March 17, 1997

PHASE II SOIL AND GROUNDWATER INVESTIGATION

3/17/97

807 75th Avenue
Oakland, CA 94621

#1650

Project No. 1515

Prepared for:

Mr. Alan Kanady
Omega Termite Control
807 75th Avenue
Oakland, CA 94621

Prepared by:

All Environmental, Inc.
3364 Mt. Diablo Boulevard
Lafayette, CA 94549
(510) 283-6000

AEI

ALL ENVIRONMENTAL, INC.
Environmental Engineering & Construction

March 17, 1997

Mr. Allen Kanady
Omega Termite Control
807 75th Avenue
Oakland, CA 94621

Subject: **Soil and Groundwater Investigation**
807 75th Avenue
Oakland, CA 94621
Project No. 1449

Dear Mr. Kanady:

The following letter report describes the activities and results of the subsurface investigation conducted by All Environmental, Inc. (AEI) at the above referenced property. The investigation was conducted in response to your request to assess and define the magnitude and extent of petroleum hydrocarbon contamination present at the site.

I Site Description and Background

The subject property currently supports the operation of Omega Termite Control (Figure 1: Site Location Map).

In September 15, 1996, three gasoline underground storage tanks were removed from the property (Ref. - Underground Storage Tank Removal Final Report, October 10, 1996). The tanks consisted of one 500 gallon, one 1,000 gallon and one 8,000 gallon tank. The previous locations of the tanks are shown in Figure 2.

Soil samples were collected from beneath the 500 gallon and 1,000 gallon gasoline tanks and from the three sidewalls of the 8,000 gallon tank excavation. Concentrations of total petroleum hydrocarbons (TPH) as gasoline were present in the soil beneath the 500 gallon UST at concentrations of 4,300 ppm. Minor concentrations (41 ppm) of TPH as gasoline were present beneath the 1,000 gallon tank. Three sidewall samples were collected following the tank removals. Concentrations of TPH as gasoline above 100 ppm were present in the western and northwestern sidewall samples. Refer to Figure 2 for the location of the sidewall samples.

Groundwater was encountered during the excavation of the 8,000 gallon tank. A grab groundwater sample collected from the excavation indicated significant concentrations of petroleum hydrocarbon contaminants within the groundwater.

AEI issued a workplan, dated January 10, 1997, to the Alameda County Health Care Services Agency (ACHCSA). The workplan was designed to define the extent and magnitude of petroleum hydrocarbon contamination in the vicinity of the former tanks. The workplan was subsequently approved by Mr. Barney Chan of the ACHCSA. The following report describes the scope and results of the subsurface investigation.

II Investigative Efforts

All Environmental, Inc. (AEI) performed a subsurface investigation at the property on January 31, 1997. The investigation included the advancement of six soil borings (BH-1 through BH-6) in the vicinity of the

former tanks. The borings were advanced in the locations shown on Figure 2 using a Geoprobe drilling rig. Prior to drilling, permit number 97051 was obtained from the Zone 7 Water Agency (Refer to Attachment A).

Borings BH-2, BH-3, and BH-5 were advanced to a depth of 12 feet below ground surface (bgs), borings BH-1 and BH-6 were advanced to a depth of 16 feet bgs, and boring BH-4 was advanced to a depth of 20 feet bgs. Soil samples were collected at 3, 5, 7 and 10 feet bgs in most of the borings and labeled according to their depth. The soil samples were screened in the field with a portable organic vapor meter (OVM). The soil samples were collected in 7/8 inch acrylic liners which were sealed with Teflon tape and caps and placed on ice in an ice chest for transportation to the laboratory under chain of custody protocol. The near surface sediments encountered during the boring advancement generally contained intermittent gravel and included clay, silty clay, and silty sand. Refer to Attachment B for logs of the boreholes and the depths of the actual samples collected.

Groundwater at the site is expected to equilibrate beneath the site at approximately 11 feet bgs. Once the advancement of the borings was completed, groundwater was measured between 15 and 3.6 feet bgs in the six borings. Since the site is underlain by stratigraphic layers composed primarily of clay, these groundwater measurements may not be indicative of the true groundwater level. Grab groundwater samples were obtained and submitted for analysis from borings BH-1, BH-4, and BH-6. Groundwater samples were collected using a clean stainless steel bailer. Water was poured from the bailer amber liter bottles, 40 ml voa vials and capped so that no head space or visible air bubbles were present within the sample containers. The groundwater samples were labeled and placed in an ice chest for transportation to the laboratory under chain of custody protocol.

The borings were backfilled with cement slurry as per ACHCSA requirements upon collection of the soil and groundwater samples.

The soil and groundwater samples were submitted to McCampbell Analytical, Inc. of Pacheco, California (DOHS Certification Number 1644) for analysis. Soil samples collected at 10 feet bgs from each boring were analyzed for total petroleum hydrocarbons (TPH) as gasoline (EPA method 5030/8015), benzene, toluene, ethyl benzene, total xylenes (BTEX), methyl tertiary butyl ether (MTBE) (EPA method 8020/602) and total lead (AA)(EPA Method 7420).

