

CS
8/14/96

May 20, 1996

ENVIRONMENTAL
PROTECTION
96 MAY 21 AM 11:05

Ms. Amy Leech
Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, CA 94501

RE: Unocal Service Station #5760
376 Lewelling Boulevard
San Lorenzo, California

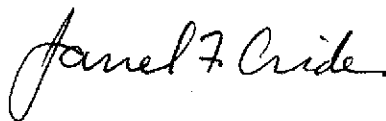
Dear Ms. Leech:

Per the request of the Unocal Corporation Project Manager, Ms. Tina R. Berry, enclosed please find our most recent data report for the above referenced site.

Should you have any questions regarding the reporting of data, please feel free to call our office at (510) 602-5120. Any other questions may be directed to the Project Manager at (510) 277-2321.

Sincerely,

MPDS Services, Inc.



Jarrel F. Crider

/dr

Enclosure

cc: Ms. Tina R. Berry



PACIFIC
ENVIRONMENTAL
GROUP, INC.

April 19, 1996
Project 310-058.5A

Mr. Richard Hiatt
Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

Re: Unocal Corporation
Quarterly Summary Report
First Quarter 1996

Dear Mr. Hiatt:

As directed by Ms. Tina Berry of Unocal Corporation, Pacific Environmental Group, Inc. is forwarding the quarterly summary report for the following location:

Service Station

5760

Location

376 Lewelling Boulevard, San Lorenzo

If you have questions or comments, please do not hesitate to contact our office at (408) 441-7500.

Sincerely,

Pacific Environmental Group, Inc.

Joseph Muzzio
Project Geologist

Enclosure

cc: Ms. Tina Berry, Unocal Corporation
Ms. Amy Leech, Alameda County Environmental Health Care Services

96 APR 25 PM 2:00
ENVIRONMENTAL
PROTECTION

Quarterly Summary Report First Quarter 1996

Unocal Service Station 5760
376 Lewelling Boulevard
San Lorenzo, California

City/County ID #: None
County: Alameda

BACKGROUND

The underground storage tanks were removed and replaced in November 1987. Currently there are nine monitoring wells on-site. Groundwater monitoring and sampling of wells began in February 1988. A remedial action plan was submitted during the third quarter 1994. A groundwater extraction system and soil vapor extraction system was installed in August and September 1995.

RECENT QUARTER ACTIVITIES

Quarterly groundwater monitoring and sampling were conducted in January 1996. Monthly monitoring of soil and groundwater remedial systems were performed and appropriate reports documenting findings were submitted, as well as a quarterly performance report. In February 1996, modifications to the present sampling and monitoring activities were presented in a letter to Unocal and Alameda County, recommending a reduction to semiannual groundwater sampling for some of the monitoring wells.

NEXT QUARTER ACTIVITIES

Groundwater monitoring and sampling for the second quarter 1996 will be performed. Operation of soil vapor and groundwater extraction and treatment system will continue.

CHARACTERIZATION/REMEDIAL STATUS

Soil contamination delineated? Yes.
Dissolved groundwater delineated? No.
Free product delineated? Yes.
Amount of groundwater contaminant recovered this quarter? Approximately 14 pounds.
Soil remediation in progress? Yes.
Start? October 1995.
Anticipated completion date? Unknown.
Dissolved/free product remediation in progress? Yes.
Start? October 1995.
Anticipated completion? Unknown.

CONSULTANT: Pacific Environmental Group, Inc.



PACIFIC
ENVIRONMENTAL
GROUP, INC.

8/14/96

ENVIRONMENTAL
PROTECTION
96 APR 23 PM 1:52

April 18, 1996
Project 310-058.5A

Ms. Tina Berry
Unocal Corporation
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

*Zone influence?
ORC locations?
Initial Bioreclamation Assessment?*

Re: **Remedial Action Performance Summary - First Quarter 1996**
Unocal Service Station 5760
376 Lewelling Boulevard at Usher Street
San Lorenzo, California

Dear Ms. Berry:

This letter presents a remedial action performance summary for the site referenced above. A process flow diagram and equipment layout are included as Figures 1 and 2. Attachment A presents the remedial performance summary which includes key operating parameters. Certified analytical reports and chain-of-custody documentation are presented as Attachment B, and field data sheets are included as Attachment C. The status of recent remedial activities is presented below.

Recent Remedial Activities

Pacific Environmental Group, Inc. (PACIFIC) performed the following remedial activities during the first quarter of 1996:

- Troubleshoot and repaired groundwater extraction pumps in Wells U-1 and U-3.
- Replaced silted-up groundwater carbon unit.
- Troubleshoot leaking bag filter housing.
- Performed regular operation and maintenance, monitoring, sampling, recordkeeping, and reporting.

April 18, 1996

Page 2

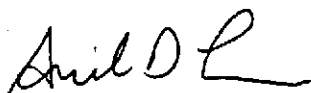
Should you have any questions regarding the contents of this remedial action performance summary, please do not hesitate to contact our office.

Sincerely,

Pacific Environmental Group, Inc.



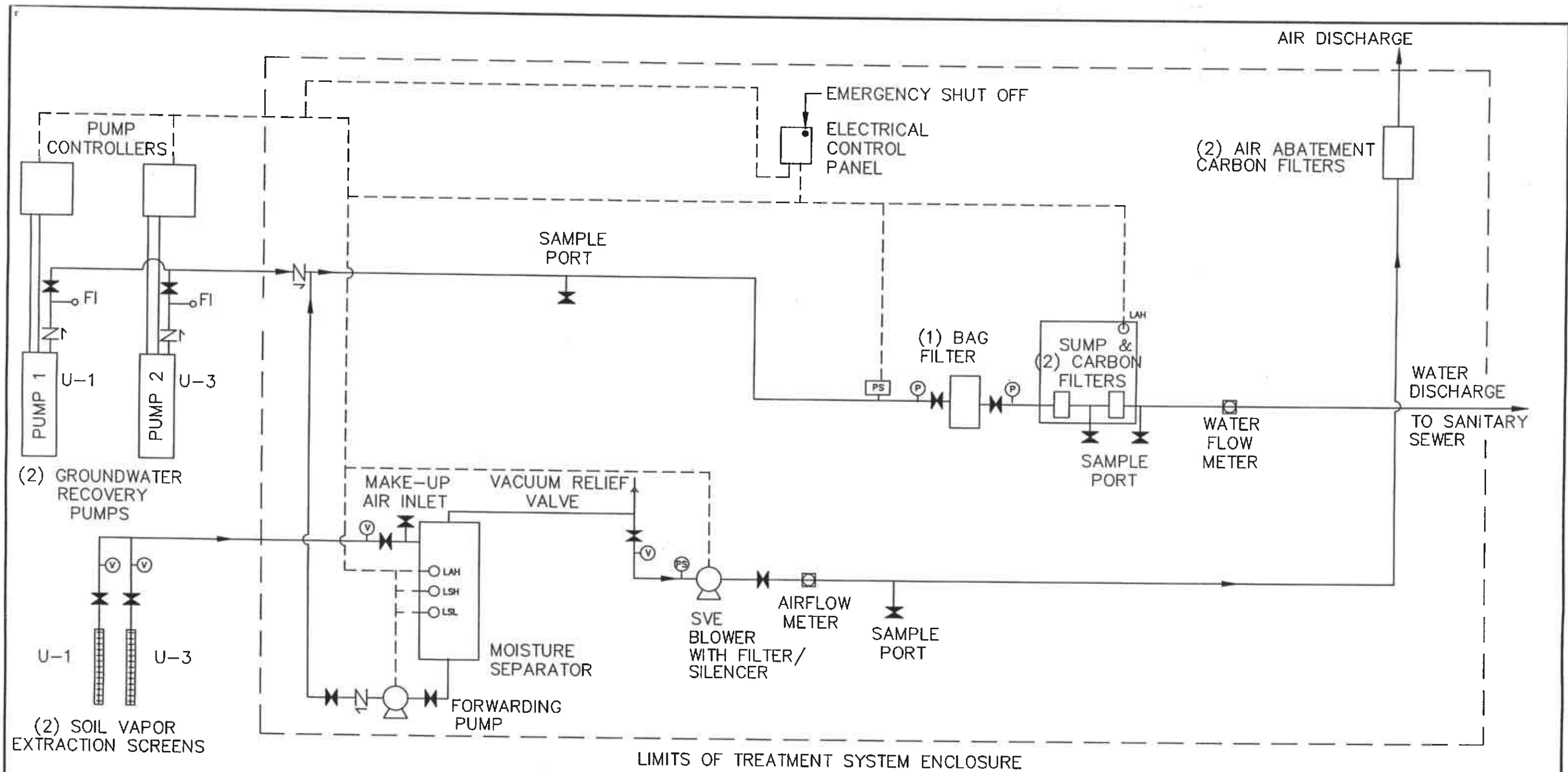
Steven D. Clark
Project Hydrogeologist
HG 167



Andrew D. Lehane
Project Engineer

Attachments: Figure 1 - Process Flow Diagram - Groundwater/SVE System
Figure 2 - Equipment Layout - Plan View
Attachment A - Remedial Action Performance Summary
Attachment B - Certified Analytical Reports and Chain-of-Custody
Documentation
Attachment C - Field Data Sheets

cc: Mr. Richard Hiatt, Regional Water Quality Control Board - S.F. Bay Region
Ms. Amy Leech, Alameda County Health Care Services

