



SP ENVIRONMENTAL SYSTEMS, INC.

9719 LINCOLN VILLAGE DR., SUITE 310 SACRAMENTO, CA 95827 (916) 369-8971 FAX (916) 369-8370
September 30, 1991

Mr. Dennis Byrne
Alameda County Health Care Services Agency
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

**Subject: Third Quarter 1991 Groundwater Monitoring Report
Southern Pacific Transportation Company
5th and Kirkham Streets Site
Oakland, California
July, 1991
SPEvS Project No. 05032**

Dear Mr. Byrne:

SP Environmental Systems, Inc. (SPEvS) is submitting this groundwater monitoring report for the above referenced site on behalf of Southern Pacific Transportation Company. Work was performed in accordance with the guidelines set in your letter to SPEvS dated June 21, 1991, requiring groundwater monitoring at this site. Previous work at this site is described in the *Phase II Environmental Site Assessment, Southern Pacific Transportation Company, 5th and Kirkham Streets, Oakland, California (SPEvS, March 1, 1991)*.

Groundwater Elevations and Sampling

There are currently four wells onsite (MW-1, MW-3, MW-4 and MW-6). Well locations are shown on Figure 1. Wells MW-1, MW-3 and MW-4 are installed in former underground storage tank (UST) locations. MW-6 is an upgradient well not associated with the UST's, and was not sampled. Groundwater elevations were measured and samples were collected on July 25, 1991, from MW-1, MW-3 and MW-4. Groundwater elevations were measured using an electronic water level probe. Prior to sampling, three well volumes were purged from each well using a submersible pump. The pump was decontaminated prior to each use. Water temperature, conductivity and pH were measured prior to well purging, and three times during purging to determine that these parameters had stabilized before sample collection. Field data sheets are attached as Appendix A. Samples were collected with decontaminated Teflon bailers and poured into laboratory supplied containers. Samples were analyzed for Total Petroleum Hydrocarbons (TPH)-Gasoline and BTEX (Method P/T-GBX-Triregional), and TPH-Diesel (Method TPH-D-Triregional). Groundwater elevations and analytical results are shown in Table 1.

gradient is west (not triangulated) wells
not substantiated -
no data, ie 88 8888 88 88 16
Top of Casing - Depth to GW = GW Elev!

Analytical Results

Results of analyses of samples from MW-1 and MW-4 were below detection limits for all analyses. Samples from MW-3 showed concentrations of 1700 ug/L TPH (diesel) and 2.0 ug/l benzene. Results of other analyses of MW-3 samples were below detection limits. Laboratory reports are attached as Appendix B.

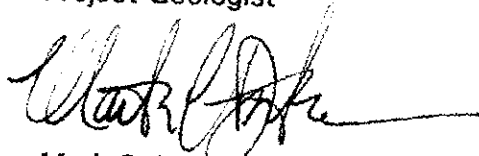
The next sampling period is currently scheduled for October, 1991.

If you have any questions concerning this report, please contact Diane Beaulaurier at (916) 369-8971.