III Findings

Significant concentrations of petroleum hydrocarbons are present within the soil located approximately 10 feet east of the current open excavation. Analysis of soil samples collected from BH-5 and BH-6 indicate concentrations of 800 mg/Kg and 110 mg/Kg TPH as gasoline, respectively. Significant soil contamination is also present within the soil to the northwest of the excavation. Analysis of soil samples collected from BH-3 indicate a concentration 280 mg/Kg TPH as gasoline present at a distance of approximately 10 feet northwest of the excavation. Refer to Table 1 for a summary of the soil sample analytical results.

Groundwater samples collected from borings BH-1, BH-4, and BH-6 contained significant concentrations of petroleum hydrocarbons, indicating that the groundwater beneath the site is impacted. Analysis indicated maximum concentrations of 27,000 µg/L TPH as gasoline and 5,000 µg/L benzene. Refer to Table 2 for a summary of the groundwater analytical data.

The laboratory analytical results and chain of custody documents are included as Attachment C.

IV Recommendations/Additional Investigations

Analytical results from the subsurface investigation revealed significant levels of gasoline present within soil to the east and northwest of the open excavation. AEI recommends additional excavation of soil from these areas. However, only a limited amount of soil can be removed from the north or south of the excavation as the removal of additional soil could potentially undermine the existing buildings.

Due to the significant levels of contamination present in the groundwater beneath the site, further investigation into the impact on groundwater will probably be required by the ACHCSA. The investigation should include the installation of three groundwater monitoring wells to determine groundwater gradient beneath the site and to evaluate the petroleum hydrocarbon plume.

If you have any questions regarding our investigation, please do not hesitate to contact Bryan Campbell at (510) 283-6000.

Sincerely,
All Environmental, Inc.