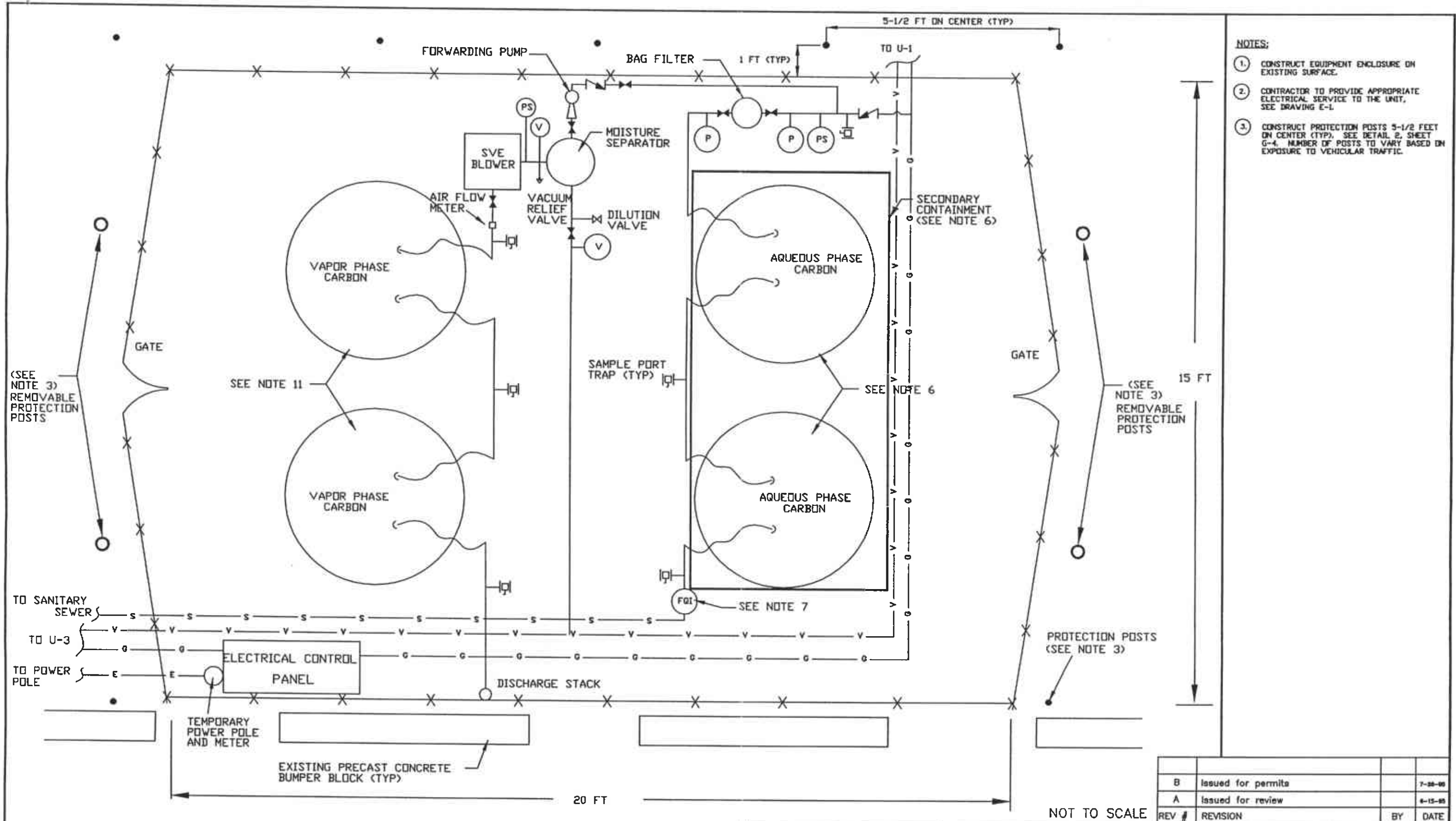


NOTES:
SEE SHEET G4 FOR LEGEND TO SYMBOLS

REV #	REVISION	BY	DATE
B	Issued for permits		7-28-95
A	Issued for review		8-15-95

UNOCAL	PROJECT: 310-058.3B	TITLE:
	FACILITY: UNOCAL STATION #5760 376 Lewelling Boulevard San Lorenzo, California	PROCESS FLOW DIAGRAM GROUNDWATER/SVE SYSTEM
CERT-G5A ₁	DATE: 7/26/95 SHEET 6 of 9	DRAWING No. 5760-G5

B



- NOTES:**
1. CONSTRUCT EQUIPMENT ENCLOSURE ON EXISTING SURFACE.
 2. CONTRACTOR TO PROVIDE APPROPRIATE ELECTRICAL SERVICE TO THE UNIT, SEE DRAWING E-1.
 3. CONSTRUCT PROTECTION POSTS 5-1/2 FEET ON CENTER (TYP). SEE DETAIL 2, SHEET G-4. NUMBER OF POSTS TO VARY BASED ON EXPOSURE TO VEHICULAR TRAFFIC.

REV #	REVISION	BY	DATE
B	Issued for permits		7-28-95
A	Issued for review		4-15-95

UNOCAL	PROJECT: 310-058.3B	EQUIPMENT LAYOUT PLAN VIEW
	FACILITY: UNOCAL STATION #5760	
CERT-G7	376 Lewelling Boulevard	DRAWING No. 5760-G7
	San Lorenzo, California	
1	DATE: 7/26/95	SHEET 8 of 9
		B

NOT TO SCALE

ATTACHMENT A
REMEDIAL ACTION PERFORMANCE SUMMARY

ATTACHMENT A
REMEDIAL ACTION PERFORMANCE SUMMARY: FIRST QUARTER 1996
GROUNDWATER DEWATERING SYSTEM

Site Name: Unocal Service Station 5760
 Site Address: 376 Lewelling Boulevard, San Lorenzo, CA
 Abatement Equipment: Granular-Activated Carbon Vessels
 Start-Up Date: 10/18/95

Permitting Agency: Oro Loma Sanitary District
 Permit No.: 024
 Permit Expiration Date: 6/30/96
 Estimated Shutdown Date: Unknown

REMEDIAL OBJECTIVES

- o Dewatering to enhance soil vapor extraction
- o Regulatory Compliance

OPERATIONAL DATA

Treatment System Data

	January	February	March
Operational Status	Down	Operational	Down
Groundwater Volume Pumped (gals)	4,319	9,630	53,340

Table 1 Page A-3

Treatment System Analytical Data Summary

	INFLUENT	EFFLUENT
EPA Method 8020 Analyses	Detected	ND

Table 2 Page A-4

TPH and Benzene Summary

	January	February	March	
Influent TPPH-gasoline (µg/L)	NS	32,000	NS	
Influent Benzene (µg/L)	NS	460	NS	
Effluent TPPH-gasoline (µg/L)	NS	ND	NS	
Effluent Benzene (µg/L)	NS	ND	NS	Cumulative
Mass TPPH-gasoline Removed (lbs)	0.1 †	1.3	7.3 †	11.0
Mass Benzene Removed (lbs)	0.00 †	0.02	0.11 †	0.16

Table 1 Page A-3

Table 1 Page A-3

Table 2 Page A-4

Table 2 Page A-4

Table 1 Page A-3

Table 1 Page A-3

PERFORMANCE EVALUATION

Dewatering

Due to (1) pump malfunction, (2) carbon backup, and (3) bag-filter housing closure failure, the groundwater extraction system was operational less than two weeks out of the quarter. However, with these problems resolved, the system is ready for full operation during the second quarter 1996.

Regulatory Compliance

During February 1996, the groundwater dewatering and treatment system operated in compliance with all discharge limitations set forth by Oro Loma Sanitary District Permit 024. A carbon changeout was performed March 25, 1996 to the groundwater extraction system.

ACTIONS/RECOMMENDATIONS

- o Finish repair to bag filter assembly and restart system.

NOTES:

TPPH = Total purgeable petroleum hydrocarbons
 ND = Not detected above detection limit
 NS = Not sampled
 gals = Gallons
 µg/L = Micrograms per liter
 lbs = Pounds
 † = System found down; samples not taken (prior concentrations assumed for calculations)
 Note: When appropriate, tabulated data is followed by associated graphical presentation.

ATTACHMENT A (continued)
REMEDIAL ACTION PERFORMANCE SUMMARY: FIRST QUARTER 1996
SOIL-BASED REMEDIAL SYSTEM

Site Name: Unocal Service Station 5760
 Site Address: 376 Lewelling Boulevard, San Lorenzo, CA
 Abatement Equipment: 2-1,000 lb vapor-phase carbon cannisters
 Start-Up Date: 10/18/95

Permitting Agency: BAAQMD
 ATC No.: 14994
 ATC Expiration Date: 10/11/97
 Estimated Shutdown Date: Unknown

REMEDIAL OBJECTIVES

- o Migration Control
- o Mass Removal
- o Regulatory Compliance

OPERATIONAL DATA

Treatment System Data

Operational Status
 Instantaneous Flow Rate (scfm)

January	February	March
Operational	Operational	Down
29	54	N/A

Table 3 Page A-5

TPPH and Benzene Summary

Influent TPPH-gasoline (ppmv)
 Influent Benzene (ppmv)
 Effluent TPPH-gasoline (ppmv)
 Effluent Benzene (ppmv)
 Mass TPPH Removed (lbs)
 Mass Benzene Removed (lbs)

January	February	March	
31	52	NS	
0.40	0.69	NS	
ND	ND	NS	
ND	ND	NS	Cumulative
0.6	4.7	N/A	43.6
0.01	0.05	N/A	0.34

Table 3 Page A-5

Table 3 Page A-5

Table 4 Page A-6

Table 4 Page A-6

Table 3 Page A-5

Table 3 Page A-5

REMEDIAL ACTION PERFORMANCE EVALUATION

Migration Control Due to the apparently low volume of residual hydrocarbons in the soil, it is unlikely that significant unsaturated zone migration is occurring. However, the vapor extraction system is effective in controlling migration in the unsaturated zone and in the saturated zone, to a degree.

Mass Removal Mass removal rates decreased in January 1996 and increased slightly in February. Following system restart in April, mass removal may be expected to spike somewhat due to the shutdown period.

Regulatory Compliance During January and February 1996, the soil vapor extraction (SVE) system operated in compliance with all BAAQMD permit conditions. The SVE system was temporarily down during March, due to high groundwater conditions and the inoperability of the groundwater treatment system.

ACTIONS/RECOMMENDATIONS

- o Re-start the system following repair of bag filter housing closure.
- o Continue to operate the soil vapor extraction system and optimize groundwater system to enhance soil vapor extraction performance.

NOTES:
 ND = Not detected above detection limit
 NS = Not sampled
 scfm = Standard cubic feet per minute
 ppmv = Parts per million by volume
 lbs = Pounds
 Note: When appropriate, tabulated data is followed by associated graphical presentation.

Table 1
Groundwater Extraction System Performance Data

Unocal Service Station 5760
376 Lewelling Boulevard at Usher Street
San Lorenzo, California

Sample ID	Date Sampled	Temp (deg F)	Totalizer Reading (gallons)	Average Flow Rate (gpm)	TPPH as Gasoline			Benzene		
					Influent Concentration (µg/L)	Removal Rate (lbs/day)	Removed To Date (lbs)	Influent Concentration (µg/L)	Removal Rate (lbs/day)	Removed To Date (lbs)
INFL	10/18/95 a	NM	76	N/A	NS	N/A	0.0	NS	N/A	0.00
INFL	10/30/95	NM	4,040	0.2	33,000	0.09	1.1	480	0.0013	0.02
INFL	11/30/95	NM	7,751	0.1	15,000	0.02	1.8	190	0.0003	0.03
INFL	12/27/95	64.2	15,031	0.2	1,100	0.02	2.3	16	0.0002	0.03
INFL	01/22/96 b	58.4	19,350	0.1	NS	0.00 c	2.4	NS	0.0000 c	0.03
INFL	02/13/96 d	70.9	28,980	0.3	32,000	0.06	3.7	460	0.0009	0.05
INFL	03/11/96 e	N/A	82,320	1.4	NS	0.27	11.0	NS	0.0039	0.16
REPORTING PERIOD:					12/27/95 - 03/11/96 (b,d)					
TOTAL GALLONS EXTRACTED:					82,244					
PERIOD GALLONS EXTRACTED:					67,289					
TOTAL POUNDS TPPH-GASOLINE REMOVED:					11.0					
TOTAL GALLONS TPPH-GASOLINE REMOVED:					1.8					
TOTAL POUNDS BENZENE REMOVED:					0.16					
TOTAL GALLONS BENZENE REMOVED:					0.02					
PERIOD POUNDS TPPH-GASOLINE REMOVED:					8.7					
PERIOD POUNDS BENZENE REMOVED:					0.13					
AVERAGE FLOW RATE (gpm):					0.6					
TPPH = Total purgeable petroleum hydrocarbons Temp = Temperature deg F = Degrees Fahrenheit gpm = Gallons per minute µg/L = Parts per billion lbs = Pounds NM = Not measured N/A = Not available or not applicable NS = Not sampled (assume prior concentrations)					a. GWE system startup on October 18, 1995. b. GWE system found down 1/17/96; pumps pulled for repair. c. Samples not taken; prior concentrations assumed. d. GWE Pumps U-1 and U-3 re-installed 2/13/96. e. Systems down; carbon changeout performed 3/25/96; further repair required to bag filter housing closure assembly.					
Assumed densities: TPPH = 6.1 lbs/gal; benzene = 7.34 lbs/gal. Net hydrocarbon removal data are approximate. Mass removed is an approximation calculated using averaged concentrations.										