Sincerely,



Walter D. Floyd
Project Geologist



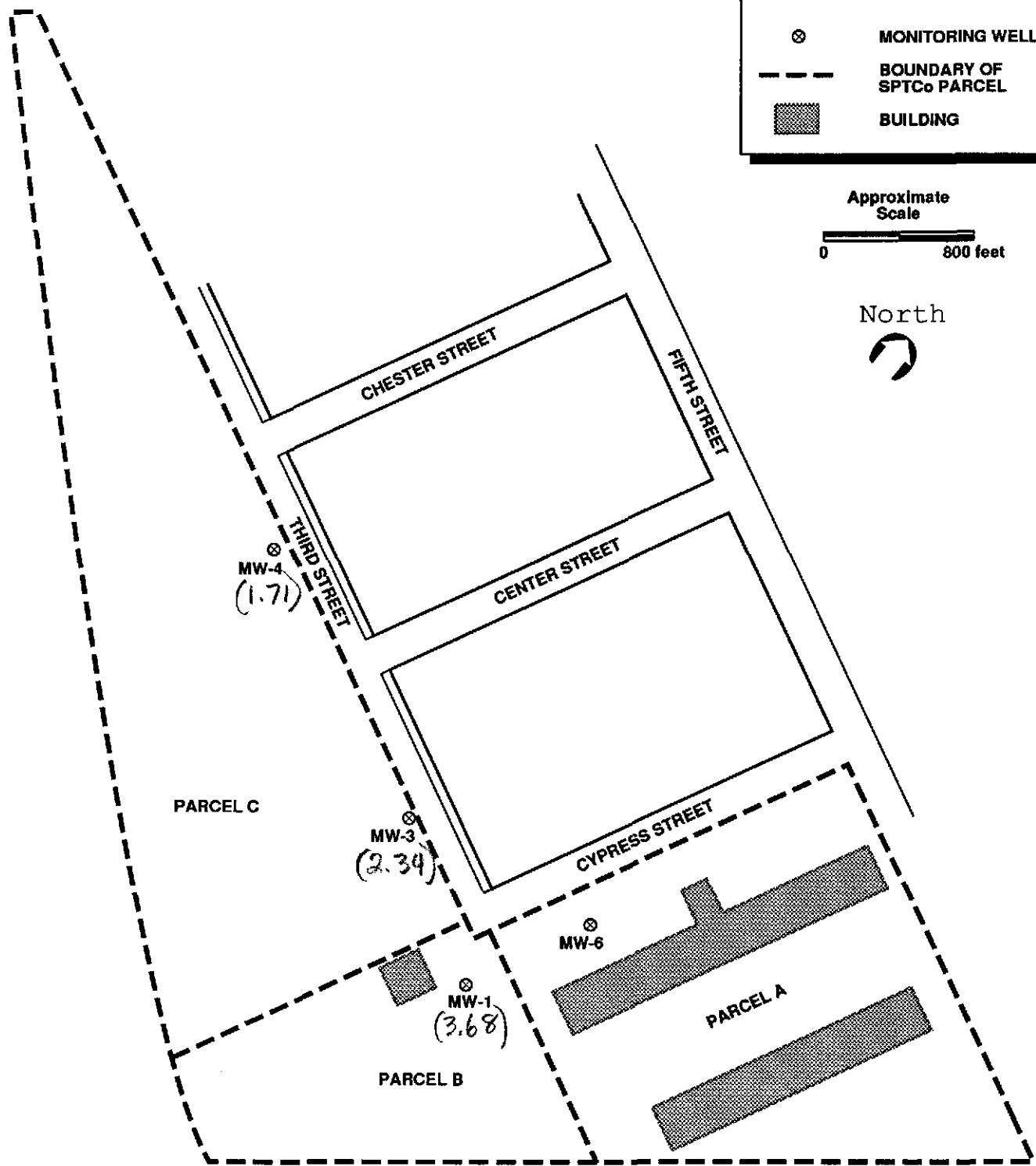
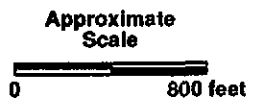
Mark S. Dockum, R.G.
Project Manager

cc: Mr. Lester Feldman
Mr. Rafat Shahid
Mr. Dave Long, Esq.
Mr. Greg Shepherd

9/30/91

LEGEND

- ⊗ MONITORING WELL
- - - BOUNDARY OF SPTCo PARCEL
- ▨ BUILDING



(gw elev)



SP ENVIRONMENTAL SYSTEMS, INC.

**LOCATION OF MONITORING WELLS
SOUTHERN PACIFIC TRANSPORTATION CO.
5TH & KIRKHAM PROPERTY
OAKLAND, CALIFORNIA**

FIGURE 1

PROJECT NO: 05032	DATE: 09/30/91
DRAWN BY: PD	CHECKED BY: DB

SCALE
as shown



SP ENVIRONMENTAL SYSTEMS, INC.