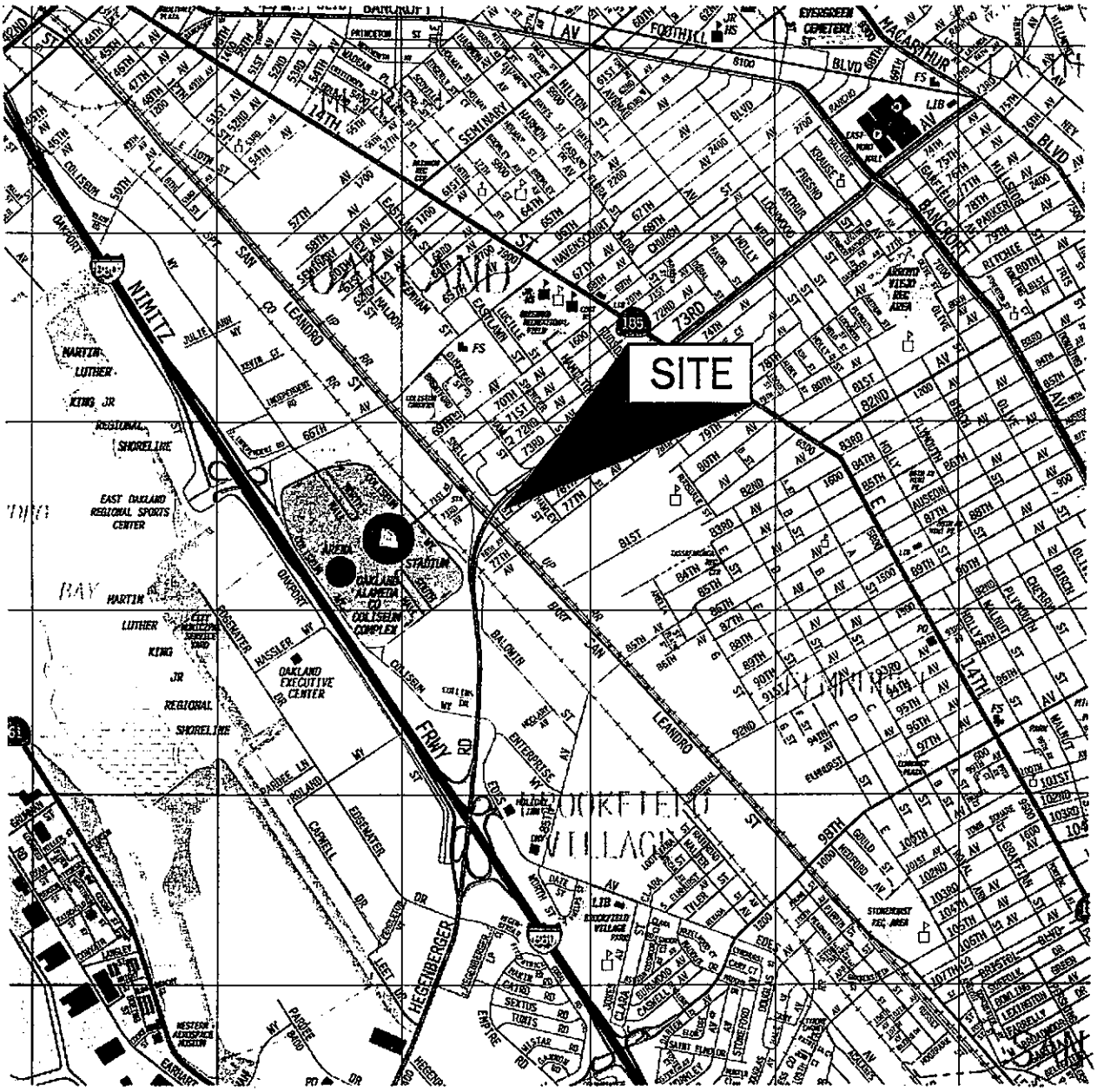
Bryan Campbell
Project Geologist

Joseph P. Derhake, PE, CAC
Senior Author

REGISTERED PROFESSIONAL ENGINEER
JOSEPH P. DERHAKE
C055476
Exp. 12/31/98
CIVIL
STATE OF CALIFORNIA

cc: Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

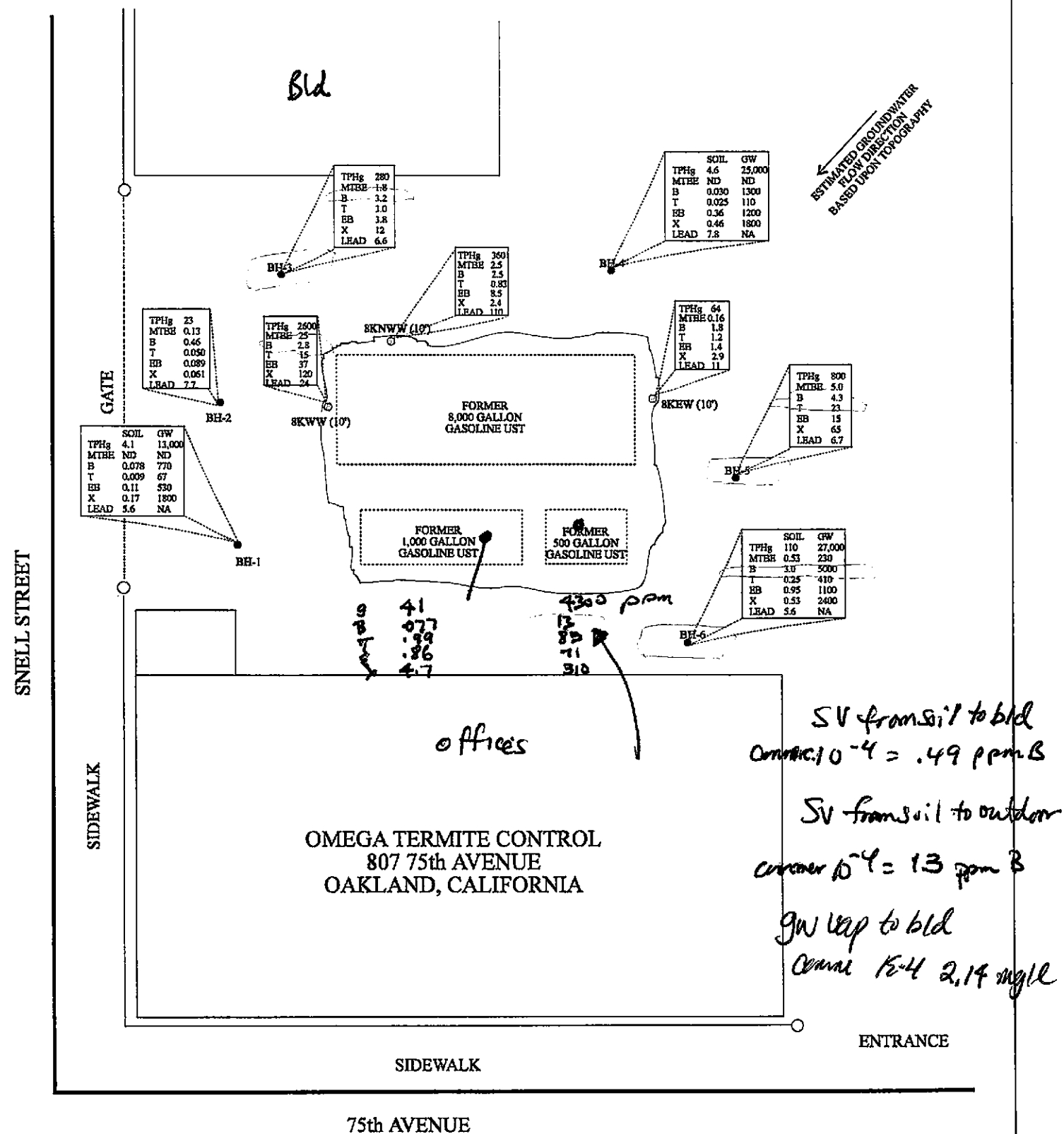
Attachment A
Attachment B
Attachment C



N

FROM:
THOMAS BROS. MAPS
1997

ALL ENVIRONMENTAL, INC. 3364 MT. DIABLO BOULEVARD, LAFAYETTE		
SCALE: 1 IN = 2400 FT	APPROVED BY:	DRAWN BY: J.S. ANDERSON
DATE: 10 OCTOBER 96		REVISED: J.S. ANDERSON
SITE LOCATION MAP		
807 75th AVENUE OAKLAND, CALIFORNIA		DRAWING NUMBER: FIGURE 1



N

← TO SAN LEANDRO AVENUE

⊙ SIDEWALL SOIL SAMPLES COLLECTED 9/15 AND 9/16/97

● SOIL BORING SAMPLES COLLECTED 1/13/97

ALL ANALYSES ARE SOIL UNLESS OTHERWISE NOTED

SOIL SAMPLES ARE LISTED AS MG/KG AND GROUNDWATER SAMPLES ARE LISTED AS UG/L

ALL ENVIRONMENTAL, INC.
3364 MT. DIABLO BOULEVARD, LAFAYETTE

SCALE: 1 IN = 10 FT.	APPROVED BY:	DRAWN BY:
DATE:		REVISED:

SAMPLE LOCATION MAP

807 75th AVENUE
OAKLAND, CALIFORNIA

DRAWING NUMBER:
FIGURE 2

TABLE 1 - Soil Sample Analytical Data

Well	Depth	TPH-G (mg/Kg)	MTBE (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl Benzene (mg/Kg)	Total Xylenes (mg/Kg)	Total Lead (mg/Kg)
BH-1	10 feet	4.1	<5.0	0.078	0.009	0.11	0.17	5.6
BH-2	10 feet	23	0.13	0.46	0.050	0.089	0.061	7.7
BH-3	10 feet	280	1.8	3.2	3.0	3.8	12	6.6
BH-4	10 feet	4.6	<5.0	0.030	0.025	0.36	0.46	7.8
BH-5	10 feet	800	5.0	4.3	23	15	65	6.7
BH-6	10 feet	110	0.53	3.0	0.25	0.95	0.53	5.6

mg/Kg = Parts Per Million

TABLE 2 - Groundwater Sample Analytical Data

Well	TPH-G (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)
BH-1	13,000	<60	770	67	530	1800
BH-4	25,000	<50	1300	110	1200	2400
BH-6	27,000	230	5000	410	1100	2400

µg/L = Parts Per Billion

ATTACHMENT A

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT
807 75th Avenue
Oakland, CA 94621

CLIENT
Name Omega Termite Control
Address 807 75 Avenue Voice (510) 502-1333
City Oakland Zip 94621

APPLICANT
Name All Environmental, Inc.
Bryan Campbell Fax (510) 283-6121
Address 3364 Mt. Diablo B Voice (510) 283-6000
City Lafayette Zip 94549

TYPE OF PROJECT
Well Construction
Cathodic Protection ___
Water Supply ___
Monitoring ___
Geotechnical Investigation
General ___
Contamination X
Well Destruction ___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger ___
Cable ___ Other Geoprobe

DRILLER'S LICENSE NO. 485165

WELL PROJECTS
Drill Hole Diameter ___ in. Maximum
Casing Diameter ___ in. Depth ___ ft.
Surface Seal Depth ___ ft. Number ___

GEOTECHNICAL PROJECTS
Number of Borings 6 Maximum
Hole Diameter 3 in. Depth 12 ft.

ESTIMATED STARTING DATE 1/23/97
ESTIMATED COMPLETION DATE 1/23/97

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ Date 1/20/97

FOR OFFICE USE

PERMIT NUMBER 97051
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 23 Jan 97
Wyman Hong

91992

TOTAL P.02

ATTACHMENT B

PROJECT: KANADY - Project No. 1515		**LOG OF BOREHOLE:** BH-1	
BORING LOC.: WEST OF EXCAVATION		ELEVATION, TOC: --	
DRILLING CONTRACTOR: GREGG DRILLING		START DATE: 1/31/97	END DATE: 1/31/97
DRILLING METHOD: DIRECT PUSH		TOTAL DEPTH: 16.0'	
DRILLING EQUIPMENT: GEOPROBE DRILL RIG		DEPTH TO WATER: 15.0'	
SAMPLING METHOD: 2" DRIVE SAMPLER		LOGGED BY: B. CAMPBELL	
HAMMER WEIGHT and FALL: N/A		RESPONSIBLE PROFESSIONAL: JPD	

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	COMMENTS
0	CL	0.0 - 1.0; Clay; Dark Gray.				
1	CL	1.0 - 3.0; Silty Clay; Light Olive Brown.				
2						
3	SC	3.0 - 6.0; Silty, Gravelly, Sand; Light Olive Brown; Gravel up to 1/8"; w/ Grayish Olive Mottling.	3'			No Odor. 10 ppm
4						
5			5'			Slight Hydrocarbon Odor. 20 ppm
6	CL	6.0 - 8.0; Clay; Dark Gray.				
7			7'			No Odor. 60 ppm
8	CL	8.0 - 16.0; Silty, Gravelly, Clay; Light Olive Brown; Gravel up to 1/8"; w/ Grayish Olive Mottling.				
9						
10			10'			Slight Hydrocarbon Odor. 20 ppm
11						
12						
13						
14						

PROJECT: KANADY - Project No. 1515			LOG OF BOREHOLE: BH-1				
DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES				COMMENTS
			SAMPLE NO.	INTERVAL	BLOW COUNTS		
15							▽
16		Borehole terminated at 16.0 feet.					
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

PROJECT:	KANADY - Project No. 1515	**LOG OF BOREHOLE:**	BH-2
BORING LOC.:	WEST OF EXCAVATION	ELEVATION, TOC:	--
DRILLING CONTRACTOR:	GREGG DRILLING	START DATE: 1/31/97	END DATE: 1/31/97
DRILLING METHOD:	DIRECT PUSH	TOTAL DEPTH: 12.0'	
DRILLING EQUIPMENT:	GEOPROBE DRILL RIG	DEPTH TO WATER: NA	
SAMPLING METHOD:	2" DRIVE SAMPLER	LOGGED BY: B. CAMPBELL	
HAMMER WEIGHT and FALL:	N/A	RESPONSIBLE PROFESSIONAL:	JPD