Table 2
Groundwater Treatment System Analytical Data

Unocal Service Station 5760
376 Lewelling Boulevard at Usher Street
San Lorenzo, California

Date Sampled						Permit Compliance Parameters		
	TPPH (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	COD (mg/L)	TSS (mg/L)	pH (units)
Influent Samples								
10/30/95	33,000	480	1,400	900	7,100	N/A	N/A	N/A
11/30/95	15,000	190	310	210	3,700	N/A	N/A	N/A
12/27/95	1,100	16	23	<2.0	300	N/A	N/A	N/A
02/13/96 b	32,000	460	1,100	1,500	7,700	N/A	N/A	N/A
Effluent Samples								
10/04/95	<50	<0.50	<0.50	<0.50	<0.50	<20	<1.0	8.89 a
10/30/95	<50	<0.50	<0.50	<0.50	<0.50	NS	NS	NS
11/30/95	<50	<0.50	<0.50	<0.50	<0.50	NS	NS	NS
12/27/95	<50	<0.50	<0.50	<0.50	<0.50	NS	NS	7.05 a
02/13/96 b	<50	<0.50	<0.50	<0.50	<0.50	<20	9.0	6.83 a
TPPH = Total purgeable petroleum hydrocarbons COD = Chemical oxygen demand TSS = Total suspended solids µg/L = Micrograms per liter mg/L = Milligrams per liter N/A = Not applicable NS = Not sampled < = Denotes any potential concentrations fell below the shown detection limit for the analysis. a. The pH reading was measured by field instruments, not by laboratory analysis. b. GWE system was found down 1/17/96 and two pumps were pulled for repair and replaced 2/13/96.								

Table 3
Soil Vapor Extraction System Performance Data

Unocal Service Station 5760
376 Lewelling Boulevard at Usher Street
San Lorenzo, California

Sample ID	Date Sampled	Days Operational (t)	Hourmeter Reading (hours)	Flow Rate (scfm)	TPPH as Gasoline			Benzene			
					Influent Concentration (ppmv)	Removal Rate (lbs/day)	Removed To Date (lbs)	Influent Concentration (ppmv)	Removal Rate (lbs/day)	Removed To Date (lbs)	
INFL	10/18/95	a	0.0	0.00	40	87	1.33	0.0	0.95	0.012	0.00
INFL	10/19/95		0.2	5.50	40	149	2.26	0.4	2.4	0.030	0.00
INFL	10/20/95		1.2	33.95	55	45	0.94	2.3	0.49	0.008	0.03
INFL	11/30/95		37.2	927.30	40	38	0.58	30.5	0.24	0.003	0.24
INFL	12/27/95		27.1	1,576.71	34	ND	0.00	38.3	0.04	0.000	0.28
INFL	01/22/96		3.4	1,659.50	29	31	0.34	38.9	0.40	0.004	0.29
INFL	02/13/96	b	6.7	1,820.86	54	52	1.07	43.6	0.69	0.012	0.34
REPORTING PERIOD:					12/27/95 - 02/13/96 (b)						
TOTAL DAYS OF OPERATION					75.9						
PERIOD DAYS OF OPERATION					10.2						
TOTAL POUNDS TPPH-GASOLINE REMOVED:					43.6						
TOTAL GALLONS TPPH-GASOLINE REMOVED:					7.1						
TOTAL POUNDS BENZENE REMOVED:					0.34						
TOTAL GALLONS BENZENE REMOVED:					0.05						
PERIOD POUNDS TPPH-GASOLINE REMOVED:					5.3						
PERIOD POUNDS BENZENE REMOVED:					0.06						
PERIOD AVERAGE FLOW RATE (scfm):					39						
PERIOD PERCENT OPERATIONAL:					21%						
TPPH = Total purgeable petroleum hydrocarbons					a. SVE system start-up on October 18, 1995 (carbon)						
t = Time of period since last sampling					b. SVE system down during March 1996.						
scfm = Standard cubic feet per minute											
ppmv = Parts per million by volume											
lbs = Pounds											
Assume density of gasoline = 6.1 lbs/gallon and density of benzene = 7.34 lbs/gallon.											
Mass removed to date is calculated using averaged mass removal rates, which are based on instantaneous data.											
Mass removal calculations use blower hourmeter readings to estimate run time.											

Table 4
Soil Vapor Extraction System Emission Data

Unocal Service Station 5760
376 Lewelling Boulevard at Usher Street
San Lorenzo, California

Sample ID	Date Sampled	Flow Rate (scfm)	TPPH as Gasoline			Benzene		
			Effluent Concentration (ppmv)	Destruction Efficiency (percent)	Emission Rate (lbs/day)	Effluent Concentration (ppmv)	Destruction Efficiency (percent)	Emission Rate (lbs/day)
EFFL	10/18/95 a	40	ND	97.3	0.04	ND	97.0	0.0004
EFFL	10/19/95	40	ND	98.4	0.04	ND	98.8	0.0004
EFFL	10/20/95	55	ND	94.7	0.05	ND	94.1	0.0005
EFFL	11/30/95	40	ND	93.8	0.04	ND	87.8	0.0004
EFFL	12/27/95	34	ND	N/A	0.03	ND	28.6	0.0003

TPPH = Total purgeable petroleum hydrocarbons
 scfm = Standard cubic feet per minute
 ppmv = Parts per million by volume, converted from micrograms per liter
 lbs = Pounds
 ND = Not detected above detection limit
 N/A = Not available or not applicable
 a. SVE system start-up on October 18, 1995 (carbon)
 Emission calculations for non-detected concentrations are calculated using the detection limit.
 Destruction efficiency [%] = $[(1 - (\text{effluent concentration}/\text{influent concentration})) * 100]$

Figure 1
Groundwater Extraction System Mass Removal Trend

Unocal Service Station 5760
 376 Lewelling Boulevard at Usher Street
 San Lorenzo, California

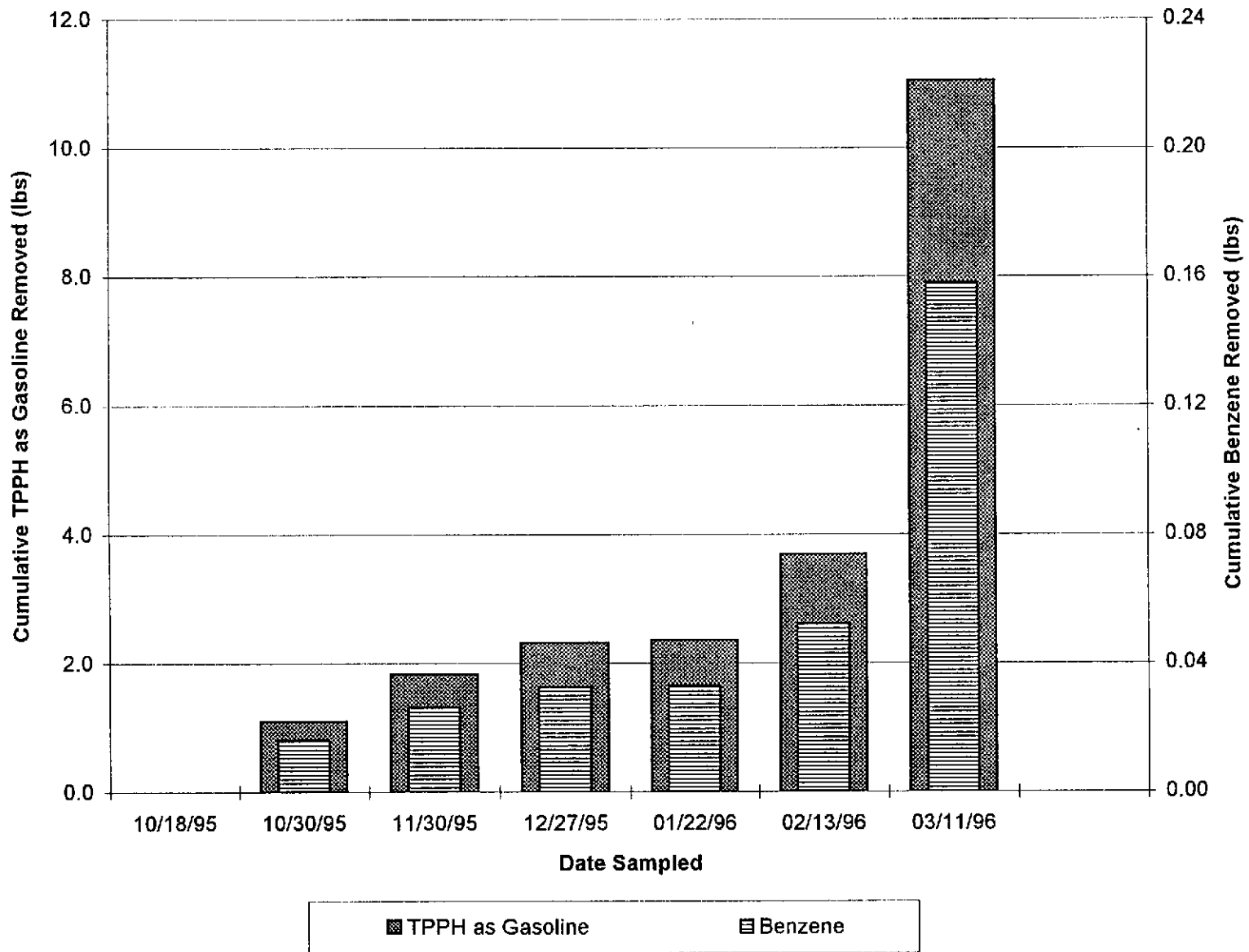


Figure 2
Groundwater Extraction System Hydrocarbon Concentrations
 Unocal Service Station 5760
 376 Lewelling Boulevard at Usher Street
 San Lorenzo, California

