STID 5553
9745

DAVID D. BOHANNON ORGANIZATION
Community Developer · 60 HILLSDALE MALL · SAN MATEO, CALIFORNIA 94403-3497
FAX 415 573-5457 TELEPHONE 415 345-8222

October 27, 1997

Ms. Juliet Shin
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re.: David D. Bohannon Organization
Third Quarter 1997 Monitoring and Sampling Report
575 Paseo Grande, San Lorenzo, California

Dear Ms. Shin:

Enclosed for your review is the Third Quarter 1997 Monitoring and Sampling Report prepared for the above referenced facility. The report summarizes the groundwater monitoring and sampling activities conducted by SECOR International Incorporated (SECOR) from April 1 through June 30, 1997. David D. Bohannon Organization has reviewed and agrees with the Third Quarter 1997 Monitoring and Sampling Report prepared by SECOR.

David D. Bohannon Organization is requesting direction from the Alameda County Health Care Services Agency (ACHCSA) before additional investigation activities are conducted at the site. In ACHCSA's letter dated September 2, 1996, ACHCSA requested that quarterly monitoring and sampling activities resume at the site. David D. Bohannon Organization has conducted four monitoring and sampling events since the ACHCSA's September 1996 request and has presented the results to the ACHCSA in quarterly monitoring and sampling reports. No further groundwater sampling or monitoring activities are currently scheduled to occur at the site, pending direction from the ACHCSA.

Should you have any questions, please feel free to contact me at 650.345.8222.

Sincerely,

Mike Jepsen
Director of Construction
David D. Bohannon Organization

MJ/lg

cc: Ron Sykora - David D. Bohannon Organization

SECOR
International Incorporated

October 22, 1997

Mr. Mike Jepsen
David D. Bohannon Organization
60 Hillsdale Mall
San Mateo, California 94403-3497

RE: **Third Quarter 1997 Groundwater Monitoring and Sampling Report**
575 Paseo Grande
San Lorenzo, California

Dear Mr. Jepsen:

SECOR International Incorporated (SECOR) is pleased to present the results of the third quarter 1997 activities conducted at 575 Paseo Grande (the Site) in San Lorenzo, California (Figures 1 and 2). This report presents the results of the quarterly sampling event conducted on September 10, 1997. The third quarter 1997 activities were conducted pursuant to Alameda County Health Care Services Agency's (ACHCSA's) letter dated December 4, 1996. The third quarter 1997 scope of work included sampling groundwater monitor wells MW-1, MW-2, and MW-3 for gasoline range petroleum hydrocarbons (TPHg), and benzene, toluene, ethylbenzene, and total xylenes (BTEX). David D. Bohannon Organization, the current owners of the Site, plan to redevelop the property into a parking lot and retail business development. Construction is expected to begin the first quarter of 1998.

BACKGROUND

Over the last 25 years, the Site has been used as an asphalt paved parking area located in a commercial area zoned as C1. The Site was a gasoline station prior to 1969. Little information is known about the site history related to it's use as a gasoline service station. In anticipation of property redevelopment, initial investigation activities were conducted in March 1995 to determine if out-of-service gasoline service station underground equipment remained on-site. 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 identified underground gasoline service station equipment which included what appeared to be the former tank pit, approximately 110 feet of fuel delivery system piping, and 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 during initial investigation activities.

1390 Willow Pass Road, Suite 360, Concord, CA 94520-5250 (510) 686-9780 (510) 686-3099 FAX www.secor.com

In June 1995, SECOR conducted additional activities at the Site which included removal of the former underground storage tank (UST) system piping and the former grease sump, and characterization soil sampling along pipe lines and around the former grease sump and former tank pit areas. This work was summarized in SECOR's letter report dated June 29, 1995. The characterization data from this investigation indicated that there were two areas of concern (AOCs) at the Site. These areas were the former grease sump area and the former gasoline distribution system area. SECOR subsequently conducted excavation activities in the vicinity of the two AOCs. The soil excavated from the former sump area was transported off-site for disposal. The soil generated from the UST excavation was treated by means of aeration. Three groundwater monitor wells (MW-1, MW-2, and MW-3) were installed during the investigation activities to evaluate the degree to which the groundwater had been impacted. The results of the soil characterization and groundwater monitoring activities are reported in SECOR's Report of Interim Remedial Actions dated June 4, 1996, and Fourth Quarter 1996 Monitoring and Sampling Report dated November 26, 1996.

SCOPE OF WORK

Quarterly groundwater sampling activities were conducted at the Site pursuant to the request of the ACHCSA. The three Site monitor wells (MW-1, MW-2, and MW-3), were gauged for depth-to-water and sampled on September 10, 1997. Each of the three wells were purged of at least three casing volumes of water prior to sampling. A copy of the field data sheets are presented in Attachment 1. The groundwater samples were submitted to Superior Analytical Laboratory, a California state-certified laboratory, for TPHg and BTEX analysis by U.S. Environmental Protection Agency (EPA) Methods 8015 (modified) and 8020, respectively.