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	COMMENTS
0	CL	0.0 - 1.0; Clay; Dark Gray.				
1	CL	1.0 - 2.0; Silty Clay; Light Olive Brown.				
2	SC	2.0 - 5.5; Silty, Gravelly, Sand; Light Olive Brown; Gravel up to 1/8"; w/ Grayish Olive Mottling.				
3			3'			Slight Hydrocarbon Odor. 50 ppm
4						
5			5'			Slight Hydrocarbon Odor. 30 ppm
6	CL	5.5 - 8.0; Clay; Dark Gray.				
7			7'			Slight Hydrocarbon Odor. 30 ppm
8	CL	5.5 - 12.0; Silty, Gravelly, Clay; Light Olive Brown; Gravel up to 1/8"; w/ Grayish Olive Mottling.				
9						
10			10'			Strong Hydrocarbon Odor. 400 ppm
11						
12		Borehole terminated at 12.0 feet.				
13						
14						

PROJECT: KANADY - Project No. 1515		**LOG OF BOREHOLE:** BH-3	
BORING LOC.: WEST OF EXCAVATION		ELEVATION, TOC: --	
DRILLING CONTRACTOR: GREGG DRILLING		START DATE: 1/31/97	END DATE: 1/31/97
DRILLING METHOD: DIRECT PUSH		TOTAL DEPTH: 12.0'	
DRILLING EQUIPMENT: GEOPROBE DRILL RIG		DEPTH TO WATER: 4.5'	
SAMPLING METHOD: 2" DRIVE SAMPLER		**LOGGED BY:** B. CAMPBELL	
HAMMER WEIGHT and FALL: N/A		RESPONSIBLE PROFESSIONAL: JPD	

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	COMMENTS
1	CL	0.0 - 1.5; Clay; Dark Gray.				
2	SC	1.5 - 4.0; Silty, Gravelly, Sand; Light Olive Brown; Gravel up to 1/8"; w/ Grayish Olive Mottling.				
3			3'			No Sample.
4	CL	4.0 - 8.0; Clay; Dark Gray.				▽
5			5'			Slight Hydrocarbon Odor. 10 ppm
6						
7			7'			Some Hydrocarbon Odor. 100 ppm
8	CL	8.0 - 12.0; Sandy, Gravelly, Clay; Light Olive Brown Gravel up to 1/8"; w/ Grayish Olive Mottling.				
9						
10			10'			Strong Hydrocarbon Odor. 400 ppm
11						
12		Borehole terminated at 12.0 feet.				
13						
14						

PROJECT: KANADY - Project No. 1515		**LOG OF BOREHOLE:** BH-4	
BORING LOC.: WEST OF EXCAVATION		ELEVATION, TOC: --	
DRILLING CONTRACTOR: GREGG DRILLING		START DATE: 1/31/97	END DATE: 1/31/97
DRILLING METHOD: DIRECT PUSH		TOTAL DEPTH: 20.0'	
DRILLING EQUIPMENT: GEOPROBE DRILL RIG		DEPTH TO WATER: 4.9'	
SAMPLING METHOD: 2" DRIVE SAMPLER		LOGGED BY: B. CAMPBELL	
HAMMER WEIGHT and FALL: N/A		RESPONSIBLE PROFESSIONAL: JPD	

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	COMMENTS
0	CL	0.0 - 7.0; Clay; Dark Gray.				
4			4'			Slight Hydrocarbon Odor. 40 ppm
5			5'			Slight Hydrocarbon Odor. 50 ppm
6		6.0 - 8.0; Clay; Dark Gray.				
7	CL	7.0 - 9.5; Silty, Gravelly, Clay; Light Olive Brown; Gravel up to 1/8"; w/ Grayish Olive Mottling.				
8			8'			Slight Hydrocarbon Odor. 60 ppm
9						▽
10	CL	9.5 - 11.0; Clay; Dark Gray.	10'			Some Hydrocarbon Odor.
11	CL	11.0 - 16.0; Silty, Gravelly, Clay; Light Olive Brown; Gravel up to 1/8"; w/ Grayish Olive Mottling.				
12			12'			Strong Hydrocarbon Odor. 200 ppm
13						
14						

PROJECT: KANADY - Project No. 1515			LOG OF BOREHOLE: BH-4				
DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES				COMMENTS
			SAMPLE NO.	INTERVAL	BLOW COUNTS		
15							
16		16.0 - 20.0; Sandy, Clay; Light Olive Brown; w/ Grayish Olive Mottling.	16				Strong Hydrocarbon Odor. 200 ppm
17							
18							
19							
20		Borehole terminated at 20.0 feet.					
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

PROJECT: KANADY - Project No. 1515		**LOG OF BOREHOLE:** BH-5	
BORING LOC.: WEST OF EXCAVATION		ELEVATION, TOC: –	
DRILLING CONTRACTOR: GREGG DRILLING		START DATE: 1/31/97	END DATE: 1/31/97
DRILLING METHOD: DIRECT PUSH		TOTAL DEPTH: 12.0'	
DRILLING EQUIPMENT: GEOPROBE DRILL RIG		DEPTH TO WATER: 3.6'	
SAMPLING METHOD: 2" DRIVE SAMPLER		LOGGED BY: B. CAMPBELL	
HAMMER WEIGHT and FALL: N/A		RESPONSIBLE PROFESSIONAL: JPD	