PURGE CHARACTERIZATION AND SAMPLE LOG

Project Number: 05032 Project Name: BoBo's Date: 7/25/91

Well Number: NW-1 Sampler: DB Weather: _____

Military Time	1636	1647	1053	1103								
Gallons Purged	0	15	25	38								
Purge Rate												
pH	7.80	8.20	7.80	6.00								
Conductivity	2470	2550	3550	3560								
Temperature (C)	63.3	64.6	64.8	63.8								
Salinity (0/00)												
Turbidity												
Color												
Water Level Casing	2.54'											
Calibration												

S.C.:

Sample #	Quantity	Volume	Type	Preserv.	Analyte	Lab	Sample Equip.	Purge Equip.	Field Comments
15247	1	1L	ANION	H ₂ SO ₄	BOIS-D	EWS	BALLA	PUMP	SAMPLE TIME = 1105
	3	40ml	VOL	HCL	TRIGAS/BREX				
Cleaning:	ISL, H ₂ O, DI								
Comments:									

Sampler's Signature: [Signature]



SP ENVIRONMENTAL SYSTEMS, INC.

PURGE CHARACTERIZATION AND SAMPLE LOG

Project Number: 05032 Project Name: Bo-Ro's Date: 7/25/91

Well Number: NW-4 Sampler: DB Weather: _____

Military Time	Gallons Purged	Purge Rate	pH	Conductivity	Temperature (C)	Salinity (0/00)	Turbidity	Color	Water Level Casing	Calibration	S.C.:
0830	0	10	7.90	5000	61.2				5.79'		✓
0832	0845	20	7.85	9650	61.5						✓
0854	32		7.42	9600	61.8						

Sample #	Quantity	Volume	Type	Preserv.	Analyse	Lab	Sample Equip.	Purge Equip.	Field Comments
15245	1	1L	ARBOX	H2SO4	BOIS-D	EMS	BALLAC	PUMP	SAMPLE TIME = 0900
	3	40ml	VOA	HCL	TRANS/AMT	✓			
Cleaning:	ISL, H2O, DTE								
Comments:									

Sampler's Signature: [Signature]

APPENDIX B
LABORATORY REPORTS



August 15, 1991
Lab ID: 059513

Walt Floyd
S.P. Environmental
9719 Lincoln Village Drive
Suite 310
Sacramento, CA 95827

Dear Mr. Floyd:

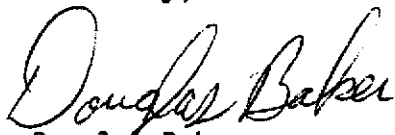
Enclosed is the report for the three aqueous samples for your 3rd Quarter 1991 Groundwater Watering Project, Number 05032, which were received at Enseco-Cal Lab on 25 July 1991.

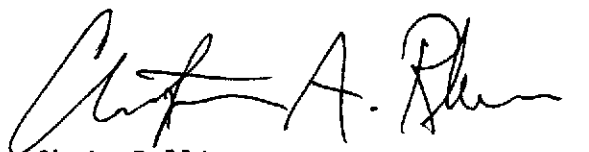
The report consists of the following sections:

- I Sample Description
- II Analysis Request
- III Quality Control Report
- IV Analysis Results

If you have any questions, please feel free to call.

Sincerely,


Douglas Baker
Program Administrator


Chris Rollins
Director of Program Administration

sh

I Sample Description

See the attached Sample Description Information.

The samples were received under chain-of-custody.

II Analysis Request

The following analytical tests were requested.

<u>Lab ID</u>	<u>Analysis Description</u>
059513-1 thru 3	Total Petroleum Hydrocarbons (Gasoline) and BTEX Total Petroleum Hydrocarbons (Diesel Fuel)

III Quality Control

- A. Project Specific QC. No project specific QC (i.e., spikes and/or duplicates) was requested.
- B. Method Blank Results. A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples.