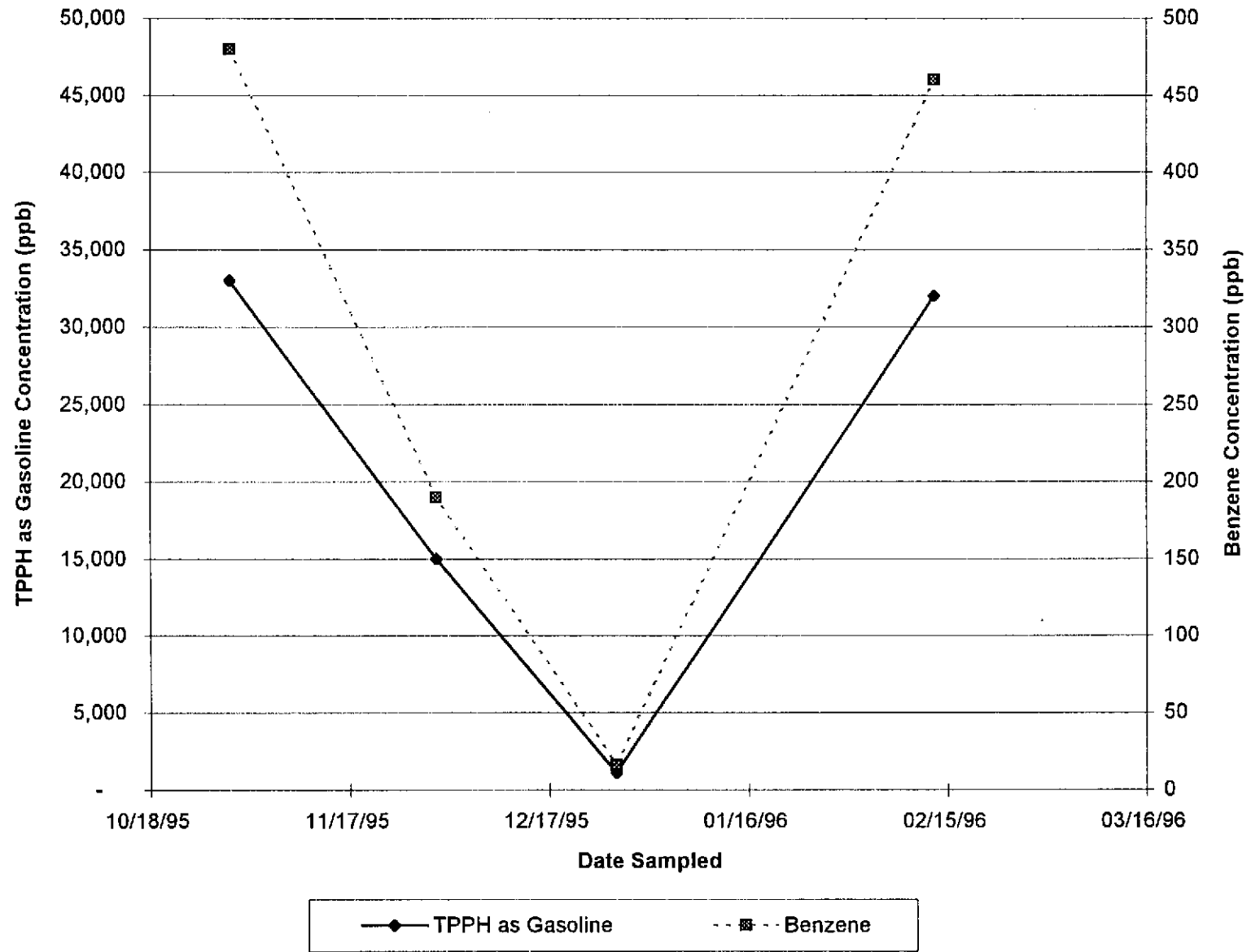


Figure 3
Soil Vapor Extraction System Mass Removal Trend

Unocal Bulk Terminal 5760
376 Lewelling Boulevard at Usher Street
San Lorenzo, California

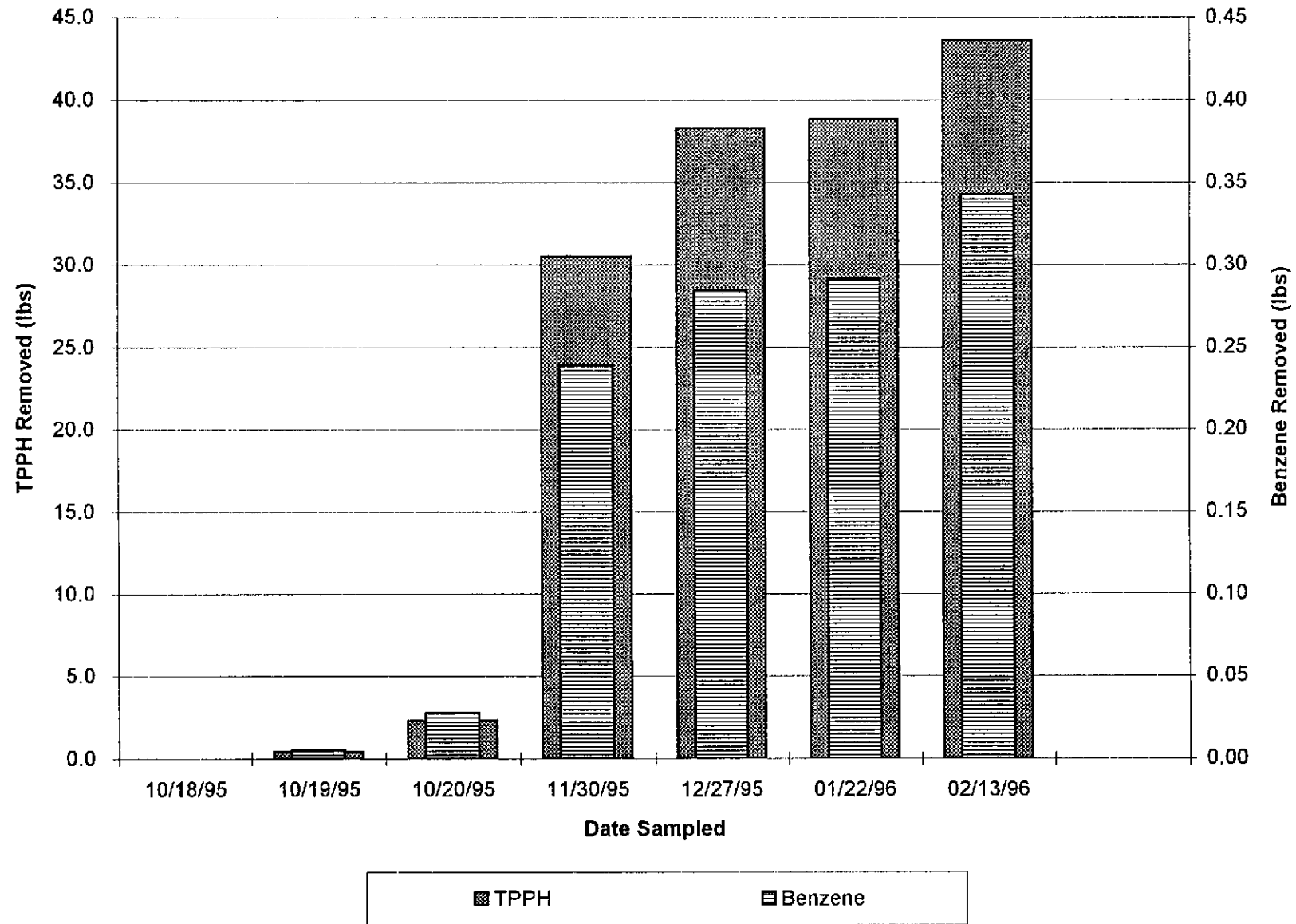
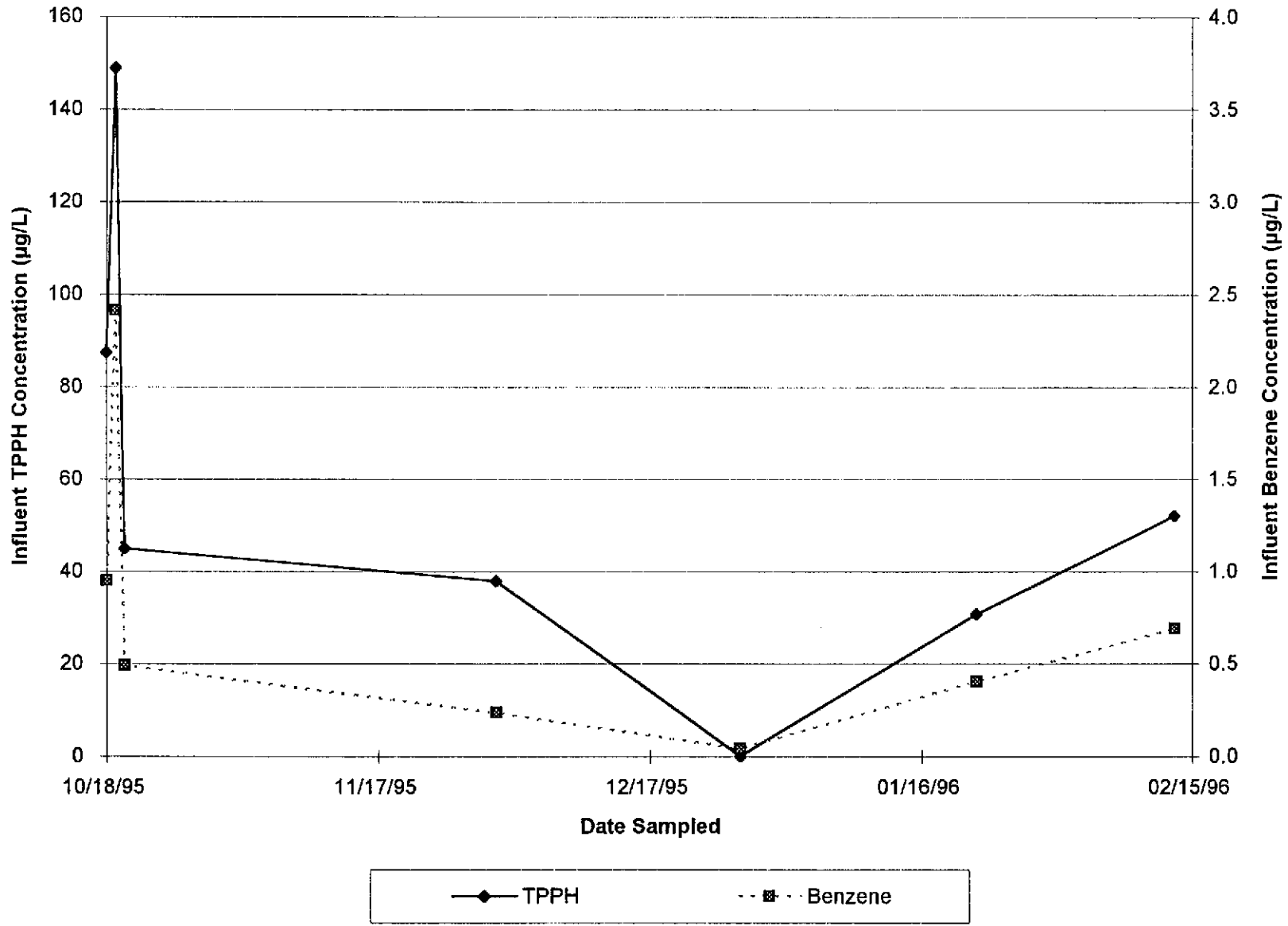
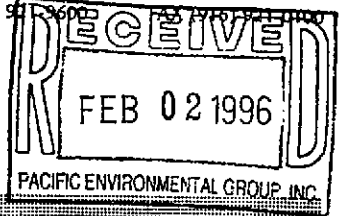


Figure 4
Soil Vapor Extraction System Hydrocarbon Concentrations
 Unocal Bulk Terminal 5760
 376 Lewelling Boulevard at Usher Street
 San Lorenzo, California



ATTACHMENT B

**CERTIFIED ANALYTICAL REPORTS
AND CHAIN-OF-CUSTODY DOCUMENTATION**



Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Client Proj. ID: 310-058.5A/5760, San Lorenzo
Sample Descript: INFL
Matrix: AIR
Analysis Method: 8015Mod/8020
Lab Number: 9601D76-01

Sampled: 01/22/96
Received: 01/23/96
Analyzed: 01/24/96
Reported: 01/29/96

Attention: Steve Clark

GC Batch Number: GC012496BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	25	130
Benzene	0.25	1.4
Toluene	0.25	8.1
Ethyl Benzene	0.25	5.9
Xylenes (Total)	0.25	32
Chromatogram Pattern:		Gas
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	81

analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Bruce Fletcher
Project Manager





Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Steve Clark

Client Project ID: 310-058.5A/5760, San Lorenzo

Work Order #: 9601D76 01

Reported: Feb 1, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC012496BTEX17A	GC012496BTEX17A	GC012496BTEX17A	GC012496BTEX17A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Woo	J. Woo	J. Woo	J. Woo
MS/MSD #:	960155902	960155902	960155902	960155902
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	1/24/96	1/24/96	1/24/96	1/24/96
Analyzed Date:	1/24/96	1/24/96	1/24/96	1/24/96
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	9.1	8.6	28
MS % Recovery:	100	91	86	93
Dup. Result:	10	10	10	30
MSD % Recov.:	100	100	100	100
RPD:	0.0	9.4	15	6.9
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	BLK012496	BLK012496	BLK012496	BLK012496
Prepared Date:	1/24/96	1/24/96	1/24/96	1/24/96
Analyzed Date:	1/24/96	1/24/96	1/24/96	1/24/96
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	10	10	10	31
LCS % Recov.:	100	100	100	103

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120
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Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

B Fletcher

Brucie Fletcher
Project Manager

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9601D76.PPP <1>



Consultant Company: PACIFIC ENVIRONMENTAL GROUP		Project Name: 310-05B.SA	
Address: 2025 GATEWAY PL. STE 440 S		UNOCAL Project Manager: TINA BERRY	
City: SAN JOSE	State: CA	Zip Code: 95110	AFE #:
Telephone: 408 441-7500		FAX #: 441-7539	
Report To: BOB CLARK		Site #, City, State: 5760 SAN JOSE CA	
Sampler: JOHN MASON X		QC Data: <input checked="" type="checkbox"/> Level D (Standard) <input type="checkbox"/> Level C <input type="checkbox"/> Level B <input type="checkbox"/> Level A	

Turnaround 10 Work Days 5 Work Days 3 Work Days
 Time: 2 Work Days 1 Work Day 2-8 Hours
 CODE: Misc. Detect. Eval. Remed. Demol. Closure

Drinking Water
 Waste Water
 Other

Analyses Requested: **9601076**

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Laboratory Sample #	Comments
1. INPC	1/22/96/1445	AIR	1	TEOLAC	01A	2 TPA's/BK
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

Relinquished By: Samuel	Date: 1/23/96	Time: 07:15	Received By: Rhonda Neigung	Date: 1-23-96	Time: 7:15
Relinquished By: Rhonda Neigung	Date: 1-23-96	Time: 10:30A	Received By: Stae TR	Date: 1-23-96	Time: 10:30 A
Relinquished By: Stae TR	Date: 1/23/96	Time: 12:30	Received By Lab: mg	Date: 1/23/96	Time: 12:31

Were Samples Received in Good Condition? Yes No
 Samples on Ice? Yes No
 Method of Shipment: **Ship**

To be completed upon receipt of report:
 1) Were the analyses requested on the Chain of Custody reported? Yes No If no, what analyses are still needed? _____
 2) Was the report issued within the requested turnaround time? Yes No If no, what was the turnaround time? _____
 Approved by: _____ Signature: **Samuel** Company: **PACIFIC** Date: _____

Pink - Client

Yellow - Laboratory

White - Laboratory



Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA. 95110

Client Proj. ID: 310-058.5A/5760, San Lorenzo
Sample Descript: INFL
Matrix: AIR
Analysis Method: 8015Mod/8020
Lab Number: 9602883-01

Sampled: 02/13/96
Received: 02/14/96
Analyzed: 02/14/96
Reported: 02/16/96

IC Batch Number: GC021496BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	25	220
Benzene	0.25	2.4
Toluene	0.25	3.1
Ethyl Benzene	0.25	4.6
Xylenes (Total)	0.25	23
Gas & Unidentified HC		< C8

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 - 130	184 Q



analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu

Claudia Hirotsu
Project Manager



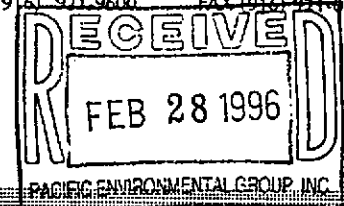


**Sequoia
Analytical**

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834

(415) 364-9600 FAX (415) 364-9233
(510) 988-9600 FAX (510) 988-9673
(916) 921-9600 FAX (916) 921-9100



Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Client Proj. ID: 310-058.5A/5760, San Lorenzo

Lab Proj. ID: 9602A22

Sampled: 02/13/96
Received: 02/14/96
Analyzed: see below

Attention: Steve Clark

Reported: 02/26/96

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9602A22-02				
Sample Desc: LIQUID, EFFL				
Chemical Oxygen Demand	mg/L	02/20/96	20	N.D.
Total Suspended Solids	mg/L	02/16/96	1.0	9.0

analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu
Project Manager





Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Client Proj. ID: 310-058.5A/5760, San Lorenzo
Sample Descript: INFL
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9602A22-01

Sampled: 02/13/96
Received: 02/14/96
Analyzed: 02/16/96
Reported: 02/26/96

Attention: Steve Clark

JC Batch Number: GC021696BTEX01A
Instrument ID: GCHP01

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10000	32000
Benzene	100	460
Toluene	100	1100
Ethyl Benzene	100	1500
Xylenes (Total)	100	7700
Chromatogram Pattern:		Gas
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	100

analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu
Project Manager





Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Client Proj. ID: 310-058.5A/5760, San Lorenzo
Sample Descript: EFFL
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9602A22-02

Sampled: 02/13/96
Received: 02/14/96
Analyzed: 02/21/96
Reported: 02/26/96

Attention: Steve Clark

Batch Number: GC022196BTEX06A
Instrument ID: GCHP06

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	82

analytes reported as N.D. were not present above the stated limit of detection.

EQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu
Project Manager





Sequoia
Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834

(415) 364-9600
(510) 988-9600
(916) 921-9600

FAX (415) 364-9233
FAX (510) 988-9673
FAX (916) 921-0100

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Steve Clark

Client Proj. ID: 310-058.5A/5760, San Lorenzo

Received: 02/14/96

Lab Proj. ID: 9602A22

Reported: 02/26/96

LABORATORY NARRATIVE

MTBE was not detected above 40 ppb in these samples.

EQUOIA ANALYTICAL

Claudia Hirotsu
Project Manager





Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Steve Clark

Client Project ID: 310-058.5A/5760, San Lorenzo
Matrix: LIQUID

Work Order #: 9602A22 01

Reported: Feb 27, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC021696BTEX01A	GC021696BTEX01A	GC021696BTEX01A	GC021696BTEX01A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	D. Jirsa	D. Jirsa	D. Jirsa	D. Jirsa
MS/MSD #:	960261806	960261806	960261806	960261806
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	2/16/96	2/16/96	2/16/96	2/16/96
Analyzed Date:	2/16/96	2/16/96	2/16/96	2/16/96
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.7	9.5	9.9	29
MS % Recovery:	97	95	99	97
Dup. Result:	10	10	11	31
MSD % Recov.:	100	100	110	103
RPD:	3.0	5.1	11	6.7
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	BLK021696	BLK021696	BLK021696	BLK021696
Prepared Date:	2/16/96	2/16/96	2/16/96	2/16/96
Analyzed Date:	2/16/96	2/16/96	2/16/96	2/16/96
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	9.4	9.4	9.4	29
LCS % Recov.:	94	94	94	97

MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130
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Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL
Claudia Hirotsu
Claudia Hirotsu
Project Manager

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9602A22.PPP <1>





Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Steve Clark

Client Project ID: 310-058.5A/5760, San Lorenzo
Matrix: LIQUID

Work Order #: 9602A22 02

Reported: Feb 27, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC022196BTEX06A	GC022196BTEX06A	GC022196BTEX06A	GC022196BTEX06A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	M. Otte	M. Otte	M. Otte	M. Otte
MS/MSD #:	9602B0712	9602B0712	9602B0712	9602B0712
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	2/21/96	2/21/96	2/21/96	2/21/96
Analyzed Date:	2/21/96	2/21/96	2/21/96	2/21/96
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.7	9.9	9.9	30
MS % Recovery:	97	99	99	100
Dup. Result:	9.5	9.8	9.8	30
MSD % Recov.:	95	98	98	100
RPD:	2.1	1.0	1.0	0.0
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:	BLK022196	BLK022196	BLK022196	BLK022196
Prepared Date:	2/21/96	2/21/96	2/21/96	2/21/96
Analyzed Date:	2/21/96	2/21/96	2/21/96	2/21/96
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	10	10	10	31
LCS % Recov.:	100	100	100	103

MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130
---------------------------------	--------	--------	--------	--------

Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Claudia Hirotsu
Claudia Hirotsu
Project Manager

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9602A22.PPP <2>





Pacific Environmental Group 2025 Gateway Place, Suite 440 San Jose, CA 95110 Attention: Steve Clark	Client Project ID: 310-058.5A/5760, San Lorenzo Matrix: LIQUID Work Order #: 9602A22 02	Reported: Feb 27, 1996
--	---	------------------------

QUALITY CONTROL DATA REPORT

Analyte: Total Suspended Solids
QC Batch: IN021696160200A
Analy. Method: EPA 160.2
Prep Method: N.A.