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	COMMENTS
0	CL	0.0 - 1.0; Clay; Dark Gray.				
1	CL	1.0 - 3.0; Clay; Greenish Gray.				
2						
3	SC	3.0 - 4.0; Silty, Gravelly, Sand; Light Olive Brown; Gravel up to 1/8"; w/ Grayish Olive Mottling.	3'			Some Hydrocarbon Odor. 300 ppm
4	CL	4.0 - 6.0; Silty, Gravelly, Clay; Light Olive Brown; Gravel up to 1/8"; w/ Grayish Olive Mottling.				
5			5'			Some Hydrocarbon Odor. 200 ppm
6	CL	6.0 - 8.5; Clay; Dark Gray.				
7			7'			Strong Hydrocarbon Odor. 200 ppm
8						
9	CL	8.5 - 11.0; Silty, Gravelly, Clay; Grayish Olive; Gravel up to 1/8"; w/ Grayish Olive Mottling.				
10			10'			Strong Hydrocarbon Odor. >1000 ppm
11	CL	11.0 - 12.0; Sandy, Gravelly, Clay; Light Olive Brown Gravel up to 1/8"; w/ Grayish Olive Mottling.				
12		Borehole terminated at 12.0 feet.				
13						
14						

PROJECT:	KANADY - Project No. 1515	**LOG OF BOREHOLE:**	BH-6
BORING LOC.:	WEST OF EXCAVATION	ELEVATION, TOC:	--
DRILLING CONTRACTOR:	GREGG DRILLING	START DATE: 1/31/97	END DATE: 1/31/97
DRILLING METHOD:	DIRECT PUSH	TOTAL DEPTH: 16.0'	
DRILLING EQUIPMENT:	GEOPROBE DRILL RIG	DEPTH TO WATER: 9.2'	
SAMPLING METHOD:	2" DRIVE SAMPLER	LOGGED BY: B. CAMPBELL	
HAMMER WEIGHT and FALL:	N/A	RESPONSIBLE PROFESSIONAL:	JPD

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES: SAMPLE NO.	SAMPLES: INTERVAL	SAMPLES: BLOW COUNTS	COMMENTS
0	CL	0.0 - 1.0; Clay; Dark Gray.				
1	CL	1.0 - 2.5; Clay; Greenish Gray.				
2						
3	SC	2.5 - 4.0; Silty, Gravelly, Sand; Light Olive Brown; Gravel up to 1/8"; w/ Grayish Olive Mottling.	3'			Slight Hydrocarbon Odor. 20 ppm
4	CL	4.0 - 6.0; Silty, Gravelly, Clay; Light Olive Brown; Gravel up to 1/8"; w/ Grayish Olive Mottling.				
5			5'			Strong Hydrocarbon Odor. >1000 ppm
6	CL	6.0 - 8.0; Clay; Dark Gray.				
7			7'			Strong Hydrocarbon Odor. 200 ppm
8	CL	8.0 - 10.5; Sandy, Gravelly, Clay; Light Olive Brown; Gravel up to 1/8"; w/ Grayish Olive Mottling.				
9						▽
10			10'			Slight Hydrocarbon Odor. 20 ppm
11	CL	10.5 - 16.0; Sandy, Gravelly, Clay; Grayish Olive; Gravel up to 1/8"; w/ Grayish Olive Mottling.				
12						
13						
14						

PROJECT: KANADY - Project No. 1515			LOG OF BOREHOLE: BH-6				
DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES				COMMENTS
				SAMPLE NO.	INTERVAL	BLOW COUNTS	
15							
16		Borehole terminated at 16.0 feet.					
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
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29							
30							
31							

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: # 1515; Kanady	Date Sampled: 01/31/97
		Date Received: 01/31/97
	Client Contact: Bryan Campbell	Date Extracted: 01/31/97
	Client P.O:	Date Analyzed: 01/31/97

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	% Rec. Surrogate
73382	BH-4, 10'	S	4.6,a	ND	0.030	0.025	0.36	0.46	100
73388	BH-5, 10'	S	800,a	5.0	4.3	23	15	65	119#
73392	BH-6, 10'	S	110,a	0.53	3.0	0.25	0.95	0.53	103
73395	BH-3, 10'	S	280,a	1.8	3.2	3.0	3.8	12	111#
73399	BH-2, 10'	S	23,b,j	0.13	0.046	0.050	0.089	0.061	---#
73403	BH-1, 10'	S	4.1,a	ND	0.078	0.009	0.11	0.17	103
73404	BH-1	W	13,000,a,h	ND< 60	770	67	530	1800	103
73406	BH-4	W	25,000,a	ND< 150	1300	110	1200	2400	102
73408	BH-6	W	27,000,a,h	230	5000	410	1100	2400	102
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, soil and sludge samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: # 1515; Kanady	Date Sampled: 01/31/97
		Date Received: 01/31/97
	Client Contact: Bryan Campbell	Date Extracted: 01/31/97
	Client P.O:	Date Analyzed: 02/03/97