No target parameters were detected in the method blanks associated with your samples at the reporting limit levels noted on the attached Method Blank Report.

Repetitions of method blanks (with identical QC Lot No.s) have been reported but do not indicate unique determinations.

C. Laboratory Control Samples - The LCS Program

Duplicate Control Samples. A DCS is a well-characterized matrix (blank water, sand or celite) which is spiked with certain target parameters and analyzed at approximately 10% of the sample load in order to establish method-specific control limits. The DCS results associated with your samples are on the attached Duplicate Control Sample Report.

Accuracy is measured by Percent Recovery as in:

$$\% \text{ recovery} = \frac{(\text{measured concentration})}{(\text{actual concentration})} \times 100$$

Precision is measured using duplicate tests by Relative Percent Difference (RPD) as in:

$$\text{RPD} = \frac{(\% \text{ recovery test 1} - \% \text{ recovery test 2})}{(\% \text{ recovery test 1} + \% \text{ recovery test 2})/2} \times 100$$

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery ± 3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference $+ 3$ standard deviation units. In cases where there is not enough historical data, EPA limits or advisory limits are set, with the approval of the Quality Assurance department.

IV Analysis Results

Test methods may include minor modifications of published EPA Methods such as reporting limits or parameter lists. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis; i.e., no correction is made for moisture content, unless the method requires or the client requests that such correction be made.

Results are on the attached data sheets.

SAMPLE DESCRIPTION INFORMATION
for
SP Environmental

Lab ID	Client ID	Matrix	Sampled		Received
			Date	Time	
059513-0001-SA	15245	AQUEOUS	25 JUL 91	09:00	25 JUL 91
059513-0002-SA	15246	AQUEOUS	25 JUL 91	10:10	25 JUL 91
059513-0003-SA	15247	AQUEOUS	25 JUL 91	11:05	25 JUL 91

*which
MWS?*

QC LOT ASSIGNMENT REPORT
Volatile Organics by GC

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
059513-0001-SA	AQUEOUS	TPH-BTEX-A	22 JUL 91-14A	31 JUL 91-14A
059513-0002-SA	AQUEOUS	TPH-BTEX-A	22 JUL 91-14A	31 JUL 91-14A
059513-0003-SA	AQUEOUS	TPH-BTEX-A	31 JUL 91-14A	31 JUL 91-14A

METHOD BLANK REPORT
Volatile Organics by GC

Analyte	Result	Units	Reporting Limit
Test: TPH-G-BTEX-TR-A			
Matrix: AQUEOUS			
QC Lot: 22 JUL 91-14A QC Run: 31 JUL 91-14A			
Benzene	ND	ug/L	0.50
Ethylbenzene	ND	ug/L	0.50
Toluene	ND	ug/L	0.50
Xylenes (total)	ND	ug/L	0.50
Gasoline	ND	ug/L	50

Test: TPH-G-BTEX-TR-A
Matrix: AQUEOUS
QC Lot: 31 JUL 91-14A QC Run: 31 JUL 91-14A

Benzene	ND	ug/L	0.50
Ethylbenzene	ND	ug/L	0.50
Toluene	ND	ug/L	0.50
Xylenes (total)	ND	ug/L	0.50
Gasoline	ND	ug/L	50

DUPLICATE CONTROL SAMPLE REPORT
Volatile Organics by GC

Analyte	Concentration		Measured DCS2	AVG	Accuracy Average(%)		Precision (RPD)	
	Spiked	DCS1			DCS	Limits	DCS Limit	DCS Limit
Category: TPH-BTEX-A								
Matrix: AQUEOUS								
QC Lot: 22 JUL 91-14A								
Concentration Units: ug/L								
Benzene	5.0	4.97	5.07	5.02	100	82-112	2.0	11
Toluene	5.0	4.76	4.86	4.81	96	81-114	2.1	13
Gasoline	1000	1040	1030	1040	104	81-114	1.0	13

Category: TPH-BTEX-A
Matrix: AQUEOUS
QC Lot: 31 JUL 91-14A
Concentration Units: ug/L

Benzene	5.0	4.82	4.94	4.88	98	82-112	2.5	11
Toluene	5.0	4.80	4.84	4.82	96	81-114	0.8	13
Gasoline	1000	966	1030	998	100	81-114	6.4	13

Calculations are performed before rounding to avoid round-off errors in calculated results.

QC LOT ASSIGNMENT REPORT
Volatile Organics by GC

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
059513-0001-SA	AQUEOUS	TPH-D-TR-A	30 JUL 91-A	30 JUL 91-A
059513-0002-SA	AQUEOUS	TPH-D-TR-A	30 JUL 91-A	30 JUL 91-A
059513-0003-SA	AQUEOUS	TPH-D-TR-A	30 JUL 91-A	30 JUL 91-A

METHOD BLANK REPORT
Volatile Organics by GC

Analyte	Result	Units	Reporting Limit
Test: TPH-D-TR-A			
Matrix: AQUEOUS			
QC Lot: 30 JUL 91-A	QC Run: 30 JUL 91-A		
Diesel Fuel	ND	ug/L	50

DUPLICATE CONTROL SAMPLE REPORT
 Volatile Organics by GC

Analyte	Concentration Spiked	Concentration Measured		AVG	Accuracy Average(%)		Precision (RPD)	
		DCS1	DCS2		DCS	Limits	DCS	Limit
Diesel Fuel	5000	4050	3900	3980	80	58-163	3.8	32

Category: TPH-D-TR-A
 Matrix: AQUEOUS
 QC Lot: 30 JUL 91-A
 Concentration Units: ug/L

Calculations are performed before rounding to avoid round-off errors in calculated results.

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method P/T-GBX-TRIREGIONAL

Client Name: SP Environmental
Client ID: 15245
Lab ID: 059513-0001-SA
Matrix: AQUEOUS
Authorized: 26 JUL 91

Sampled: 25 JUL 91
Prepared: NA

Received: 25 JUL 91
Analyzed: 31 JUL 91

Parameter	Result	Units	Reporting Limit
Benzene	ND	ug/L	0.50
Ethylbenzene	ND	ug/L	0.50
Toluene	ND	ug/L	0.50
Xylenes (total)	ND	ug/L	0.50
Gasoline	ND	ug/L	50

which MW?

ND = Not detected
NA = Not applicable

Reported By: Jennifer Neeley Bavetta Approved By: Marcia Reed

The cover letter is an integral part of this report.

Rev 230787

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method P/T-GBX-TRIREGIONAL

Client Name: SP Environmental
 Client ID: 15246
 Lab ID: 059513-0002-SA
 Matrix: AQUEOUS
 Authorized: 26 JUL 91

Sampled: 25 JUL 91
 Prepared: NA

Received: 25 JUL 91
 Analyzed: 31 JUL 91

Parameter	Result	Units	Reporting Limit
Benzene	2.0	ug/L	0.50
Ethylbenzene	ND	ug/L	0.50
Toluene	ND	ug/L	0.50
Xylenes (total)	ND	ug/L	0.50
Gasoline	ND	ug/L	50

*check
MW?*

MW-3

ND = Not detected
 NA = Not applicable

Reported By: Jennifer Neeley Bavetta Approved By: Marcia Reed

The cover letter is an integral part of this report.

Total Petroleum Hydrocarbons (Gasoline) and BTEX
Method P/T-GBX-TRIREGIONAL

Client Name: SP Environmental

Client ID: 15247

Lab ID: 059513-0003-SA

Matrix: AQUEOUS

Authorized: 26 JUL 91

Sampled: 25 JUL 91

Prepared: NA

Received: 25 JUL 91

Analyzed: 31 JUL 91

Parameter	Result	Units	Reporting Limit
Benzene	ND	ug/L	0.50
Ethylbenzene	ND	ug/L	0.50
Toluene	ND	ug/L	0.50
Xylenes (total)	ND	ug/L	0.50
Gasoline	ND	ug/L	50

 ND = Not detected
 NA = Not applicable

Reported By: Jennifer Neeley Bavetta Approved By: Marcia Reed

The cover letter is an integral part of this report.

Rev 230787

Total Petroleum Hydrocarbons by GC/FID (Triregional)**Method TPH-D-TRIREGIONAL**

Client Name: SP Environmental

Client ID: 15245

Lab ID: 059513-0001-SA

Matrix: AQUEOUS

Authorized: 26 JUL 91

Sampled: 25 JUL 91

Prepared: 30 JUL 91

Received: 25 JUL 91

Analyzed: 08 AUG 91

Parameter	Result	Units	Reporting Limit
Diesel Fuel	ND	ug/L	50

ND = Not detected

NA = Not applicable

Reported By: Tom MacClanahan

Approved By: Marcia Reed

The cover letter is an integral part of this report.

Rev 230787

Total Petroleum Hydrocarbons by GC/FID (Triregional)**Method TPH-D-TRIREGIONAL**

Client Name: SP Environmental
Client ID: 15246
Lab ID: 059513-0002-SA
Matrix: AQUEOUS
Authorized: 26 JUL 91

Sampled: 25 JUL 91
Prepared: 30 JUL 91

Received: 25 JUL 91
Analyzed: 08 AUG 91

Parameter	Result	Units	Reporting Limit	
Diesel Fuel	1700	ug/L	500	R

Note R : Raised reporting limit(s) due to high analyte level(s).

ND = Not detected
NA = Not applicable

Reported By: Tom MacClanahan

Approved By: Marcia Reed

The cover letter is an integral part of this report.

Rev 230787

Total Petroleum Hydrocarbons by GC/FID (Triregional)**Method TPH-D-TRIREGIONAL**

Client Name: SP Environmental
Client ID: 15247
Lab ID: 059513-0003-SA
Matrix: AQUEOUS
Authorized: 26 JUL 91

Sampled: 25 JUL 91
Prepared: 30 JUL 91

Received: 25 JUL 91
Analyzed: 08 AUG 91

Parameter	Result	Units	Reporting Limit	
Diesel Fuel	ND	ug/L	50	1

Note 1 : Analysis of this sample detected a single peak in the C11-C12 range and two peaks in the C14-C16 range.

ND = Not detected
NA = Not applicable

Reported By: Tom MacClanahan

Approved By: Marcia Reed

The cover letter is an integral part of this report.
Rev 230787



SP - EVS

CHAIN-OF-CUSTODY RECORD

No. 10407

SP - Environmental Systems, Inc. • 9719 Lincoln Village Drive, Ste. 310 • Sacramento, CA 95827 • Phone 916-369-8971 • FAX 916-369-8370

PROJECT NAME 300 QNL 1991 GWHOUNTAIN		PROJECT LOCATION 30-BO'S JUNKYARD OAKLAND CALIF.					
PROJ. NO. 05032		PROJECT CONTACT WALT FLOYD					
CLIENT'S REPRESENTATIVE		PROJECT TELEPHONE NO. (916)369-8971					
PROJECT MANAGER/SUPERVISOR WEBB GAREY		ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) TPH GAS BREX BOAST-DIESEL					
ITEM NO.	SAMPLE NUMBER	DATE	TIME	NO. OF CONTAINERS	NUMBER OF CONTAINERS	ANALYSIS DESIRED	REMARKS
1	15245	7/25/91	0900	X	4	X	
2	15246	7/25/91	1010	X	4	X	
3	15247	7/25/91	1105	X	4	X	
4							
5							
6							
7							
8							
9							
10							

ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME	REMARKS
1-3	Stanis Benlaur	McDyao	7/25/91	1630	STANONLD T.A.T.
2					
3					
4					

SAMPLER'S SIGNATURE
Stanis Benlaur

SAMPLER'S NAME
Diane Benlaur

LAB COPY