

June 29, 1995

Mr. Ron Sykora  
Bohannon Development  
60 Hillsdale Mall  
San Mateo, California 94403

**Subject: Preliminary Characterization Report  
Former Gasoline Service Station  
Property at the Northeast Corner of  
Paseo Grande and Paseo Largavista  
San Lorenzo, California**

Dear Mr. Sykora:

This letter presents the results obtained during preliminary characterization work conducted at the site referenced above (the Site) (Figures 1 and 2).

### **Background**

In anticipation of property redevelopment, initial investigation activities were conducted in March 1995 at the Site to determine if underground facilities remain from past Site use as a gasoline service station. The work was conducted by Twining Laboratories, Inc. (TLI), as documented in their letter report dated April 15, 1995. The work conducted included a magnetometer survey followed by an exploratory excavation. In summary, the work conducted has identified former gasoline service station facilities which include what appears to be the former tank pit, approximately 110 feet of fuel delivery system piping, and what appears to have been a grease sump and/or hydraulic lift pit in an area which may have been the former service garage (Figure 2). Field evidence and one soil sample indicated the potential for soil contamination along the piping runs, around the grease sump, and around the inferred location of the former tank pit. Characterization of the magnitude and extent of potential soil contamination was not conducted. The excavations at the Site were left open, and the excavated soil and debris stockpiled.

### **Scope of Work**

The main focus of this investigation was to remove the piping and the grease trap (sump) and to provide preliminary soil characterization. The following work steps were conducted as part of this investigation.

#### **Task 1 - Preparation of a Work Plan and Site Safety Plan**

A Work Plan detailing the proposed scope of work was prepared and submitted to the Alameda County Environmental Health Department on May 24, 1995.

A Site-specific Health and Safety Plan was prepared in accordance with 40 CFR 1910.120.

Mr. Ron Sykora  
Bohannon Development  
June 29, 1995  
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### **Task 2 - Debris Removal**

The debris removal was conducted by Bay Area Tank Removal, Incorporated, a licensed California Hazardous Substances Removal and Remedial Actions Contractor License number 672323.

The contents of the grease sump were removed and placed in drums pending characterization for disposal. The exposed piping and sump were excavated using a backhoe and were removed from the Site. The piping and sump were taken to Circosta Iron and Metal, a permitted recycler in San Francisco, U.S. Environmental Protection Agency (EPA) I.D. number CAD983650797. The concrete and asphalt debris were disposed of at a Class III disposal facility.

The southern end of the eastern pipeline trench was expanded in order to remove all of the piping. A 4-inch diameter cast iron pipe was observed in the eastern pipeline excavation and may have connected to the former sump. The excavated soils were combined with the existing stockpile.

### **Task 3 - Soil Sampling**

Following removal of piping and the sump, soil samples were collected from along the product line trenches at 20-foot intervals (five samples), around the grease sump (three samples), and around the former tank pit (five samples). The soil samples were collected utilizing a backhoe and/or a hand-driven soil sampler. Soil samples were collected in clean brass sampling tubes, capped, taped, labeled, placed on ice, and transported under chain-of-custody manifest to a state certified laboratory for analysis.

All samples were analyzed for a petroleum hydrocarbon scan, benzene, toluene, ethylbenzene, and xylenes (BTEX) by modified EPA methods 8015/8020 and for total lead by EPA method 6010. Additionally, the three samples collected from around the grease sump were analyzed for total petroleum hydrocarbons (TPH) by EPA method 5520, for volatile organics by EPA Method 8010, and for metals cadmium, chromium, lead, zinc, and nickel. One soil sample collected from under the former grease sump was also analyzed for semi-volatile organics by EPA Method 8270. The original work plan stated that the sump samples would be analyzed for total oil and grease (TOG) by EPA Methods 5520 D & F; however, the laboratory analyzed the samples using EPA Methods 5520 C & F for TPH. The TPH concentrations are conservative because TOG is removed before the TPH concentration is quantified. Therefore, the TOG values would be equal to or greater than the TPH values.

The stockpiled soils were sampled for disposal purposes. The composite sample was analyzed for BTEX and the hydrocarbon scan. After sampling, the stockpiled soils were placed into the excavation to help shore up the walls and to minimize the risks associated with open excavations.

### **Results**

A summary of all detected compounds in soil is presented in Table 1. The Preliminary Remedial Goal established by the EPA, Region IX, has been included in Table 1 for each applicable constituent. The action level for TPH set forth in the Tri-Regional Guidelines is also presented in Table 1.

### Former Sump Excavation

A review of Table 1 indicates that the soils around the former sump have been impacted with benzene up to 0.02 milligrams per kilogram (mg/kg), toluene up to 0.2 mg/kg, ethylbenzene up to 0.92 mg/kg and xylenes up to 0.92 mg/kg. The soil sample collected from beneath the former sump contained the highest hydrocarbon concentrations with TPH at 2200 mg/kg, total petroleum hydrocarbons as kerosene (TPHk) at 1100 mg/kg and total petroleum hydrocarbons as motor oil (TPHmo) at 660 mg/kg. Cadmium ranged to 37 mg/kg; chromium ranged to 3900 mg/kg; lead ranged to 700 mg/kg; nickel ranged to 4900 mg/kg; and zinc ranged to 5200 mg/kg in soil samples collected from the former sump excavation. No semi-volatile constituents were detected above method detection limits.

*matrix interference*

### Tank Pit Excavation

A review of Table 1 indicates that all five soil samples collected from the tank pit contained detectable BTEX concentrations with maximum concentrations of 0.56 mg/kg, 2.4 mg/kg, 5 mg/kg, and 14 mg/kg for BTEX, respectively. Total petroleum hydrocarbons as mineral spirits (TPHms) was detected up to 860 mg/kg and was the only compound detected in the hydrocarbon scan. The fact that TPHms was reported instead of total petroleum hydrocarbons as gasoline (TPHg) may be the result of the degradation of gasoline. The lighter compounds in gasoline tend to degrade faster than the heavier ends causing the remaining portion to "look" like mineral spirits rather than gasoline. Therefore, based on the previous uses at the site, it is interpreted that what is reported as TPHms is actually degraded gasoline. Total lead was detected up to 1300 mg/kg.

### Pipeline Trenches

BTEX constituents were detected in three of the five soil samples collected from the two pipeline trenches with maximum concentrations of 3.1 mg/kg, 12 mg/kg, 55 mg/kg, and 200 mg/kg, respectively. TPHms (interpreted to be degraded gasoline) was detected up to 7800 mg/kg and was the only compound detected by the hydrocarbon scan. Total lead was detected up to 1300 mg/kg. All of the maximum concentrations were detected in soil sample PL1-1-3 which was collected near the 4-inch cast iron pipe discovered in the eastern pipeline trench.

### Stockpiled Soils

The soil samples collected from the stockpiled soils were composited in the laboratory. The composited sample did not contain detectable BTEX concentrations. TPHms (interpreted to be degraded gasoline) and TPHmo were detected in the composite sample at 17 mg/kg and 100 mg/kg respectively.

### Conclusions

Based on the results obtained during this investigation, the sump area has been impacted with TPH, TPHk, TPHmo, and chromium at concentrations above the action level or the PRG. The tank pit and pipeline trenches have been impacted with degraded gasoline and total lead at concentrations exceeding

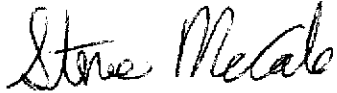
Mr. Ron Sykora  
Bohannon Development  
June 29, 1995  
Page 4

the action level or PRG. Even though the laboratory erroneously analyzed the sump samples for TPH instead of TOG, the conclusions reached are the same because the TOG values would have been higher than those reported for TPH. In both cases the values are above the action level.

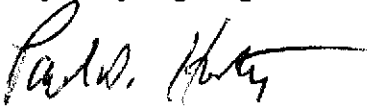
If you have any questions, comments, or require additional information, please call me at your convenience.

Sincerely,

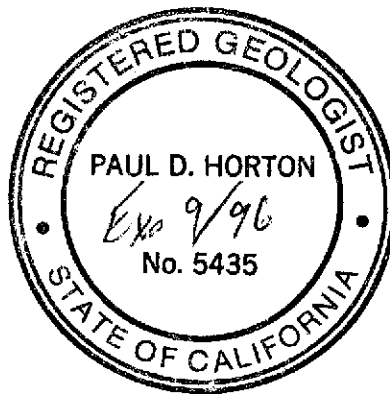
**SECOR International Incorporated**



Steven M. McCabe  
Project Hydrogeologist



Paul D. Horton, R.G., #5435  
Principal Hydrogeologist

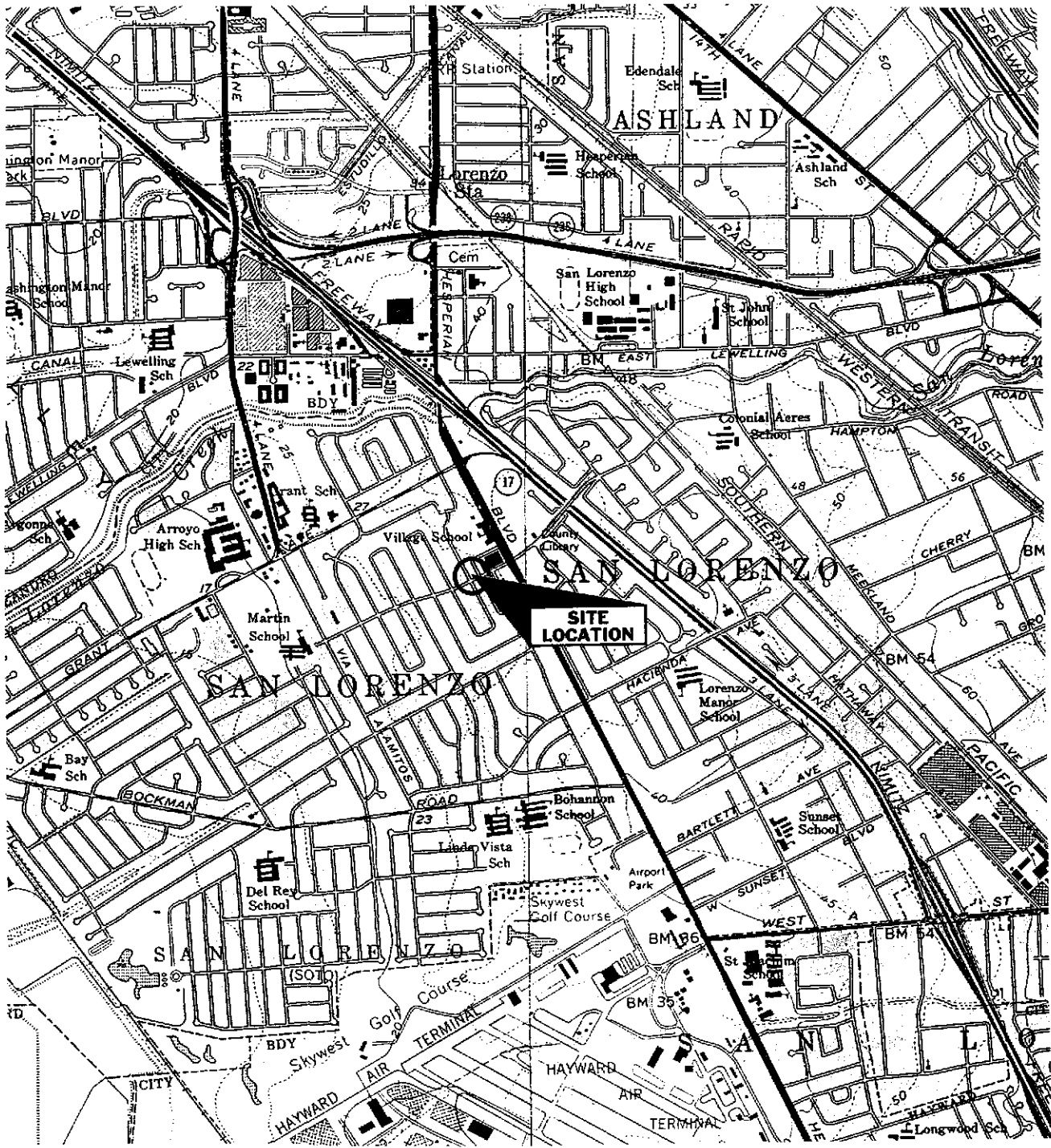


- Attachments:
- 1 - Figure 1, Site Location Map
  - 2 - Figure 2, Site Plan and Sample Location Map
  - 3 - Laboratory Reports
  - 4 - Table 1, Summary of Detected Constituents in Soil

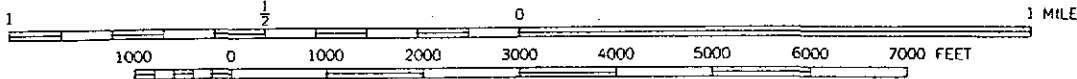
***ATTACHMENT 1***

***Figure 1, Site Location Map***

**SAN LEANDRO AND HAYWARD QUADRANGLE**  
 California  
 7.5 Minute Series (Topographic)



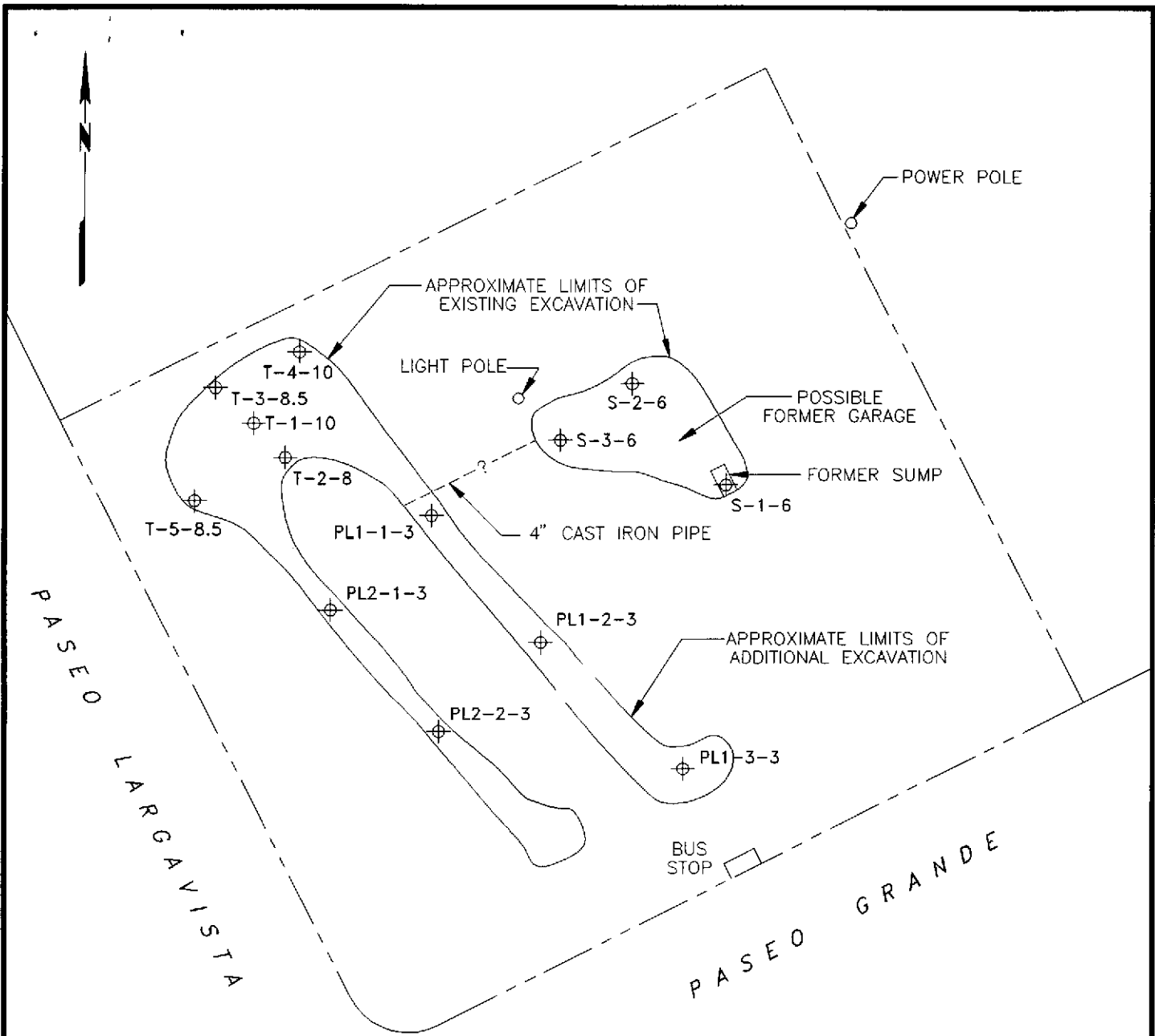
SCALE 1:24 000



DRAFTED BY: <b>JLH</b>	CHECKED BY: <b>SM</b>	PROJECT NO. 70074-001-01	FIGURE 1	<b>SECOR</b> 1390 Willow Pass Road Suite 360 Concord, CA 94520
DWG. DATE: <b>06-16-95</b>	REV. DATE:	Bohannon Development Northeast corner of Paseo Grande and Paseo Largavista San Lorenzo, California	Site Location Map	
FILE NAME: <b>slorenz.f01</b>				

***ATTACHMENT 2***

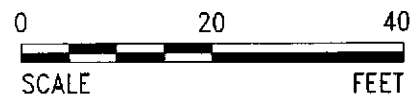
***Figure 2, Site Plan and Sample Location Map***



**LEGEND:**

⊕T-4-10 SOIL SAMPLE LOCATION

----- PROPERTY LINE



**SECOR  
INTERNATIONAL  
INCORPORATED**

DRAWN	CCR
APPR	SM
DATE	17JUN95
JOB NO.	70074-001-01

**FIGURE 2**  
BOHANNON DEVELOPMENT  
SAN LORENZO, CALIFORNIA  
**SITE PLAN AND  
SAMPLE LOCATION MAP**



***ATTACHMENT 3***

***Laboratory Reports***

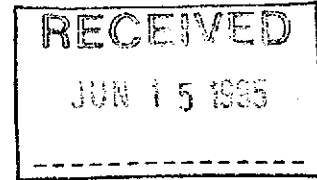


# GTEL

ENVIRONMENTAL  
LABORATORIES, INC.

**Northwest Region**

4080-C Pike Lane  
Concord, CA 94520  
(510) 685-7852  
(800) 544-3422 from inside California  
(800) 423-7143 from outside California  
(510) 825-0720 (FAX)



June 13, 1995

Paul Horton  
Seacor  
1390 Willow Pass Road, Suite 360  
Concord, CA 94520-5250

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RE: GTEL Client ID: SEA02SEA02  
Login Number: C5060040  
Project ID (number): 70074-001-01  
Project ID (name): Bohannon/575 Paseo Grande, San Lorenzo, CA

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Dear Paul Horton:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 06/05/95.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes.

GTEL is certified by the Department of Health Service under Certification Number E1075.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,  
GTEL Environmental Laboratories, Inc.

Rashmi Shah  
Laboratory Director

GTEL Client ID: SEA02SEA02  
 Login Number: C5060040  
 Project ID (number): 70074-001-01  
 Project ID (name): Bohannon/575 Paseo Grande, San Lorenzo, CA

ANALYTICAL RESULTS

Volatile Organics  
 Method: EPA8010/20  
 Matrix: Solids

GTEL Sample Number	C5060040-01	C5060040-02	C5060040-03	
Client ID	S-1-6'	S-2-6'	S-3-6'	
Date Sampled	06/05/95	06/05/95	06/05/95	
Date Analyzed	06/11/95	06/11/95	06/11/95	
Dilution Factor	1.00	1.00	1.00	

Analyte	Reporting		Concentration:Wet Weight			
	Limit	Units				
Chloromethane	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
Vinyl chloride	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
Bromomethane	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
Chloroethane	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
Trichlorofluoromethane	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
1,1-Dichloroethene	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
Methylene chloride	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
1,1-Dichloroethane	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
Chloroform	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
1,1,1-Trichloroethane	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
Carbon tetrachloride	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
1,2-Dichloroethane	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
Trichloroethene	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
1,2-Dichloropropane	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
Bromodichloromethane	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
2-Chloroethyl vinyl ether	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
cis-1,3-Dichloropropene	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
trans-1,3-Dichloropropene	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
1,1,2-Trichloroethane	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
Tetrachloroethene	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
Dibromochloromethane	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
Chlorobenzene	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
Bromoform	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
1,1,2,2-Tetrachloroethane	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
1,3-Dichlorobenzene	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
1,4-Dichlorobenzene	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
1,2-Dichlorobenzene	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
trans-1,2-Dichloroethene	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
cis-1,2-Dichloroethene	0.02	mg/kg	< 0.02	< 0.02	< 0.02	--
Benzene	0.02	mg/kg	< 0.02	0.02	< 0.02	--
Toluene	0.02	mg/kg	0.20	0.20	< 0.02	--
Ethylbenzene	0.02	mg/kg	1.0	0.92	< 0.02	--
Xylenes (total)	0.06	mg/kg	13.	0.94	< 0.06	--
BFB (surrogate)	--	%	67.7	96.5	65.5	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA8010/20:

GTEL Concord, CA  
 C5060040:1



GTEL Client ID: SEA02SEA02  
 Login Number: C5060040  
 Project ID (number): 70074-001-01  
 Project ID (name): Bohannon/575 Paseo Grande, San Lorenzo, CA

ANALYTICAL RESULTS

Volatile Organics  
 Method: EPA8010/20  
 Matrix: Solids

GTEL Sample Number	C5060040-01	C5060040-02	C5060040-03	--
Client ID	S-1-6'	S-2-6'	S-3-6'	--
Date Sampled	06/05/95	06/05/95	06/05/95	--
Date Analyzed	06/11/95	06/11/95	06/11/95	--
Dilution Factor	1.00	1.00	1.00	--

Analyte	Reporting Limit	Units	Concentration:Wet Weight
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Notes: (continued)

"Test Methods for Evaluating Solid Waste. Physical/Chemical Methods". SW-846. Third Edition including promulgated Update 1. Bromofluorobenzene surrogate recovery acceptability limits are 60 - 140 %.

C5060040-01:

Data obtained from multiple analysis.

C5060040-02:

Data obtained from multiple analysis.

C5060040-03:

Data obtained from multiple analysis.

GTEL Concord, CA  
 C5060040:2



GTEL Client ID: SEA02SEA02                      QUALITY CONTROL RESULTS  
Login Number: C5060040  
Project ID (number): 70074-001-01  
Project ID (name): Bohannon/575 Paseo Grande, San Lorenzo, CA

Volatile Organics  
Method: EPA8010/20  
Matrix: Solids

Method Blank Results

QC Batch No: C061095-1  
Date Analyzed: 11-JUN-95

Analyte	Method: EPA8010/20	Concentration: mg/kg
Dichlorodifluoromethane	< 0.00500	
Chloromethane	< 0.00500	
Vinyl chloride	< 0.00500	
Bromomethane	< 0.00500	
Chloroethane	< 0.00500	
Trichlorofluoromethane	< 0.00500	
1,1-Dichloroethene	< 0.00500	
Methylene chloride	< 0.00500	
1,1-Dichloroethane	< 0.00500	
Chloroform	< 0.00500	
1,1,1-Trichloroethane	< 0.00500	
Carbon tetrachloride	< 0.00500	
1,2-Dichloroethane	< 0.00500	
Trichloroethene	< 0.00500	
1,2-Dichloropropane	< 0.00500	
Bromodichloromethane	< 0.00500	
2-Chloroethyl vinyl ether	< 0.00500	
cis-1,3-Dichloropropene	< 0.00500	
trans-1,3-Dichloropropene	< 0.00500	
1,1,2-Trichloroethane	< 0.00500	
Tetrachloroethene	< 0.00500	
Dibromochloromethane	< 0.00500	
Chlorobenzene	< 0.00500	
Bromoform	< 0.00500	
1,1,2,2-Tetrachloroethane	< 0.00500	
1,3-Dichlorobenzene	< 0.00500	
1,4-Dichlorobenzene	< 0.00500	
1,2-Dichlorobenzene	< 0.00500	
trans-1,2-Dichloroethene	< 0.00500	
cis-1,2-Dichloroethene	< 0.00500	
Benzene	0.0383*	
Toluene	< 0.00500	
Ethylbenzene	< 0.00500	
Xylenes (Total)	0.0652*	

Notes:

GTEL Client ID: SEA02SEA02  
 Login Number: C5060040  
 Project ID (number): 70074-001-01  
 Project ID (name): Bohannon/575 Paseo Grande, San Lorenzo, CA

ANALYTICAL RESULTS

Volatile Organics  
 Method: EPA 8020  
 Matrix: Solids

GTEL Sample Number	C5060040-04	C5060040-05	C5060040-06	C5060040-07
Client ID	T-1-10'	T-2-8'	T-3-8.5'	T-4-10'
Date Sampled	06/05/95	06/05/95	06/05/95	06/05/95
Date Analyzed	06/08/95	06/08/95	06/08/95	06/08/95
Dilution Factor	5.00	1.00	1.00	1.00

Analyte	Reporting		Reporting			
	Limit	Units	Concentration:Wet Weight			
Benzene	0.005	mg/kg	0.38	0.14	0.56	1.1
Toluene	0.005	mg/kg	2.0	0.81	1.7	2.4
Ethylbenzene	0.005	mg/kg	4.9	2.2	2.8	5.0
Xylenes (total)	0.015	mg/kg	14.	7.8	8.0	9.0
BFB (Surrogate)	--		113.	151.	145.	138.

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update 1. BFB surrogate recovery acceptability limits are 60 - 119 %.

C5060040-05:

BFB recovery high due to interference of hydrocarbons.

C5060040-06:

BFB recovery high due to interference of hydrocarbons.

C5060040-07:

BFB recovery high due to interference of hydrocarbons.

GTEL Concord, CA  
 C5060040:1



GTEL Client ID: SEA02SEA02  
 Login Number: C5060040  
 Project ID (number): 70074-001-01  
 Project ID (name): Bohannon/575 Paseo Grande, San Lorenzo, CA

ANALYTICAL RESULTS

Volatile Organics  
 Method: EPA 8020  
 Matrix: Solids

GTEL Sample Number	C5060040-08	C5060040-09	C5060040-10	C5060040-11
Client ID	T-5-8.5	PL1-1-3	PL1-2-3	PL1-3-3
Date Sampled	06/05/95	06/05/95	06/05/95	06/05/95
Date Analyzed	06/12/95	06/12/95	06/08/95	06/12/95
Dilution Factor	2.00	20.0	1.00	2.00

Analyte	Reporting		Concentration:Wet Weight			
	Limit	Units				
Benzene	0.005	mg/kg	0.033	3.1	< 0.005	0.18
Toluene	0.005	mg/kg	0.19	12.	< 0.005	0.77
Ethylbenzene	0.005	mg/kg	0.57	55.	< 0.005	2.0
Xylenes (total)	0.015	mg/kg	1.9	200	< 0.015	5.7
BFB (Surrogate)	--		104.	107.	118.	106.

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update 1. BFB surrogate recovery acceptability limits are 60 - 119 %.

C5060040-09:

BFB recovery high due to interference of hydrocarbons.

GTEL Concord, CA  
 C5060040:2



GTEL Client ID: SEA02SEA02 ANALYTICAL RESULTS  
 Login Number: C5060040  
 Project ID (number): 70074-001-01  
 Project ID (name): Bohannon/575 Paseo Grande, San Lorenzo, CA

Volatile Organics  
 Method: EPA 8020  
 Matrix: Solids

GTEL Sample Number	C5060040-12	C5060040-13	C5060040-14	--
Client ID	PL2-1-3	PL2-2-3	SP-A-D	--
Date Sampled	06/05/95	06/05/95	06/05/95	--
Date Analyzed	06/07/95	06/07/95	06/10/95	--
Dilution Factor	1.00	1.00	1.00	--

Analyte	Reporting		Concentration:Wet Weight			--
	Limit	Units				
Benzene	0.005	mg/kg	< 0.005	0.008	< 0.005	--
Toluene	0.005	mg/kg	< 0.005	< 0.005	< 0.005	--
Ethylbenzene	0.005	mg/kg	< 0.005	< 0.005	< 0.005	--
Xylenes (total)	0.015	mg/kg	< 0.015	< 0.015	< 0.015	--
BFB (Surrogate)	--		105.	90.9	104.	--

Notes:

**Dilution Factor:**

Dilution factor indicates the adjustments made for sample dilution.

**EPA 8020:**

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update 1. BFB surrogate recovery acceptability limits are 60 - 119 %.

GTEL Concord, CA  
 C5060040:3





GTEL Client ID: SEA02SEA02  
Login Number: C5060040  
Project ID (number): 70074-001-01  
Project ID (name): Bohannon/575 Paseo Grande, San Lorenzo, CA

QUALITY CONTROL RESULTS

Volatile Organics  
Method: EPA 8020  
Matrix: Solids

Method Blank Results

QC Batch No: A060995-1  
Date Analyzed: 09-JUN-95

Analyte	Method: EPA 8020	Concentration: mg/kg
Benzene	< 0.0050	
Toluene	< 0.0050	
Ethylbenzene	< 0.0050	
Chlorobenzene	< 0.50	
Xylenes (Total)	< 0.015	
1,2-Dichlorobenzene	< 0.10	
1,3-Dichlorobenzene	< 0.10	
1,4-Dichlorobenzene	< 0.10	

Notes:

Acceptability limits for recovery in the Bromofluorobenzene (BFB) surrogate is 60-119%.  
Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual protocols, May 1988 revision.

Client Number: SEA02SEA02  
 Consultant Project Number: 70074-001-01  
 Project ID: Bohannon  
 575 Paseo Grande  
 San Lorenzo, CA  
 Work Order Number: C5-06-0040

**ANALYTICAL RESULTS**  
 Semi-Volatile Organics in Soil  
 EPA Method 8270a

GTEL Sample Number		01	060895 BNAS		
Client Identification		S-1-6'	METHOD BLANK		
Date Sampled		06/05/95	--		
Date Extracted		06/08/95	06/08/95		
Date Analyzed		06/10/95	06/10/95		
Analyte	Detection Limit, ug/Kg	Concentration, ug/Kg			
Phenol	300	<1500 <sup>b</sup>	<300		
bis(2-Chloroethyl)ether	300	<1500 <sup>b</sup>	<300		
2-Chlorophenol	300	<1500 <sup>b</sup>	<300		
1,3-Dichlorobenzene	300	<1500 <sup>b</sup>	<300		
1,4-Dichlorobenzene	300	<1500 <sup>b</sup>	<300		
Benzyl alcohol	300	<1500 <sup>b</sup>	<300		
1,2-Dichlorobenzene	300	<1500 <sup>b</sup>	<300		
2-Methylphenol	300	<1500 <sup>b</sup>	<300		
bis-(2-Chloroisopropyl)ether	300	<1500 <sup>b</sup>	<300		
4-Methylphenol	300	<1500 <sup>b</sup>	<300		
N-Nitroso-di-propylamine	300	<1500 <sup>b</sup>	<300		
Hexachloroethane	300	<1500 <sup>b</sup>	<300		
Nitrobenzene	300	<300	<300		
Isophorone	300	<300	<300		
2-Nitrophenol	300	<300	<300		
2,4-Dimethylphenol	300	<300	<300		
Benzoic acid	1500	<1500	<1500		
bis(2-Chloroethoxy)methane	300	<300	<300		
2,4-Dichlorophenol	300	<300	<300		
1,2,4-Trichlorobenzene	300	<300	<300		
Naphthalene	300	<300	<300		
4-Chloroaniline	300	<300	<300		
Hexachlorobutadiene	300	<300	<300		
4-Chloro-3-methylphenol	300	<300	<300		
2-Methylnaphthalene	300	<300	<300		
Hexachlorocyclopentadiene	300	<300	<300		
2,4,6-Trichlorophenol	300	<300	<300		
2,4,5-Trichlorophenol	1500	<1500	<1500		
2-Chloronaphthalene	300	<300	<300		
2-Nitroaniline	1500	<1500	<1500		
Dimethylphthalate	300	<300	<300		
Acenaphthylene	300	<300	<300		
3-Nitroaniline	1500	<1500	<1500		
Acenaphthene	300	<300	<300		
2,4-Dinitrophenol	1500	<1500	<1500		
4-Nitrophenol	1500	<1500	<1500		

**ANALYTICAL RESULTS**  
 Semi-Volatile Organics in Soil  
 EPA Method 8270a

GTEL Sample Number		01	060895 BNAS		
Client Identification		S-1-6'	METHOD BLANK		
Date Sampled		06/05/95	-		
Date Extracted		06/08/95	06/08/95		
Date Analyzed		06/10/95	06/10/95		
Analyte	Detection Limit, ug/Kg	Concentration, ug/Kg			
Dibenzofuran	300	<300	<300		
2,4-Dinitrotoluene	300	<300	<300		
2,6-Dinitrotoluene	300	<300	<300		
Diethylphthalate	300	<300	<300		
4-Chlorophenyl-phenylether	300	<300	<300		
Fluorene	300	<300	<300		
4-Nitroaniline	1500	<1500	<1500		
4,6-Dinitro-2-methylphenol	1500	<1500	<1500		
N-Nitrosodiphenylamine	300	<300	<300		
4-Bromophenyl-phenylether	300	<300	<300		
Hexachlorobenzene	300	<300	<300		
Pentachlorophenol	1500	<1500	<1500		
Phenanthrene	300	<300	<300		
Anthracene	300	<300	<300		
Di-n-butylphthalate	300	<300	<300		
Fluoranthene	300	<300	<300		
Pyrene	300	<300	<300		
Butylbenzylphthalate	300	<300	<300		
3,3'-Dichlorobenzidine	600	<600	<600		
Benzo(a)anthracene	300	<300	<300		
bis(2-Ethylhexyl)phthalate	300	<300	<300		
Chrysene	300	<300	<300		
Di-n-octylphthalate	300	<300	<300		
Benzo(b)fluoranthene	300	<300	<300		
Benzo(k)fluoranthene	300	<300	<300		
Benzidine	600	<600	<600		
Benzo(a)pyrene	300	<300	<300		
Indeno(1,2,3-cd)pyrene	300	<300	<300		
Dibenz(a,h)anthracene	300	<300	<300		
Benzo(g,h,i)perylene	300	<300	<300		
Detection Limit Multiplier		1	1		
d5-Nitrobenzene surr., % rec.		1.08	69.0		
2-Fluorobiphenyl surr., % rec.		61.5	68.0		
d14-Terphenyl surr., % rec.		91.2	72.3		
d5-Phenol surr., % rec.		71.7	72.8		
2-Fluorophenol surr., % rec.		219 <sup>c</sup>	80.1		
2,4,6-Tribromophenol surr., % rec.		93.9	49.6		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Sample extraction by EPA Method 3540. Results reported on a wet weight basis.

b. Detection limits raised due to matrix interference.

c. Recovery high due possible matrix interference.

Client Number: SEA02SEA02  
 Consultant Project Number: 70074-001-01  
 Project ID: Bohannon  
 575 Paseo Grande  
 San Lorenzo, CA  
 Work Order Number: C5-06-0040

## ANALYTICAL RESULTS

### Total Petroleum Hydrocarbons in Soil by Infrared Spectrometry<sup>1</sup>

EPA 3550 (Mod.)/EPA 418.1 (SM 5520 FC)<sup>2</sup>

GTEL Sample Number		01	02	03	060695 TPH
Client Identification		S-1-6'	S-2-6'	S-3-6'	METHOD BLANK
Date Sampled		06/05/95	06/05/95	06/05/95	--
Date Prepared		06/06/95	06/06/95	06/06/95	06/06/95
Date Analyzed		06/07/95	06/07/95	06/07/95	06/07/95
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Total Petroleum Hydrocarbons	5	2200	120	6	<5
Detection Limit Multiplier		25	2.5	1	1

1. The sample is sonication extracted using a modification of EPA 3550. The extract is analyzed, as in EPA 418.1 (SM 5520 CF), to yield results reported as Total Petroleum Hydrocarbons. Results are reported on a wet weight basis.
2. Standard Methods for the Examination of Water and Wastewater, 17th ed., American Public Health Association, 1989.

Note: Matrix spike recovery for this analyte batch demonstrated a matrix effect. Laboratory control sample indicated the analysis was within control limits.

## ANALYTICAL RESULTS

### Total Metals in Soil

GTEL Sample Number			01	02	03	04
Client Identification			S-1-6'	S-2-6'	S-3-6'	T-1-10'
Date Sampled			06/05/95	06/05/95	06/05/95	06/05/95
Date Prepared (Method 3050)			06/07/95	06/07/95	06/07/95	06/07/95
Date Analyzed (Method 6010A)			06/07/95	06/07/95	06/07/95	06/07/95
Analyte	EPA Method <sup>a</sup>	Detection Limit, mg/Kg	Concentration, mg/Kg			
Cadmium	EPA 6010A	0.5	26	15	37	NR
Chromium, total	EPA 6010A	1	3900	3500	3800	NR
Lead	EPA 6010A	5	670	680	700	1000
Nickel	EPA 6010A	2	4300	4500	4900	NR
Zinc	EPA 6010A	2	4600	4500	5200	NR
Detection Limit Multiplier		1	1	1	1	1

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, including Update 1, US EPA July 1992. Sample preparation by EPA Method 3050. Results reported on a wet weight basis.

NR = Not Requested

## ANALYTICAL RESULTS

### Total Metals in Soil

GTEL Sample Number			05	06	07	08
Client Identification			T-2-8'	T-3-8.5'	T-4-10'	T-5-8.5'
Date Sampled			06/05/95	06/05/95	06/05/95	06/05/95
Date Prepared (Method 3050)			06/07/95	06/07/95	06/07/95	06/07/95
Date Analyzed (Method 6010A)			06/07/95	06/07/95	06/07/95	06/07/95
Analyte	EPA Method <sup>a</sup>	Detection Limit, mg/Kg	Concentration, mg/Kg			
Cadmium	EPA 6010A	0.5	NR	NR	NR	NR
Chromium, total	EPA 6010A	1	NR	NR	NR	NR
Lead	EPA 6010A	5	1300	9	1100	960
Nickel	EPA 6010A	2	NR	NR	NR	NR
Zinc	EPA 6010A	2	NR	NR	NR	NR
Detection Limit Multiplier		1	1	1	1	1

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, including Update 1, US EPA July 1992. Sample preparation by EPA Method 3050. Results reported on a wet weight basis.

NR = Not Requested

## ANALYTICAL RESULTS

### Total Metals in Soil

GTEL Sample Number			09	10	11	12
Client Identification			PL1-1-3'	PL1-2-3'	PL1-3-3'	PL2-1-3'
Date Sampled			06/05/95	06/05/95	06/05/95	06/05/95
Date Prepared (Method 3050)			06/07/95	06/07/95	06/07/95	06/07/95
Date Analyzed (Method 6010A)			06/07/95	06/07/95	06/07/95	06/07/95
Analyte	EPA Method <sup>a</sup>	Detection Limit, mg/Kg	Concentration, mg/Kg			
Cadmium	EPA 6010A	0.5	NR	NR	NR	NR
Chromium, total	EPA 6010A	1	NR	NR	NR	NR
Lead	EPA 6010A	5	1300	890	1100	400
Nickel	EPA 6010A	2	NR	NR	NR	NR
Zinc	EPA 6010A	2	NR	NR	NR	NR
Detection Limit Multiplier		1	1	1	1	1

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, including Update 1, US EPA July 1992. Sample preparation by EPA Method 3050. Results reported on a wet weight basis.

NR = Not Requested

Client Number: SEA02SEA02  
 Consultant Project Number: 70074-001-01  
 Project ID: Bohannon  
 575 Paseo Grande  
 San Lorenzo, CA  
 Work Order Number: C5-06-0040

## ANALYTICAL RESULTS

### Total Metals in Soil

GTEL Sample Number		13	BS060795		
Client Identification		PL2-2-3'	METHOD BLANK		
Date Sampled		06/05/95	-		
Date Prepared (Method 3050)		06/07/95	06/07/95		
Date Analyzed (Method 6010A)		06/07/95	06/07/95		
Analyte	EPA Method <sup>a</sup>	Detection Limit, mg/Kg	Concentration, mg/Kg		
Cadmium	EPA 6010A	0.5	NR	<0.5	
Chromium, total	EPA 6010A	1	NR	<1	
Lead	EPA 6010A	5	500	<5	
Nickel	EPA 6010A	2	NR	<2	
Zinc	EPA 6010A	2	NR	<2	
Detection Limit Multiplier		1	1	1	

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, including Update 1, US EPA July 1992. Sample preparation by EPA Method 3050. Results reported on a wet weight basis.

NR = Not Requested



## ANALYTICAL RESULTS

### Hydrocarbons in Soil

Method: GC-FID<sup>a</sup>

GTEL Sample Number		01 <sup>c,d</sup>	02 <sup>d</sup>	03	04
Client Identification		S-1-6'	S-2-6'	S-3-6'	T-1-10'
Date Sampled		06/05/95	06/05/95	06/05/95	06/05/95
Date Extracted		06/08/95	06/08/95	06/08/95	06/08/95
Date Analyzed		06/10/95	06/09/95	06/10/95	06/13/95
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
TPH as gasoline <sup>b</sup>	10	<10	<10	<10	<10
TPH as mineral spirits	10	<10	<10	<10	230
TPH as kerosene	10	1100	20	<10	<10
TPH as diesel fuel	10	<10	<10	<10	<10
TPH as motor oil	100	660	<100	<100	<100
Detection Limit Multiplier		1	1	1	1
O-Terphenyl surrogate, % recovery		117	73.2	57.6	61.8

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, USEPA, November, 1986. Results reported on a wet weight basis. O-Terphenyl surrogate acceptability limits are 50-150%.
- b. Quantitation uncertain due to analyte losses during extraction and chromatographic interference by the solvent peak.
- c. Results reported from multiple dilutions.
- d. Hydrocarbon pattern uncharacteristic of kerosene. Possible overlapping fuel patterns.

## ANALYTICAL RESULTS

### Hydrocarbons in Soil

Method: GC-FID<sup>a</sup>

GTEL Sample Number		05 <sup>c</sup>	06 <sup>c</sup>	07	08
Client Identification		T-2-8'	T-3-8.5'	T-4-10'	T-5-8.5'
Date Sampled		06/05/95	06/05/95	06/05/95	06/05/95
Date Extracted		06/08/95	06/08/95	06/08/95	06/08/95
Date Analyzed		06/13/95	06/13/95	06/10/95	06/12/95
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
TPH as gasoline <sup>b</sup>	10	<10	<10	<10	<10
TPH as mineral spirits	10	340	860	100	150
TPH as kerosene	10	<10	<10	<10	<10
TPH as diesel fuel	10	<10	<10	<10	<10
TPH as motor oil	100	<100	<100	<100	<100
Detection Limit Multiplier		1	1	1	1
O-Terphenyl surrogate, % recovery		72.5	80.2	64.3	61.2

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, USEPA, November, 1986. Results reported on a wet weight basis. O-Terphenyl surrogate acceptability limits are 50-150%.
- b. Quantitation uncertain due to analyte losses during extraction and chromatographic interference by the solvent peak.
- c. Results reported from multiple dilutions.

## ANALYTICAL RESULTS

### Hydrocarbons in Soil

Method: GC-FID<sup>a</sup>

GTEL Sample Number		09 <sup>c</sup>	10	11 <sup>c</sup>	12
Client Identification		PL1-1-3'	PL1-2-3'	PL1-3-3'	PL2-1-3'
Date Sampled		06/05/95	06/05/95	06/05/95	06/05/95
Date Extracted		06/08/95	06/12/95	06/08/95	06/08/95
Date Analyzed		06/13/95	06/13/95	06/13/95	06/10/95
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
TPH as gasoline <sup>b</sup>	10	<10	<10	<10	<10
TPH as mineral spirits	10	7800	<10	950	<10
TPH as kerosene	10	<10	<10	<10	<10
TPH as diesel fuel	10	<10	<10	<10	<10
TPH as motor oil	100	<100	<100	<100	<100
Detection Limit Multiplier		1	1	1	1
O-Terphenyl surrogate, % recovery		81.2	106	79.4	68.5

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, USEPA, November, 1986. Results reported on a wet weight basis. O-Terphenyl surrogate acceptability limits are 50-150%.
- b. Quantitation uncertain due to analyte losses during extraction and chromatographic interference by the solvent peak.
- c. Results reported from multiple dilutions.

## ANALYTICAL RESULTS

### Hydrocarbons in Soil

Method: GC-FID<sup>a</sup>

GTEL Sample Number		13	14	GCJ 060995	GCJ 061395
Client Identification		PL2-2-3'	SP-A-D	METHOD BLANK	METHOD BLANK
Date Sampled		06/05/95	06/05/95	--	--
Date Extracted		06/08/95	06/08/95	06/08/95	06/08/95
Date Analyzed		06/11/95	06/13/95	06/09/95	06/13/95
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
TPH as gasoline <sup>b</sup>	10	<10	<10	<10	<10
TPH as mineral spirits	10	<10	17	<10	<10
TPH as kerosene	10	<10	<10	<10	<10
TPH as diesel fuel	10	<10	<10	<10	<10
TPH as motor oil	100	<100	100	<100	<100
Detection Limit Multiplier		1	1	1	1
O-Terphenyl surrogate, % recovery		72.4	73.0	110	122

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, USEPA, November, 1986. Results reported on a wet weight basis. O-Terphenyl surrogate acceptability limits are 50-150%.
- b. Quantitation uncertain due to analyte losses during extraction and chromatographic interference by the solvent peak.

# SECOR Chain-of Custody Record

Field Office: 510 686-9780  
 Address: 1390 Willow Pass Rd. Ste 360  
Concord Ca. 94520

Additional documents are attached, and are a part of this Record.

Job Name: Behannon/San Lorenzo  
 Location: 575 Paseo Grande  
San Lorenzo, Ca.

Project # 20074-001-01 Task # 00  
 Project Manager Paul Horton  
 Laboratory GTEL  
 Turnaround Time Standard 5-day

Sampler's Name Bob Robitaille  
 Sampler's Signature [Signature]

Lab	Sample ID	Date	Time	Matrix
01	S-1-6'	06/05/95	0925	Soil
02	S-2-6'	}	0930	}
03	S-3-6'		0940	
04	T-1-10'		0955	
05	T-2-8'		0959	
06	T-3-8.5'		1010	
07	T-4-10'		1020	
08	T-5-8.5'		1030	
09	PL1-1-3'		1050	
10	PL1-2-3'		1058	

Analysis Request

HCID	TPH (BTEX)/WTPH-G 8016 (modified)/8020	TPH/WTPH-D 8015 (modified)	TPH 418.1/WTPH 418.1	Aromatic Volatiles 602/8020	Volatile Organics 624/8240 (GC/MS)	Halogenated Volatiles 601/8010	Semi-volatile Organics 625/8270 (GC/MS)	Pesticides/PCBs 608/8080	Total Lead 7421	Priority Pollutant Metals (13)	TCLP Metals	Hydrocarbon Screen	TPH-5520 DIF	LMFT METHIS	Comments/ Instructions	Number of Containers
	X					X	X		X			X	X	X		1
	X					X	X		X			X	X	X		1
	X					X	X		X			X	X	X		1
	X					X	X		X			X	X	X		1
	X					X	X		X			X	X	X		1
	X					X	X		X			X	X	X		1
	X					X	X		X			X	X	X		1
	X					X	X		X			X	X	X	60C	1
	X					X	X		X			X	X	X	C5060040	1

Special Instructions/Comments:

Relinquished by: SECOR  
 Sign B. Jill Horton  
 Print B. Jill Horton  
 Company SECOR  
 Time 16:30 Date 6-5-95

Relinquished by: J. Weber  
 Sign J. Weber  
 Print J. Weber  
 Company GTEL  
 Time 16:30 Date 6-5-95

Sample Receipt  
 Total no. of containers: \_\_\_\_\_  
 Chain of custody seals: \_\_\_\_\_  
 Rec'd. in good condition/cold: \_\_\_\_\_  
 Conforms to record: \_\_\_\_\_

Relinquished by: \_\_\_\_\_  
 Sign J. Weber  
 Print J. Weber  
 Company GTEL  
 Time 17:00 Date 6-5-95

Relinquished by: \_\_\_\_\_  
 Sign Ronald Jensen  
 Print RON JENSEN  
 Company GTEL  
 Time 16:30 Date 6/5/95

Client: \_\_\_\_\_  
 Client Contact: \_\_\_\_\_  
 Client Phone: \_\_\_\_\_



**ATTACHMENT 4**

***Table 1, Summary of Detected Constituents in Soil***

**Table 1**  
**Summary of Detected Constituents in Soil (mg/kg)**  
**Bohannon Development**

Sample I.D.	Benzene	Toluene	Ethylbenzene	Xylenes	TPH	TPHms*	TPHk	TPHmo	Cadmium	Chromium	Lead	Nickel	Zinc
<b>Grease Sump Excavation</b>													
S-1-6	<0.02	0.2	1	13	<del>130</del>	<10	<del>20</del>	<del>100</del>	26	<del>3500</del>	<del>680</del>	4300	4600
S-2-6	0.02	0.2	0.92	0.94	130	<10	20	<100	15	3500	680	4500	4500
S-3-6	<0.02	<0.02	<0.02	<0.06	6	<10	<10	<100	37	3800	700	4900	5200
<b>Tank Pit Excavation</b>													
T-1-10	0.38	2	4.9	14	NA	230	<10	<100	NA	NA	1000	NA	NA
T-2-8	0.14	0.81	2.2	7.8	NA	340	<10	<100	NA	NA	<del>360</del>	NA	NA
T-3-8.5	0.56	1.7	2.8	8	NA	<del>850</del>	<10	<100	NA	NA	9	NA	NA
T-4-10	1.1	2.4	5	9	NA	100	<10	<100	NA	NA	<del>1100</del>	NA	NA
T-5-8.5	0.033	0.19	0.57	1.9	NA	150	<10	<100	NA	NA	960	NA	NA
<b>Pipeline Trenches</b>													
PL1-1-3	<del>3.1</del>	<del>12</del>	<del>55</del>	<del>200</del>	NA	7800	<10	<100	NA	NA	1300	NA	NA
PL1-2-3	<0.005	<0.005	<0.005	<0.015	NA	<10	<10	<100	NA	NA	<del>890</del>	NA	NA
PL1-3-3	0.18	0.77	2	5.7	NA	950	<10	<100	NA	NA	<del>1100</del>	NA	NA
PL2-1-3	<0.005	<0.005	<0.005	<0.015	NA	<10	<10	<100	NA	NA	400	NA	NA
PL2-2-3	0.008	<0.005	<0.005	<0.015	NA	<10	<10	<100	NA	NA	500	NA	NA
<b>Stockpiled Soils</b>													
SP-A-D	<0.005	<0.005	<0.005	<0.015	NA	17	<10	100	NA	NA	NA	NA	NA
PRG	3.2	2700	3100	980	100**	100**	100**	100**	850	1600	1000	34000	100000

*Sump*

*Tank Pit*

*Piping Trench*

\* = interpreted to be degraded gasoline

TPH = Total Petroleum Hydrocarbons

TPHms = Total Petroleum Hydrocarbons as mineral spirits

TPHk = Total Petroleum Hydrocarbons as kerosene

TPH mo = Total Petroleum Hydrocarbons as motor oil

PRG = Preliminary Remedial Goals for Industrial Soil (EPA, Region IX)

\*\* = There are no PRGs established for TPH compounds; however, 100 mg/kg is the action level specified in the Tri-Regional Guidelines