Lead*

EPA analytical methods 6010/200.7, 239.2+

Lab ID	Client ID	Matrix	Extraction°	Lead*	% Recovery Surrogate
73382	BH-4, 10'	S	TTLC	7.8	104
73388	BH-5, 10'	S	TTLC	6.7	102
73392	BH-6, 10'	S	TTLC	5.6	97
73395	BH-3, 10'	S	TTLC	6.6	101
73399	BH-2, 10'	S	TTLC	7.7	100
73403	BH-1, 10'	S	TTLC	5.6	100
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		S	TTLC	3.0 mg/kg	
		W	TTLC	0.005 mg/L	
		—	STLC,TCLP	0.2 mg/L	

* soil and sludge samples are reported in mg/kg, and water samples and all STLC & TCLP extracts in mg/L

+ Lead is analysed using EPA method 6010 (ICP)for soils, sludges, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples

° EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC from CA Title 22

surrogate diluted out of range; N/A means surrogate not applicable to this analysis

& reporting limit raised due matrix interference

i) liquid sample that contains greater than ~ 2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
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Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 01/31/97 Matrix: Soil

Analyte	Concentration (mg/kg) Sample (#68846)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.000	2.170	1.960	2.03	107	97	10.2
Benzene	0.000	0.200	0.184	0.2	100	92	8.3
Toluene	0.000	0.210	0.192	0.2	105	96	9.0
Ethylbenzene	0.000	0.204	0.188	0.2	102	94	8.2
Xylenes	0.000	0.648	0.562	0.6	108	94	14.2
TPH (diesel)	0	345	337	300	115	112	2.2
TRPH (oil and grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 01/30/97-01/31/97 Matrix: Water

Analyte	Concentration (mg/L) Sample (#73220)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	95.0	91.8	100.0	95.0	91.8	3.4
Benzene	0.0	9.2	8.7	10.0	92.0	87.0	5.6
Toluene	0.0	9.2	8.9	10.0	92.0	89.0	3.3
Ethyl Benzene	0.0	9.3	9.0	10.0	93.0	90.0	3.3
Xylenes	0.0	27.9	26.7	30.0	93.0	89.0	4.4
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
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Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR ICP and/or AA METALS

Date: 02/03/97 Matrix: Soil

Extraction: TTLC

Analyte	Concentration (mg/kg, mg/L, ug/wip)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
Total Lead	0.0	4.17	4.03	5.0	83	81	3.4
Total Cadmium	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Chromium	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Nickel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Zinc	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Copper	N/A	N/A	N/A	N/A	N/A	N/A	N/A
STLC Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

Chain of Custody

ALL ENVIRONMENTAL, INC.
3364 Mt. Diablo Boulevard
Lafayette, CA 94549
(510) 283-6000 FAX: (510) 283-6121

ICE/T° ✓ | GOOD CONDITION ✓ | HEAD SPACE ABSENT ✓

PRESERVATIVE APPROPRIATE ✓ | CONTAINERS ✓

VOAS	O&G	METALS	OTHER

DATE: 1/31/97 PAGE: 1 OF: 3

AEI PROJECT MANAGER: Bryan Campbell
PROJECT NAME: Kamady
PROJECT NUMBER: 1515
SIGNATURE:
TOTAL # OF CONTAINERS:
RECD. GOOD COND./COLD:

ANALYSIS REQUEST

SAMPLE I.D.	DATE	TIME	MATRIX	TPH-Gasoline (EPA 5030.8015)	TPH-Gasoline (EPA 5030.8015) w/ BTEX and MTBE (EPA 602.8020)	TPH-Diesel (EPA 3510/3550.8015)	PURGEABLE AROMATICS BTEX and MTBE (EPA 602.8020)	TOTAL OIL & GREASE (EPA 5520 E&F)	TOTAL LEAD (AA) (EPA 7420)	VOLATILE ORGANIC COMPOUNDS (EPA 8240)	LUFT Metals (EPA 7130,7190,7420,7520,7950)	STLC CAM 17 (EPA 1310/6010)	RCI REACTIVITY, CORROSIVITY, IGNITABILITY (Title 22, CCR 66261.21-3)		
BH-4, 4'	1/31	9:37am	Soil												73379
BH-4, 5'		9:37am												HOLD	73380
BH-4, 8'		9:45am													73381
BH-4, 10'		9:45am			X				X						73382
BH-4, 12'		9:50am													73383
BH-4, 16'		10:05am													73384
BH-5, 3'		10:30am												HOLD	73385
BH-5, 5'		10:40am													73386
BH-5, 7'		10:40am													73387
BH-5, 10'		10:45am			X				X						73388
BH-6, 3'		11:10am													73389
BH-6, 5'		11:15am												HOLD	73390
BH-6, 7'		11:19am													73391
BH-6, 10'	↓	11:25am	↓		X				X						73392

ANALYTICAL LAB: McCampbell
ADDRESS:
PHONE: ( ) - FAX: ( ) -

INSTRUCTIONS/COMMENTS:

RELINQUISHED BY: 1	RECEIVED BY: 1	RELINQUISHED BY: 2	RECEIVED BY: 2
Signature	Signature	Signature	Signature
Bryan Campbell	Angela Rydelius		
Printed Name	Printed Name	Printed Name	Printed Name
AEI	MAI		
Company	Company	Company	Company
Time 6:25p Date 1/31/97	Time 6:25pm Date 1/31/97	Time Date	Time Date