GROUNDWATER ELEVATION RESULTS

Groundwater elevation data collected to date is summarized in Table 1. The average depth-to-water at the Site on September 10, 1997 was 7.16 feet below grade. A potentiometric surface map showing the interpreted groundwater surface elevation on September 10, 1997 is presented as Figure 3. The average hydraulic gradient across the Site on September 10, 1997 was approximately 0.005 feet per foot and was toward the west (Figure 3). These results are consistent with flow direction results obtained during the prior monitoring events. As mentioned in previous quarterly reports, the flow direction beneath the Site is likely to be tidally influenced by the San Francisco Bay. Regardless of tidal influences, the predominant groundwater flow direction beneath the Site is presumably towards the west to southwest.

GROUNDWATER ANALYTICAL RESULTS

Groundwater analytical results from samples collected to date are summarized in Table 2 and sampling field data sheets are included in Attachment 1. Consistent with previous sampling events, field personnel observed a sheen present on the groundwater in monitor wells MW-2 and MW-3. TPHg was detected in samples

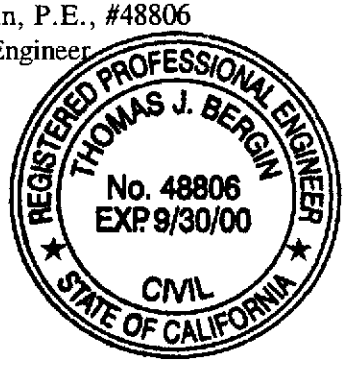
collected from the three Site wells (MW-1, MW-2, and MW-3) at 640 micrograms per liter ($\mu g/\ell$), 8,500 $\mu g/\ell$, and 290,000 $\mu g/\ell$, respectively. These results may be anomalous due to interference with floating free-product. Benzene was detected in samples collected from the three monitor wells at 2.2 $\mu g/\ell$, 390 $\mu g/\ell$ and 1,800 $\mu g/\ell$, respectively. Toluene was detected in samples collected from monitor wells MW-1, MW-2, and MW-3 at 3.8 $\mu g/\ell$, 51 $\mu g/\ell$ and 3,200 $\mu g/\ell$, respectively. Ethylbenzene was detected in monitor wells MW-1, MW-2, and MW-3 at 7.4 $\mu g/\ell$, 220 $\mu g/\ell$, and 2,800 $\mu g/\ell$, respectively. Xylenes were detected in the samples collected from all three monitor wells at 16 $\mu g/\ell$, 240 $\mu g/\ell$, and 6,900 $\mu g/\ell$, respectively. The laboratory noted that BTEX results from the sample collected from well MW-1, toluene results from the sample collected from MW-2, and ethylbenzene and xylene results from the sample collected from well MW-3 had a greater than 25 percent difference between the laboratories two GC columns. The TPHg, toluene, ethylbenzene, and xylenes concentrations detected in the sample collected from monitor well MW-3 were significantly higher than concentrations detected during previous quarters. Field personnel observed a hydrocarbon sheen present in monitor well MW-3 during sampling activities. It is possible that a portion of the free-product was transferred from the well to the sample bottles during well sampling activities, subsequently resulting in the high concentrations of TPHg and BTEX concentrations reported by the laboratory. A copy of the laboratory report and chain-of-custody is included in Attachment 2.

If you have any questions or require more information, please call us at (510) 686-9780.

Sincerely,
SECOR International Incorporated

Kirsten L. Duey
Staff Engineer

Thomas J. Bergin, P.E., #48806
Principal Civil Engineer



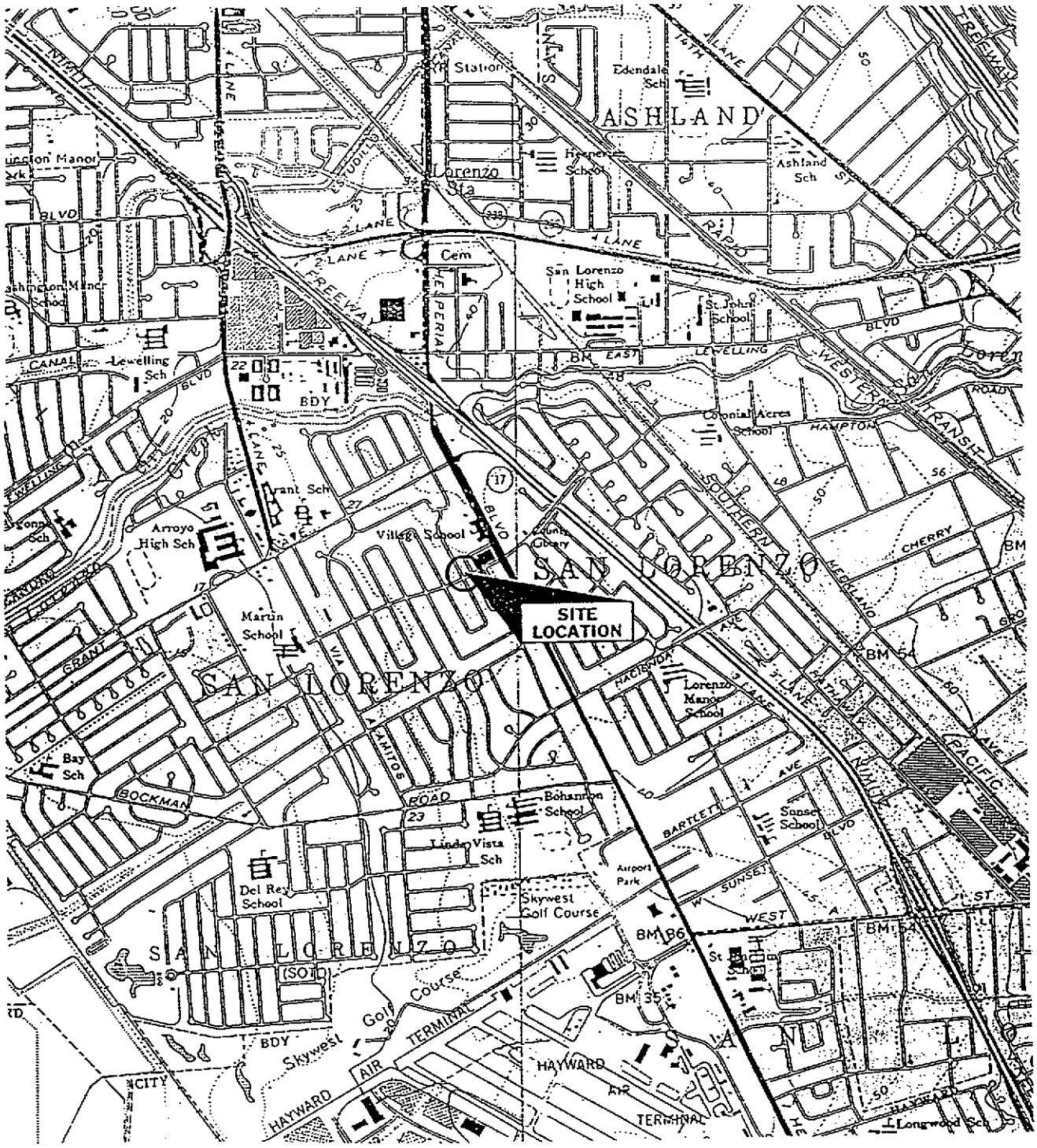
cc: Ms. Juliet Shin, Alameda County Health Care Services Agency

Figure 1 - Site Location Map
Figure 2 - Site Plan
Figure 3 - Potentiometric Surface Map

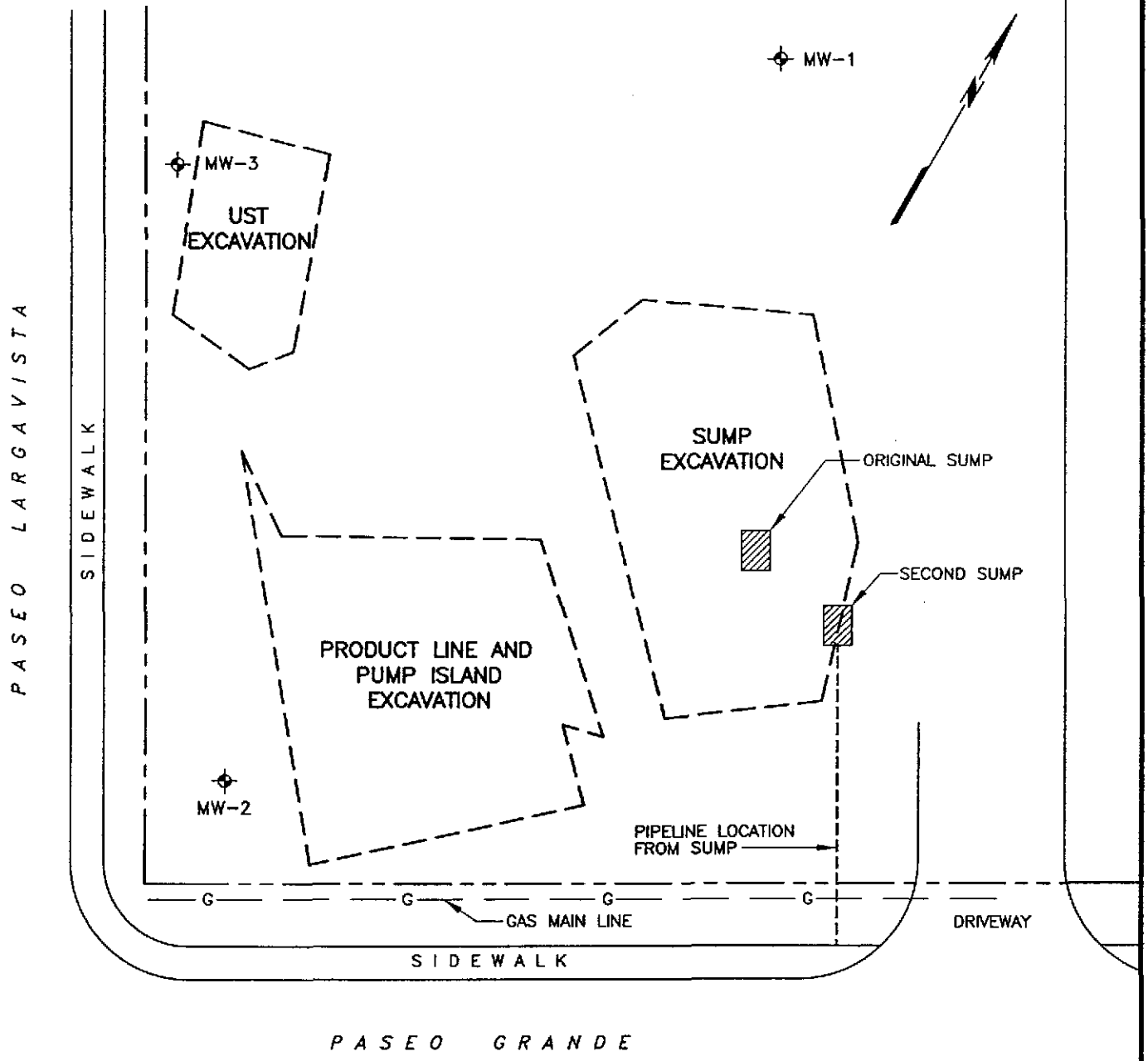
Table 1 - Groundwater Elevation Data
Table 2 - Groundwater Analytical Results - TPHg and BTEX

Attachments: 1 - Field Data Sheets
2 - Laboratory Analytical Reports - Groundwater

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



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



LEGEND:

MW-1 GROUNDWATER MONITORING WELL

LIMITS OF FORMER EXCAVATION

APPROXIMATE PROPERTY BOUNDARY

0 20 40

SCALE FEET

SOURCE: NOLTE AND ASSOCIATES, INC., DATED 1996.

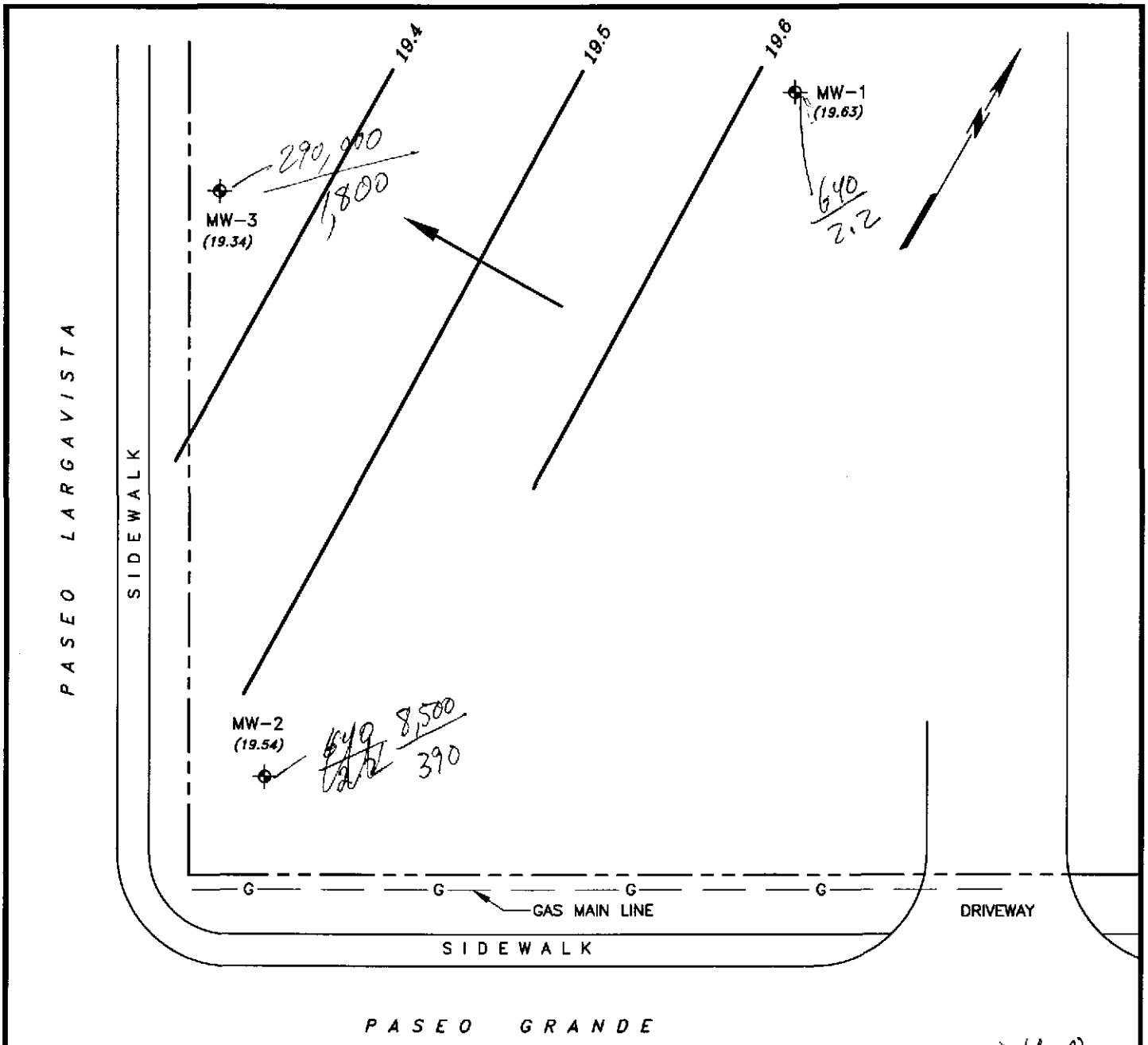
SECOR
INTERNATIONAL
INCORPORATED

DRAWN	CCR
APPR	KW
DATE	30APR97
JOB NO.	70074-001-02

FIGURE 2
DAVID D. BOHANNON ORGANIZATION
575 PASEO GRANDE
SAN LORENZO, CALIFORNIA

SITE PLAN

199704.280928 X:\JOBS\1961\BOHANNON\SNLORENZ\SITEPLAN



TPHg
Benzene (ppb) in H2O

LEGEND:

- MW-1 — GROUNDWATER MONITORING WELL
- 19.4 — GROUNDWATER ELEVATION CONTOUR (SEPTEMBER 10, 1997) (FEET ABOVE MEAN SEA LEVEL)
- (19.54) — GROUNDWATER ELEVATION (SEPTEMBER 10, 1997) (FEET ABOVE MEAN SEA LEVEL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- APPROXIMATE PROPERTY BOUNDARY

0 20 40
SCALE FEET

SOURCE: NOLTE AND ASSOCIATES, INC., DATED 1996.

SECOR INTERNATIONAL INCORPORATED

DRAWN	CCR
APPR	KD
DATE	19SEP97
JOB NO.	70074-001-02

FIGURE 3
DAVID D. BOHANNON ORGANIZATION
575 PASEO GRANDE
SAN LORENZO, CALIFORNIA

POTENTIOMETRIC SURFACE MAP SEPTEMBER 10, 1997

I:\JOBS\1996\BOHANNON\SNLORENZ\SNLORE07 X:\JOBS\1996\BOHANNON\SNLORENZ\SNLORE07 199709.190214

Table 1
Groundwater Elevation Data
575 Paseo Grande
San Lorenzo, California

Date	MW-1			MW-2			MW-3			FLOW DIRECTION
	TOC (ft msl)	DTW (ft bTOC)	ELEV (ft msl)	TOC (ft msl)	DTW (ft bTOC)	ELEV (ft msl)	TOC (ft msl)	DTW (ft bTOC)	ELEV (ft msl)	
17-May-96	27.11	5.65	21.46	26.73	5.56	21.17	26.15	4.39	21.76	southeast
8-Oct-96		7.47	19.64		7.15	19.58		6.82	19.33	west
1-Apr-97		6.27	20.84		6.61	20.12		5.53	20.62	south
12-Jun-97		6.90	20.21		6.76	19.97		6.18	19.97	southwest
10-Sep-97		7.48	19.63		7.19	19.54		6.81	19.34	west

TOC = Top of well casing
DTW = Depth to Water
ELEV. = Water table elevation above MSL
ft msl = Feet above mean sea level
ft bTOC = Feet below top of casing

Table 2
Groundwater Analytical Results - TPHg and BTEX
575 Paseo Grande
San Lorenzo, California

	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)
MW-1					
17-May-96	**1100**	ND (<0.5)	**8.7**	**7.4**	**17**
8-Oct-96	**120**	ND (<0.5)	ND (<0.5)	**2.7**	ND (<0.5)
1-Apr-97	**550**	ND (<0.5)	ND (<0.5)	**7.6**	**6.6**
12-Jun-97	**160**	ND (<0.5)	ND (<0.5)	**2.9**	**1.7**
10-Sep-97	**640**	**2.2**[P]	**3.8**[P]	**7.4**[P]	**16**[P]
MW-2					
17-May-96	**23000**	**900**	**330**	**650**	**1500**
8-Oct-96	**8400**	**530**	ND (<50)	**400**	**360**
1-Apr-97	**7600**	**470**	**64**	**210**	**250**
12-Jun-97	**8200**	**440**	**52**	**190**	**190**
10-Sep-97	**8500**	**390**	**51**[P]	**220**	**240**
MW-3					
17-May-96	**6700**	**140**	**45**	**210**	**180**
8-Oct-96	**1800**	**2700**	**240**	**910**	**970**
1-Apr-97	**27000**	**520**	**50**	**520**	**450**
12-Jun-97	**29000**	**2700**	**160**	**940**	**500**
10-Sep-97	**290000**	**1800**	**3200**	**2800**[P]	**6900**[P]

TPHg = Total petroleum hydrocarbons quantified as gasoline
ug/L = Micrograms per liter
ND = Below laboratory detection limits (detection limit indicated in parentheses)
[P] The laboratory noted that there was a greater than 25% difference in results between the two GC columns.

ATTACHMENT 1

Field Data Sheets

DATE: 9/ /97 PROJECT: Bohannon Development PROJECT # 70074-001-02

EVENT: Q.M. SAMPLER: GRC

WELL OR LOCATION	TIME	MEASUREMENT					COMMENTS
		TOC	DTW	DTB	PT	ELEV	
MW-1	18:20		7.48	14.78			
MW-2	18:23		7.19	14.94			
MW-3	18:25		6.81	12.90			

CODES: TOC - TOP OF CASING (FEET, RELATIVE TO MEAN SEA LEVEL)
DTW - DEPTH TO WATER (FEET)
DTP - DEPTH TO PRODUCT (FEET)
PT - PRODUCT THICKNESS (FEET)
ELEV - GROUNDWATER ELEVATION (FEET, RELATIVE TO MEAN SEA LEVEL)

SECOR International Inc.

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 70074-001-02 PURGED BY: GC WELL I.D.: MW-1

CLIENT NAME: Bohannon SAMPLED BY: GC SAMPLE I.D.: MW-1

LOCATION: 575 Paseo Grande San Lorenzo QA SAMPLES: None

DATE PURGED 9/10/97 START (2400hr) 18:30 END (2400hr) 18:50

DATE SAMPLED 9/10/97 SAMPLE TIME (2400hr) 19:00

SAMPLE TYPE: Groundwater X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER:	2"	3"	4"	5"	6"	8"	Other
Casing Volume: (gallons per foot)	X (0.17)	___ (0.38)	___ (0.67)	___ (1.02)	___ (1.50)	___ (2.60)	___ ( )

DEPTH TO BOTTOM (feet) = 14.78 CASING VOLUME (gal) = 1.24

DEPTH TO WATER (feet) = 7.48 CALCULATED PURGE (gal) = 3.72

WATER COLUMN HEIGHT (feet) = 7.30 ACTUAL PURGE (gal) = 4.00

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (visual)
9/10	18:40	1.5	72.1	1390	7.10	TAN	High
9/10	18:45	3.0	71.6	1328	7.26	TAN	High
9/10	18:50	4.0	72.1	1309	7.29	TAN	High

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: — SAMPLE TURBIDITY: —

80% RECHARGE: X YES ___ NO ANALYSES: TPHG BTEX

ODOR: None SAMPLE VESSEL / PRESERVATIVE: 3 HCL VOAs

PURGING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
X Bailer (Teflon)
___ Bailer (PVC)
___ Bailer (Stainless Steel)
X Dedicated D&P

Other: ___

Pump Depth: ___

SAMPLING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
___ Bailer (Teflon)
X Bailer (___ PVC or X disposable)
___ Bailer (Stainless Steel)
___ Dedicated ___

Other: ___

WELL INTEGRITY: Good LOCK#: None

REMARKS: CAP Does not Fit Casing to high!!

SIGNATURE: DRC

SECOR International Inc.

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 70074-001-02 PURGED BY: GC WELL I.D.: MW-2

CLIENT NAME: Bohannon SAMPLED BY: GC SAMPLE I.D.: MW-2

LOCATION: 575 Paseo Grande San Lorenzo QA SAMPLES: None

DATE PURGED 9/10/97 START (2400hr) 19:05 END (2400hr) 19:25

DATE SAMPLED 9/10/97 SAMPLE TIME (2400hr) 19:30

SAMPLE TYPE: Groundwater X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER:	2"	3"	4"	5"	6"	8"	Other
Casing Volume: (gallons per foot)	X (0.17)	___ (0.38)	___ (0.67)	___ (1.02)	___ (1.50)	___ (2.60)	___ ( )

DEPTH TO BOTTOM (feet) = 14.94 CASING VOLUME (gal) = 1.31

DEPTH TO WATER (feet) = 7.19 CALCULATED PURGE (gal) = 3.95

WATER COLUMN HEIGHT (feet) = 7.75 ACTUAL PURGE (gal) = 4.25

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY ~~(NTU)~~ visual
9/10	19:10	1.5	71.5	1494	7.04	BRN	Hvy
9/10	19:20	3.0	73.0	1540	7.00	BRN	Hvy
9/10	19:25	4.25	73.2	1521	6.96	BRN	Hvy

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: — SAMPLE TURBIDITY: —

80% RECHARGE: X YES ___ NO ANALYSES: TPHG, BTEX

ODOR: GAS SAMPLE VESSEL / PRESERVATIVE: 3 HCL VOAs

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ Bladder Pump	X Bailer (Teflon)	___ Bladder Pump	___ Bailer (Teflon)
___ Centrifugal Pump	___ Bailer (PVC)	___ Centrifugal Pump	X Bailer (___ PVC or X disposable)
___ Submersible Pump	___ Bailer (Stainless Steel)	___ Submersible Pump	___ Bailer (Stainless Steel)
___ Peristaltic Pump	X Dedicated Disp	___ Peristaltic Pump	___ Dedicated ___
Other: ___		Other: ___	
Pump Depth: ___			

WELL INTEGRITY: Good LOCK#: None

REMARKS: Hydrocarbon Sheen

SIGNATURE: JRC

SECOR International Inc.

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 70074-001-02 PURGED BY: GL WELL I.D.: MW-3

CLIENT NAME: Bohannon SAMPLED BY: GL SAMPLE I.D.: MW-3

LOCATION: 575 Paseo Grande San Lorenzo QA SAMPLES: None

DATE PURGED 9/10/97 START (2400hr) 19:40 END (2400hr) 20:05

DATE SAMPLED 9/10/97 SAMPLE TIME (2400hr) 20:15

SAMPLE TYPE: Groundwater X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER:	2" X	3" ___	4" ___	5" ___	6" ___	8" ___	Other ___
Casing Volume: (gallons per foot)	(0.17)	(0.38)	(0.67)	(1.02)	(1.50)	(2.60)	( )

DEPTH TO BOTTOM (feet) = 12.90 CASING VOLUME (gal) = 1.03

DEPTH TO WATER (feet) = 6.81 CALCULATED PURGE (gal) = 3.10

WATER COLUMN HEIGHT (feet) = 6.09 ACTUAL PURGE (gal) = 3.50

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (visual)
9/10	19:50	1.25	71.4	1217	7.30	BLK	High
9/10	19:55	2.50	71.8	1212	7.11	BLK	High
9/10	20:05	3.50	71.9	1208	7.05	BLK	High

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: ___ SAMPLE TURBIDITY: ___

80% RECHARGE: X YES ___ NO ANALYSES: TPHG BTEX

ODOR: Gas Strong SAMPLE VESSEL / PRESERVATIVE: 3 HCL VOAs

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ Bladder Pump	X Bailer (Teflon)	___ Bladder Pump	___ Bailer (Teflon)
___ Centrifugal Pump	___ Bailer (PVC)	___ Centrifugal Pump	X Bailer (___ PVC or X disposable)
___ Submersible Pump	___ Bailer (Stainless Steel)	___ Submersible Pump	___ Bailer (Stainless Steel)
___ Peristaltic Pump	X Dedicated D/SP	___ Peristaltic Pump	___ Dedicated ___
Other: ___		Other: ___	
Pump Depth: ___			

WELL INTEGRITY: Good LOCK#: None

REMARKS: Hydrocarbon on H2O

SIGNATURE: DRC

ATTACHMENT 2

Laboratory Analytical Reports

Superior
Analytical Laboratory

CASE NARRATIVE

SECOR
Project Number/Name: 70074-001-02 TASK #009
Laboratory Number: 23185

Sample Receipt

Three water samples were received by
Superior Analytical Laboratory on September 11, 1997.

Cooler temperature was 5.3°C

No abnormalities were noted with sample recieving.

Sample Analysis

The samples were analyzed for methods 8015M and 8020.

GASBTXE/REGULAR

P - There is a greater than 25% difference for detected
concentration between the two GC columns.

Superior
Analytical Laboratory

SECOR
Attn: Kirsten Wagle

Project 70074-001-02 TASK #009
Reported on September 16, 1997

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Chronology

Laboratory Number 23185

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
MW-1	09/10/97	09/11/97	09/15/97	09/15/97	DI152.37	01
MW-2	09/10/97	09/11/97	09/15/97	09/15/97	DI152.37	02
MW-3	09/10/97	09/11/97	09/15/97	09/15/97	DI152.37	03

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
DI152.37-01	Method Blank	MB	Water	09/15/97	09/15/97
DI152.37-02	Laboratory Spike	LS	Water	09/15/97	09/15/97
DI152.37-03	MW-4	MS 23171-01	Water	09/15/97	09/15/97
DI152.37-04	MW-4	MSD 23171-01	Water	09/15/97	09/15/97

Superior Analytical Laboratory

SECOR
Attn: Kirsten Wagle

Project 70074-001-02 TASK #009
Reported on September 16, 1997

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
23185-01	MW-1	Water	1.0	-
23185-02	MW-2	Water	10.0	-
23185-03	MW-3	Water	100.0	-

R E S U L T S O F A N A L Y S I S

Compound	23185-01 Conc. ug/L	RL	23185-02 Conc. ug/L	RL	23185-03 Conc. ug/L	RL
Gasoline Range	640	50	8500	500	290000	5000
Benzene	2.2P	0.5	390	5.0	1800	50
Toluene	3.8P	0.5	51P	5.0	3200	50
Ethyl Benzene	7.4P	0.5	220	5.0	2800P	50
Total Xylenes	16P	0.5	240	5.0	6900P	50
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)	95		97		116	

Superior Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 23185
Method Blank(s)

	DI152.37-01 Conc. ug/L	RL
Gasoline Range	ND	50
Benzene	ND	0.5
Toluene	ND	0.5
Ethyl Benzene	ND	0.5
Total Xylenes	ND	0.5
>> Surrogate Recoveries (%) <<		
Trifluorotoluene (SS)	93	

Superior Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 23185

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L) DI152.37 02 / - Laboratory Control Spikes						
Gasoline Range		2000	1800	90	65-135	
Benzene		20	20	100	65-135	
Toluene		20	20	100	65-135	
Ethyl Benzene		20	20	100	65-135	
Total Xylenes		60	61	102	65-135	
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				94	50-150	
For Water Matrix (ug/L) DI152.37 03 / 04 - Sample Spiked: 23171 - 01						
Gasoline Range	ND	2000	1700/1900	85/95	65-135	11
Benzene	ND	20	20/20	100/100	65-135	0
Toluene	ND	20	20/21	100/105	65-135	5
Ethyl Benzene	ND	20	21/21	105/105	65-135	0
Total Xylenes	ND	60	61/62	102/103	65-135	1
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				92/90	50-150	

Superior
Analytical Laboratory

Narrative:

P - There is a greater than 25% difference for detected concentration between the two GC columns.

Definitions:

ND	=	Not Detected			
RL	=	Reporting Limit			
NA	=	Not Analysed			
RPD	=	Relative Percent Difference			
ug/L	=	parts per billion (ppb)	ug/kg	=	parts per billion (ppb)
mg/L	=	parts per million (ppm)	mg/kg	=	parts per million (ppm)

23185 Chain-of Custody Number:

SECOR Chain-of Custody Record

Field Office: Concord
Address: 1340 Willow Pass Rd Suite 360
Concord CA 94520

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

Job Name: Bohannan
Location: San Lorenzo

Project # 70074-004-02 Task # 009
Project Manager Kirsten Waagle
Laboratory Superior
Turnaround Time Standard

Sampler's Name GARY CLIFT
Sampler's Signature

Sample ID	Date	Time	Matrix	HCID	TPHg/BTEX/WTPH-G 8015 (modified)/8020	TPHd/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			Comments/ Instructions	Number of Containers
MW-1	9-10	19:00	H2O		X														3
MW-2	9-10	19:30	H2O		X														3
MW-3	9-10	20:15	H2O		X														3

Please Initial:
Samples stored in ice. t=5.3
Appropriate containers ✓
Samples preserved ✓
VOA's without headspace ✓
Comments:

Special Instructions/Comments:
Fax results to
Kirsten Waagle @
(510) 686-3099

Relinquished by: SECOR
Sign
Print GARY R CLIFT
Company SECOR
Time 8:00 Date 9/11/97

Received by:
Sign
Print
Company
Time Date

Relinquished by:
Sign
Print
Company
Time Date

Received by:
Sign
Print Dolly Farmer
Company
Time 11:23 Date 9/11/97

Sample Receipt
Total no. of containers: 9
Chain of custody seals:
Rec'd. in good condition/cold:
Conforms to record:

Client: SECOR
Client Contact: Kirsten Waagle
Client Phone: (510) 686-9780

SECOR CUSTREC Rev. 1/95

Date: 9/11/97 Page 1 of 1

Superior Analytical Laboratory

SECOR
1390 WILLOW PASS RD, STE. 360
CONCORD, CA 94520

Attn: Kirsten Wagle

RECEIVED
OCT 15 1997

Date: September 18, 1997

Laboratory Number : 23185

Project Number/Name : 70074-001-0
Facility/Site : BOHANNON
SAN LORENZO

Dear Kirsten Wagle:

Attached is Superior Analytical Laboratory report for the samples received on September 11, 1997. This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety. Following the cover letter is the Case Narrative detailing sample receipt and analysis. Also enclosed is a copy of the original Chain-of-Custody record confirming receipt of samples.

Please note that any unused portion of the sample will be discarded after October 11, 1997, unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please contact our Laboratory at (510) 313-0850.

Sincerely,

Afsaneh Salimpour
Project Manager

Sanjay Panda
QA/QC Manager

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
Grease Sump Excavation													
S-1-6	<0.02	0.2	1	13	2200	<10	1100	660	26	3900	670	4300	4600
S-2-6	0.02	0.2	0.92	0.94	120	<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
Tank Pit Excavation													
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	1300	NA	NA
T-3-8.5	0.56	1.7	2.8	8	NA	860	<10	<100	NA	NA	9	NA	NA
T-4-10	1.1	2.4	5	9	NA	100	<10	<100	NA	NA	1100	NA	NA
T-5-8.5	0.033	0.19	0.57	1.9	NA	150	<10	<100	NA	NA	960	NA	NA
Pipeline Trenches													
PL1-1-3	3.1	12	55	200	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	890	NA	NA
PL1-3-3	0.18	0.77	2	5.7	NA	950	<10	<100	NA	NA	1100	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
Stockpiled Soils													
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

* = interpreted to be degraded gasoline
TPH = Total Petroleum Hydrocarbons
TPHms = Total Petroleum Hydrocarbons as mineral spirts
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