Analyst: S. Chin

Duplicate Sample #: 960299401

Prepared Date: 2/16/96
Analyzed Date: 2/16/96
Instrument I.D.#: MANUAL

Sample Concentration: 4.0

Dup. Sample Concentration: 3.5

RPD: 13
RPD Limit: 0-30

SEQUOIA ANALYTICAL

Claudia Hirotsu
Claudia Hirotsu
Project Manager

** RPD=Relative % Difference





Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Steve Clark

Client Project ID: 310-058.5A/5760, San Lorenzo
Matrix: LIQUID

Work Order #: 9602A22 02

Reported: Feb 27, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Chemical Oxygen Demand
QC Batch#:	IN022096410400A
Analy. Method:	EPA 410.4
Prep. Method:	N.A.

Analyst: D. Lawrence
MS/MSD #: 9602A2202
Sample Conc.: N.D.
Prepared Date: 2/20/96
Analyzed Date: 2/20/96
Instrument I.D.#: MANUAL
Conc. Spiked: 100 mg/L

Result: 110
MS % Recovery: 110

Dup. Result: 99
MSD % Recov.: 99

RPD: 9.5
RPD Limit: 0-30

LCS #: LCS022096
Prepared Date: 2/20/96
Analyzed Date: 2/20/96
Instrument I.D.#: MANUAL
Conc. Spiked: 100 mg/L
LCS Result: 93
LCS % Recov.: 93

MS/MSD	
LCS	70-130
Control Limits	

Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Claudia Hirotsu
Project Manager

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9602A22.PPP <4>



Consultant Company: PACIFIC ENVIRONMENTAL GROUP Project Name: 310-0585A
 Address: 2025 CARRWAY PL STE 440 UNOCAL Project Manager: TINA BERRY
 City: SAN JOSE State: CA Zip Code: 95110 AFE #:
 Telephone: 408 441-7500 FAX #: 446-7539 Site #, City, State: 5760 SAN LORENZO CA
 Report To: STEVE CLARK Sampler: DHW MANNIX QC Data: Level D (Standard) Level C Level B Level A

Turnaround 10 Work Days 5 Work Days 3 Work Days
 Time: 2 Work Days 1 Work Day 2-8 Hours
 CODE: Misc. Detect. Eval. Remed. Demol. Closure

Analyses Requested
 Drinking Water
 Waste Water
 Other GW

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Laboratory Sample #	[Handwritten Notes: THIS BOX STORED SOLIDS CHEMICAL ANALYSIS DEMAND]										Comments
1. <u>INFL</u>	<u>2.3.96/1825</u>	<u>WATER</u>	<u>3</u>	<u>VOA</u>	<u>01 A-C</u>											
2. <u>GFL</u>	<u>1/1826</u>		<u>3</u>	<u>VOA</u>	<u>02 J</u>											
3. <u>↓</u>	<u>↓</u>		<u>1</u>	<u>PL/MP</u>	<u>D</u>											
4. <u>↓</u>	<u>↓</u>		<u>1</u>	<u>PL/H2SO4</u>	<u>E</u>											
5.																
6.																
7.																
8.																
9.																
10.																

Relinquished By: <u>[Signature]</u>	Date: <u>2.14.96</u>	Time: <u>0700</u>	Received By: <u>[Signature]</u>	Date: <u>2/14/96</u>	Time: <u>700</u>
Relinquished By: <u>[Signature]</u>	Date: <u>2/14/96</u>	Time: <u>902</u>	Received By: <u>[Signature]</u>	Date: <u>2/14/96</u>	Time: <u>9:00</u>
Relinquished By: <u>[Signature]</u>	Date: <u>2/14/96</u>	Time:	Received By Lab: <u>[Signature]</u>	Date: <u>2.14.96</u>	Time: <u>1237</u>

Were Samples Received in Good Condition? Yes No Samples on Ice? Yes No Method of Shipment: _____ Page 1 of 1

To be completed upon receipt of report:
 1) Were the analyses requested on the Chain of Custody reported? Yes No If no, what analyses are still needed? _____
 2) Was the report issued within the requested turnaround time? Yes No If no, what was the turnaround time? _____
 Approved by: _____ Signature: [Signature] Company: PACIFIC Date: 2/28/96

Pink - Client
Yellow - Laboratory
White - Laboratory

ATTACHMENT C
FIELD DATA SHEETS

SITE INFORMATION FORM

Identification

Project # 3100583A SA

Station # 5760

Site Address: Unocal

376 Lewelling Blvd
San Lorenzo

County:

Project Manager: C. York

Requestor: S. Clark

Client: Unocal

Project Type

- 1st Time Visit
- Quarterly
 - 1st 2nd 3rd 4th
- Monthly
- Semi-Monthly
- Weekly
- One time event
- Other: _____

Client P.O.C.: _____

Date of Request _____

Ideal field date(s): _____

Check Appropriate Category

Budget Hrs. _____

Actual Hrs. 2.5

Mob de Mob 1.5

Field Tasks: For General Description

circle one:

Priority: 1. (emergency, must be done within 24 hrs); 2. (next visit); 3. (when available)

Semi Monthly: Data Collection / System Optimization: Fill out attached data sheets; Optimize GWE/SVE Systems.

Monthly: SVE: - FID readings from INFL, MID-1, EFFL for BAAQMD compliance (must do)
- INFL Air Bag Sample (to Sequoia Anal) for TPH-g, BTEX

GWE: - TAKE INFL & EFFL water samples for lab analysis (Sequoia)
INFL - TPHg/BTEX, EFFL - TPHg/BTEX/SS/COD/pH
- Perform regular semi-monthly tasks listed above

(Request Revised 10/2/96 by SDC)

Comments, remarks, etc. from Field Staff (include problems encountered and out-of-scope work)

- PUMP CONTROLLERS WERE EVIDENTLY CALIBRATED FOR 1/2 HP PUMPS. RECALIBRATE FOR 1/3 HP. THIS WAS THE CAUSE OF LACK OF DRAW DOWN, PUMP CYCLES LONGER IN DURATION - SET FOR 2 MINUTE RECHARGE

- Samples taken Samples not required Soil Vapor Groundwater
- Weekly Semi-Monthly Monthly Quarterly Semi-Annual

PACIFIC ENVIRONMENTAL GROUP, INC.

Completed by: John M... Date: 1.11.96

Checked by: _____

Soil Vapor and Groundwater Extraction System
 Unocal Service Station 5760
 376 Lewelling Boulevard
 San Lorenzo, California
 310-058.5A

Name: JOHN MADDEX Date/Time: 1.11.96/1115

TREATMENT SYSTEM READINGS			
SVE Operational Upon Arrival?	No - K.O. FLOAT SWITCH STUCK, HIGH LEVEL	GWS Operational Upon Arrival?	YES
Liquid Carbon #1 Pressure (psi)	1 psi / 12 psi	SVE Blower Hour Meter Reading	01652.89
Liquid Carbon #2 Pressure (psi)	2 psi / 6 psi	Total Vacuum from Wells (" of H2O)	68" H2O / 50" H2O
Electric Meter (kw-hrs)	03918 Kw hr	Manual Air Dilution Valve Position?	FULLY CLOSED
SVE Total Air Flow To Carbon (cfm)	0.15" = 35 cfm / 0.50" = 83 cfm	Post-Dilution SVE Air Flow To Carbon (cfm)	NO DILUTION
GWS Totalizer (gallons)	0017980	Bag Filter Pressure (psi). Filt Changed?	IN = 22 psi / 15 psi OUT = 5 psi / 14 psi
GWS Second Cont. Switch Operational?	YES	Was the Oil Changed This Month on Blower?	NO - OK
SVE Influent FID Reading (ppm)	WC = 700 ppm WCC = 750 ppm	SVE Effluent FID Reading (ppm)	WC = 600 ppm WCC = 525 ppm
		GWS EFFL. Temp	= 58.4° F

- PUMP 1 DRAWS 3.57/3.63 AMPS
- " 2 " 3.64/3.77 AMPS
- (BEFORE/AFTER) ADJUSTMENTS, FILTER CHANGE, ETC.
- SVE BLOWER PULLED BIG SLUG OF WATER, THEN FLOW RATE INCREASED AS NOTED; VAC DECREASED.. MORE SCREEN AVAILABLE WITH INCREASED DRAW DOWN
- EFFL FLOW RATE = 11.0 CPM

SITE INFORMATION FORM

Identification

Project # 310058.3A SA
Station # 5760
Site Address: Unocal
376 Lewelling Blvd
San Lorenzo
County:
Project Manager: C. York
Requestor: S. Clark
Client: Unocal

Project Type

- 1st Time Visit
Quarterly
1st 2nd 3rd 4th
Monthly
Semi-Monthly
Weekly
One time event
Other:

Client P.O.C.:
Date of Request
Ideal field date(s):

Check Appropriate Category

Budget Hrs.
Actual Hrs. 4.0
Mob de Mob 2.0

Field Tasks: For General Description

circle one:

Priority: 1. (emergency, must be done within 24 hrs); 2. (next visit); 3. (when available)

Semi Monthly: Data Collection / System Optimization: Fill out attached data sheets; Optimize GWE/SVE Systems.

Monthly: SVE: -FID readings from INEL, MID-1, EFFL for BAAQMD compliance (must do)
- INEL Air Bag Sample (to Sequoia) for TPH-g, BTEX

GWE: -TAKE INEL & EFFL water samples for lab analysis (Sequoia)
INEL - TPHg/BTEX, EFFL - TPHg/BTEX/SS/COD/pH
- Perform regular semi-monthly tasks listed above

(Request Revised 11/2/96 by SAC)

Comments, remarks, etc. from Field Staff (Include problems encountered and out-of-scope work)

PULLED PUMPS FROM U-1 AND U-3 240V MEASURED ACROSS PUMP LEADS NO AMPERAGE DRAW. PHONED SYMCOM (PUMPSAVER) AND THEY AGREED THE PROBLEM WAS AT THE JETSUB PUMPS. ALSO RESET AT PUMPSAVER TO BYPASS JETSUB RESTART CIRCUIT - NO PUMPING - WILL PASS OFF TO BRUCE BARTON FOR APPRAISAL. SVE SAMPLE TAKEN, NO GWE.

- Samples taken Samples not required Soil Vapor Groundwater
Weekly Semi-Monthly Monthly Quarterly Semi-Annual

PACIFIC ENVIRONMENTAL GROUP, INC.

Completed by: [Signature] Date: 1.22.96
Checked by:

Soil Vapor and Groundwater Extraction System
 Unocal Service Station 5760
 376 Lewelling Boulevard
 San Lorenzo, California
 310-058.5A

Name: LOWMAN, DOK Date/Time: 1.22.96

TREATMENT SYSTEM READINGS			
SVE Operational Upon Arrival?	NO-HIGH LEVEL IN K.O PUMPCDOWN, RESTART	GWS Operational Upon Arrival?	NO-HIGH PRESSURE AT FILTER. CHANGE RESTART
Liquid Carbon #1 Pressure (psi)	SEE NOTE	SVE Blower Hour Meter Reading	01659.50 SEE NOTE
Liquid Carbon #2 Pressure (psi)	↓	Total Vacuum from Wells (" of H2O)	12" H ₂ O
Electric Meter (kw-hrs)	03949 kw-hrs	Manual Air Dilution Valve Position?	FULLY CLOSED
SVE Total Air Flow To Carbon (cfm)	0.10" = 29 cfm	Post-Dilution SVE Air Flow To Carbon (cfm)	NO DILUTION FLOW = 0.10
GWS Totalizer (gallons)	009350	Bag Filter Pressure (psi). Filt Changed?	YES IN = 8 psi OUT = 8 psi
GWS Second Cont. Switch Operational?	YES	Was the Oil Changed This Month on Blower?	NO - OK
SVE Influent FID Reading (ppm)	WC = 10 ppm WOC = 28 ppm	SVE Effluent FID Reading (ppm)	WC = 10 ppm WOC = 17 ppm
	MID WC = 9 WOC = 16	GWS Effl. Temp	NA

UNOCAL 76

819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600
404 N. Wiget Lane • Walnut Creek, CA 94598 • (510) 988-9600
10300 120th Ave., N.E., Suite 101 • Bonno, WA 98011 • (206) 751-9200
East 11115 Montgomery, Suite B • Spokane, WA 99206 • (509) 924-9200
15055 S.W. Sequoia Pkwy, Suite 110 • Portland, OR 97222 • (503) 624-9800

Consultant Company: PACIFIC ENVIRONMENTAL GROUP		Project Name: 310-05B.SA	
Address: 2025 GATEWAY PL. STE 440 S		UNOCAL Project Manager: TINA BERRY	
City: SAN JOSE	State: CA	Zip Code: 95110	AFE #:
Telephone: 400 441-7500		FAX #: 441-7539	
Report To: STEVE CLARK		Site #, City, State: 5760 SAN JOSE CA	
Sampler: JAN M... X		QC Data: <input checked="" type="checkbox"/> Level D (Standard) <input type="checkbox"/> Level C <input type="checkbox"/> Level B <input type="checkbox"/> Level A	

Turnaround 10 Work Days 5 Work Days 3 Work Days
Time: 2 Work Days 1 Work Day 2-8 Hours

CODE: Misc. Detect. Eval. Remed. Demol. Closure

Analyses Requested

Drinking Water
 Waste Water
 Other

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Laboratory Sample #	Analyses Requested										Comments				
1. INFC	1/22/96/1445	AIR	1	TEPLAC	27845/58															
2.																				
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				

Relinquished By: SM... X	Date: 1/23/96	Time: 0715	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By Lab:	Date:	Time:

Were Samples Received in Good Condition? Yes No Samples on Ice? Yes No Method of Shipment: _____ Page **1** of **1**

To be completed upon receipt of report:

1) Were the analyses requested on the Chain of Custody reported? Yes No If no, what analyses are still needed? _____

2) Was report issued within the requested turnaround time? Yes No , what was the turnaround time? _____

Approved by: _____ Signature: _____ Company: _____ Date: _____

Pink - Client
Yellow - Laboratory
White - Laboratory

W

SITE INFORMATION FORM

Identification

Project # 310-05B.SA

Station # 5760

Site Address:

LEWELLING BLVD
SAN LORENZO

County: ALAMEDA

Project Manager:

Requestor: ANDREW L

Client:

Project Type

- 1st Time Visit
- Quarterly
 - 1st 2nd 3rd 4th
- Monthly
- Semi-Monthly
- Weekly
- One time event
- Other: _____

Client P.O.C.: _____

Date of Request _____

Ideal field date(s): _____

Check Appropriate Category

Budget Hrs. _____

Actual Hrs. 1.5

Mob de Mob 1.0

Field Tasks: For General Description

circle one:

Priority: 1. (emergency, must be done within 24 hrs); 2. (next visit); 3. (when available)

- Pump test on jetsub (ground/s) 1/3 HP. PUMPS DRAW 3 SAMPLES
 CYCLE 8x BEFORE SHUTTING OFF. EVIDENTLY PUMPS REQUIRE
 RESET MANUALLY AFTER 8 CYCLES.
 - PUMPS FROM U-1 AND U-3

Comments, remarks, etc. from Field Staff (include problems encountered and out-of-scope work)

- Samples taken Samples not required Soil Vapor Groundwater
- Weekly Semi-Monthly Monthly Quarterly Semi-Annual

PACIFIC ENVIRONMENTAL GROUP, INC.

Completed by: [Signature] Date: 2.1.96

Checked by: _____

SITE INFORMATION FORM

Identification

Project # 310 058 3A SA

Station # 5760

Site Address: Unocal

376 Lewelling Blvd
San Lorenzo

County:

Project Manager: C. York

Requestor: S. Clark

Client: Unocal

Project Type

- 1st Time Visit
- Quarterly
 - 1st 2nd 3rd 4th
- Monthly
- Semi-Monthly
- Weekly
- One time event
- Other: _____

Client P.O.C.: _____

Date of Request _____

Ideal field date(s): _____

Check Appropriate Category

Budget Hrs. _____

Actual Hrs. 3.0

Mob de Mob 1.5

Field Tasks: For General Description

circle one:

Priority: 1. (emergency, must be done within 24 hrs); 2. (next visit); 3. (when available)

Semi Monthly: Data Collection / System Optimization: Fill out attached data sheets; Optimize GWE/SVE Systems.

Monthly: SVE: -FID readings from INFL, MID-1, EFFL for BAAQMD compliance (must do)
- INFL Air Bag Sample (to Sequoia Anal) for TPH-g, BTEX

GWE: -TAKE INFL & EFFL water samples for lab analysis (Sequoia) (INFL - TPHg/BTEX) (EFFL - TPHg/BTEX/SS/COD/pH)
- Perform regular semi-monthly tasks listed above

(Request Revised 11/2/96 by SDC)

Comments, remarks, etc. from Field Staff (include problems encountered and out-of-scope work)

- REINSTALLED U1 AND U3 GROUNDWATER PUMPS / RESTARTED SYSTEM. RESTART SVE AS WELL - SVE DROUPE HEAD PULSED MUCH GW, WITHOUT BENEFIT OF GWE DRAW DOWN. HEAVY SILT - NOTED INCREASE IN PRESSURE DROP ACROSS BAG FILTER DURING SITE VISIT. AERB FILTER CHANGE 12psi IN, 12psi OUT. ~ 2 HOURS OF PUMPING -> 16psi IN, 10psi OUT

- Samples taken Samples not required Soil Vapor Groundwater
- Weekly Semi-Monthly Monthly Quarterly Semi-Annual

PACIFIC ENVIRONMENTAL GROUP, INC.

Completed by: JOHN MADDOX Date: 2.13.96

Checked by: _____

Soil Vapor and Groundwater Extraction System
 Unocal Service Station 5760
 376 Lewelling Boulevard
 San Lorenzo, California
 310-058.5A

Name: JOHN MADDOX Date/Time: 2.12.90/1645/2.13.96/1610

TREATMENT SYSTEM READINGS			
SVE Operational Upon Arrival?	NO - HIGH KO, FILTER LOADED	GWS Operational Upon Arrival?	NO - REINSTALL PUMPS
Liquid Carbon #1 Pressure (psi)	10 psi (AFTER FILTER CHANGE, BOTH PUMPS & KO XFER)	SVE Blower Hour Meter Reading	01820,86 HRS
Liquid Carbon #2 Pressure (psi)	5 psi ↓	Total Vacuum from Wells (" of H2O)	57" H2O
Electric Meter (kw-hrs)	04451 Kw hrs	Manual Air Dilution Valve Position?	FULLY CLOSED
SVE Total Air Flow To Carbon (cfm)	0.35" H2O = 54 cfm	Post-Dilution SVE Air Flow To Carbon (cfm)	NO DILUTION
GWS Totalizer (gallons)	6028980	Bag Filter Pressure (psi). Filt Changed?	72 psi IN, 0 psi OUT AFTER FILTER CH.; 12 psi IN, 12 psi:
GWS Second Cont. Switch Operational?	Yes	Was the Oil Changed This Month on Blower?	NO - OK
SVE Influent FID Reading (ppm)	WC = 40 ppm WCC = 180 ppm	SVE Effluent FID Reading (ppm)	WC = 2 ppm MID WC = 14 ppm WCC = 42 ppm WCC = 120 ppm
	GWS Effl. Temp		70.9 °F

Effl pH = 6.83

UNOCAL 76

- 680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600
- 18939 120th Ave., N.E., Suite 101 • Bothell, WA 98011 • (206) 481-9200
- 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600
- East 11115 Montgomery, Suite B • Spokane, WA 99206 • (509) 924-9200
- 1900 Bates Ave., Suite LM • Concord, CA 94520 • (510) 686-9600
- 15055 S.W. Sequoia Pkwy, Suite 110 • Portland, OR 97222 • (503) 624-9800

Company Name: PACIFIC ENVIRONMENTAL GROUP Project Name: 310-0585A

Address: 2025 GATEWAY PL STE 440 UNOCAL Project Manager: TINA BERRY

City: SAN JOSE State: CA Zip Code: 95110 Release #:

Telephone: 408 441-7500 FAX #: 441-7539 Site #: 5760 SAN LORENZO CA

Report To: STE CLARK Sampler: JOHN MADDOX QC Data: Level D (Standard) Level C Level B Level A

Turnaround 10 Work Days 5 Work Days 3 Work Days

Time: 2 Work Days 1 Work Day 2-8 Hours

CODE: Misc. Detect. Eval. Remed. Demol. Closure

Drinking Water

Waste Water

Other AIR

Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Laboratory Sample #	Analyses Requested										Comments								
1. <u>INPL</u>	<u>2.13.96/1816</u>	<u>AIR</u>	<u>1</u>	<u>TELAR</u>		<input checked="" type="checkbox"/>																		
2.																								
3.																								
4.																								
5.																								
6.																								
7.																								
8.																								
9.																								
10.																								

Relinquished By: <u>[Signature]</u>	Date: <u>2.14.96</u>	Time: <u>5700</u>	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By Lab:	Date:	Time:

Were Samples Received in Good Condition? Yes No Samples on Ice? Yes No Method of Shipment _____ Page 1 of 1

To be completed upon receipt of report:

1) Were the analyses requested on the Chain of Custody reported? Yes No If no, what analyses are still needed?

2) Was the report issued within the requested turnaround time? Yes No If no, what was the turnaround time?

Pink - Client
Yellow - Laboratory
White - Laboratory

UNOCAL 76

680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600
 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600
 404 N. Wiget Lane • Walnut Creek, CA 94598 • (510) 988-9600

18939 120th Ave., N.E., Suite 101 • Bothell, WA 98011 • (206) 401-0200
 East 11115 Montgomery, Suite B • Spokane, WA 99206 • (509) 924-9200
 15055 S.W. Sequoia Pkwy, Suite 110 • Portland, OR 97222 • (503) 624-9800

Consultant Company: <u>PACIFIC ENVIRONMENTAL GROUP</u>			Project Name: <u>310-0585A</u>		
Address: <u>2025 CARRWAY PL STE 440</u>			UNOCAL Project Manager: <u>TINA BERRY</u>		
City: <u>SAN JOSE</u>	State: <u>CA</u>	Zip Code: <u>95110</u>	AFE #:		
Telephone: <u>408 441-7500</u>		FAX #: <u>416-7539</u>	Site #, City, State: <u>5760 SAN LORENZO CA</u>		
Report To: <u>STEVE CLARK</u>	Sampler: <u>BHW MADDOX</u>		QC Data: <input checked="" type="checkbox"/> Level D (Standard) <input type="checkbox"/> Level C <input type="checkbox"/> Level B <input type="checkbox"/> Level A		

Turnaround 10 Work Days 5 Work Days 3 Work Days
 Time: 2 Work Days 1 Work Day 2-8 Hours

CODE: Misc. Detect. Eval. Remed. Demol. Closure

Drinking Water
 Waste Water
 Other GW

Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Laboratory Sample #	Analyses Requested										Comments				
1. <u>INFL</u>	<u>2.13.96/1825</u>	<u>WATER</u>	<u>3</u>	<u>VOA</u>		<u>X</u>														
2. <u>GFPL</u>	<u>1/1820</u>		<u>3</u>	<u>VOA</u>		<u>X</u>														
3. <u>↓</u>	<u>↓</u>		<u>1</u>	<u>PL/MP</u>																
4. <u>↓</u>	<u>↓</u>		<u>1</u>	<u>PL/H₂O₂</u>																
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				

Relinquished By: <u>[Signature]</u>	Date: <u>2.14.96</u>	Time: <u>0700</u>	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By Lab:	Date:	Time:

Were Samples Received in Good Condition? Yes No Samples on Ice? Yes No Method of Shipment _____ Page 1 of 1

To be completed upon receipt of report:

1) Were the analyses requested on the Chain of Custody reported? Yes No If no, what analyses are still needed? _____

2) Was the report issued within the requested turnaround time? Yes No If no, what was the turnaround time? _____

Pink - Client
 Yellow - Laboratory
 White - Laboratory

SITE INFORMATION FORM

Identification

Project # 310.058.3A SA
 Station # 5760
 Site Address: Unocal
376 Lewelling Blvd
San Lorenzo
 County: _____
 Project Manager: C. York
 Requestor: S. Clark
 Client: Unocal

Project Type

- 1st Time Visit
- Quarterly
 - 1st 2nd 3rd 4th
- Monthly
- Semi-Monthly
- Weekly
- One time event
- Other: _____

Client P.O.C.: _____
 Date of Request _____
 Ideal field date(s): _____

Check Appropriate Category

Budget Hrs. _____
 Actual Hrs. 2.5
 Mob de Mob 2.0

Field Tasks: For General Description

circle one:

Priority: 1. (emergency, must be done within 24 hrs); 2. (next visit); 3. (when available)

Semi Monthly: Data Collection / System Optimization: Fill out attached data sheets; Optimize GWE/SVE Systems.

* Monthly: SVE: -FID readings from INFL, MID-1, EFFL for BAAQMD compliance (must do)
 - INFL Air Bag Sample (to Seguin Anal) for TPH-g, BTEX

GWE: -TAKE INFL & EFFL water samples for lab analysis (Seguin)
 INFL-TPH_g/BTEX, EFFL-TPH_g/BTEX/SS/COD/pH
 - Perform regular semi-monthly tasks listed above

(Request Revised 10/2/96 by SDC)

Comments, remarks, etc. from Field Staff (include problems encountered and out-of-scope work)

GW FILTER LOADS UP QUICKLY. SET HIGH PRESSURE SWITCH FOR 90psi. SHUTOFF CHANGED FILTER TWICE - INFL P WENT FROM 14psi TO 90psi WITHIN AN HOUR OF CHANGEOUT. COULD ROUTE SVE KO PUMP LINE TO SECOND FILTER, AND INSTALL A SECOND FILTER IN PARALLEL TO THE FIRST.

- Samples taken Samples not required Soil Vapor Groundwater
- Weekly Semi-Monthly Monthly Quarterly Semi-Annual

PACIFIC ENVIRONMENTAL GROUP, INC.

Completed by: [Signature] Date: 2.27.96

Checked by: _____

Soil Vapor and Groundwater Extraction System
 Unocal Service Station 5760
 376 Lewelling Boulevard
 San Lorenzo, California
 310-058.5A

Name: JW Max Date/Time: 2.27.96/0740

TREATMENT SYSTEM READINGS			
SVE Operational Upon Arrival?	NO FILTER LOADED/HIGH KO	GWS Operational Upon Arrival?	NO
Liquid Carbon #1 Pressure (psi)	< 2psi / 12psi	SVE Blower Hour Meter Reading	01826.38
Liquid Carbon #2 Pressure (psi)	< 2psi / 4psi	Total Vacuum from Wells (" of H2O)	44 1/2
Electric Meter (kw-hrs)	04682 Kw hrs	Manual Air Dilution Valve Position?	FULLY CLOSED
SVE Total Air Flow To Carbon (cfm)	0.50"	Post-Dilution SVE Air Flow To Carbon (cfm)	No Dilution
GWS Totalizer (gallons)	0046170	Bag Filter Pressure (psi). Filt Changed?	90psi IN / 14psi IN < 2psi OUT / 14psi OUT
GWS Second Cont. Switch Operational?	YES	Was the Oil Changed This Month on Blower?	No - OK
SVE Influent FID Reading (ppm)	175 / 350 WC WOC	SVE Effluent FID Reading (ppm)	240 / 340 WC WOC
MID FID	= 250 ppm / 330 ppm WC WOC	GWS Effl. Temp	61.6°F

PRESSURE VALUES
 ARE BEFORE / AFTER FILTER CHANGE

SITE INFORMATION FORM

Identification

Project # 310-058 SA
Station # 5760
Site Address: UNOCAL
376 LEVELLING
SAN LORENZO
County: ALAMEDA
Project Manager:
Requestor: STEVE CLARK
Client: UNOCAL

Project Type

- 1st Time Visit
Quarterly
1st 2nd 3rd 4th
Monthly
Semi-Monthly
Weekly
One time event
Other:

Client P.O.C.:
Date of Request
Ideal field date(s):

Check Appropriate Category

Budget Hrs.
Actual Hrs. 2.0
Mob de Mob 1.5

Field Tasks: For General Description

circle one:
Priority: 1. (emergency, must be done within 24 hrs); 2. (next visit); 3. (when available)

-ON SITE FOR SCHEDULED O&M VISIT. GWE AND SVE DOWN DUE TO LEAKING FIRST CARBON DRUM AND HIGH LEVEL IN SECONDARY CONTAINMENT. CARBON LID IS BOWED OUT & NEEDS REPLACEMENT, VENDOR: CETCO AQUATEX 1-800-256-8466
THIS IS A 55 GAL. DRUM WITH 1" INLET IN CENTER OF LID
SVE HR METER = 01912.66
ELECTRIC METER = 05167 kWhrs
GWE TOTALIZER = 0082,320 GAL

Comments, remarks, etc. from Field Staff (include problems encountered and out-of-scope work)

[Blank lines for field staff comments]

- Samples taken Samples not required Soil Vapor Groundwater
Weekly Semi-Monthly Monthly Quarterly Semi-Annual

Completed by: JOHN MADDOX Date: 3.11.96
Checked by:

PACIFIC ENVIRONMENTAL GROUP, INC.

SITE INFORMATION FORM

Identification

Project # 3100583A SA

Station # 5760

Site Address: Unocal
376 Lewelling Blvd
San Lorenzo

County:

Project Manager: C. York

Requestor: S. Clark / ANARENW

Client: Unocal

Project Type

- 1st Time Visit
- Quarterly
 - 1st 2nd 3rd 4th
- Monthly
- Semi-Monthly *ARRIVED 10:00 DEPART 12:00*
- Weekly
- One time event
- Other:

Client P.O.C.: _____

Date of Request _____

Ideal field date(s): _____

Check Appropriate Category

Budget Hrs. _____

Actual Hrs. 2.5

Mob de Mob _____

Field Tasks: For General Description

circle one:

Priority: 1. (emergency, must be done within 24 hrs); 2. (next visit); 3. (when available)

Semi Monthly: Data Collection / System Optimization: Fill out attached data sheets; Optimize GWE/SVE Systems.

* Monthly: SVE: - FID readings from INFL, MID-1, EFEL for BAAQMD compliance (must do)
- INFL Air Bag Sample (to Sequoia) for TPH-g, BTEX

GWE: - TAKE INFL & EFEL water samples for lab analysis (Sequoia: INFL - TPHg/BTEX, EFEL - TPHg/BTEX/SS/COD/pH)
- Perform regular semi-monthly tasks listed above

(Request Revised 11/2/96 by SDC)

Comments, remarks, etc. from Field Staff (include problems encountered and out-of-scope work)

* NEED TO MODIFY GWS TO TRANSFER H₂S (that is stored in drums) THROUGH SYSTEM (PER: LINDA BERRY)

- Samples taken Samples not ^{taken} required
- Weekly Semi-Monthly Monthly Quarterly Semi-Annual
- Soil Vapor Groundwater

PACIFIC ENVIRONMENTAL GROUP, INC.

Completed by: 1179
Checked by: _____

Date: 3/25/96

Soil Vapor and Groundwater Extraction System
 Unocal Service Station 5760
 376 Lewelling Boulevard
 San Lorenzo, California
 310-058.5A

Name: M.G. Date/Time: 3/25/96

TREATMENT SYSTEM READINGS			
SVE Operational Upon Arrival?	NO	GWS Operational Upon Arrival?	NO
Liquid Carbon #1 Pressure (psi)	5	SVE Blower Hour Meter Reading	01912
Liquid Carbon #2 Pressure (psi)	4	Total Vacuum from Wells (" of H2O)	/
Electric Meter (kw-hrs)	05168	Manual Air Dilution Valve Position?	/
SVE Total Air Flow To Carbon (cfm)	/	Post-Dilution SVE Air Flow To Carbon (cfm)	/
GWS Totalizer (gallons)	0082600	Bag Filter Pressure (psi). Filtr Changed?	30/7
GWS Second Cont. Switch Operational?	YES	Was the Oil Changed This Month on Blower?	/
SVE Influent FID Reading (ppm)	/	SVE Effluent FID Reading (ppm)	/
		GWS Effl. Temp	/

Completed Carbon change out @ 11:00, had problems with nut/bolt assembly on Bag Filter lid, nut was frozen up on bolt, as a result of that it broke. System cannot be operated until replaced, I got it as light as ^{much as} I could and system ran for a short while then filter started leaking.