Chain of Custody

ALL ENVIRONMENTAL, INC.
3364 Mt. Diablo Boulevard
Lafayette, CA 94549
(510) 283-6000 FAX: (510) 283-6121

ICE/T° ✓ | COOD CONDITION ✓ | HEAD SPACE ABSENT ✓
PRESERVATIVE APPROPRIATE CONTAINERS ✓

VOAS	O&G	METALS	OTHER

DATE: 1/31/97 PAGE: 2 OF: 3

AEI PROJECT MANAGER: Bryan Campbell
PROJECT NAME: Kamady
PROJECT NUMBER: 1515
SIGNATURE:
TOTAL # OF CONTAINERS:
RECD. GOOD COND./COLD:

ANALYSIS REQUEST

SAMPLE I.D.	DATE	TIME	MATRIX	TPH-Gasoline (EPA 5030.8015)	TPH-Gasoline (EPA 5030.8015) w/ BTEX and MTBE (EPA 602.8020)	TPH-Diesel (EPA 3510/3550.8015)	PURGEABLE AROMATICS BTEX and MTBE (EPA 602.8020)	TOTAL OIL & GREASE (EPA 5520 E&F)	TOTAL LEAD (AA) (EPA 7420)	VOLATILE ORGANIC COMPOUNDS (EPA 8240)	LUFT Metals (EPA 7130,7190,7420,7520,7950)	STLC CAM 17 (EPA 1310/6010)	RCI REACTIVITY, CORROSIVITY, IGNITABILITY (Title 22, CCR 66261.21-3)		CONTAINERS
BH-3, 5'	1/31	12:10pm	Soil												H 73393
BH-3, 7'		12:10pm													H 73394
BH-3, 10'		12:20pm			X				X						73395
BH-2, 3'		12:30pm													H 73396
BH-2 5'		12:40pm												HOLD	H 73397
BH-2, 7'		12:40pm													H 73398
BH-2, 10'		12:45pm			X				X						73399
BH-1, 3'		12:50pm													73400
BH-1, 5'		1:00pm													H 73401
BH-1, 7'		1:05pm												HOLD	H 73402
BH-1, 10'	↓	1:05pm	↓		X				X						73403

ANALYTICAL LAB: MC Campbell
ADDRESS:
PHONE: ( ) - FAX: ( ) -

INSTRUCTIONS/COMMENTS:

RELINQUISHED BY: 1	RECEIVED BY: 1	RELINQUISHED BY: 2	RECEIVED BY: 2
Signature	Signature	Signature	Signature
Bryan Campbell	Augda Rydelius		
Printed Name	Printed Name	Printed Name	Printed Name
AEI	MAI		
Company	Company	Company	Company
Time 6:25pm Date 1/31/97	Time 6:25pm Date 1/31/97	Time Date	Time Date

ALL ENVIRONMENTAL, INC.
3364 Mt. Diablo Boulevard
Lafayette, CA 94549
(510) 283-6000 FAX: (510) 283-6121

Chain of Custody

ICE/T° ✓ GOOD CONDITION ✓ HEAD SPACE ABSENT ✓ PRESERVATIVE ✓ APPROPRIATE CONTAINERS ✓ VOAS ___ O&G ___ METALS ___ OTHER ___

DATE: 1/31/97 PAGE: 3 OF: 3

AEI PROJECT MANAGER: Bryan Campbell
PROJECT NAME: Kanady
PROJECT NUMBER: 1515
SIGNATURE: [signature]
TOTAL # OF CONTAINERS: 10
RECD. GOOD COND./COLD: ___

ANALYSIS REQUEST

SAMPLE I.D.	DATE	TIME	MATRIX	TPH-Gasoline (EPA 5030/8015)	TPH-Gasoline (EPA 5030/8015) w/ BTEX and MTBE (EPA 602/8020)	TPH-Diesel (EPA 9510/3550/8015)	PURGEABLE AROMATICS BTEX and MTBE (EPA 602/8020)	TOTAL OIL & GREASE (EPA 5520 E&F)	TOTAL LEAD (AA) (EPA 7420)	VOLATILE ORGANIC COMPOUNDS (EPA 8240)	LUFT Metals (EPA 7190,7190,7480,7580,7060)	STLC CAM 17 (EPA 1310/6010)	RCI REACTIVITY, CORROSIVITY, IGNITABILITY (Title 22, CCR 66681, 21-3)				NUMBER OF CONTAINERS
BH-1	1/31		water		X												2
BH-3														HOLD			2
(4) BH-4					X												2
BH-5														HOLD			2
(4) BH-6					X												2

73404
73405
73406
73407
73408

ANALYTICAL LAB: MCCampbell
ADDRESS: ___
PHONE: ( ) ___ FAX: ( ) ___

INSTRUCTIONS/COMMENTS: ___

RELINQUISHED BY: 1	RECEIVED BY: 1	RELINQUISHED BY: 2	RECEIVED BY: 2
Signature: [signature]	Signature: [signature]	Signature:	Signature:
Printed Name: Bryan Campbell	Printed Name: Angela Rydelius	Printed Name:	Printed Name:
Company: AEI	Company: MAI	Company:	Company:
Time: 6:25 Date: 1/31/97	Time: 6:25 Date: 1/31/97	Time: Date:	Time: Date: