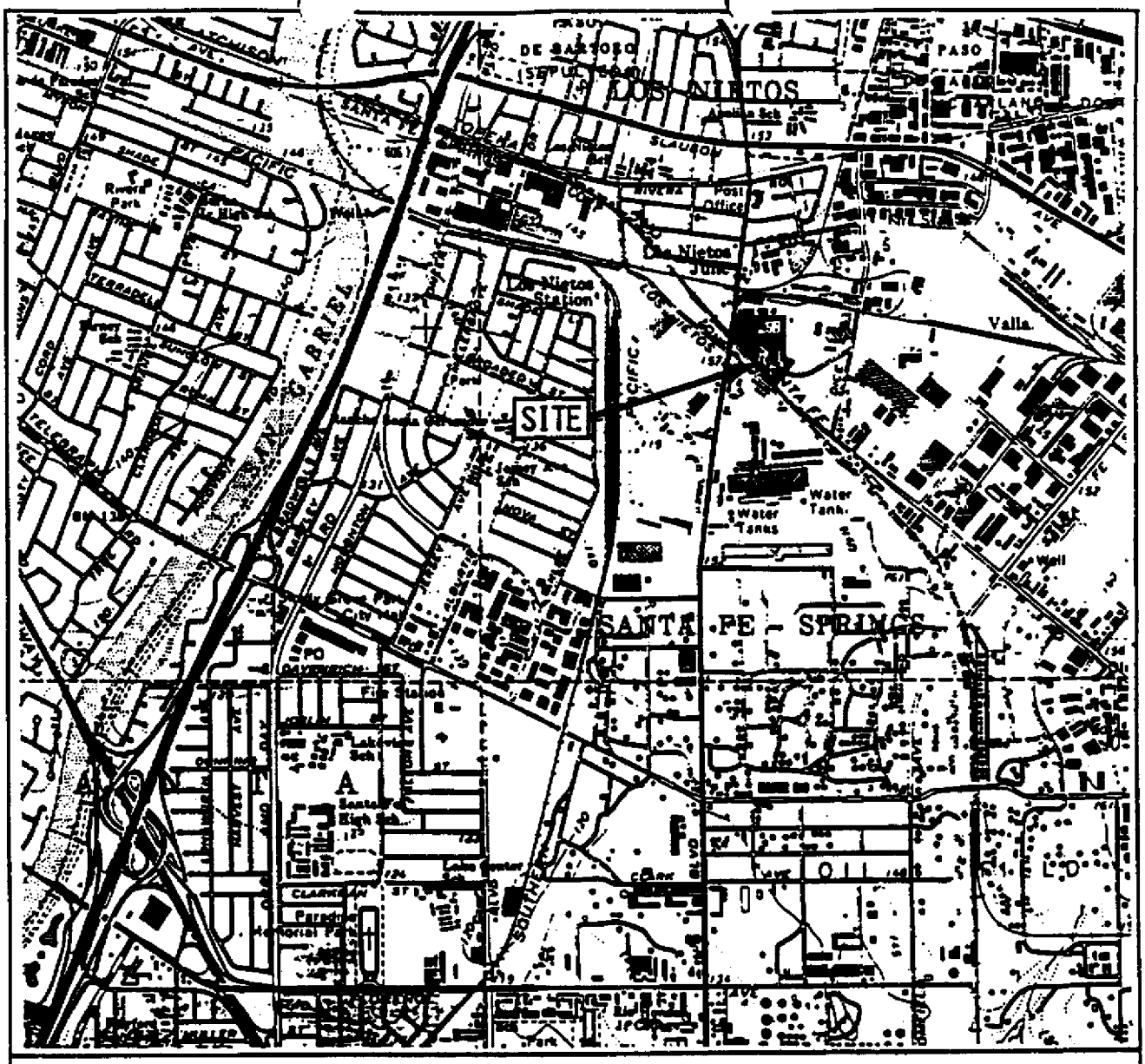
Date:December 10, 1999	SLIC File No.:883	Case Reviewer: Mr. Jimmie Woo	
Site Name/Address: **Los Nietos Business Center** **9120-9160 S. Norwalk Blvd.** **11925-11930 E. Los Nietos Rd.** **Santa Fe Springs, CA**	Responsible Parties: WHC-Six Real Estate Limited Partnership C/o Ms. Vera Ingram Archon Group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

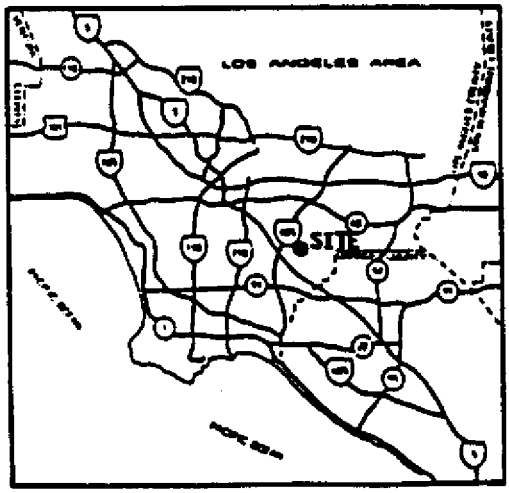
February 13, 1990. In April 22, 1994, four borings were advanced to 15 feet bgs. and soil samples collected in areas not previously investigated. No VOCs were identified but, the analytical results identified TRPH up to 9,400 at 1.5 feet below ground surface. However, the deeper soil sample at 15 feet 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.



Los Ni tos Business Center
9120-9160 South Norwalk Blvd.
Santa Fe Springs, 90670
1.0 MILE
City of Santa Fe Springs
Well 06D-3
Rocky Mountain Industries
Well 06C-3
Bell Ranch Dr
McCann Dr.
Smith Ave
Telegraph Rd
Park St
Mora Dr.
Clark St
Bloomfield Ave
Legend
Active Production Wells
Active Regional Board UST Case
Active Local UST Case
0
0.25
0.5 Miles





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

NORTH

000023

0 ½ 1

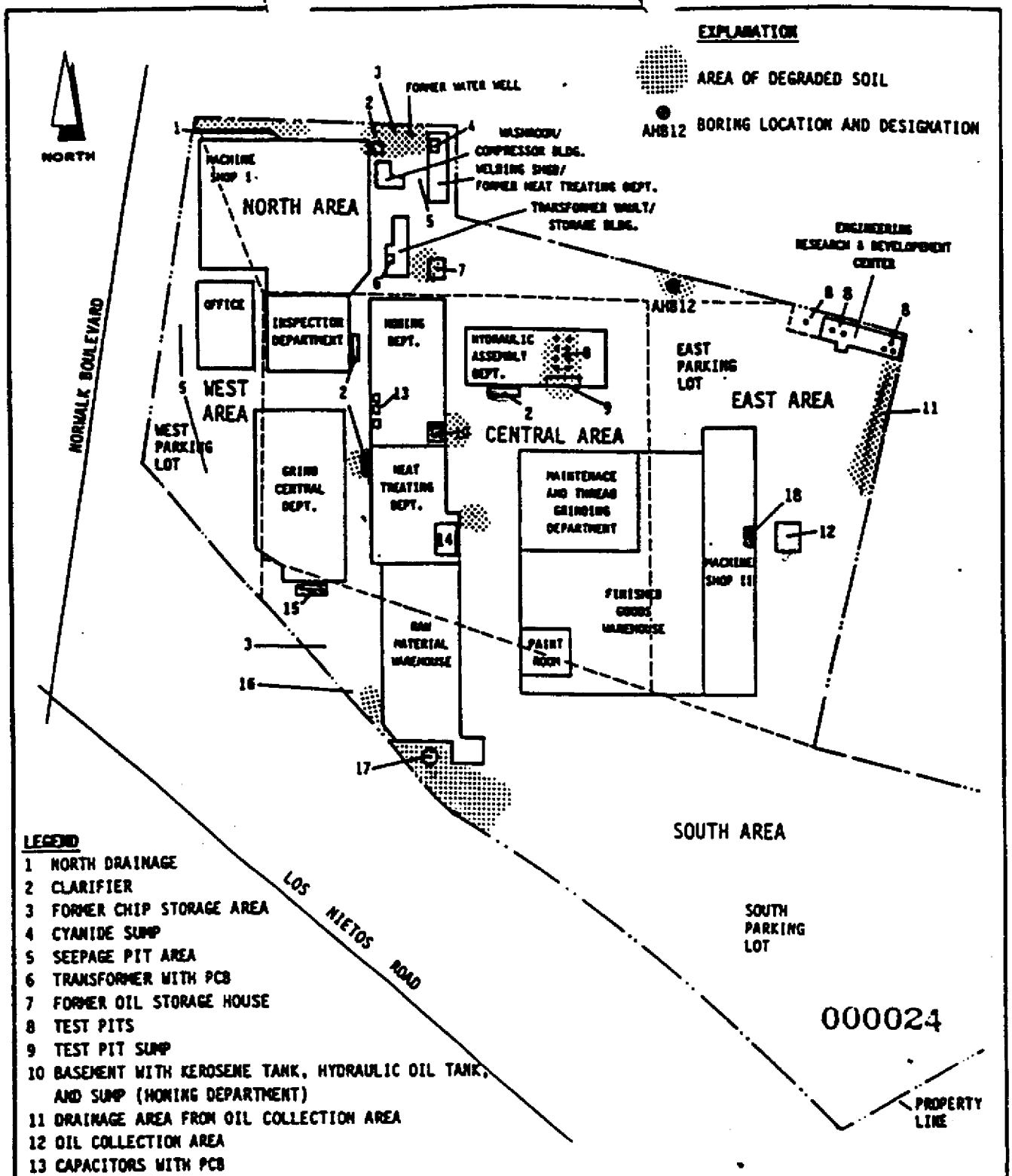
SCALE, MILES

APPLIED GEOSCIENCES INC.

Engineering Geology and Hazardous Materials Consultants

SITE VICINITY MAP

PROJECT NUMBER AGI1142	FIGURE 1



LEGEND

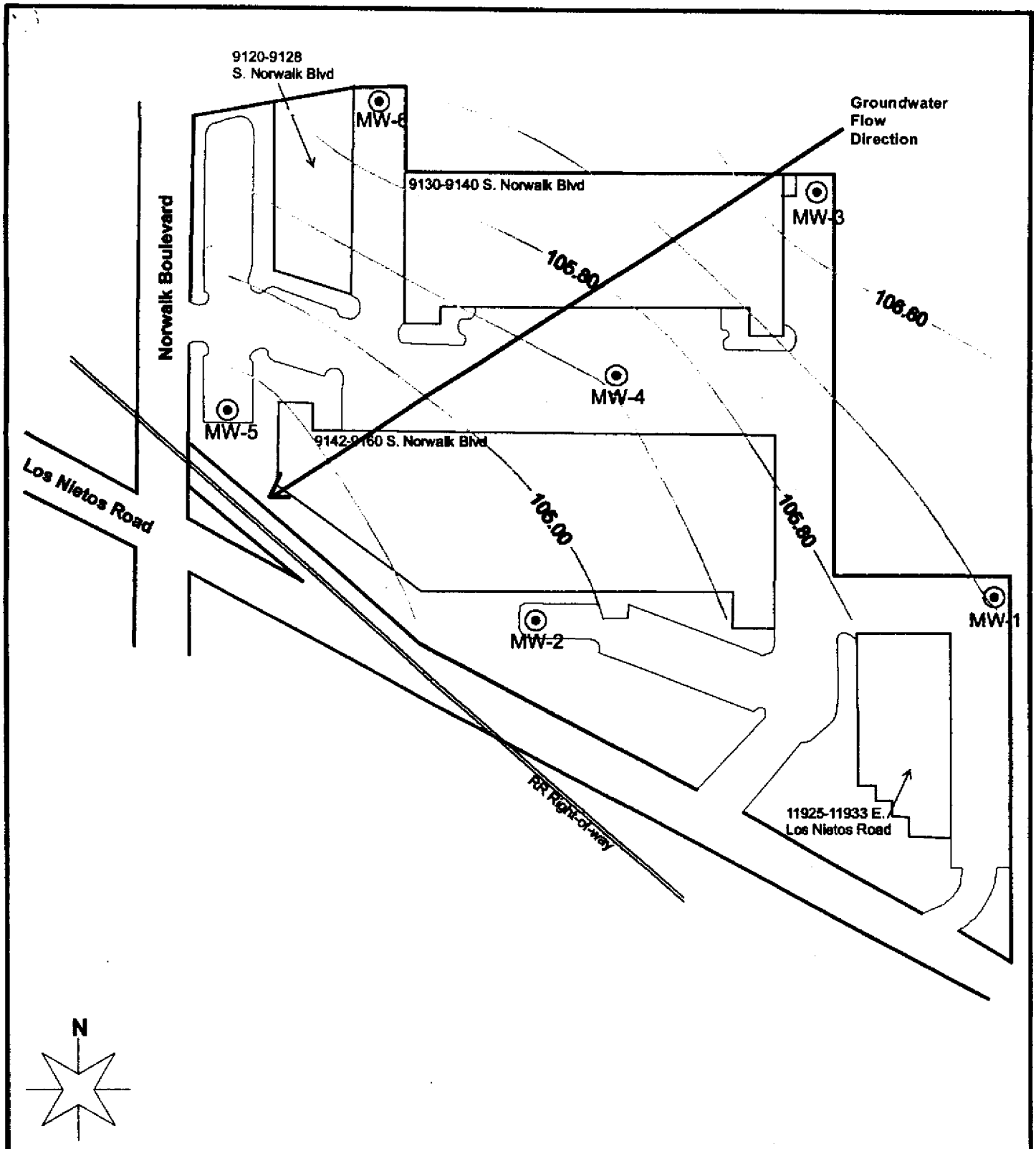
1 NORTH DRAINAGE
2 CLARIFIER
3 FORMER CHIP STORAGE AREA
4 CYANIDE SUMP
5 SEEPAGE PIT AREA
6 TRANSFORMER WITH PCB
7 FORMER OIL STORAGE HOUSE
8 TEST PITS
9 TEST PIT SUMP
10 BASEMENT WITH KEROSENE TANK, HYDRAULIC OIL TANK, AND SUMP (HONING DEPARTMENT)
11 DRAINAGE AREA FROM OIL COLLECTION AREA
12 OIL COLLECTION 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

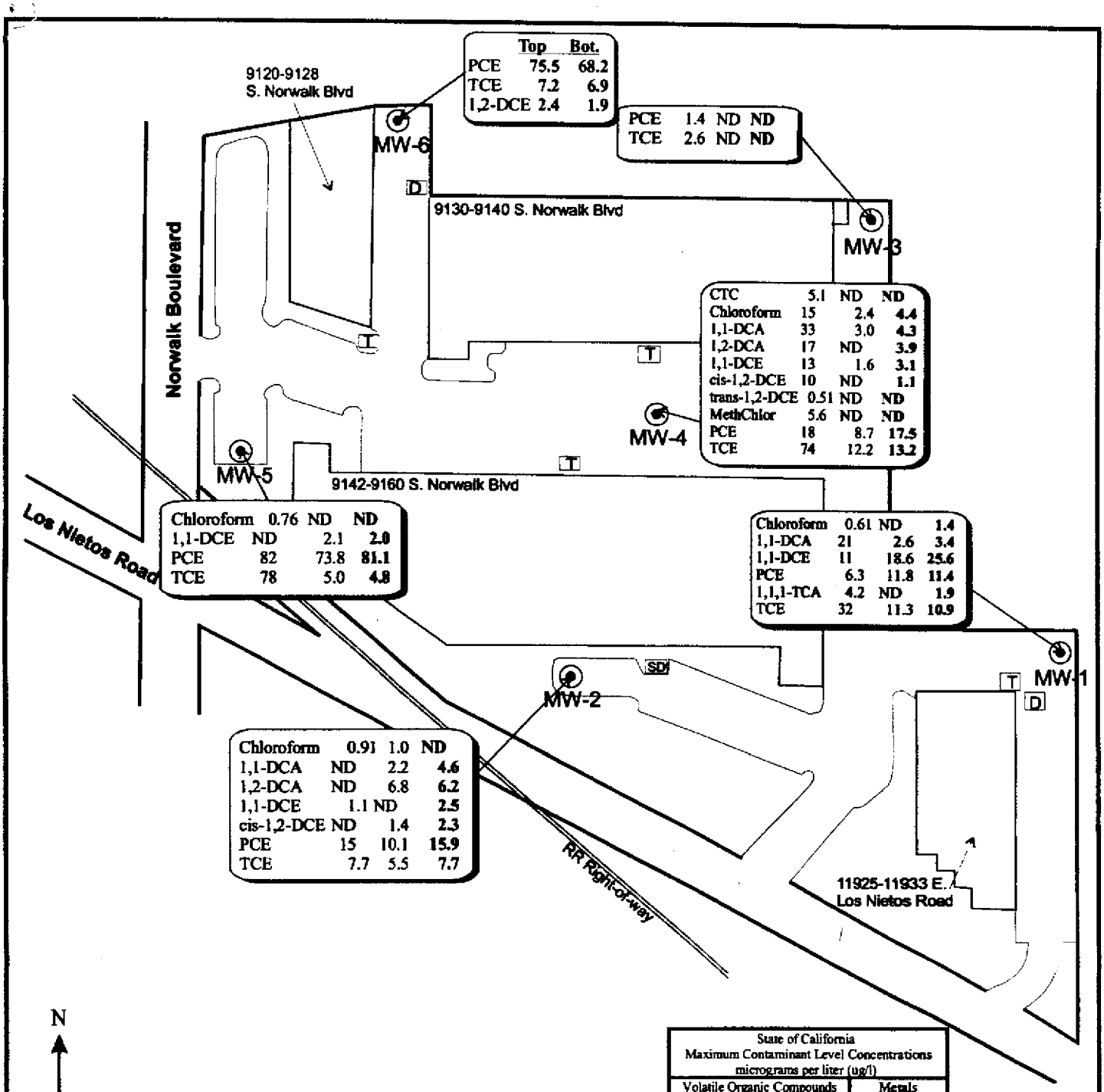
PROJECT NUMBER AGI1142 | FIGURE 2



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 D Dumpster Enclosure T Transformer Monitoring Well	Los Nietos Business Center 9120-9160 South Norwalk Boulevard Santa Fe Springs, California Client: Archon Group 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

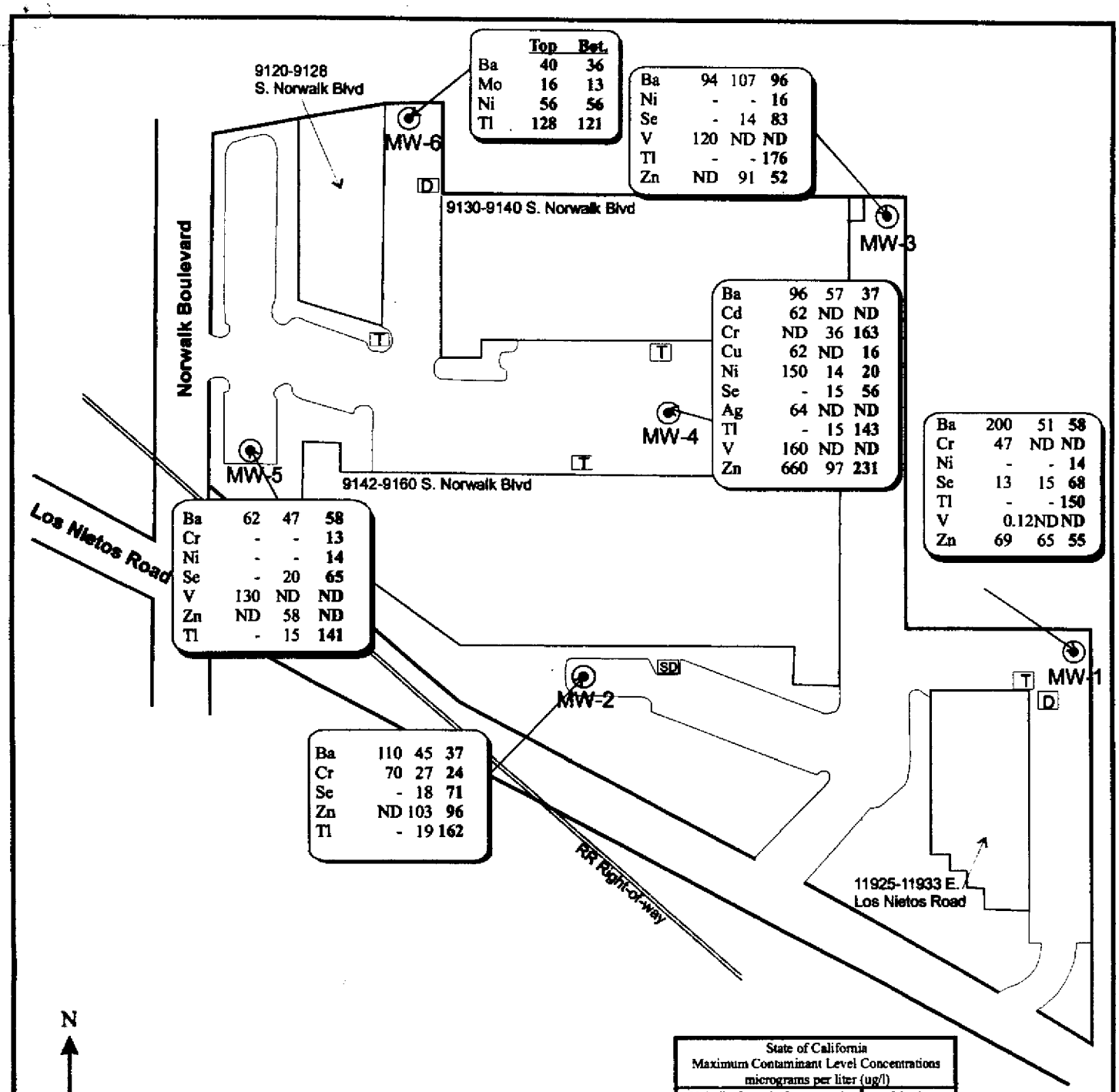
GROUNDWATER SAMPLING RESULTS - VOCs

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



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 - 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

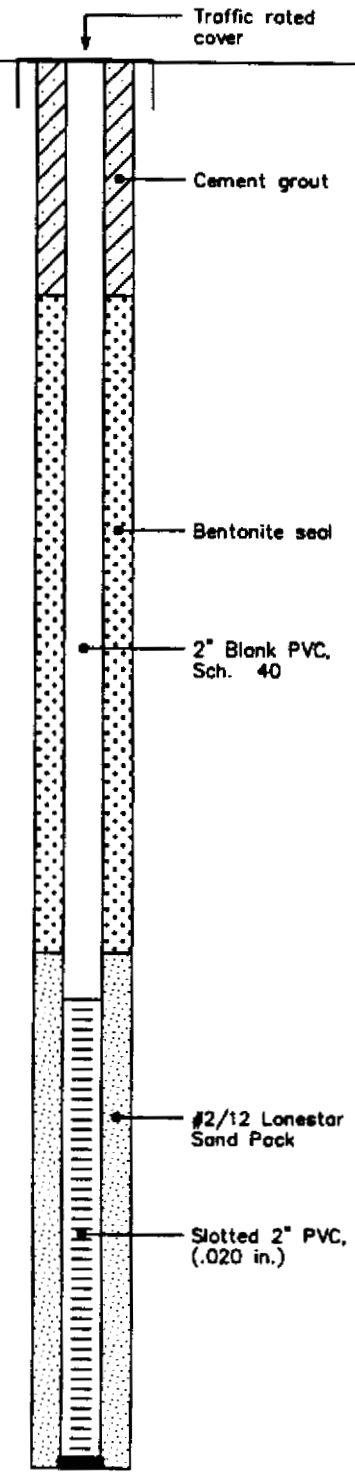
PROJECT: LOS NIETOS BUSINESS CENTER
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: 50 ft.

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

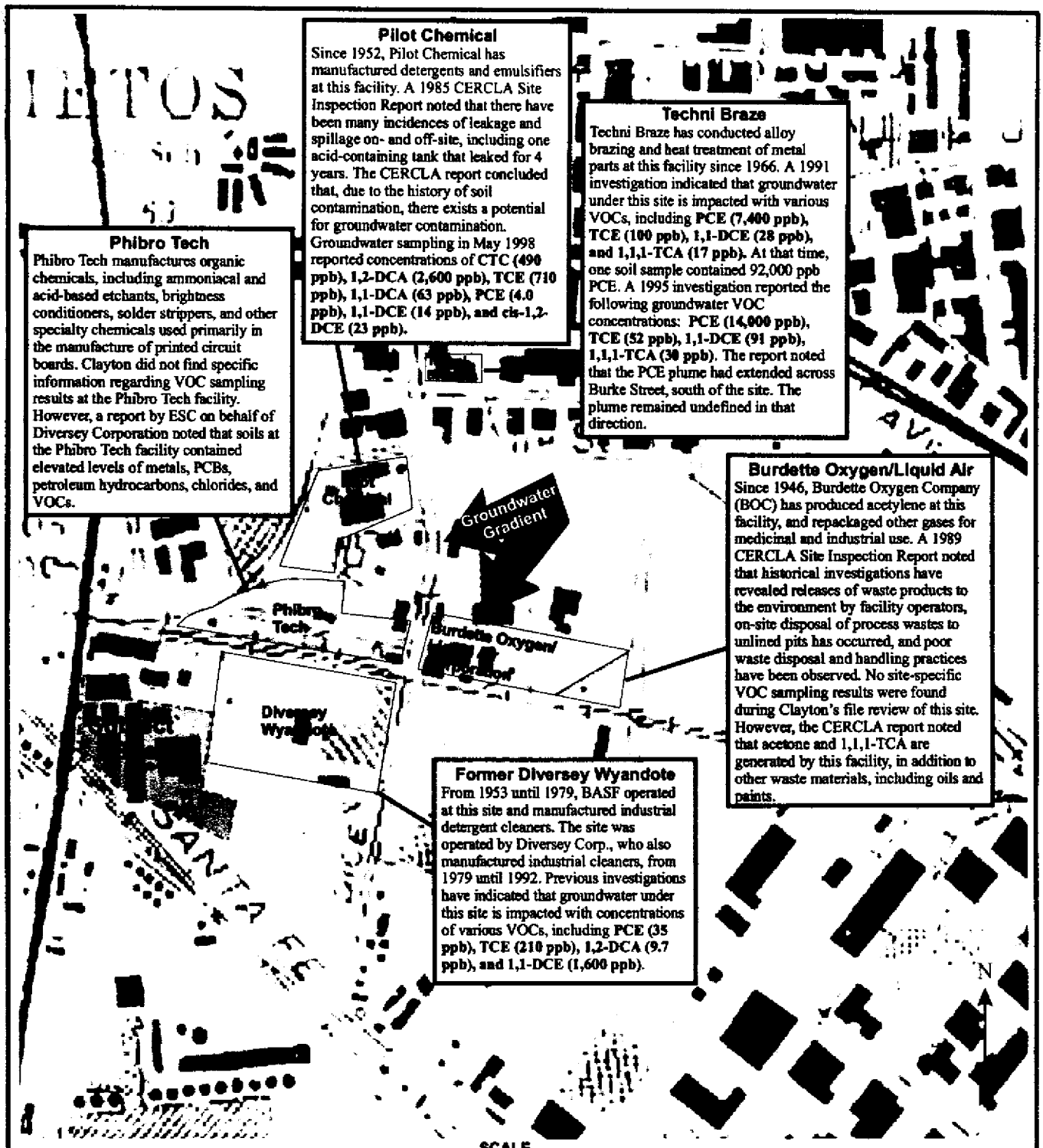


CLAYTON ENVIRONMENTAL CONSULTANTS
3611 South Harbor Blvd., Suite 260
Santa Ana, California 92704

Notes:

LOS NIETOS BUSINESS CENTER
Sante Fe Springs, California

Project No. 70-00302.00

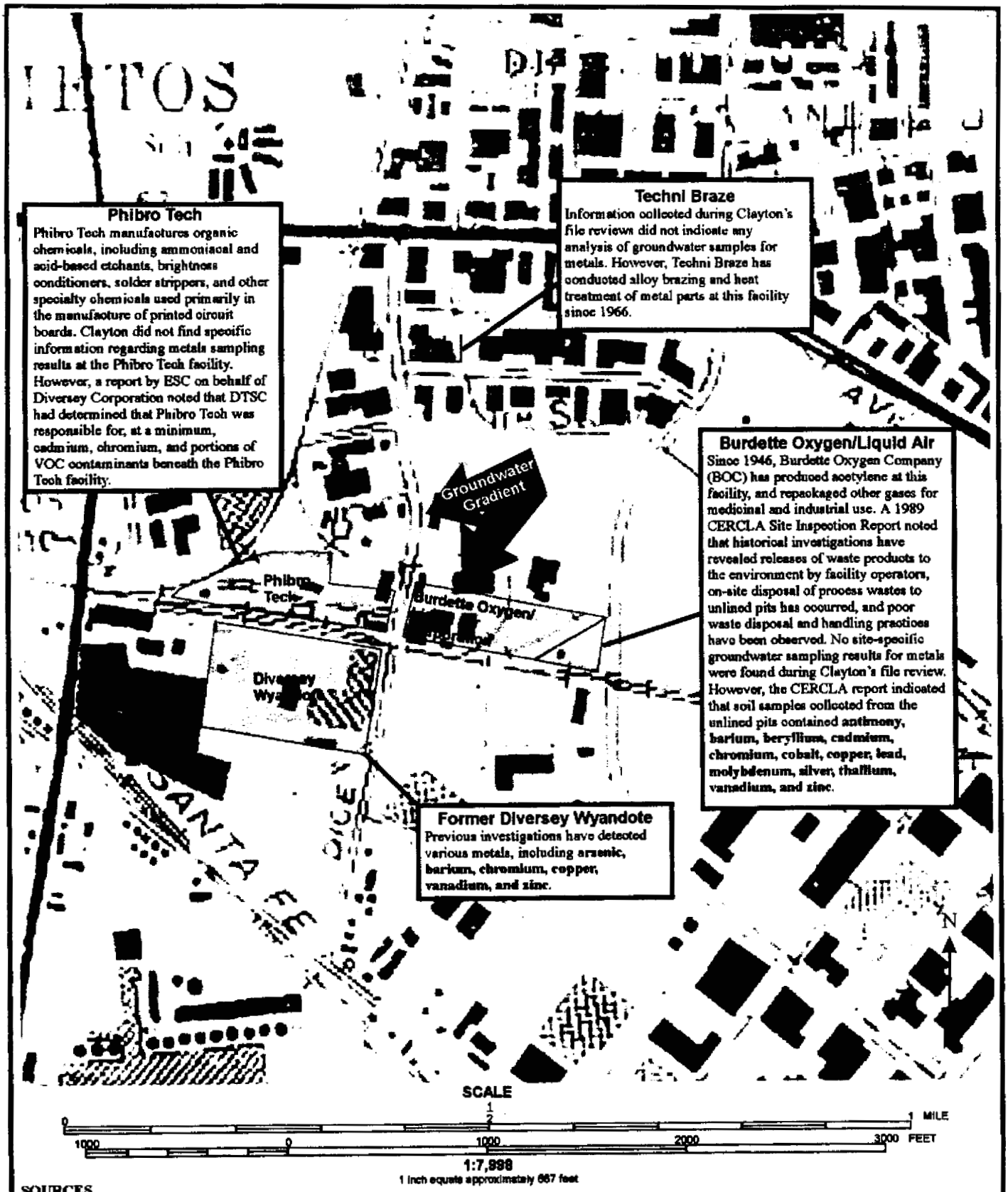


SOURCES

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 Offsite VOC sources	Los Nietos Business Center 9120-9160 South Norwalk Boulevard Santa Fe Springs, California Client: Archon Group Clayton Project No. 70-00302.00	4a	

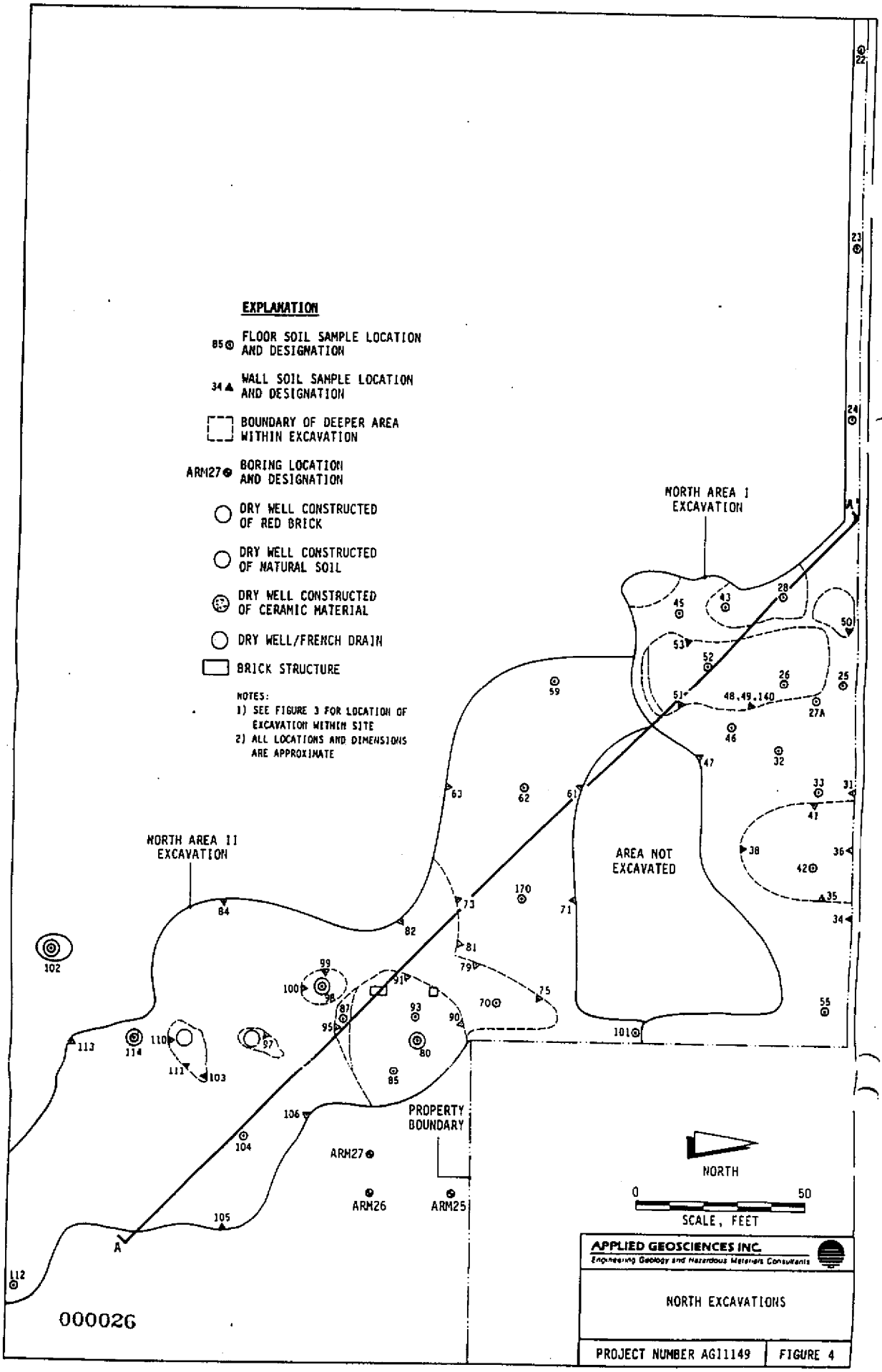


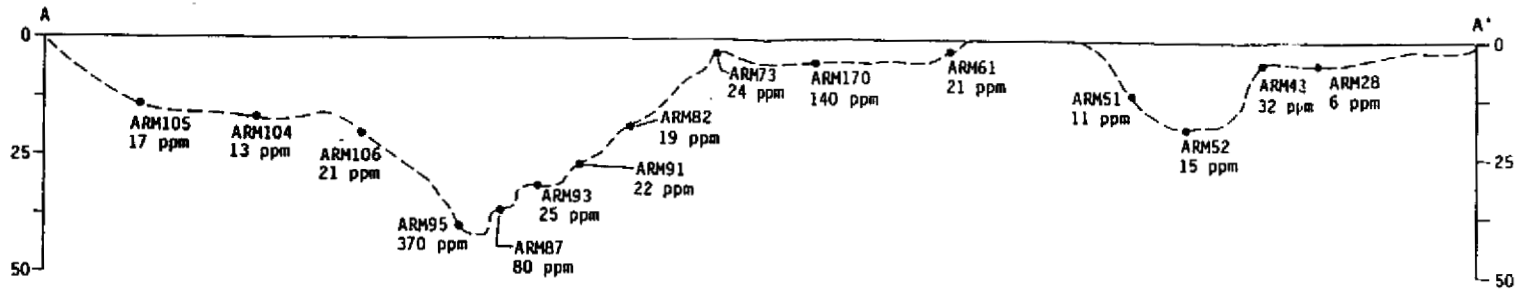
SOURCES

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 Offsite Metals sources	Los Nietos Business Center 9120-9160 South Norwalk Boulevard Santa Fe Springs, California Client: Archon Group 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



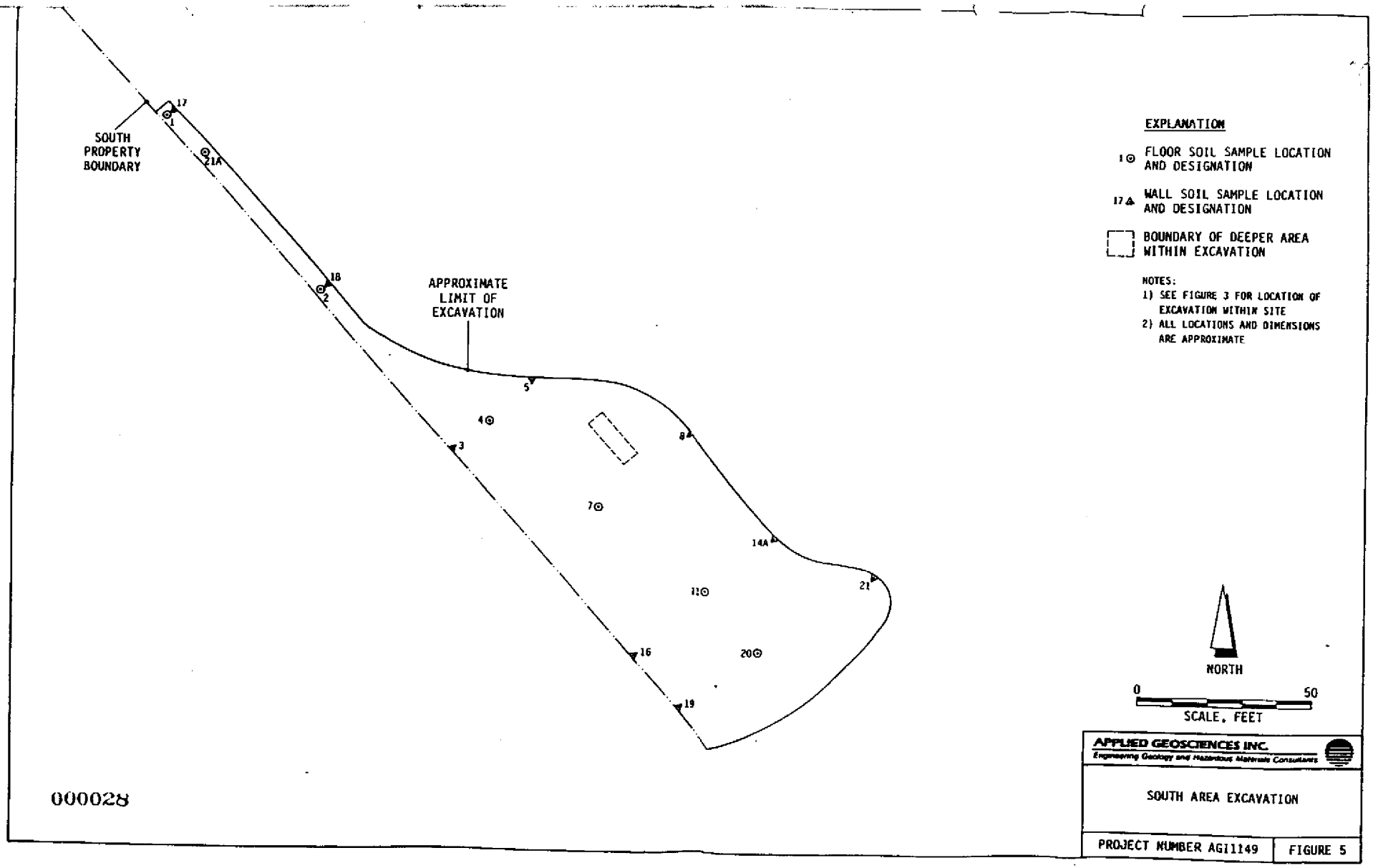
0 50
SCALE, FEET
VERTICAL/HORIZONTAL

APPLIED GEOSCIENCES INC.
Engineering Geology and Hazardous Materials Consultants

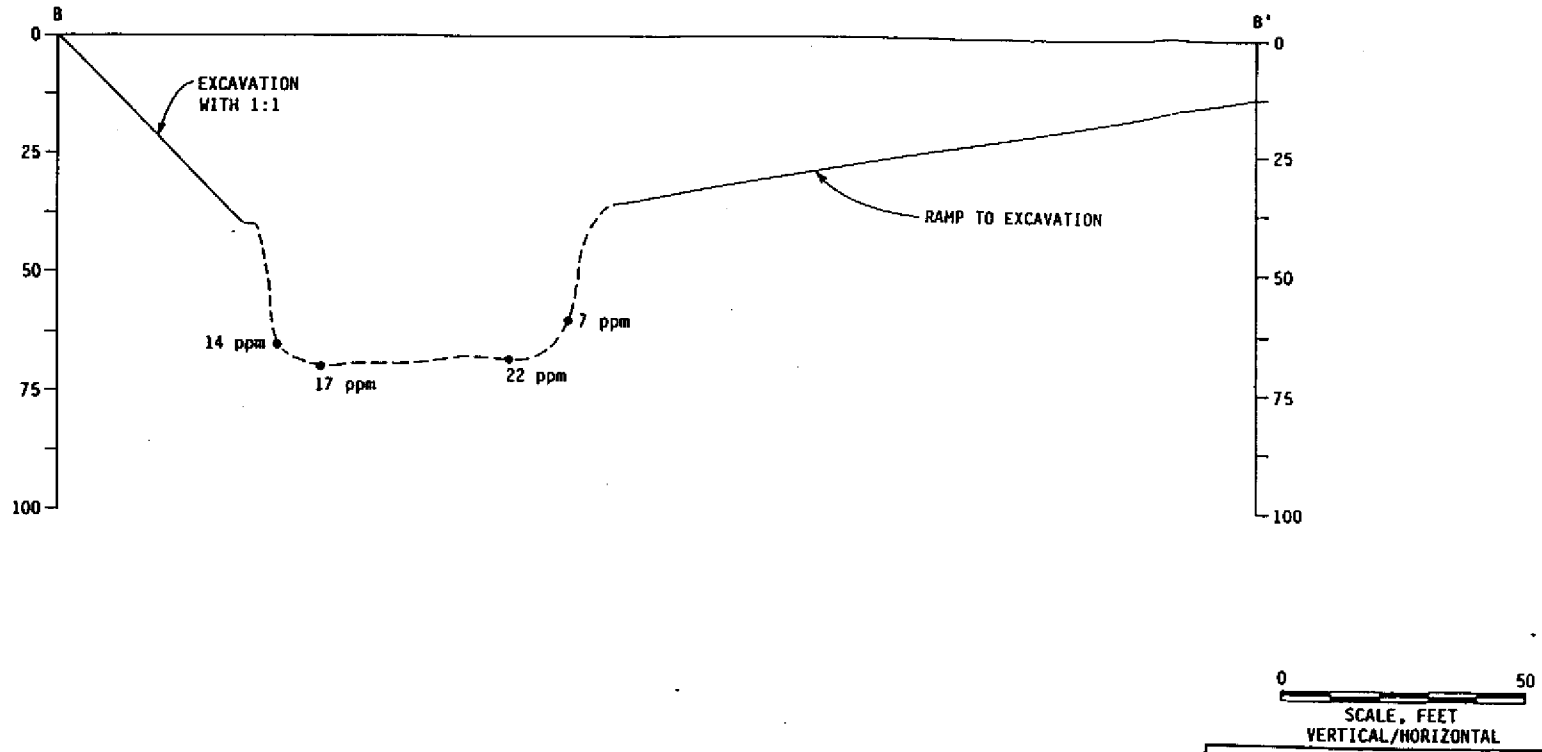
NORTH AREA CROSS SECTION

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 AGI1149
FIGURE 5

000028

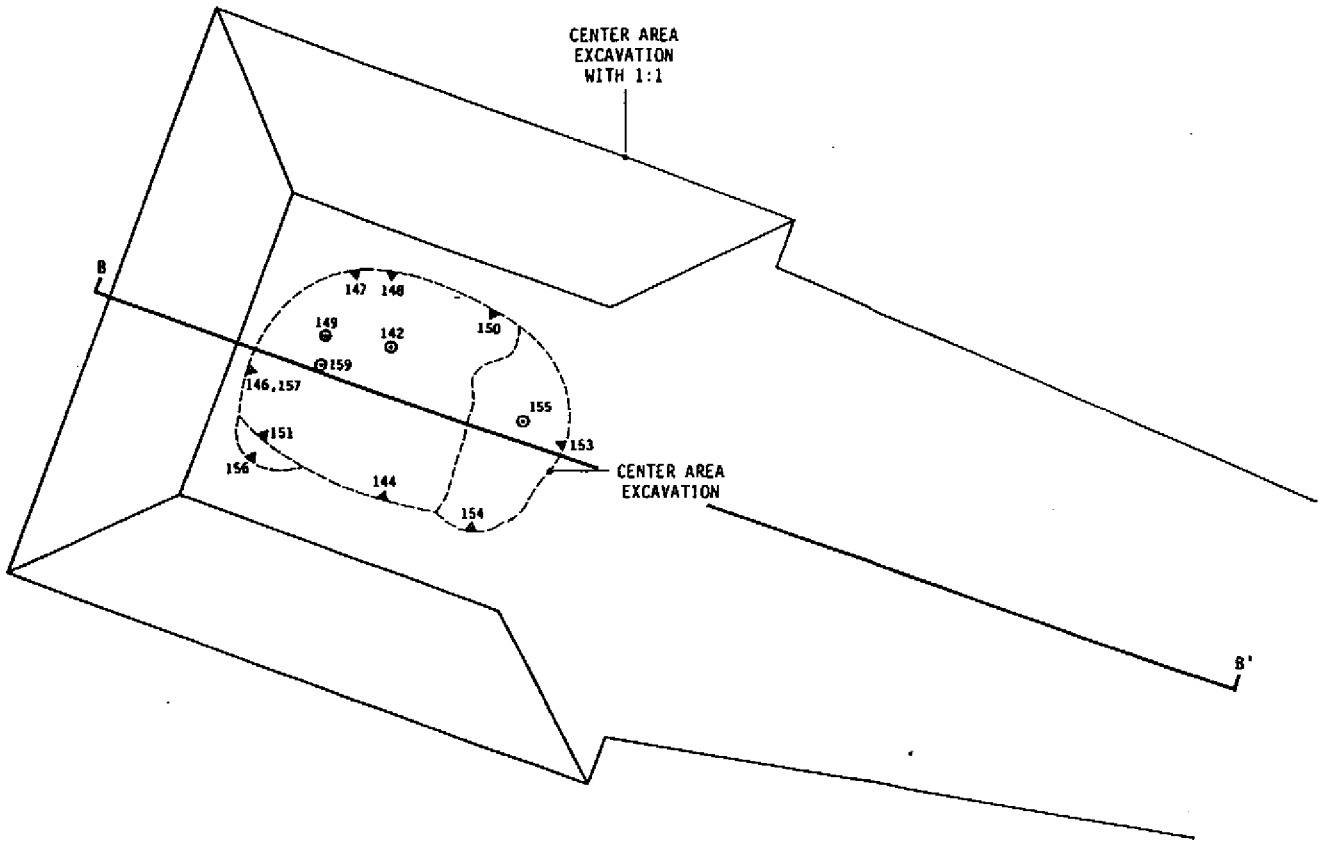


APPLIED GEOSCIENCES INC.
Engineering Geology and Hazardous Materials Consultants

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.

April 1, 1988

RECEIVED
APR 05 1988
APPLIED GEOSCIENCES

WCAS
WEST COAST ANALYTICAL SERVICE, INC.
ANALYTICAL CHEMISTS

APPLIED GEOSCIENCES, INC.
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

RECEIVED
APR 13 1988
APPLIED GEOSCIENCES

WCAS
WEST COAST ANALYTICAL SERVICE, INC.
ANALYTICAL CHEMISTS

APPLIED GEOSCIENCES, INC.
17321 Irvine Blvd.
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.G. Northington, Ph.D.
Technical Director

000089

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

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

RECEIVED
APR 06 1988
APPLIED GEOSCIENCES

WCAS
WEST COAST ANALYTICAL SERVICE, INC.
ANALYTICAL CHEMISTS

APPLIED GEOSCIENCES, INC
17321 Irvine Blvd.
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

000091

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

RECEIVED
APR 0 0 1988
APPLIED GEOSCIENCES

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.

April 15, 1988

RECEIVED
APR 1 8 1988
APPLIED GEOSCIENCES

WCAS
WEST COAST ANALYTICAL SERVICE, INC.
ANALYTICAL CHEMISTS

APPLIED GEOSCIENCES, INC.
17321 Irvine Blvd.
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

000087

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

April 15, 1988

RECEIVED
APR 13 1988
APPLIED GEOSCIENCES

WCAS
WEST COAST ANALYTICAL SERVICE, INC.
ANALYTICAL CHEMISTS

APPLIED GEOSCIENCES, INC.
17321 Irvine Blvd.
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
Shelley Rinker
Analytical Chemist

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

TABLE 1A

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

BORING DESIGNATION	NEAR SURFACE[2] SAMPLE DEPTH	NEAR SURFACE[2] CONC. (ppm)	SHALLOW SUBSURFACE[3] SAMPLE DEPTH	SHALLOW SUBSURFACE[3] 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 8240, "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 8240 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 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 AHB18	Center of site	Possible presents of petroleum hydrocarbons and metals in the subsurface.	418.1 "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

Michael Shelton
Senior Chemist

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

000178

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

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.

WCAS

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.

000192

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.

WCAS

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.

WCAS

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.

WCAS

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	15.	5.

000209

WCAS

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.

WCAS

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.

000218

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.

1000223

WCAS

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.

000229

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.

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.

CHAIN OF CUSTODY RECORD

SHIPMENT NO.: 1

PAGE 1 OF 3

DATE 8/3/87

PROJECT NAME: Armco

PROJECT NO.: AG11142

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°E	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 Printed Name: Paul Roberts Company: Applied Geosciences Inc. Reason: To Lab	Signature: Mary Cederwall Printed Name: Mary Cederwall Company: WCAS #6694	Date: 8/3/87 Time: 9:10 Am
Signature: Printed Name: Company: Reason:	Signature: Printed Name: Company:	Date: / / Time:
Signature: Printed Name: Company: Reason:	Signature: Printed Name: Company:	Date: / / Time:
Signature: Printed Name: Company: Reason:	Signature: Printed Name: Company:	Date: / / 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 1147

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 Printed Name: Paul Roberts Company: Applied Geosciences Inc. Reason: To Lab	Signature: Mary Cedrowski Printed Name: Mary Cedrowski Company: WCAS #6694	Date: 8/3/87 Time: 9:05 AM
Signature: Printed Name: Company: Reason:	Signature: Printed Name: Company:	Date: / / Time:
Signature: Printed Name: Company: Reason:	Signature: Printed Name: Company:	Date: / / Time:
Signature: Printed Name: Company: Reason:	Signature: Printed Name: Company:	Date: / / Time:

Special Shipment / Handling / Storage Requirements:

000248

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

AMPLE GENERATOR Applied Geosciences Inc. DATE 8-3-87
DDRESS 17321 Irvine Ave. PROJECT NO. AG11142
Tustin, CA PROJECT NAME Armco
ELEPHONE (714) 838-8595 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.

SHIPMENT NO.: 1

CHAIN OF CUSTODY RECORD

PAGE 1 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*
AHB7-1	AHB7	SOIL	GRAB	GLASS JAR	40°-50°F	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						(2) 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 Printed Name: Paul Roberts Company: Applied Geosciences Inc Reason: To Lab	Signature: [illegible] Printed Name: [illegible] Company: ~~[illegible]~~ #7034	Date: 9/3/87 Time: 9:30 am
Signature: Printed Name: Company: Reason:	Signature: Printed Name: Company:	Date: / / Time:
Signature: Printed Name: Company: Reason:	Signature: Printed Name: Company:	Date: / / Time:
Signature: Printed Name: Company: Reason:	Signature: Printed Name: Company:	Date: / / Time:

Special Shipment / Handling / Storage Requirements:

* RUSH

(2) - Run 418.1 twice

000250

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

APPLIED GEOSCIENCES INC.

CHAIN OF CUSTODY RECORD

SHIPMENT NO.: 1

PAGE 2 OF 6

DATE 9/2/87

PROJECT NAME: ARCO

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°	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 Printed Name: Paul Roberts Company: Applied Geosciences Inc Reason: To Lab	Signature: Mary C. Printed Name: Mary Company: WCB #7034	Date: 9/3/87 Time: 9:30 a.
Signature: Printed Name: Company: Reason:	Signature: Printed Name: Company:	Date: / / Time:
Signature: Printed Name: Company: Reason:	Signature: Printed Name: Company:	Date: / / Time:
Signature: Printed Name: Company: Reason:	Signature: Printed Name: Company:	Date: / / 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 Printed Name: Paul Roberts Company: Applied Geosciences Inc. Reason: To Lab	Signature: Mary C. Printed Name: [illegible] Company: WLAL #7034	Date: 9/13/87 Time: 9:30 a.m.
Relinquished By: Signature: Printed Name: Company: Reason:	Received By: Signature: Printed Name: Company:	Date: / / Time:
Relinquished By: Signature: Printed Name: Company: Reason:	Received By: Signature: Printed Name: Company:	Date: / / Time:
Relinquished By: Signature: Printed Name: Company: Reason:	Received By: Signature: Printed Name: Company:	Date: / / Time:

Special Shipment / Handling / Storage Requirements:

* RUSH

(2) - Run 418.1 twice

000252

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

APPLIE 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 Printed Name: Paul Roberts Company: Applied Geosciences Inc. Reason: To Lab	Signature: Mary C. Printed Name: Mary C. Company: UCAS #7034	Date: 9/3/87 Time: 9:30 a.m.
Signature: Printed Name: Company: Reason:	Signature: Printed Name: Company:	Date: / / Time:
Signature: Printed Name: Company: Reason:	Signature: Printed Name: Company:	Date: / / Time:
Signature: Printed Name: Company: Reason:	Signature: Printed Name: Company:	Date: / / 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 Printed Name: Paul Roberts Company: Applied Geosciences Inc. Reason: To Lab	Signature: [illegible] Printed Name: [illegible] Intex Company: UPS #7034	Date: 9/3/87 Time: 9:30 am
Relinquished By: Signature: Printed Name: Company: Reason:	Received By: Signature: Printed Name: Company:	Date: / / Time:
Relinquished By: Signature: Printed Name: Company: Reason:	Received By: Signature: Printed Name: Company:	Date: / / Time:
Relinquished By: Signature: Printed Name: Company: Reason:	Received By: Signature: Printed Name: Company:	Date: / / 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 9/12/87

PROJECT NAME: ARMCO

PROJECT NO.: 46I1142

Sample Number	Location	Type of Sample: Material	Type of Sample: Method	Type of Container	Type of Preservation: Temp	Type of Preservation: Chemical	Analysis Required*
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

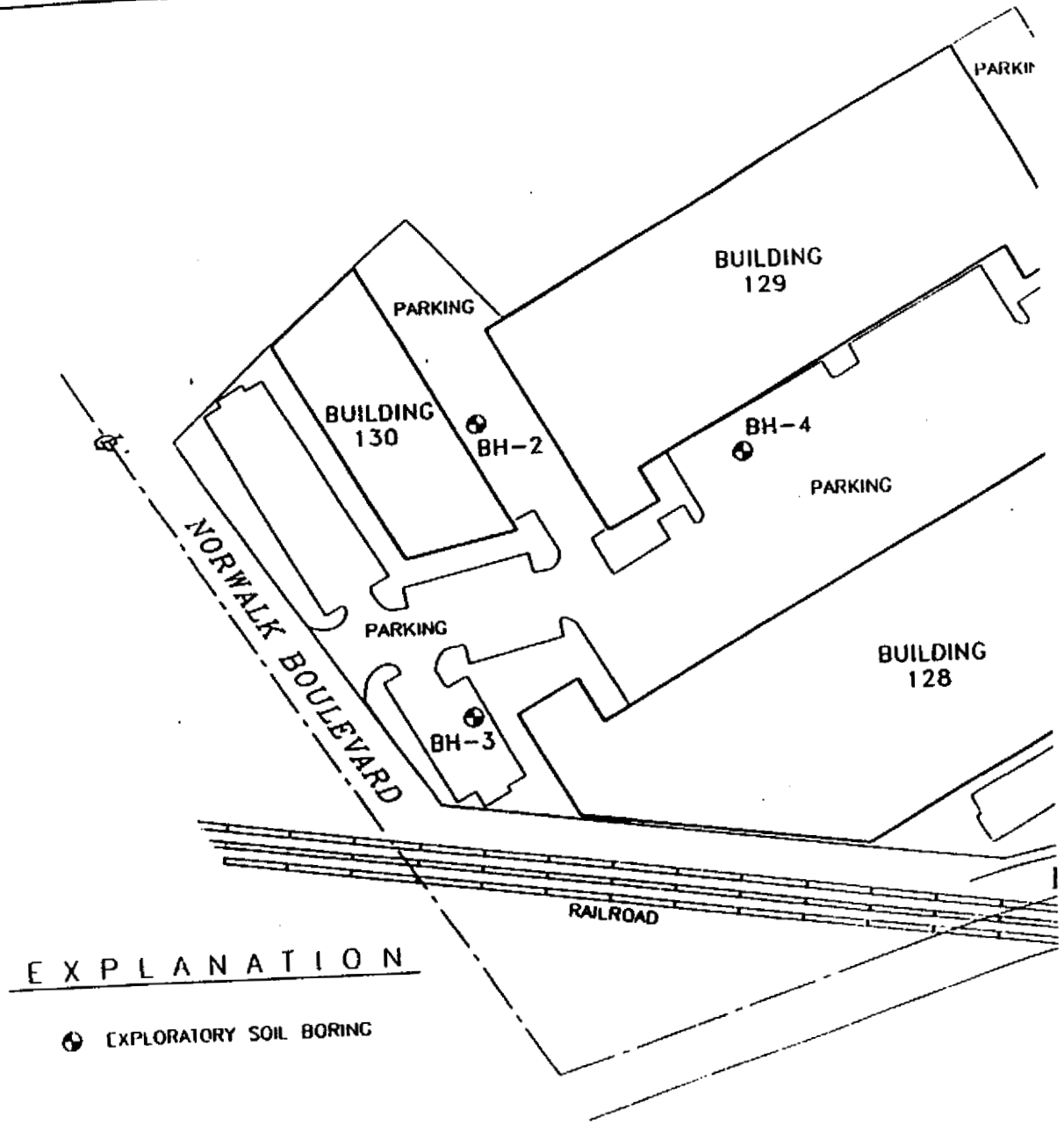
Relinquished By	Received By	Date / Time
Signature: Paul Roberts Printed Name: Paul Roberts Company: Applied Geosciences Inc. Reason: To Lab	Signature: Mary C. Printed Name: [illegible] Company: WLAS #703	Date: 9/3/87 Time: 9 30A
Relinquished By: Signature: Printed Name: Company: Reason:	Received By: Signature: Printed Name: Company:	Date: / / Time:
Relinquished By: Signature: Printed Name: Company: Reason:	Received By: Signature: Printed Name: Company:	Date: / / Time:
Relinquished By: Signature: Printed Name: Company: Reason:	Received By: Signature: Printed Name: Company:	Date: / / Time:

Special Shipment / Handling / Storage Requirements:

(2) - Run 418.1 twice

000255

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



SEACOR

PROJECT:V0004-(

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