



**Chevron U.S.A. Inc.**

2410 Camino Ramon, San Ramon, California • Phone (415) 842-9500

Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804

Marketing Operations

D. Moller

Division Manager, Operations

S. L. Patterson

Area Manager, Operations

C. G. Trimbach

Manager, Engineering

June 21, 1989

Ariu Levi  
Alameda County  
Environmental Health  
470 27th Street, Room 324  
Oakland, California 94612

Re: Former Chevron Bulk Plant #1001067  
1520 Powell Street  
Emeryville, California

Dear Mr. Levi:

Enclosed are the results of the quarterly ground water sampling conducted by Western Geologic Resources at the above referenced site. As indicated in the report, all water samples were analyzed for total purgeable petroleum hydrocarbons (TPH) and aromatic hydrocarbons (BTEX). In order to track the natural degradation of hydrocarbons in the groundwater beneath the site, Chevron will continue to monitor the site on a quarterly basis.

I declare under penalty of perjury that the information contained in the attached report is true and correct, and that any recommended actions are appropriate under the circumstances, to the best of my knowledge. If you have any questions or require additional information, please contact Lisa Marinaro at (415) 842-9527.

Sincerely,  
D. Moller

By *Lisa Marinaro*  
Lisa Marinaro, Engineer

cc: Tom Callaghan  
California Regional Water  
Quality Control Board  
1111 Jackson Street  
Oakland, California 94607

7.25.89



**WESTERN GEOLOGIC RESOURCES INC.**

2169 E. FRANCISCO BLVD., SUITE B / SAN RAFAEL  
CALIFORNIA 94901 / FAX 415.457.8521  
TELE 415.457.7595

90 JUL 25 AM 10:40

23 July 1990

Mr. Dennis Byrne  
Alameda County Health Department  
Hazardous Materials Group  
80 Swan Way, Suite 200  
Oakland, California 94621

Re: Proposed Site Closure  
Former Chevron Asphalt Plant  
1520 Powell Street  
Emeryville, California  
WGR Project #1-045

Dear Mr. Byrne:

As discussed during our telephone conversation of 31 May 1990, Western Geologic Resources, Inc. (WGR), on behalf of Chevron, USA, is transmitting the attached Closure Plan and background material for the former Chevron asphalt plant in Emeryville, California. An expanded Soils Remediation Report is being transmitted under separate cover.

As previously noted, the next step in the proposed closure of the site is a review by Alameda County. If you have questions concerning this review, or require any additional information concerning the site, please contact Christopher Alger at (415) 457-7595.

Sincerely,  
Western Geologic Resources, Inc.

Christopher S. Alger  
Project Geologist

CSA:va

cc: Lisa Marinaro-Backlund, Chevron USA

**ATTACHMENTS**

Site Closure Plan  
Additional Subsurface Investigation  
Soil Sampling Correspondence

045L1JL0.va

COLORADO SPRINGS  
SALT LAKE CITY  
SAN DIEGO  
VENTURA

2169 E. FRANCISCO BOULEVARD, SUITE B  
SAN RAFAEL, CALIFORNIA 94901  
415/457-7595 FAX: 415/457-8521

QUARTERLY MONITORING REPORT

Abandoned Chevron Asphalt Plant and Terminal  
1520 Powell Street  
Emeryville, CA

*Prepared For*

Chevron USA  
2410 Camino Ramon  
San Ramon, CA

JUN 26 '89 H.C.H.

June 1989

QUARTERLY MONITORING REPORT

Abandoned Chevron Asphalt Plant and Terminal  
1520 Powell Street  
Emeryville, CA

*Prepared For*

Chevron USA  
2410 Camino Ramon  
San Ramon, CA

*Prepared By*

Western Geologic Resources, Inc.  
2169 E. Francisco Blvd.  
San Rafael, CA



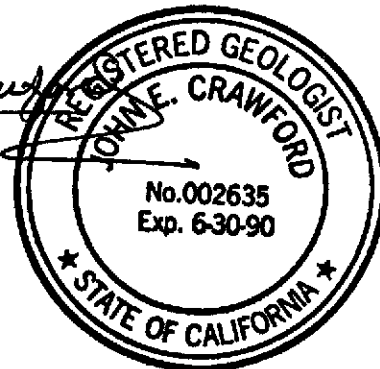
Thomas M. Howard  
Project Geologist



Sherwood Lovejoy Jr.  
President/ Senior Hydrogeologist



John E. Crawford  
Senior Geologist  
CRG # 2635



JUN 26 '89 H.C.H.

CONTENTS

	<u>Pg. No.</u>
Introduction	1
Background	2
Groundwater Sampling	3
Analytic Results	4
Groundwater Flow	5
Summary	6

**FIGURES**

1. Site Location Map
2. Monitoring Well Locations with Total Purgeable Petroleum Hydrocarbon Concentrations in Shallow Groundwater
3. Distribution of 1,2-Dichloroethene in Shallow Groundwater
4. Distribution of Vinyl Chloride in Shallow Groundwater
5. Potentiometric Surface of the Shallow Water-Bearing Zone

TABLES

1. Analytic Results of Groundwater Sampling
2. Potentiometric Data for Shallow Groundwater

**ATTACHMENTS**

- A. SOP-4: Groundwater Purging and Sampling
- B. Chain-of-Custody Forms
- C. Laboratory Reports
- D. Laboratory Quality Assurance Reports



1. INTRODUCTION

The scope of work for this project is:

1. Measure depth-to-water, depth-to-product, product-thickness, and well-bore volume in all groundwater monitoring wells and produce a potentiometric surface contour map based on liquid level measurements;
2. Collect water samples from the monitoring wells for analysis of total purgeable petroleum hydrocarbons (TPPH), aromatic hydrocarbons and purgeable priority pollutants by EPA Method 8260, gas chromatograph/mass spectroscopy, metals (cadmium, chromium, lead and zinc) by EPA Method 7131/7191/7421/7950 and petroleum-based oil and grease by EPA Method 503E;
3. Start a database for water-level/product-level/product-thickness measurements and for chemical data;
4. Produce distribution maps of total purgeable petroleum hydrocarbons (TPPH), 1,2-dichloroethene (1,2-DCE), and vinyl chloride (VC);
5. Review the results and prepare a report.

## 2. BACKGROUND

A brief description of work previously conducted at the site is given below. The site is presently abandoned, and was a former asphalt plant.

In March 1985, Harding Lawson Associates (HLA) installed 9 groundwater monitoring wells. Low levels of hydrocarbons were detected in groundwater samples. Groundwater flow direction was determined to be to the south.

In October 1987, above-ground storage tanks and associated piping were removed.

In July of 1988, HLA installed 3 additional groundwater monitoring wells; soil samples from the borings contained hydrocarbons and trichloroethene (TCE). Hydrocarbons and other regulated compounds were present in water samples.

In August and September of 1988, the loading dock and additional underground piping were removed.

In September 1988, Western Geologic Resources, Inc. (WGR) conducted soil sampling in the vicinity and perimeter of the loading dock; soil samples contained hydrocarbons and regulated compounds.

In December 1988, Groundwater Technology Inc. (GTI) conducted a subsurface soil investigation for the entire site and a small area offsite which borders the west property line. Soil samples contained hydrocarbons. Two plumes were defined in the vadose zone. A TPH plume was defined in the vadose zone in the center of the property and a TCE plume was defined in the vadose zone under the loading dock and office building.

In June 1989, WGR initiated site remediation, beginning with the excavation of the vadose zone in the above mentioned areas.

### 3. GROUNDWATER SAMPLING

Groundwater samples were collected from monitoring wells MW-1 through MW-12, with the exception of MW-9 which could not be located, on 14 April 1989, according to WGR's standard operating procedure included as Attachment A. Travel blanks, consisting of deionized water, were transported from the laboratory to the site and along with the field samples back to the laboratory under chain-of-custody. All water, evacuated during the sampling process, was collected and temporarily stored on site in 55-gallon drums pending analytic results.

#### 4. ANALYTIC RESULTS

Central Coast Analytical Services (CCAS) of San Luis Obispo, California analyzed the samples collected on 13 and 14 April 1989 for TPH, aromatic hydrocarbons, purgeable priority pollutants, cadmium, chromium, lead, zinc, and petroleum-based oil and grease. Analytic results are presented in Table 1. Attachments B, C and D contain the chain-of-custody forms, the laboratory reports, and the laboratory quality assurance reports, respectively.

TPPH characterized as diesel #2 were detected at concentrations of 4300 ppb and 3300 ppb, respectively in groundwater samples from wells MW-5 and MW-6. TPH characterized as gasoline were detected at 380 ppb in the groundwater sample from well MW-4. Benzene was detected in well MW-1 at 34.0 ppb and was below detection for all other wells. Toluene, ethylbenzene, and total xylenes were below detection limits for all wells. Oil and grease were below the detection limit of 3 ppm for samples from monitoring wells MW-2 through MW-8 and MW-10 through MW-12. Well MW-1 was not analyzed for oil and grease.

Several chlorinated compounds were detected including 1,2-dichloroethene (both cis and trans), 1,1-dichloroethene, trichloroethane, 1,2-dichloropropane, trichloroethene and vinyl chloride. Most of these compounds were detected in the sample from well MW-1, in concentrations from 6 ppb 1,2-dichloropropane to 739 ppb 1,2-dichloroethene. Wells MW-10 and MW-11 contained 1,1-DCE at 15.0 ppb and 120 ppb, and TCE at 5.0 ppb and 4.0 ppb, respectively. Well MW-10 and MW-4 both contained 2.0 ppb 1,1-DCA. Well MW-11 also contained 1.0 ppb 1,1-DCE. Wells MW-1 and MW-10 contained vinyl chloride at 340 ppb and 10 ppb, respectively. Well MW-12 contained 1.0 ppb 1,2-DCE, and well MW-7 contained 1.0 ppb TCA.

Cadmium was below detection limits for all samples. Chromium was detected at low levels in MW-5 and MW-7 at 0.15 ppm and 0.17 ppm, respectively. Lead was detected at the detection limit of 0.005 ppm in the sample from MW-5. Low levels of zinc were detected in samples from all wells, except MW-1, MW-4, MW-10 and MW-12, in concentrations from 0.05 ppm to 0.23 ppm.

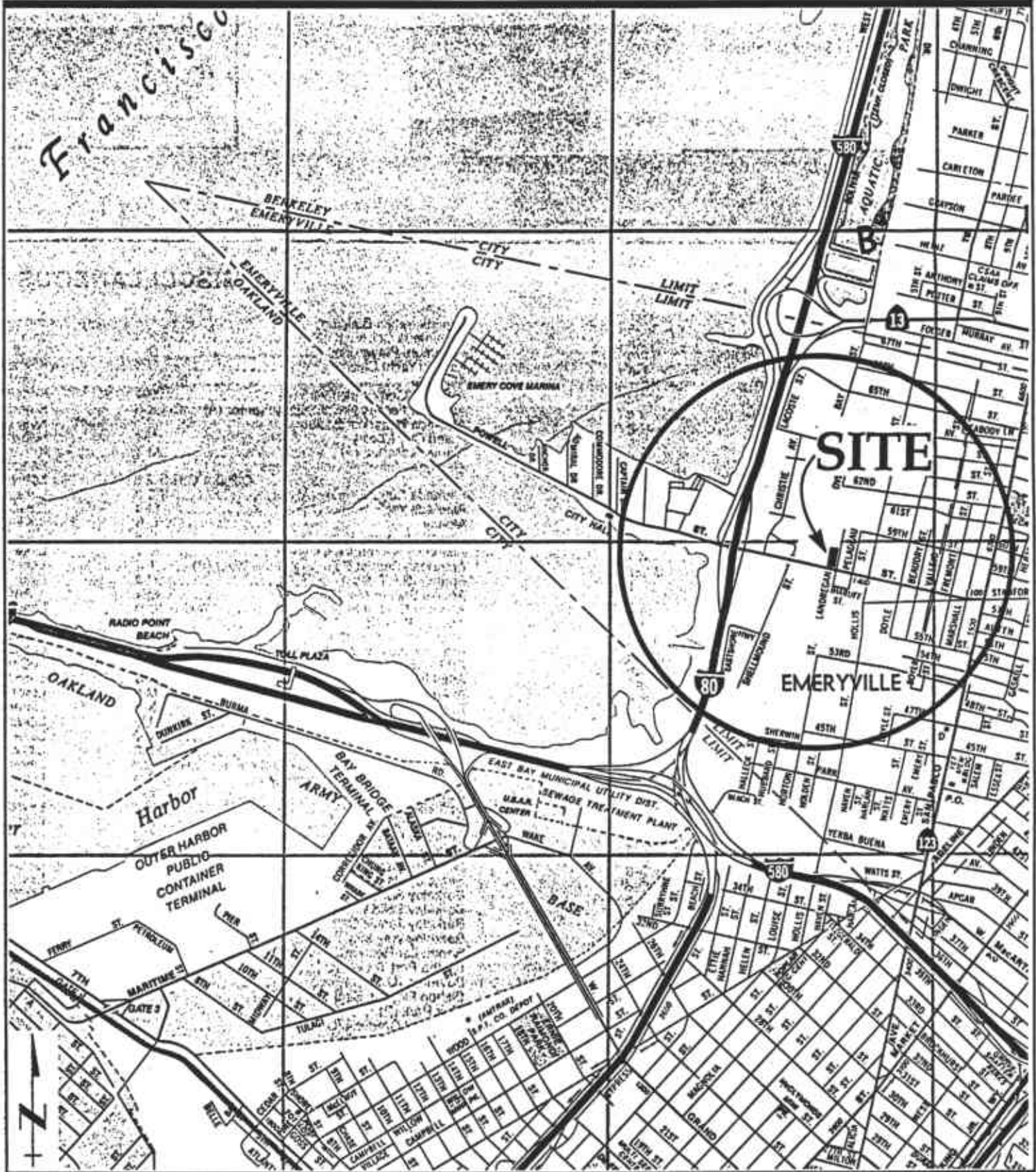
Distribution maps for TPH, 1,2-dichloroethene and vinyl chloride are included as Figures 2,3 and 4, respectively.

## 5. GROUNDWATER FLOW

Figure 5 is the potentiometric surface map of the shallow water-bearing zone based on depth-to-water measurements taken on 6 March 1989. Potentiometric data for shallow groundwater are tabulated in Table 2. Estimated ground water flow onsite is to south at an average gradient of about 1% (Figure 5).

6. SUMMARY

TPPH were detected in wells MW-4, MW-5 and MW-6. Various chlorinated compounds were detected in wells MW-1, MW-4, MW-7, MW-10, MW-11 and MW-12. Benzene was detected in well MW-1 at 34 ppb. Groundwater flow direction is to the south.



Site Location Map  
Chevron Asphalt Plant, Emeryville Terminal  
Emeryville, California

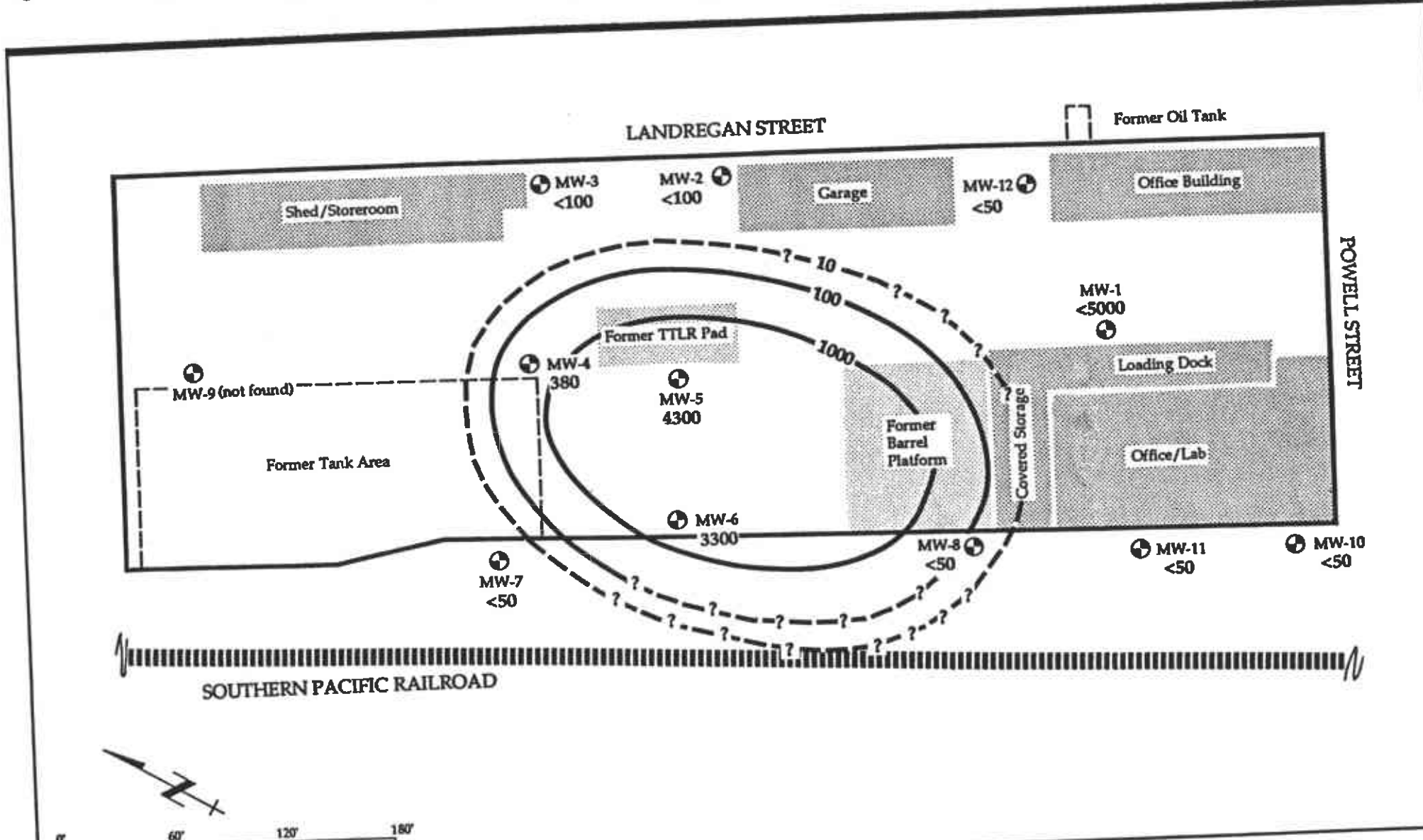
June 1989

WESTERN GEOLOGIC RESOURCES, INC.

FIGURE

1

1-045.07



<b>LEGEND</b>	MW-7 <50	Monitoring well location and total purgeable petroleum hydrocarbons (diesel #2) in ppb (parts per billion)
	10 ?	Isoconcentration contour for TPPH (diesel #2) in ppb, dashed where inferred, queried where uncertain

Site Map with Monitoring Well Locations and Distribution of Total Purgeable Petroleum Hydrocarbons in the Shallow Water-Bearing Zone, Chevron Asphalt Plant, Emeryville Terminal Emeryville, California

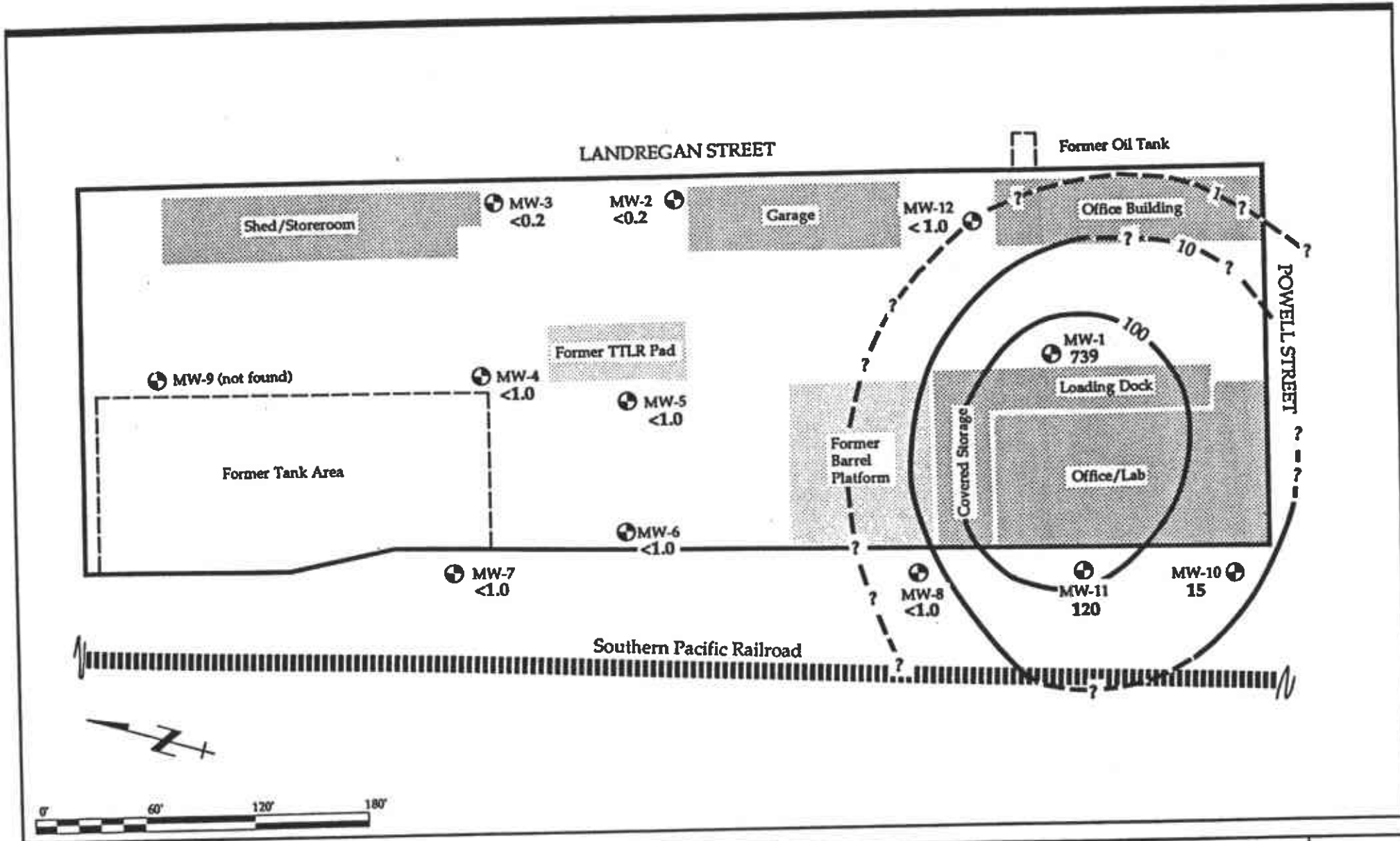
June 1989

WESTERN GEOLOGIC RESOURCES, INC.



**FIGURE**  
**2**

1-045.07





**LEGEND**

- 
**MW-6**  
**<1.0**  
 Monitoring Well Location and Concentration of 1,2-DCE in ppb (parts per billion)
- 
**100 ?**  
 Isoconcentration Contour for 1,2-DCE in ppb, dashed where inferred, queried where uncertain

Distribution of 1,2-Dichloroethene in the Shallow Water-Bearing Zone, Chevron Asphalt Plant Emeryville Terminal, Emeryville, California

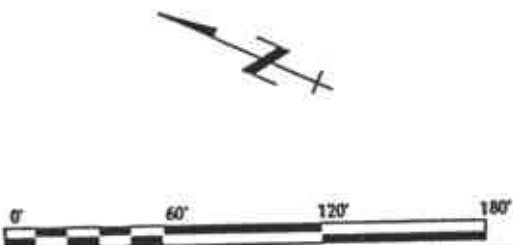
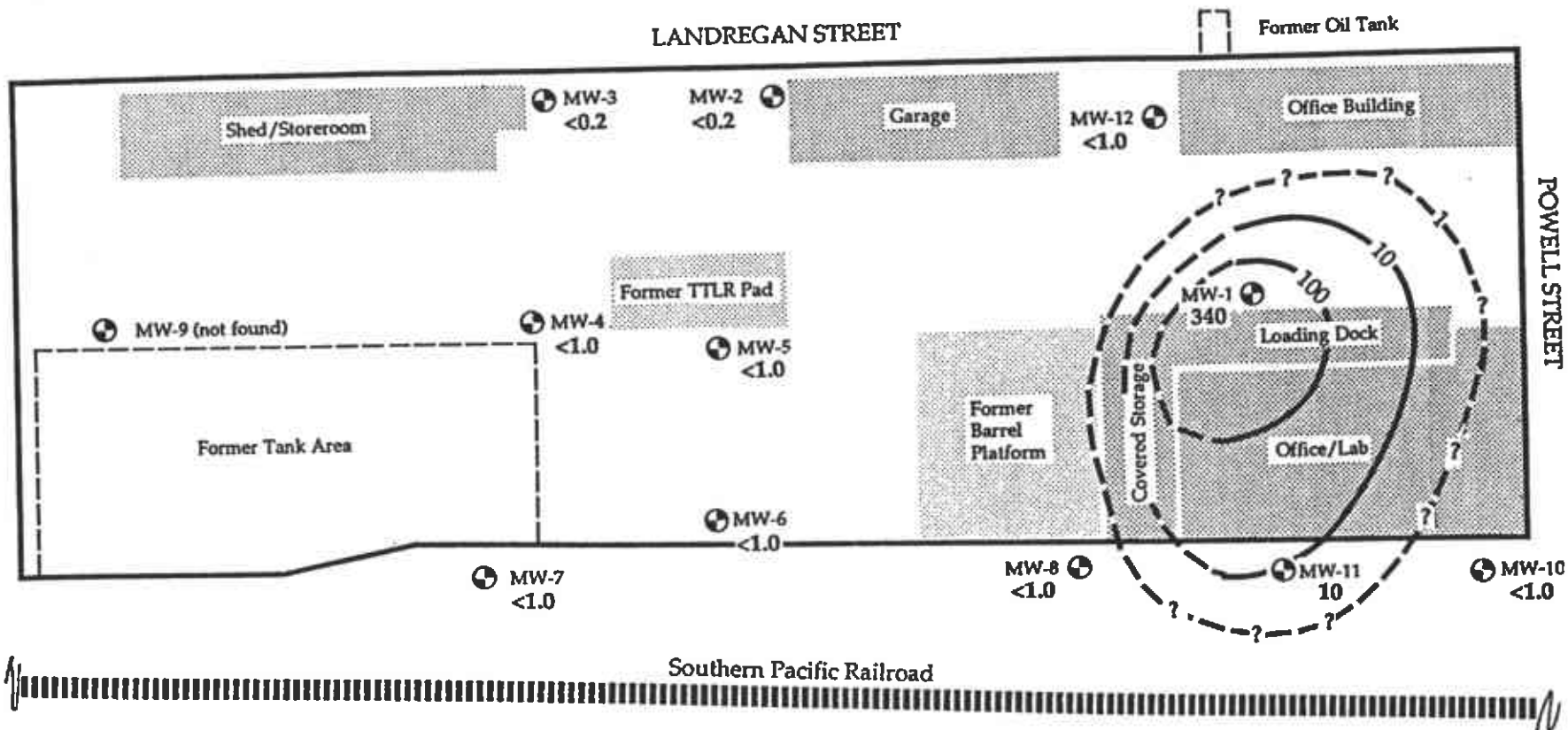
June 1989

WESTERN GEOLOGIC RESOURCES, INC.

FIGURE

**3**

1-045.07



**LEGEND**

- MW-6 <1.0  
 Monitoring Well Location and Concentration of Vinyl Chloride ppb (parts per billion)
- 100 ?  
 Isoconcentration Contour for Vinyl Chloride in ppb, dashed where inferred, queried where uncertain

Distribution of Vinyl Chloride in the Shallow Water-Bearing Zone, Chevron Asphalt Plant Emeryville Terminal, Emeryville, California

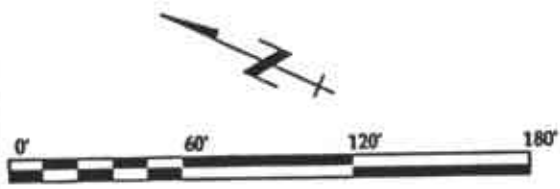
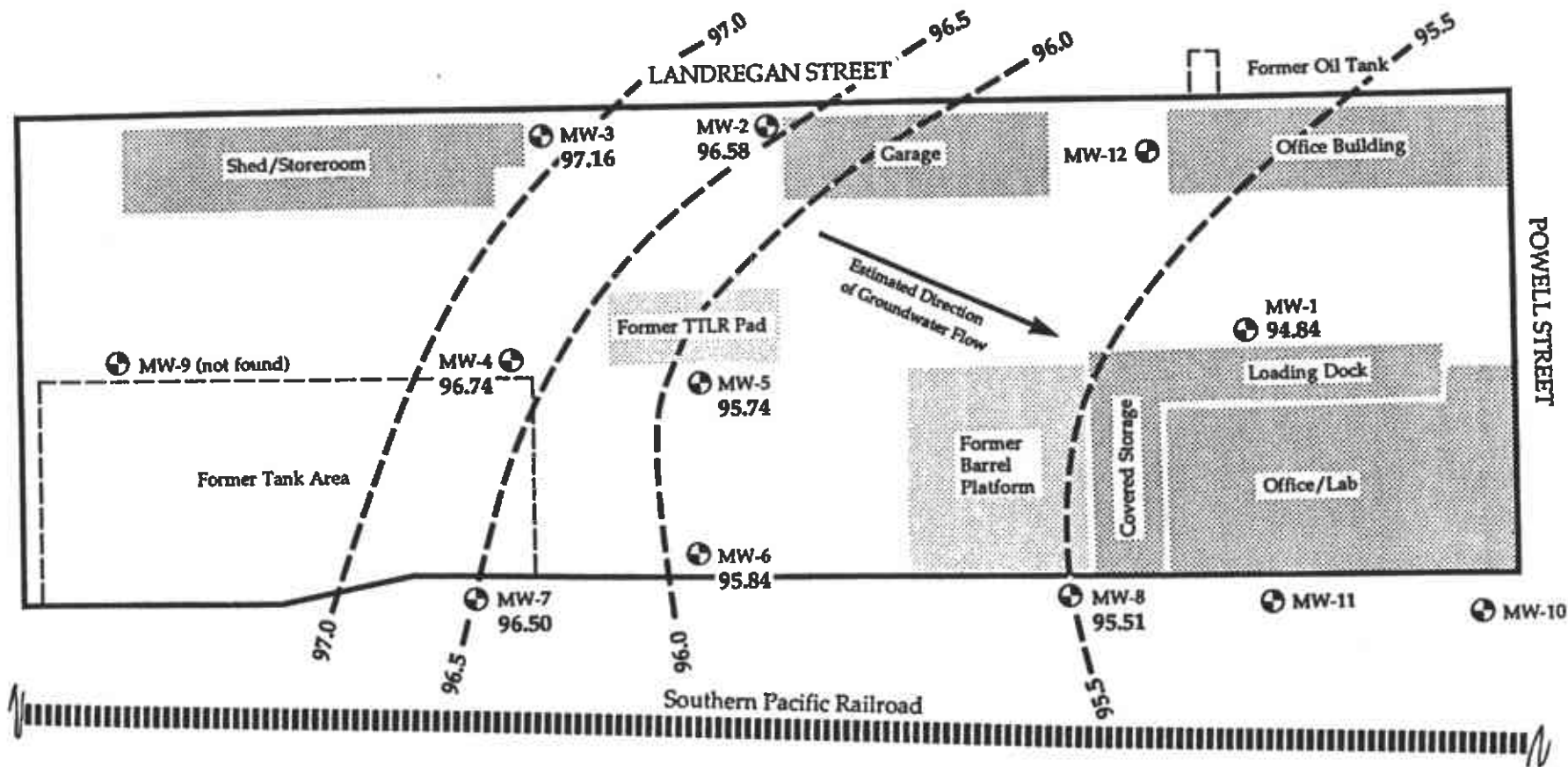
June 1989

WESTERN GEOLOGIC RESOURCES, INC.

FIGURE

**4**

1-045.07



**LEGEND**

- MW-1**  
**94.84** Monitoring Well Location and relative groundwater elevation \*
- 96.0** Relative groundwater elevation contour, dashed where inferred

\*See text for explanation

Potentiometric Surface of the Shallow Water-Bearing Zone  
 14 April 1989, Chevron Asphalt Plant, Emeryville Terminal  
 Emeryville, California

June 1989

WESTERN GEOLOGIC RESOURCES, INC.

FIGURE  
**5**

1-045.07

TABLE 1. Analytic Results of Groundwater Sampling  
Job No. 1-045.07, Chevron Asphalt Plant

Well #	Date	O & G ppm	FC	TPPH	B	T	E-B	X	ppb					
									1,1 DCE	1,2 DCE	1,1 DCA	TCA	TCE	VC
MW-1	14 APR 89	---	---	<5000	34.0	<5.0	<5.0	<10.0	<5.0	739.0	<5.0	<5.0	11.0	340.0 *
MW-2	14 APR 89	<3.0	---	<100	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-3	14 APR 89	<3.0	---	<100	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
MW-4	14 APR 89	<3.0	GAS	380	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	2.0	<1.0	<1.0	<1.0
MW-5	14 APR 89	<3.0	DSL 2	4300	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-6	14 APR 89	<3.0	DSL 2	3300	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-7	14 APR 89	<3.0	---	<50	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0
MW-8	14 APR 89	<3.0	---	<50	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-10	14 APR 89	<3.0	---	<50	<0.5	<1.0	<1.0	<1.0	<1.0	15.0	2.0	<1.0	5.0	<1.0
MW-11	14 APR 89	<3.0	---	<50	<0.5	<1.0	<1.0	<1.0	1.0	120.0	<1.0	<1.0	4.0	10.0
MW-12	14 APR 89	<3.0	---	<50	<0.5	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	<1.0
TB	14 APR 89	---	---	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Notes:

ppm = parts-per-million  
 ppb = parts-per-billion  
 O&G = Oil and gas  
 FC = Fuel characterization  
 GAS = Gasoline  
 DSL 2 = Diesel #2  
 TPPH = Total purgeable petroleum hydrocarbons  
 B = Benzene  
 T = Toluene

E-B = Ethylbenzene  
 X = Total Xylenes  
 1,1 DCE = 1,1-Dichloroethene  
 1,2 DCE = 1,2-Dichloroethene  
 1,1 DCA = 1,1-Dichloroethane  
 TCA = Trichloroethane  
 TCE = Trichloroethene  
 VC = Vinyl Chloride  
 \* = 6 ppb 1,2-Dichloropropane

TABLE 1 (continued)  
Analytic Results of Groundwater Sampling

Well #	Date	CADMIUM	CHROMIUM	LEAD	ZINC
		←-----PPM-----			
MW-1	14 APR 89	<0.001	<0.005	<0.005	<0.005
MW-2	14 APR 89	<0.001	<0.005	<0.005	0.01
MW-3	14 APR 89	<0.001	<0.005	<0.005	0.16
MW-4	14 APR 89	<0.2	<0.05	<0.005	<0.05
MW-5	14 APR 89	<0.2	0.15	0.005	0.14
MW-6	14 APR 89	<0.2	<0.05	<0.005	0.14
MW-7	14 APR 89	0.2	0.17	<0.005	0.23
MW-8	14 APR 89	<0.2	<0.05	<0.005	0.05
MW-10	14 APR 89	<0.2	<0.05	<0.005	<0.05
MW-11	14 APR 89	<0.2	<0.05	<0.005	0.15
MW-12	14 APR 89	<0.2	<0.05	<0.005	<0.05

045T1JN9

TABLE 2. Potentiometric Data  
Former Chevron Asphalt Plant  
Emeryville, California  
WGR Project # 1-045.02

Monitor Well	DATE	TOC*	DTW	RWE
MW-1	13 Apr 89	98.56	3.72	94.84
MW-2	13 Apr 89	99.20	2.62	96.58
MW-3	13 Apr 89	99.50	2.34	97.16
MW-4	13 Apr 89	98.86	2.12	96.74
MW-5	13 Apr 89	98.53	2.79	95.74
MW-6	13 Apr 89	99.03	1.90	95.84
MW-7	13 Apr 89	98.40	1.90	96.50
MW-8	13 Apr 89	98.31	2.80	95.51

## Notes:

TOC\* = Top-of-casing elevations surveyed to temporary bench mark established at southwest corner of former totalizer set at 100.00 ft above mean sea level

DTW = Depth to water

RWE = Relative water elevation

**ATTACHMENT A**

**SOP-4: GROUNDWATER PURGING AND SAMPLING**

**STANDARD OPERATING PROCEDURES  
RE: GROUNDWATER PURGING AND SAMPLING  
SOP-4**

Prior to water sampling, each well is purged by evacuating a minimum of three well-casing volumes of groundwater or until the discharge water temperature, conductivity, and pH stabilize. The groundwater sample should be taken when the water level in the well recovers to 80% of its static level.

The sampling equipment used consists of either a teflon bailer or a stainless steel bladder pump with a teflon bladder. If the sampling system is dedicated to the well, then the bailer is made of teflon, but the bladder pump is PVC with a polypropylene bladder. Forty milliliter (ml) glass volatile-organic-analysis (VOA) vials, with teflon septa, are used as sample containers.

The groundwater sample is decanted into each VOA vial in such a manner that there is a meniscus at the top of the vial. The cap is quickly placed over the top of the vial and securely tightened. The VOA vial is then inverted and tapped to see if air bubbles are present. If none are present, the sample is labeled and refrigerated for delivery under chain-of-custody to the laboratory. Label information should include a sample identification number, job identification number, date, time, type of analysis requested, and the sampler's name.

For quality control purposes, a duplicate water sample is collected for each well. This sample is held at the laboratory unless needed. A trip blank is prepared at the laboratory and placed in the transport cooler. It remains with the cooler and is analyzed by the laboratory along with the groundwater samples. A field blank is prepared in the field when sampling equipment is not dedicated. The field blank is prepared after a pump or bailer has been steam-cleaned, prior to use in a second well, and is analyzed along with the other samples. The field blank demonstrates the quality of in-field cleaning procedures to prevent cross-contamination.

To minimize the potential for cross-contamination between wells, all the well-development and water-sampling equipment that is not dedicated to a well is steam-cleaned between each well. As a second precautionary measure, wells will be sampled in order of least to highest concentrations as established by previous analyses.





**ATTACHMENT B**

**CHAIN-OF-CUSTODY FORMS**

Central  
Coast  
Analytical  
Services

Air, Water, & Hazardous Waste Sampling, Analysis, & Consultation  
State Certified Hazardous Waste, Chemistry, & Bacteriology Laboratories

141 Suburban Road, Suite C-4  
San Luis Obispo, Ca 93401  
Fax (805) 543-2535  
(805) 543-2553

6453-D Calle Real  
Goleta, CA 93117  
Fax (805) 976-4366  
(805) 964-7633

SAMPLE CHAIN OF CUSTODY

page 183

MITTED BY:

Western Geologic Resources

CONTACT NAME

Tom Howard

ADDRESS  
4169 East Francisco Blvd Suite B, San Rafael, CA 94901

PHONE

(415) 457-7595

PROJECT #  
-045.07

PROJECT NAME

Emeryville

ANALYSIS REQUESTED

COLLECTOR (Print & Sign Name)

Madeleine Stanger, Madeleine B. Stanger

EPA 8260 Fy  
Scan + TPHP  
Oil residue by  
EPA 802E  
ICP Soluble  
metals

CLASS #	SAMPLE IDENTIFICATION (ID #, location, matrix)	DATE/TIME COLLECTED	# OF ITEMS	PRESERVE
---------	--	---------------------	------------	----------

4667	4504 A,B	<del>4.12.89</del> 10.14	2	NaHSO <sub>4</sub> X					
	4504 C	10.14	1	H <sub>2</sub> SO <sub>4</sub>	X				
	4504 D	10.14	1	none		X			
4668	4505 A,B	<del>9.20</del>	2	NaHSO <sub>4</sub> X					
	4505 C	9.20	1	H <sub>2</sub> SO <sub>4</sub>	X				
	4505 D	9.20	1	none		X			
4669	4506 A,B	<del>9.28</del>	2	NaHSO <sub>4</sub> X					
	4506 C	9.28	1	H <sub>2</sub> SO <sub>4</sub>	X				
	4506 D	9.28	1	none		X			
4670	4507 A,B	<del>11.24</del>	2	NaHSO <sub>4</sub> X					

REMARKS:

please prepare report with samples sent on 4.13.89

samples rec'd sealed, intact, cold

SAMPLE RELINQUISHED BY:

DATE/TIME

RECEIVED BY:

~~Greg Dubois (Greg Dubois)~~  
Greyhound

~~4/15~~  
4/15 0900

Greyhound  
Marta Havelick

Central  
Coast  
Analytical  
Services

Air, Water, & Hazardous Waste Sampling, Analysis, & Consultation  
State Certified Hazardous Waste, Chemistry, & Bacteriology Laboratories

141 Suburban Road, Suite C-4  
San Luis Obispo, Ca 93401  
Fax (805) 543-2555  
(805) 543-2553

5433-D Calle Real  
Goleta, CA 93117  
Fax (805) 976-4356  
(805) 964-7833

SAMPLE CHAIN OF CUSTODY

page 2 of 3

EMITTED BY:

COMPANY: *Western Geologic Resources*

CONTACT NAME: *Tom Howard*

ADDRESS: *2169 East Francisco Blvd Suite B, San Rafael, CA 94901*

PHONE: *(415) 457-7595*

OBJECT #: *1-045.07*

PROJECT NAME: *Emeryville*

ANALYSIS REQUESTED

OPERATOR (Print & Sign Name): *Madeline B. Stanger*

*EPH 8260 Full  
Sun TTPH  
Oil / Grease  
EPA 503  
ICP Soluble  
Metals*

CAS AB #	SAMPLE IDENTIFICATION (ID #, location, matrix)	DATE/TIME COLLECTED	# OF ITEMS	PRESERVE					
<del>4670</del>	<del>4507C</del>	<del>4.14.89</del> 11.24	<del>1</del>	<del>H<sub>2</sub>SO<sub>4</sub></del>	<del>X</del>				
<del>↓</del>	<del>4507D</del>	<del>11.24</del>	<del>1</del>	<del>none</del>		<del>X</del>			
<del>4671</del>	<del>4508 A,B</del>	<del>12.10</del>	<del>2</del>	<del>NaHSO<sub>4</sub></del>	<del>X</del>				
	<del>4508 C</del>	<del>12.10</del>	<del>1</del>	<del>H<sub>2</sub>SO<sub>4</sub></del>	<del>X</del>				
<del>↓</del>	<del>4508 D</del>	<del>12.10</del>	<del>1</del>	<del>none</del>		<del>X</del>			
	<del>4509 A,B</del>	<del>12.07</del>	<del>2</del>	<del>NaHSO<sub>4</sub></del>	<del>X</del>				
	<del>4509 C</del>	<del>12.07</del>	<del>1</del>	<del>H<sub>2</sub>SO<sub>4</sub></del>	<del>X</del>				
	<del>4509 D</del>	<del>12.07</del>	<del>1</del>	<del>none</del>		<del>X</del>			
<del>4672</del>	<del>4510 A,B</del>	<del>12.07</del>	<del>2</del>	<del>NaHSO<sub>4</sub></del>	<del>X</del>				
<del>↓</del>	<del>4510 C</del>	<del>12.07</del>	<del>1</del>	<del>H<sub>2</sub>SO<sub>4</sub></del>	<del>X</del>				

REMARKS:

*please prepare report with samples sent on 4.13.89*

*samples rec'd intact, sealed, cold*

SAMPLE RELINQUISHED BY:

DATE/TIME

RECEIVED BY:

*Grayhound*  
*Grayhound*

*4/15*  
*0900*

*Grayhound*  
*Maria Kovalich*

Central  
 Coast  
 Analytical  
 Services

141 Suburban Road, Suite C-4  
 San Luis Obispo, Ca 93401  
 Fax (805) 543-2555  
 (805) 543-2553

6453-D Calle Real  
 Goleta, CA 93117  
 Fax (805) 979-4355  
 (805) 954-7233

SAMPLE CHAIN OF CUSTODY

page 3 of 3

TITLED BY:

ANY Western Geologic Resources

CONTACT NAME Tom Howard

ESS 2169 E Francisco Blvd, San Rafael, Ca. 94901

PHONE 457-7595(415)

EST # -045-07 PROJECT NAME Emeryville Asphalt Plant

ANALYSIS REQUESTED

OPER (Print & Sign Name) April DuBois, Mark Froy Madeline Stenab

SAMPLE #	SAMPLE IDENTIFICATION (ID #, location, matrix)	DATE/TIME COLLECTED	# OF ITEMS	PRESERVE	Oil & Grease	ICP Soluble Metals
572	4510D	4/14 12.07	1	none	X	
573	TB45	4/14	1	NaHSO <sub>4</sub>	X	
574	4501 C	4/14 14.07	1	H <sub>2</sub> SO <sub>4</sub>	X	
<p>F#4674 is a replacement for a OG which broke in shipment</p>						

REMARKS:

samples rec'd intact sealed cold

SAMPLE RELINQUISHED BY:

DATE/TIME

RECEIVED BY:

April DuBois  
 Greyhound

4/15 0900

Greyhound  
 Malin Havelich

Central  
Coast  
Analytical  
Services

Air, Water, & Hazardous Waste Sampling, Analysis, & Consultation  
State Certified Hazardous Waste, Chemistry, & Bacteriology Laboratories

141 Suburban Road, Suite C-4  
San Luis Obispo, Ca 93401  
Fax (805) 543-2555  
(805) 543-2553

2453-D Calle Real  
Goleta, CA 93117  
Fax (805) 978-4356  
(805) 954-7833

SAMPLE CHAIN OF CUSTODY

~~Page 5 of 5~~

MITTED BY:

Western Geologic Resources

CONTACT NAME

Tom Howard

169 East Francisco Blvd. Suite B San Rafael, CA 94901

PHONE

(415) 457-7595

PROJECT # 045.07 PROJECT NAME Emeryville

ANALYSIS REQUESTED

ANALYST (Print & Sign Name)

Madeleine Stanger

MARKS: FCTE

DATE	SAMPLE IDENTIFICATION (ID #, location, matrix)	DATE/TIME COLLECTED	# OF ITEMS	PRESERVE	ANALYSIS REQUESTED
	4510 D	4.14.89	1	none	X
275	4511 A, B	4.14.89 13.03	2	NaHSO <sub>4</sub>	X
	4511 C	13.03	1	H <sub>2</sub> SO <sub>4</sub>	X
	4511 D	13.03	1	none	X
276	4512 A, B	13.21	2	NaHSO <sub>4</sub>	X
	4512 C	13.21	1	H <sub>2</sub> SO <sub>4</sub>	X
	4512 D	13.21	1	none	X
277	4512 B	13.21	1	NaHSO <sub>4</sub>	X
				NaN <sub>3</sub> ↑	

EPA 8260-0-011  
 SUGGESTED  
 BY EPA  
 ICP  
 metals

MARKS:

Please prepare report with samples shipped on 4.13.89

samples rec'd intact, sealed, cold

SAMPLE RELINQUISHED BY:

DATE/TIME

RECEIVED BY:

M. M. Gray

4.14.89 14:00

Greyhound

Greyhound

4/15 0900

Tricia Hawick



**ATTACHMENT C**

**LABORATORY REPORTS**

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number: As Listed  
Collected: 04/13/89  
Received: 04/14/89  
Tested: As Listed  
Collected by: Mark Frye

ATTN: Mark Frye  
Western Geologic Resources  
2169 E. Francisco Blvd.  
Suite B  
San Rafael, CA 94901

Sample Description:  
Proj.#1-045.07, Water  
Samples As Listed

REPORT

LAB NUMBER	SAMPLE DESCRIPTION	LEVEL FOUND
		OIL & GREASE (mg/l)
EPA METHOD-----		503E
DETECTION LIMIT(PQL)**-----		3.
DATE/ANALYST-----		04/27/89 LAP

F-04606	4502	<3.
F-04607	4503	<3.

\*\*Practical Quantitation Limit

05-06-89  
F04606WG.WR1/#44  
MH/kc

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES  
*Mary Havlicek*  
Mary Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number: As Listed  
Collected: 04/14/89  
Received: 04/15/89  
Tested: As Listed  
Collected by: Madeleine Stanger

Attn: Tom Howard  
Western Geologic Resources  
2169 E. Francisco Blvd.  
Suite B  
San Rafael, Ca. 94901

Sample Description:  
1-045.07 Emeryville, Monitoring Water  
Samples As Listed

REPORT

LAB NUMBER	SAMPLE DESCRIPTION	LEVEL FOUND OIL & GREASE mg/l
EPA METHOD-----		503E
DETECTION LIMIT(PQL)**-----		3.
DATE/ANALYST-----		04/29/89 LAP
F-4667	4504 C	<3.
F-4668	4505 C	<3.
F-4669	4506 C	<3.
F-4670	4507 C	<3.
F-4671	4508 C	<3.
F-4672	4510 C	<3.
F-4674	4501 C	No Analysis Done
F-4675	4511 C	<3.
F-4676	4512 C	<3.

\*\*Practical Quantitation Limit

05/16/89  
F4667WG.WR1/47  
MH/ah

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES  
*Mary Havlicek*  
Mary Havlicek, Ph.D., President



Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number: F-4605  
Collected: 04/13/89 @ 1409  
Received: 04/14/89 @ 0900  
Tested: As Listed  
Collected by: Mark Frye

ATTN: Mark Frye  
Western Geologic  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 91406

Sample Description:  
Project #1-045.07, #4501  
Filtered, Monitoring Water

DIGESTED BY EPA METHOD 3005  
ON 04/27/89 BY JJ.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 05/01/89 MM	0.001	<0.001	1.0
CHROMIUM	7191 05/01/89 MM	0.005	<0.005	500.
LEAD	7421 05/01/89 MM	0.005	<0.005	5.0
ZINC	7950 05/03/89 KRW	0.005	<0.005	250.

\*\*Practical Quantitation Limit

\*\*\*SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Art 11  
Sec. 66699 as persistent & bioaccumulative toxic substance.

05/05/89  
F4605ME.WR1/#44  
MH/ke

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES  
*Mary Havlicek*  
Mary Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number: F-4606  
Collected: 04/13/89 @ 1702  
Received: 04/14/89 @ 0900  
Tested: As Listed  
Collected by: Mark Frye

ATTN: Mark Frye  
Western Geologic  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 91406

Sample Description:  
Project #1-045.07, #4502  
Filtered, Monitoring Water

DIGESTED BY EPA METHOD 3005  
ON 04/27/89 BY JJ.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 05/01/89 MM	0.001	<0.001	1.0
CHROMIUM	7191 05/01/89 MM	0.005	<0.005	560.
LEAD	7421 05/01/89 MM	0.005	<0.005	5.0
ZINC	7950 05/03/89 KRW	0.005	0.010	250.

\*\*Practical Quantitation Limit

\*\*\*SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Art 11  
Sec. 66699 as persistent & bioaccumulative toxic substance.

05/05/89  
F4606ME.WR1/#44  
MH/ke

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES  
*Mary Havlicek*  
Mary Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number: F-4607  
Collected: 04/13/89 @ 1723  
Received: 04/14/89 @ 0900  
Tested: As Listed  
Collected by: Mark Frye

ATTN: Mark Frye  
Western Geologic  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 91406

Sample Description:  
  
Project #1-045.07, #4503  
Filtered, Monitoring Water

DIGESTED BY EPA METHOD 3005  
ON 04/27/89 BY JJ.

REPORT

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l)(PQL)**	DISSOLVED LEVEL FOUND mg/l	***STLC mg/l
CADMIUM	7131 05/01/89 MM	0.001	<0.001	1.0
CHROMIUM	7191 05/01/89 MM	0.005	<0.005	500.
LEAD	7421 05/01/89 MM	0.005	<0.005	5.0
ZINC	7950 05/03/89 KRW	0.005	0.16	250.

\*\*Practical Quantitation Limit

\*\*\*SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Art 11  
Sec. 66699 as persistent & bioaccumulative toxic substance.

05/05/89  
F4607ME.WR1/#44  
MH/ke

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES

*Mary Havlicek*  
Mary Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number: F-4667  
Collected: 04/14/89  
Received: 04/15/89  
Tested: As Listed  
Collected by: Madeleine Stanger

ATTN: Tom Howard  
Western Geologic  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 91406

Sample Description:  
Project #1-045.07 Emeryville  
#4504 D, Filtered, Monitoring Water

\*Digested by EPA 3005 on 04/27/89 by EPM

ICP/AA SCAN FOR CALDERON METALS

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION		DISSOLVED	STLC*** mg/l
		LIMIT (mg/l) (PQL)**		LEVEL FOUND mg/l	
ANTIMONY	6010 05/03/89 MM	3.		<3.	15.
ARSENIC	6010 05/03/89 MM	2.		<2.	5.0
BARIUM	6010 05/03/89 MM	0.01		0.20	100.
BERYLLIUM	6010 05/03/89 MM	0.01		<0.01	0.75
CADMIUM	6010 05/03/89 MM	0.2		<0.2	1.0
CALCIUM	6010 05/03/89 MM	1.		77.	NO LIMIT
CHROMIUM	6010 05/03/89 MM	0.05		<0.05	560.
COBALT	6010 05/03/89 MM	0.05		<0.05	80.
COPPER	6010 05/03/89 MM	0.05		<0.05	25.
IRON	6010 05/03/89 MM	0.05		0.83	NO LIMIT
LEAD	7421 05/01/89 MM	0.005		<0.005	5.0
MAGNESIUM	6010 05/03/89 MM	1.		46.	NO LIMIT
MANGANESE	6010 05/03/89 MM	0.02		2.3	NO LIMIT
MOLYBDENUM	6010 05/03/89 MM	5.		<5.	350.
NICKEL	6010 05/03/89 MM	0.05		<0.05	20.
POTASSIUM	6010 05/03/89 MM	3.		<3.	NO LIMIT
SILVER	6010 05/03/89 MM	0.2		<0.2	5.
SODIUM	6010 05/03/89 MM	1.		130.	NO LIMIT
THALLIUM	7840 05/03/89 KRW	0.05		<0.05	7.0
VANADIUM	6010 05/03/89 MM	0.02		<0.02	24.
ZINC	6010 05/03/89 MM	0.05		<0.05	250.

\*\*Practical Quantitation Limit

\*\*\*SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Article 11 Sec. 66699 as persistent and bioaccumulative toxic substance. "NO LIMIT" means not listed therein as persistent and bioaccumulative toxic substance.

NOTE: Results obtained from ICP Scans (EPA 6010) are susceptible to positive interferences. Unacceptably high results using this method should be rechecked using atomic absorption spectrometry.

05/05/89  
F4667ME.WR1/#44  
MH/ke

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES

*Mary Havlicek*  
Mary Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number: F-4668  
Collected: 04/14/89  
Received: 04/15/89  
Tested: As Listed  
Collected by: Madeleine Stanger

ATTN: Tom Howard  
Western Geologic  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 91406

Sample Description:  
  
Project #1-045.07 Emeryville  
#4505 D, Filtered, Monitoring Water

\*Digested by EPA 3005 on 04/27/89 by EPM

ICP/AA SCAN FOR CALDERON METALS

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l) (PQL)**	DISSOLVED LEVEL FOUND mg/l	STLC*** mg/l
ANTIMONY	6010 05/03/89 MM	3.	<3.	15.
ARSENIC	6010 05/03/89 MM	2.	<2.	5.0
BARIUM	6010 05/02/89 MM	0.01	0.36	100.
BERYLLIUM	6010 05/02/89 MM	0.01	<0.01	0.75
CADMIUM	6010 05/02/89 MM	0.2	<0.2	1.0
CALCIUM	6010 05/02/89 MM	1.	150.	NO LIMIT
CHROMIUM	6010 05/02/89 MM	0.05	0.15	560.
COBALT	6010 05/02/89 MM	0.05	<0.05	80.
COPPER	6010 05/02/89 MM	0.05	0.07	25.
IRON	6010 05/02/89 MM	0.05	6.6	NO LIMIT
LEAD	7421 05/01/89 MM	0.005	0.005	5.0
MAGNESIUM	6010 05/02/89 MM	1.	38.	NO LIMIT
MANGANESE	6010 05/02/89 MM	0.02	7.2	NO LIMIT
MOLYBDENUM	6010 05/02/89 MM	5.	<5.	350.
NICKEL	6010 05/02/89 MM	0.05	<0.05	20.
POTASSIUM	6010 05/02/89 MM	3.	4.	NO LIMIT
SILVER	6010 05/03/89 MM	0.2	<0.2	5.
SODIUM	6010 05/02/89 MM	1.	30.	NO LIMIT
THALLIUM	7840 05/03/89 KRW	0.05	<0.05	7.0
VANADIUM	6010 05/02/89 MM	0.02	0.04	24.
ZINC	6010 05/02/89 MM	0.05	0.14	250.

\*\*Practical Quantitation Limit

\*\*\*SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Article 11 Sec. 66699 as persistent and bioaccumulative toxic substance. "NO LIMIT" means not listed therein as persistent and bioaccumulative toxic substance.

NOTE: Results obtained from ICP Scans (EPA 6010) are susceptible to positive interferences. Unacceptably high results using this method should be rechecked using atomic absorption spectrometry.

05/10/89  
F4668ME.WR1/#44  
MH/ke/ah

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES  
*Mary Havlicek*  
Mary Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number: F-4669  
Collected: 04/14/89  
Received: 04/15/89  
Tested: As Listed  
Collected by: Madeleine Stanger

ATTN: Tom Howard  
Western Geologic  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 91406

Sample Description:  
  
Project #1-045.07 Emeryville  
#4506 D, Filtered, Monitoring Water

\*Digested by EPA 3005 on 04/27/89 by EPM

ICP/AA SCAN FOR CALDERON METALS

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION		DISSOLVED		STLC*** mg/l
		LIMIT (mg/l)	(PQL)**	LEVEL FOUND mg/l		
ANTIMONY	6010 05/03/89 MM	3.		<3.		15.
ARSENIC	6010 05/03/89 MM	2.		<2.		5.0
BARIUM	6010 05/02/89 MM	0.01		0.49		100.
BERYLLIUM	6010 05/02/89 MM	0.01		<0.01		0.75
CADMIUM	6010 05/02/89 MM	0.2		<0.2		1.0
CALCIUM	6010 05/02/89 MM	1.		160.		NO LIMIT
CHROMIUM	6010 05/02/89 MM	0.05		<0.05		560.
COBALT	6010 05/02/89 MM	0.05		<0.05		80.
COPPER	6010 05/02/89 MM	0.05		0.06		25.
IRON	6010 05/02/89 MM	0.05		7.8		NO LIMIT
LEAD	7421 05/01/89 MM	0.005		<0.005		5.0
MAGNESIUM	6010 05/02/89 MM	1.		51.		NO LIMIT
MANGANESE	6010 05/02/89 MM	0.02		10.		NO LIMIT
MOLYBDENUM	6010 05/02/89 MM	5.		<5.		350.
NICKEL	6010 05/02/89 MM	0.05		<0.05		20.
POTASSIUM	6010 05/02/89 MM	3.		4.		NO LIMIT
SILVER	6010 05/03/89 MM	0.2		<0.2		5.
SODIUM	6010 05/02/89 MM	1.		64.		NO LIMIT
THALLIUM	7840 05/03/89 KRW	0.05		<0.05		7.0
VANADIUM	6010 05/02/89 MM	0.02		0.03		24.
ZINC	6010 05/02/89 MM	0.05		0.14		250.

\*\*Practical Quantitation Limit

\*\*\*SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Article 11 Sec. 66699 as persistent and bioaccumulative toxic substance. "NO LIMIT" means not listed therein as persistent and bioaccumulative toxic substance.

NOTE: Results obtained from ICP Scans (EPA 6010) are susceptible to positive interferences. Unacceptably high results using this method should be rechecked using atomic absorption spectrometry.

05/10/89  
F4669ME.WR1/#44  
MH/ke/ah

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES  
*Mary Havlicek*  
Mary Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number: F-4670  
Collected: 04/14/89  
Received: 04/15/89  
Tested: As Listed  
Collected by: Madeleine Stanger

ATTN: Tom Howard  
Western Geologic  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 91406

Sample Description:  
Project #1-045.07 Emeryville  
#4507 D, Filtered, Monitoring Water

\*Digested by EPA 3005 on 04/27/89 by EPM

ICP/AA SCAN FOR CALDERON METALS

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l) (PQL)**	DISSOLVED LEVEL FOUND mg/l	STLC*** mg/l
ANTIMONY	6010 05/03/89 MM	3.	<3.	15.
ARSENIC	6010 05/03/89 MM	2.	<2.	5.0
BARIUM	6010 05/02/89 MM	0.01	0.25	100.
BERYLLIUM	6010 05/02/89 MM	0.01	<0.01	0.75
CADMIUM	6010 05/02/89 MM	0.2	0.2	1.0
CALCIUM	6010 05/02/89 MM	1.	80.	NO LIMIT
CHROMIUM	6010 05/02/89 MM	0.05	0.17	560.
COBALT	6010 05/02/89 MM	0.05	0.10	80.
COPPER	6010 05/02/89 MM	0.05	0.12	25.
IRON	6010 05/02/89 MM	0.05	0.13	NO LIMIT
LEAD	7421 05/01/89 MM	0.005	<0.005	5.0
MAGNESIUM	6010 05/02/89 MM	1.	14.	NO LIMIT
MANGANESE	6010 05/02/89 MM	0.02	0.06	NO LIMIT
MOLYBDENUM	6010 05/02/89 MM	5.	<5.	350.
NICKEL	6010 05/02/89 MM	0.05	<0.05	20.
POTASSIUM	6010 05/02/89 MM	3.	<3.	NO LIMIT
SILVER	6010 05/03/89 MM	0.2	<0.2	5.
SODIUM	6010 05/02/89 MM	1.	43.	NO LIMIT
THALLIUM	7840 05/03/89 KRW	0.05	<0.05	7.0
VANADIUM	6010 05/02/89 MM	0.02	0.06	24.
ZINC	6010 05/02/89 MM	0.05	0.23	250.

\*\*Practical Quantitation Limit

\*\*\*SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Article 11 Sec. 66699 as persistent and bioaccumulative toxic substance. "NO LIMIT" means not listed therein as persistent and bioaccumulative toxic substance.

NOTE: Results obtained from ICP Scans (EPA 6010) are susceptible to positive interferences. Unacceptably high results using this method should be rechecked using atomic absorption spectrometry.

05/10/89  
F4670ME.WR1/#44  
MH/ke/ah

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES

*Mary Havlicek*  
Mary Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number: F-4671  
Collected: 04/14/89  
Received: 04/15/89  
Tested: As Listed  
Collected by: Madeleine Stanger

ATTN: Tom Howard  
Western Geologic  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 91406

Sample Description:  
  
Project #1-045.07 Emeryville  
#4508 D, Filtered, Monitoring Water

\*Digested by EPA 3005 on 05/02/89 by RJ

ICP/AA SCAN FOR CALDERON METALS

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l) (PQL)**	DISSOLVED LEVEL FOUND mg/l	STLC*** mg/l
ANTIMONY	6010 05/03/89 MM	3.	<3.	15.
ARSENIC	6010 05/03/89 MM	2.	<2.	5.0
BARIUM	6010 05/08/89 MM	0.01	0.18	100.
BERYLLIUM	6010 05/08/89 MM	0.01	<0.01	0.75
CADMIUM	6010 05/08/89 MM	0.2	<0.2	1.0
CALCIUM	6010 05/08/89 MM	1.	48.	NO LIMIT
CHROMIUM	6010 05/08/89 MM	0.05	<0.05	560.
COBALT	6010 05/08/89 MM	0.05	<0.05	80.
COPPER	6010 05/08/89 MM	0.05	<0.05	25.
IRON	6010 05/08/89 MM	0.05	<0.05	NO LIMIT
LEAD	7421 05/01/89 MM	0.005	<0.005	5.0
MAGNESIUM	6010 05/02/89 MM	1.	28.	NO LIMIT
MANGANESE	6010 05/08/89 MM	0.02	3.0	NO LIMIT
MOLYBDENUM	6010 05/08/89 MM	5.	<5.	350.
NICKEL	6010 05/08/89 MM	0.05	<0.05	20.
POTASSIUM	6010 05/08/89 MM	3.	<3.	NO LIMIT
SILVER	6010 05/03/89 MM	0.2	<0.2	5.
SODIUM	6010 05/08/89 MM	1.	16.	NO LIMIT
THALLIUM	7840 05/03/89 KRW	0.05	<0.05	7.0
VANADIUM	6010 05/08/89 MM	0.02	<0.02	24.
ZINC	6010 05/08/89 MM	0.05	0.05	250.

\*\*Practical Quantitation Limit

\*\*\*SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Article 11 Sec. 66699 as persistent and bioaccumulative toxic substance. "NO LIMIT" means not listed therein as persistent and bioaccumulative toxic substance.

NOTE: Results obtained from ICP Scans (EPA 6010) are susceptible to positive interferences. Unacceptably high results using this method should be rechecked using atomic absorption spectrometry.

05/18/89  
F4671ME.WR1/#48  
MH/rh

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES  
*Mary Havlicek*  
Mary Havlicek, Ph.D., President



Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number: F-4672  
Collected: 04/14/89  
Received: 04/15/89  
Tested: As Listed  
Collected by: Madeleine Stanger

ATTN: Tom Howard  
Western Geologic  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 91406

Sample Description:

Project #1-045.07 Emeryville  
#4510 D, Filtered, Monitoring Water

Digested by EPA 3005 on 05/02/89 by RJ.

ICP/AA SCAN FOR CALDERON METALS

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l) (PQL)**	DISSOLVED LEVEL FOUND mg/l	STLC*** mg/l
ANTIMONY	6010 05/09/89 MM	3.	<3.	15.
ARSENIC	6010 05/09/89 MM	2.	<2.	5.0
BARIUM	6010 05/08/89 MM	0.01	0.05	100.
BERYLLIUM	6010 05/08/89 MM	0.01	<0.01	0.75
CADMIUM	6010 05/08/89 MM	0.2	<0.2	1.0
CALCIUM	6010 05/08/89 MM	1.	36.	NO LIMIT
CHROMIUM	6010 05/08/89 MM	0.05	<0.05	560.
COBALT	6010 05/08/89 MM	0.05	<0.05	80.
COPPER	6010 05/08/89 MM	0.05	<0.05	25.
IRON	6010 05/08/89 MM	0.05	<0.05	NO LIMIT
LEAD	7421 05/12/89 RJ	0.005	<0.005	5.0
MAGNESIUM	6010 05/08/89 MM	1.	20.	NO LIMIT
MANGANESE	6010 05/08/89 MM	0.02	0.09	NO LIMIT
MOLYBDENUM	6010 05/08/89 MM	5.	<5.	350.
NICKEL	6010 05/08/89 MM	0.05	<0.05	20.
POTASSIUM	6010 05/08/89 MM	3.	<3.	NO LIMIT
SILVER	6010 05/09/89 MM	0.2	<0.2	5.
SODIUM	6010 05/08/89 MM	1.	72.	NO LIMIT
THALLIUM	7840 05/10/89 KRW	0.05	<0.05	7.0
VANADIUM	6010 05/08/89 MM	0.02	<0.02	24.
ZINC	6010 05/08/89 MM	0.05	<0.05	250.

\*\*Practical Quantitation Limit

\*\*\*SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Article 11 Sec. 66699 as persistent and bioaccumulative toxic substance. "NO LIMIT" means not listed therein as persistent and bioaccumulative toxic substance.

NOTE: Results obtained from ICP Scans (EPA 6010) are susceptible to positive interferences. Unacceptably high results using this method should be rechecked using atomic absorption spectrometry.

05/15/89  
F4672ME.WR1/#47  
MH/ah

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES

*Mary Havlicek*  
Mary Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number: F-4675  
Collected: 04/14/89  
Received: 04/15/89  
Tested: As Listed  
Collected by: Madeleine Stanger

ATTN: Tom Howard  
Western Geologic  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 91406

Sample Description:  
  
Project #1-045.07 Emeryville  
#4511 D, Filtered, Monitoring Water

\*Digested by EPA 3005 on 04/27/89 by EPM

ICP/AA SCAN FOR CALDERON METALS

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l) (PQL)**	DISSOLVED LEVEL FOUND mg/l	STLC*** mg/l
ANTIMONY	6010 05/03/89 MM	3.	<3.	15.
ARSENIC	6010 05/03/89 MM	2.	<2.	5.0
BARIUM	6010 05/02/89 MM	0.01	<0.01	100.
BERYLLIUM	6010 05/02/89 MM	0.01	<0.01	0.75
CADMIUM	6010 05/02/89 MM	0.2	<0.2	1.0
CALCIUM	6010 05/02/89 MM	1.	40.	NO LIMIT
CHROMIUM	6010 05/02/89 MM	0.05	<0.05	500.
COBALT	6010 05/02/89 MM	0.05	<0.05	80.
COPPER	6010 05/02/89 MM	0.05	<0.05	25.
IRON	6010 05/02/89 MM	0.05	<0.05	NO LIMIT
LEAD	7421 05/01/89 MM	0.005	<0.005	5.0
MAGNESIUM	6010 05/02/89 MM	1.	23.	NO LIMIT
MANGANESE	6010 05/02/89 MM	0.02	0.22	NO LIMIT
MOLYBDENUM	6010 05/02/89 MM	5.	<5.	350.
NICKEL	6010 05/02/89 MM	0.05	<0.05	20.
POTASSIUM	6010 05/02/89 MM	3.	<3.	NO LIMIT
SILVER	6010 05/03/89 MM	0.2	<0.2	5.
SODIUM	6010 05/02/89 MM	1.	77.	NO LIMIT
THALLIUM	7840 05/03/89 KRW	0.05	<0.05	7.0
VANADIUM	6010 05/02/89 MM	0.02	<0.02	24.
ZINC	6010 05/02/89 MM	0.05	0.15	250.

\*\*Practical Quantitation Limit

\*\*\*SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Article 11 Sec. 66699 as persistent and bioaccumulative toxic substance. "NO LIMIT" means not listed therein as persistent and bioaccumulative toxic substance.

NOTE: Results obtained from ICP Scans (EPA 6010) are susceptible to positive interferences. Unacceptably high results using this method should be rechecked using atomic absorption spectrometry.

05/10/89  
F4675ME.WR1/#44  
MH/ke/ah

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES  
*Mary Havlicek*  
Mary Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number: F-4676  
Collected: 04/14/89  
Received: 04/15/89  
Tested: As Listed  
Collected by: Madeleine Stanger

ATTN: Tom Howard  
Western Geologic  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 91406

Sample Description:  
  
Project #1-045.07 Emeryville  
#4512 D, Filtered, Monitoring Water

\*Digested by EPA 3005 on 04/27/89 by EPM

ICP/AA SCAN FOR CALDERON METALS

CONSTITUENT	EPA METHOD/DATE/ANALYST	DETECTION LIMIT (mg/l) (PQL)**	DISSOLVED LEVEL FOUND mg/l	STLC*** mg/l
ANTIMONY	6010 05/03/89 MM	3.	<3.	15.
ARSENIC	6010 05/03/89 MM	2.	<2.	5.0
BARIUM	6010 05/03/89 MM	0.01	0.04	100.
BERYLLIUM	6010 05/03/89 MM	0.01	<0.01	0.75
CADMIUM	6010 05/03/89 MM	0.2	<0.2	1.0
CALCIUM	6010 05/03/89 MM	1.	89.	NO LIMIT
CHROMIUM	6010 05/03/89 MM	0.05	<0.05	560.
COBALT	6010 05/03/89 MM	0.05	<0.05	80.
COPPER	6010 05/03/89 MM	0.05	<0.05	25.
IRON	6010 05/03/89 MM	0.05	<0.05	NO LIMIT
LEAD	7421 05/01/89 MM	0.005	<0.005	5.0
MAGNESIUM	6010 05/03/89 MM	1.	60.	NO LIMIT
MANGANESE	6010 05/03/89 MM	0.02	0.70	NO LIMIT
MOLYBDENUM	6010 05/03/89 MM	5.	<5.	350.
NICKEL	6010 05/03/89 MM	0.05	<0.05	20.
POTASSIUM	6010 05/03/89 MM	3.	<3.	NO LIMIT
SILVER	6010 05/03/89 MM	0.2	<0.2	5.
SODIUM	6010 05/03/89 MM	1.	110.	NO LIMIT
THALLIUM	7840 05/03/89 KRW	0.05	<0.05	7.0
VANADIUM	6010 05/03/89 MM	0.02	<0.02	24.
ZINC	6010 05/03/89 MM	0.05	<0.05	250.

\*\*Practical Quantitation Limit

\*\*\*SOLUBLE THRESHOLD LIMIT CONCENTRATION as listed in 22 Cal Adm Code Article 11 Sec. 66699 as persistent and bioaccumulative toxic substance. "NO LIMIT" means not listed therein as persistent and bioaccumulative toxic substance.

NOTE: Results obtained from ICP Scans (EPA 6010) are susceptible to positive interferences. Unacceptably high results using this method should be rechecked using atomic absorption spectrometry.

05/05/89  
F4676ME.WR1/#44  
MH/ke

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES  
*Mary Havlicek*  
Mary Havlicek, Ph.D., President

Central Coast

Central  
Coast  
Analytical  
Services

Analytical Services, Inc.  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number : F-04605  
Collected : 04/13/89  
Received : 04/14/89  
Tested : 04/25/89  
Collected by: M. Frye

ATTN: Mark Frye  
Western Geologic Resources  
2169 E. Francisco Blvd.  
Suite B  
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 8030 (purge-and-trap)  
EPA METHOD 8260  
Sample Description:  
Project #1-045.07, 4501,  
Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	5.	34.
Bromodichloromethane	5.	not found
Bromoform	10.	not found
Carbon Tetrachloride	5.	not found
Chlorobenzene	5.	not found
2-Chloroethyl Vinyl Ether	50.	not found
Chloroform	20.	not found
Dibromochloromethane	5.	not found
1,2-Dichlorobenzene	5.	not found
1,3-Dichlorobenzene	5.	not found
1,4-Dichlorobenzene	5.	not found
1,1-Dichloroethane	5.	not found
1,2-Dichloroethane (EDC)	5.	not found
1,1-Dichloroethene	5.	not found
c-1,2-Dichloroethene	5.	720.
t-1,2-Dichloroethene	5.	19.
1,2-Dichloropropane	5.	6.
c-1,3-Dichloropropene	5.	not found
t-1,3-Dichloropropene	5.	not found
Ethylbenzene	5.	not found
Ethyl Chloride	5.	not found
Ethylene Dibromide	5.	not found
Methyl Bromide	5.	not found
Methyl Chloride	5.	not found
Methylene Chloride	50.	not found
1,1,2,2-Tetrachloroethane	20.	not found
Tetrachloroethylene (PCE)	5.	not found
Toluene	5.	not found
1,1,1-Trichloroethane (TCA)	5.	not found
1,1,2-Trichloroethane	5.	not found
Trichloroethene (TCE)	5.	11.
Trichlorotrifluoroethane (F113)	20.	not found
Trichlorofluoromethane(F-11)	20.	not found
Vinyl Chloride	5.	340.
Xylenes	10.	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	5000.	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 93/87/82.

05/01/89/MSD#7  
F04605v.wr1/41  
MH/jg/re/tl

Respectfully submitted,  
*Mary Havlicek*  
Mary Havlicek, Ph.D., President

**Central Coast Analytical Services, Inc.**  
 141 Suburban Road, Suite C-4  
 San Luis Obispo, California 93401  
 (805) 543-2553

Lab Number : F-84686  
 Collected : 8/13/89  
 Received : 8/14/89  
 Tested : 8/25/89  
 Collected by: M. Frye


ATTN: Mark Frye  
 Western Geologic Resources  
 2169 E. Francisco Blvd.  
 Suite B  
 San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)  
 EPA METHOD 8260  
 Sample Description:  
 Project #1-843.87, 4582,  
 Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.2	not found
Bromodichloromethane	0.2	not found
Bromoform	0.4	not found
Carbon Tetrachloride	0.2	not found
Chlorobenzene	0.2	not found
2-Chloroethyl Vinyl Ether	2.	not found
Chloroform	1.	not found
Dibromochloromethane	0.2	not found
1,2-Dichlorobenzene	0.2	not found
1,3-Dichlorobenzene	0.2	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.2	not found
1,2-Dichloroethane (EDC)	0.2	not found
1,1-Dichloroethene	0.2	not found
c-1,2-Dichloroethene	0.2	not found
t-1,2-Dichloroethene	0.2	not found
1,2-Dichloropropane	0.2	not found
c-1,3-Dichloropropene	0.2	not found
t-1,3-Dichloropropene	0.2	not found
Ethylbenzene	0.2	not found
Ethyl Chloride	0.2	not found
Ethylene Dibromide	0.2	not found
Methyl Bromide	0.2	not found
Methyl Chloride	0.2	not found
Methylene Chloride	2.	not found
1,1,2,2-Tetrachloroethane	1.	not found
Tetrachloroethylene (PCE)	0.2	not found
Toluene	0.2	not found
1,1,1-Trichloroethane (TCA)	0.2	not found
1,1,2-Trichloroethane	0.2	not found
Trichloroethene (TCE)	0.2	not found
Trichlorotrifluoroethane (f113)	1.	not found
Trichlorofluoromethane(F-11)	1.	not found
Vinyl Chloride	0.2	not found
Xylenes	0.4	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	100.	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 95/80/96.

05/01/89/MSD#7  
 F04686v.wr1/41  
 MH/cr/re/tl

Respectfully submitted,  
  
 Mary Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services, Inc.  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number : F-04607  
Collected : 04/13/89  
Received : 04/14/89  
Tested : 04/25/89  
Collected by: M. Frye

ATTN: Mark Frye  
Western Geologic Resources  
2169 E. Francisco Blvd.  
Suite B  
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)  
EPA METHOD 8260  
Sample Description:  
Project #1-045.07, 4503,  
Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.2	not found
Bromodichloromethane	0.2	not found
Bromoform	0.4	not found
Carbon Tetrachloride	0.2	not found
Chlorobenzene	0.2	not found
2-Chloroethyl Vinyl Ether	2.	not found
Chloroform	1.	not found
Dibromochloromethane	0.2	not found
1,2-Dichlorobenzene	0.2	not found
1,3-Dichlorobenzene	0.2	not found
1,4-Dichlorobenzene	0.2	not found
1,1-Dichloroethane	0.2	not found
1,2-Dichloroethane (EDC)	0.2	not found
1,1-Dichloroethene	0.2	not found
c-1,2-Dichloroethene	0.2	not found
t-1,2-Dichloroethene	0.2	not found
1,2-Dichloropropane	0.2	not found
c-1,3-Dichloropropene	0.2	not found
t-1,3-Dichloropropene	0.2	not found
Ethylbenzene	0.2	not found
Ethyl Chloride	0.2	not found
Ethylene Dibromide	0.2	not found
Methyl Bromide	0.2	not found
Methyl Chloride	0.2	not found
Methylene Chloride	2.	not found
1,1,2,2-Tetrachloroethane	1.	not found
Tetrachloroethylene (PCE)	0.2	not found
Toluene	0.2	not found
1,1,1-Trichloroethane (TCA)	0.2	not found
1,1,2-Trichloroethane	0.2	not found
Trichloroethene (TCE)	0.2	not found
Trichlorotrifluoroethane (f113)	1.	not found
Trichlorofluoromethane(F-11)	1.	not found
Vinyl Chloride	0.2	not found
Xylenes	0.4	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	100.	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 94/80/94.

05/01/89/MSD#7  
F04607v.wr1/41  
MH/cr/re/tl

Respectfully submitted,  
*Mary Havlicek*  
Mary Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services, Inc.  
141 Suburban Road, Suite C  
San Luis Obispo, CA 93401  
(805) 543-2553

Lab Number : F-4667  
Collected : 04/14/89  
Received : 04/15/89  
Tested : 04/26/89  
Collected by: M. Stranger

Western Geologic Resources  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 93108

EPA METHOD 8260  
Sample Description:  
Project # 1-045.07, Emeryville  
4504-A water

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	50.	ND	1,2-Dichloroethene	1.	ND
Benzene	0.5	ND	1,2-Dichloropropane	1.	ND
Bromodichloromethane	1.	ND	c-1,3-Dichloropropene	1.	ND
Bromoform	1.	ND	t-1,3-Dichloropropene	1.	ND
Bromomethane	1.	ND	Ethylbenzene	1.	ND
2-Butanone	10.	ND	2-Hexanone	5.	ND
Carbon Disulfide	1.	4.	Methyl Isobutyl Ketone	5.	ND
Carbon Tetrachloride	1.	ND	Methylene Chloride	5.	ND
Chlorobenzene	1.	ND	Styrene	1.	ND
Chloroethane	1.	ND	1,1,2,2-Tetrachloroethane	3.	ND
2-Chloroethylvinylether	2.	ND	Tetrachloroethene	1.	ND
Chloroform	2.	ND	Toluene	1.	ND
Chloromethane	1.	ND	1,1,1-Trichloroethane	1.	ND
Dibromochloromethane	1.	ND	1,1,2-Trichloroethane	1.	ND
1,2-Dichlorobenzene	1.	ND	Trichloroethene	1.	ND
1,3-Dichlorobenzene	1.	ND	Trichlorofluoromethane	1.	ND
1,4-Dichlorobenzene	1.	ND	Trichlorotrifluoroethane	1.	ND
1,1-Dichloroethane	1.	2.	Vinyl Acetate	5.	ND
1,2-Dichloroethane	1.	ND	Vinyl Chloride	1.	ND
1,1-Dichloroethene	1.	ND	Xylenes	1.	ND
Total Purgeable Petroleum Hydrocarbons (Gasoline)				50.	380.

\*PQL - Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 99/102/127

Constituents reported as ND would have been reported if present at or above the detection limit.

finn/05/01/89  
f4667v.wr1  
MH/brp/mc

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES

*Mary D. Havlicek*  
Mary D. Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services, Inc.  
141 Suburban Road, Suite C  
San Luis Obispo, CA 93401  
(805) 543-2553

Lab Number : F-4668  
Collected : 04/14/89  
Received : 04/15/89  
Tested : 04/26/89  
Collected by: M. Stranger

Western Geologic Resources  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 93108

EPA METHOD 8260  
Sample Description:  
Project # 1-045.07, Emeryville  
4505-A water

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	50.	ND	1,2-Dichloroethene	1.	ND
Benzene	0.5	ND	1,2-Dichloropropane	1.	ND
Bromodichloromethane	1.	ND	c-1,3-Dichloropropene	1.	ND
Bromoform	1.	ND	t-1,3-Dichloropropene	1.	ND
Bromomethane	1.	ND	Ethylbenzene	1.	ND
2-Butanone	10.	ND	2-Hexanone	5.	ND
Carbon Disulfide	1.	7.	Methyl Isobutyl Ketone	5.	ND
Carbon Tetrachloride	1.	ND	Methylene Chloride	5.	ND
Chlorobenzene	1.	ND	Styrene	1.	ND
Chloroethane	1.	ND	1,1,2,2-Tetrachloroethane	3.	ND
2-Chloroethylvinylether	2.	ND	Tetrachloroethene	1.	ND
Chloroform	2.	ND	Toluene	1.	ND
Chloromethane	1.	ND	1,1,1-Trichloroethane	1.	ND
Dibromochloromethane	1.	ND	1,1,2-Trichloroethane	1.	ND
1,2-Dichlorobenzene	1.	ND	Trichloroethene	1.	ND
1,3-Dichlorobenzene	1.	ND	Trichlorofluoromethane	1.	ND
1,4-Dichlorobenzene	1.	ND	Trichlorotrifluoroethane	1.	ND
1,1-Dichloroethane	1.	ND	Vinyl Acetate	5.	ND
1,2-Dichloroethane	1.	ND	Vinyl Chloride	1.	ND
1,1-Dichloroethene	1.	ND	Xylenes	1.	ND
Total Purgeable Petroleum Hydrocarbons (Diesel 2)				50.	4300.

\*PQL - Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 110/96/105  
Constituents reported as ND would have been reported if present at or above the detection limit.

finn/05/01/89  
f4668v.wr1  
MH/brp/mc

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES

*Mary D. Havlicek*  
Mary D. Havlicek, Ph.D., President



Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services, Inc.  
141 Suburban Road, Suite C  
San Luis Obispo, CA 93401  
(805) 543-2553

Lab Number : F-4669  
Collected : 04/14/89  
Received : 04/15/89  
Tested : 04/26/89  
Collected by: M. Stranger

Western Geologic Resources  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 93108

EPA METHOD 8260  
Sample Description:  
Project # 1-045.07, Emeryville  
4506-A water

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	50.	ND	1,2-Dichloroethene	1.	ND
Benzene	0.5	ND	1,2-Dichloropropane	1.	ND
Bromodichloromethane	1.	ND	c-1,3-Dichloropropene	1.	ND
Bromoform	1.	ND	t-1,3-Dichloropropene	1.	ND
Bromomethane	1.	ND	Ethylbenzene	1.	ND
2-Butanone	10.	ND	2-Hexanone	5.	ND
Carbon Disulfide	1.	4.	Methyl Isobutyl Ketone	5.	ND
Carbon Tetrachloride	1.	ND	Methylene Chloride	5.	ND
Chlorobenzene	1.	ND	Styrene	1.	ND
Chloroethane	1.	ND	1,1,2,2-Tetrachloroethane	3.	ND
2-Chloroethylvinylether	2.	ND	Tetrachloroethene	1.	ND
Chloroform	2.	ND	Toluene	1.	ND
Chloromethane	1.	ND	1,1,1-Trichloroethane	1.	ND
Dibromochloromethane	1.	ND	1,1,2-Trichloroethane	1.	ND
1,2-Dichlorobenzene	1.	ND	Trichloroethene	1.	ND
1,3-Dichlorobenzene	1.	ND	Trichlorofluoromethane	1.	ND
1,4-Dichlorobenzene	1.	ND	Trichlorotrifluoroethane	1.	ND
1,1-Dichloroethane	1.	ND	Vinyl Acetate	5.	ND
1,2-Dichloroethane	1.	ND	Vinyl Chloride	1.	ND
1,1-Dichloroethene	1.	ND	Xylenes	1.	ND
Total Purgeable Petroleum Hydrocarbons (Diesel 2)				50.	3300.

\*PQL - Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 97/95/109  
Constituents reported as ND would have been reported if present at or above the detection limit.

finn/05/01/89  
f4669v.wr1  
MH/brp/mc

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES

*Mary D. Havlicek*  
Mary D. Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services, Inc.  
141 Suburban Road, Suite C  
San Luis Obispo, CA 93401  
(805) 543-2553

Lab Number : F-4670  
Collected : 04/14/89  
Received : 04/15/89  
Tested : 04/26/89  
Collected by: M. Stranger

Western Geologic Resources  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 93108

EPA METHOD 8260  
Sample Description:  
Project # 1-045.07, Emeryville  
4507-A water

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	50.	ND	1,2-Dichloroethene	1.	ND
Benzene	0.5	ND	1,2-Dichloropropane	1.	ND
Bromodichloromethane	1.	ND	c-1,3-Dichloropropene	1.	ND
Bromoform	1.	ND	t-1,3-Dichloropropene	1.	ND
Bromomethane	1.	ND	Ethylbenzene	1.	ND
2-Butanone	10.	ND	2-Hexanone	5.	ND
Carbon Disulfide	1.	6.	Methyl Isobutyl Ketone	5.	ND
Carbon Tetrachloride	1.	ND	Methylene Chloride	5.	ND
Chlorobenzene	1.	ND	Styrene	1.	ND
Chloroethane	1.	ND	1,1,2,2-Tetrachloroethane	3.	ND
2-Chloroethylvinylether	2.	ND	Tetrachloroethane	1.	ND
Chloroform	2.	ND	Toluene	1.	ND
Chloromethane	1.	ND	1,1,1-Trichloroethane	1.	1.
Dibromochloromethane	1.	ND	1,1,2-Trichloroethane	1.	ND
1,2-Dichlorobenzene	1.	ND	Trichloroethere	1.	ND
1,3-Dichlorobenzene	1.	ND	Trichlorofluoromethane	1.	ND
1,4-Dichlorobenzene	1.	ND	Trichlorotrifluoroethane	1.	ND
1,1-Dichloroethane	1.	ND	Vinyl Acetate	5.	ND
1,2-Dichloroethane	1.	ND	Vinyl Chloride	1.	ND
1,1-Dichloroethene	1.	ND	Xylenes	1.	ND
Total Purgeable Petroleum Hydrocarbons (Diesel 2)				50.	ND

\*PQL - Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 96/100/122  
Constituents reported as ND would have been reported if present at or above  
the detection limit.

finn/05/01/89  
f4670v.wr1  
MH/vg/mc

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES

*Mary D. Havlicek*

Mary D. Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services, Inc.  
141 Suburban Road, Suite C  
San Luis Obispo, CA 93401  
(805) 543-2553

Lab Number : F-4671  
Collected : 04/14/89  
Received : 04/15/89  
Tested : 04/26/89  
Collected by: M. Stranger

Western Geologic Resources  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 93108

EPA METHOD 8260  
Sample Description:  
Project # 1-045.07, Emeryville  
4508-A water

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	50.	ND	1,2-Dichloroethene	1.	ND
Benzene	0.5	ND	1,2-Dichloropropane	1.	ND
Bromodichloromethane	1.	ND	c-1,3-Dichloropropene	1.	ND
Bromoform	1.	ND	t-1,3-Dichloropropene	1.	ND
Bromomethane	1.	ND	Ethylbenzene	1.	ND
2-Butanone	10.	ND	2-Hexanone	5.	ND
Carbon Disulfide	1.	ND	Methyl Isobutyl Ketone	5.	ND
Carbon Tetrachloride	1.	ND	Methylene Chloride	5.	ND
Chlorobenzene	1.	ND	Styrene	1.	ND
Chloroethane	1.	ND	1,1,2,2-Tetrachloroethane	3.	ND
2-Chloroethylvinylether	2.	ND	Tetrachloroethene	1.	ND
Chloroform	2.	ND	Toluene	1.	ND
Chloromethane	1.	ND	1,1,1-Trichloroethane	1.	ND
Dibromochloromethane	1.	ND	1,1,2-Trichloroethane	1.	ND
1,2-Dichlorobenzene	1.	ND	Trichloroethene	1.	ND
1,3-Dichlorobenzene	1.	ND	Trichlorofluoromethane	1.	ND
1,4-Dichlorobenzene	1.	ND	Trichlorotrifluoroethane	1.	ND
1,1-Dichloroethane	1.	ND	Vinyl Acetate	5.	ND
1,2-Dichloroethane	1.	ND	Vinyl Chloride	1.	ND
1,1-Dichloroethene	1.	ND	Xylenes	1.	ND
Total Purgeable Petroleum Hydrocarbons (Diesel 2)				50.	ND

\*PQL -- Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 102/100/125  
Constituents reported as ND would have been reported if present at or above the detection limit.

finn/05/01/89  
f4671v.wr1  
MH/vg/mc

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES

*Mary D. Havlicek*  
Mary D. Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services, Inc.  
141 Suburban Road, Suite C  
San Luis Obispo, CA 93401  
(805) 543-2553

Lab Number : F-4672  
Collected : 04/14/89  
Received : 04/15/89  
Tested : 04/26/89  
Collected by: M. Stranger

Western Geologic Resources  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 93108

EPA METHOD 8260  
Sample Description:  
Project # 1-045.07, Emeryville  
4510-A water

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	50.	ND	1,2-Dichloroethene	1.	15.
Benzene	0.5	ND	1,2-Dichloropropane	1.	ND
Bromodichloromethane	1.	ND	c-1,3-Dichloropropene	1.	ND
Bromoform	1.	ND	t-1,3-Dichloropropene	1.	ND
Bromomethane	1.	ND	Ethylbenzene	1.	ND
2-Butanone	10.	ND	2-Hexanone	5.	ND
Carbon Disulfide	1.	9.	Methyl Isobutyl Ketone	5.	ND
Carbon Tetrachloride	1.	ND	Methylene Chloride	5.	ND
Chlorobenzene	1.	ND	Styrene	1.	ND
Chloroethane	1.	ND	1,1,2,2-Tetrachloroethane	3.	ND
2-Chloroethylvinylether	2.	ND	Tetrachloroethene	1.	ND
Chloroform	2.	ND	Toluene	1.	ND
Chloromethane	1.	ND	1,1,1-Trichloroethane	1.	ND
Dibromochloromethane	1.	ND	1,1,2-Trichloroethane	1.	ND
1,2-Dichlorobenzene	1.	ND	Trichloroethene	1.	5.
1,3-Dichlorobenzene	1.	ND	Trichlorofluoromethane	1.	ND
1,4-Dichlorobenzene	1.	ND	Trichlorotrifluoroethane	1.	ND
1,1-Dichloroethane	1.	2.	Vinyl Acetate	5.	ND
1,2-Dichloroethane	1.	ND	Vinyl Chloride	1.	ND
1,1-Dichloroethene	1.	ND	Xylenes	1.	ND
Total Purgeable Petroleum Hydrocarbons (Diesel 2)				50.	ND

\*PQL - Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 95/95/123  
Constituents reported as ND would have been reported if present at or above the detection limit.

finn/05/01/89  
f4672v.wr1  
MH/vg/mc

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES  
*Mary D. Havlicek*  
Mary D. Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services, Inc.  
141 Suburban Road, Suite C  
San Luis Obispo, CA 93401  
(805) 543-2553

Lab Number : F-4675  
Collected : 04/14/89  
Received : 04/15/89  
Tested : 04/26/89  
Collected by: M. Stranger

Western Geologic Resources  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 93108

EPA METHOD 8260  
Sample Description:  
Project # 1-045.07, Emeryville  
4511 - A water

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	50.	ND	1,2-Dichloroethene	1.	120.
Benzene	0.5	ND	1,2-Dichloropropane	1.	ND
Bromodichloromethane	1.	ND	c-1,3-Dichloropropene	1.	ND
Bromoform	1.	ND	t-1,3-Dichloropropene	1.	ND
Bromomethane	1.	ND	Ethylbenzene	1.	ND
2-Butanone	10.	ND	2-Hexanone	5.	ND
Carbon Disulfide	1.	ND	Methyl Isobutyl Ketone	5.	ND
Carbon Tetrachloride	1.	ND	Methylene Chloride	5.	ND
Chlorobenzene	1.	ND	Styrene	1.	ND
Chloroethane	1.	ND	1,1,2,2-Tetrachloroethane	3.	ND
2-Chloroethylvinylether	2.	ND	Tetrachloroethene	1.	ND
Chloroform	2.	ND	Toluene	1.	ND
Chloromethane	1.	ND	1,1,1-Trichloroethane	1.	ND
Dibromochloromethane	1.	ND	1,1,2-Trichloroethane	1.	ND
1,2-Dichlorobenzene	1.	ND	Trichloroethene	1.	4.
1,3-Dichlorobenzene	1.	ND	Trichlorofluoromethane	1.	ND
1,4-Dichlorobenzene	1.	ND	Trichlorotrifluoroethane	1.	ND
1,1-Dichloroethane	1.	ND	Vinyl Acetate	5.	ND
1,2-Dichloroethane	1.	ND	Vinyl Chloride	1.	10.
1,1-Dichloroethene	1.	1.	Xylenes	1.	ND
Total Purgeable Petroleum Hydrocarbons (Diesel 2)				50.	ND

\*PQL - Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 100/102/120  
Constituents reported as ND would have been reported if present at or above the detection limit.

finn/05/01/89  
f4675v.wr1  
MH/vg/mc

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES

  
Mary D. Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services, Inc.  
141 Suburban Road, Suite C  
San Luis Obispo, CA 93401  
(805) 543-2553

Lab Number : F-4676  
Collected : 04/14/89  
Received : 04/15/89  
Tested : 04/26/89  
Collected by: M. Stranger

Western Geologic Resources  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 93108

EPA METHOD 8260  
Sample Description:  
Project # 1-045.07, Emeryville  
4512 - A water

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	50.	ND	1,2-Dichloroethene	1.	1.
Benzene	0.5	ND	1,2-Dichloropropane	1.	ND
Bromodichloromethane	1.	ND	c-1,3-Dichloropropene	1.	ND
Bromoform	1.	ND	t-1,3-Dichloropropene	1.	ND
Bromomethane	1.	ND	Ethylbenzene	1.	ND
2-Butanone	10.	ND	2-Hexanone	5.	ND
Carbon Disulfide	1.	ND	Methyl Isobutyl Ketone	5.	ND
Carbon Tetrachloride	1.	ND	Methylene Chloride	5.	ND
Chlorobenzene	1.	ND	Styrene	1.	ND
Chloroethane	1.	ND	1,1,2,2-Tetrachloroethane	3.	ND
2-Chloroethylvinylether	2.	ND	Tetrachloroethene	1.	ND
Chloroform	2.	ND	Toluene	1.	ND
Chloromethane	1.	ND	1,1,1-Trichloroethane	1.	ND
Dibromochloromethane	1.	ND	1,1,2-Trichloroethane	1.	ND
1,2-Dichlorobenzene	1.	ND	Trichloroethene	1.	ND
1,3-Dichlorobenzene	1.	ND	Trichlorofluoromethane	1.	ND
1,4-Dichlorobenzene	1.	ND	Trichlorotrifluoroethane	1.	ND
1,1-Dichloroethane	1.	ND	Vinyl Acetate	5.	ND
1,2-Dichloroethane	1.	ND	Vinyl Chloride	1.	ND
1,1-Dichloroethene	1.	ND	Xylenes	1.	ND
Total Purgeable Petroleum Hydrocarbons (Diesel 2)				50.	ND

\*PQL - Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 96/92/107  
Constituents reported as ND would have been reported if present at or above the detection limit.

finn/05/01/89  
f4676v.wr1  
MH/vg/mc

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES  
*Mary D. Havlicak*  
Mary D. Havlicak, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services, Inc.  
141 Suburban Road, Suite C  
San Luis Obispo, CA 93401  
(805) 543-2553

Lab Number : F-4673  
Collected : 04/14/89  
Received : 04/15/89  
Tested : 04/26/89  
Collected by: M. Stranger

Western Geologic Resources  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 93108

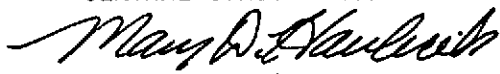
EPA METHOD 8260  
Sample Description:  
Project # 1-045.07, Emeryville  
TB45, TB041289-BP01 water

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	50.	ND	1,2-Dichloroethene	1.	ND
Benzene	0.5	ND	1,2-Dichloropropane	1.	ND
Bromodichloromethane	1.	ND	c-1,3-Dichloropropane	1.	ND
Bromoform	1.	ND	t-1,3-Dichloropropane	1.	ND
Bromomethane	1.	ND	Ethylbenzene	1.	ND
2-Butanone	10.	ND	2-Hexanone	5.	ND
Carbon Disulfide	1.	17.	Methyl Isobutyl Ketone	5.	ND
Carbon Tetrachloride	1.	ND	Methylene Chloride	5.	ND
Chlorobenzene	1.	ND	Styrene	1.	ND
Chloroethane	1.	ND	1,1,2,2-Tetrachloroethane	3.	ND
2-Chloroethylvinylether	2.	ND	Tetrachloroethene	1.	ND
Chloroform	2.	ND	Toluene	1.	ND
Chloromethane	1.	ND	1,1,1-Trichloroethane	1.	ND
Dibromochloromethane	1.	ND	1,1,2-Trichloroethane	1.	ND
1,2-Dichlorobenzene	1.	ND	Trichloroethene	1.	ND
1,3-Dichlorobenzene	1.	ND	Trichlorofluoromethane	1.	ND
1,4-Dichlorobenzene	1.	ND	Trichlorotrifluoroethane	1.	ND
1,1-Dichloroethane	1.	ND	Vinyl Acetate	5.	ND
1,2-Dichloroethane	1.	ND	Vinyl Chloride	1.	ND
1,1-Dichloroethene	1.	ND	Xylenes	1.	ND
Total Purgeable Petroleum Hydrocarbons (Diesel 2)				50.	ND

\*PQL - Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 106/102/127  
Constituents reported as ND would have been reported if present at or above the detection limit.

finn/05/01/89  
f4673v.wr1  
MH/vg/mc

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES  
  
Mary D. Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services, Inc.  
141 Suburban Road, Suite C  
San Luis Obispo, CA 93401  
(805) 543-2553

Lab Number : F-4677  
Collected : 04/14/89  
Received : 04/15/89  
Tested : 04/26/89  
Collected by: M. Stranger

Western Geologic Resources  
2169 E. Francisco Blvd., Suite B  
San Rafael, CA 93108

EPA METHOD 8260  
Sample Description:  
Project # 1-045.07, Emeryville  
45TB, TB032089-BP05, water

Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)	Compound Analyzed	Detection Limit *PQL (ug/l)	Concentration (ug/l)
Acetone	50.	ND	1,2-Dichloroethene	1.	ND
Benzene	0.5	ND	1,2-Dichloropropane	1.	ND
Bromodichloromethane	1.	ND	c-1,3-Dichloropropene	1.	ND
Bromoform	1.	ND	t-1,3-Dichloropropene	1.	ND
Bromomethane	1.	ND	Ethylbenzene	1.	ND
2-Butanone	10.	ND	2-Hexanone	5.	ND
Carbon Disulfide	1.	ND	Methyl Isobutyl Ketone	5.	ND
Carbon Tetrachloride	1.	ND	Methylene Chloride	5.	ND
Chlorobenzene	1.	ND	Styrene	1.	ND
Chloroethane	1.	ND	1,1,2,2-Tetrachloroethane	3.	ND
2-Chloroethylvinylether	2.	ND	Tetrachloroethene	1.	ND
Chloroform	2.	ND	Toluene	1.	ND
Chloromethane	1.	ND	1,1,1-Trichloroethane	1.	ND
Dibromochloromethane	1.	ND	1,1,2-Trichloroethane	1.	ND
1,2-Dichlorobenzene	1.	ND	Trichloroethene	1.	ND
1,3-Dichlorobenzene	1.	ND	Trichlorofluoromethane	1.	ND
1,4-Dichlorobenzene	1.	ND	Trichlorotrifluoroethane	1.	ND
1,1-Dichloroethane	1.	ND	Vinyl Acetate	5.	ND
1,2-Dichloroethane	1.	ND	Vinyl Chloride	1.	ND
1,1-Dichloroethene	1.	ND	Xylenes	1.	ND
Total Purgeable Petroleum Hydrocarbons (Diesel 2)				50.	ND

\*PQL - Practical Quantitation Limit

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 98/99/120  
Constituents reported as ND would have been reported if present at or above the detection limit.

finn/05/01/89  
f4677v.wr1  
MH/vg/mc

Respectfully submitted,  
CENTRAL COAST ANALYTICAL SERVICES  
*Mary D. Havlicek*  
Mary D. Havlicek, Ph.D., President



ATTACHMENT D

LABORATORY QUALITY ASSURANCE REPORTS



Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services, Inc.  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number : F-04608  
Collected : 04/12/89  
Received : 04/14/89  
Tested : 04/25/89  
Collected by: B. Pabst

ATTN: Mark Frye  
Western Geologic Resources  
2169 E. Francisco Blvd.  
Suite B  
San Rafael, CA 94901

EXTRACTED BY EPA METHOD 5035 (purge-and-trap)  
EPA METHOD 8260  
Sample Description:  
Project #1-045.07, 45TB,  
TB041289BP02, Water

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.1	not found
Bromodichloromethane	0.1	not found
Bromoform	0.2	not found
Carbon Tetrachloride	0.1	not found
Chlorobenzene	0.1	not found
2-Chloroethyl Vinyl Ether	1.	not found
Chloroform	0.5	not found
Dibromochloromethane	0.1	not found
1,2-Dichlorobenzene	0.1	not found
1,3-Dichlorobenzene	0.1	not found
1,4-Dichlorobenzene	0.1	not found
1,1-Dichloroethane	0.1	not found
1,2-Dichloroethane (EDC)	0.1	not found
1,1-Dichloroethene	0.1	not found
c-1,2-Dichloroethene	0.1	not found
t-1,2-Dichloroethene	0.1	not found
1,2-Dichloropropane	0.1	not found
c-1,3-Dichloropropene	0.1	not found
t-1,3-Dichloropropene	0.1	not found
Ethylbenzene	0.1	not found
Ethyl Chloride	0.1	not found
Ethylene Dibromide	0.1	not found
Methyl Bromide	0.1	not found
Methyl Chloride	0.1	not found
Methylene Chloride	1.	not found
1,1,2,2-Tetrachloroethane	0.5	not found
Tetrachloroethylene (PCE)	0.1	not found
Toluene	0.1	not found
1,1,1-Trichloroethane (TCA)	0.1	not found
1,1,2-Trichloroethane	0.1	not found
Trichloroethene (TCE)	0.1	not found
Trichlorotrifluoroethane (F113)	0.5	not found
Trichlorofluoromethane(F-11)	0.5	not found
Vinyl Chloride	0.1	not found
Xylenes	0.2	not found
Total Purgeable Petroleum Hydrocarbons (Gasoline)	50.	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 107/90/80.

05/01/89/MSD#7  
F04608v.wr1/41  
MH/jg/re/tl

Respectfully submitted,  
*Mary Havlicek*  
Mary Havlicek, Ph.D., President

2

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services, Inc.  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2533

Lab Number : QS-4259-2  
Collected :  
Received :  
Tested : 04/25/89  
Collected by:

CCAS

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)  
EPA METHOD 524.2/8260  
Sample Description:  
BOILED WATER SPIKE  
Spiked with 2 ug/L VOA Stock

Compound Analyzed	Detection Limit (ug/L)(PQL)*	Concentration w/spike (ug/L)	Percent Recovery
Benzene	0.1	1.9	96.
Bromodichloromethane	0.1	1.9	93.
Bromoform	0.2	1.4	72.
Carbon Tetrachloride	0.1	1.4	69.
Chlorobenzene	0.1	2.7	134.
2-Chloroethyl Vinyl Ether	1.	not spiked	----
Chloroform	0.5	1.6	79.
Dibromochloromethane	0.1	1.7	85.
1,2-Dichlorobenzene	0.1	not spiked	----
1,3-Dichlorobenzene	0.1	1.9	95.
1,4-Dichlorobenzene	0.1	1.5	74.
1,1-Dichloroethane	0.1	1.8	90.
1,2-Dichloroethane (EDC)	0.1	2.0	101.
1,1-Dichloroethene	0.1	1.8	91.
c-1,2-Dichloroethene	0.1	1.9	97.
t-1,2-Dichloroethene	0.1	1.9	93.
1,2-Dichloropropane	0.1	1.6	79.
c-1,3-Dichloropropene	0.1	not spiked	----
t-1,3-Dichloropropene	0.1	not spiked	----
Ethylbenzene	0.1	2.6	130.
Ethyl Chloride	0.1	1.5	76.
Ethylene Dibromide	0.1	not spiked	----
Methyl Bromide	0.1	1.2	60.
Methyl Chloride	0.1	not spiked	----
Methylene Chloride	1.	1.8	92.
1,1,2,2-Tetrachloroethane	0.5	not spiked	----
Tetrachloroethylene (PCE)	0.1	2.9	144.
Toluene	0.1	not spiked	----
1,1,1-Trichloroethane (TCA)	0.1	1.5	74.
1,1,2-Trichloroethane	0.1	2.1	104.
Trichloroethene (TCE)	0.1	1.8	91.
Trichlorotrifluoroethane	0.5	1.6	82.
Trichlorofluoromethane	0.5	1.6	79.
Vinyl Chloride	0.1	1.6	78.
Xylenes	0.2	7.8	130.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 88/157/131.

05/01/89/MSD#7  
QS4259v2.wr1/41  
MH/bl/tl/tl

Respectfully submitted,  
*Mary Havlicek*  
Mary Havlicek, Ph.D., President

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services, Inc.  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number : B-04259  
Collected :  
Received :  
Tested : 04/25/89  
Collected by:

EXTRACTED BY EPA METHOD 5030 (purge-and-trap)  
EPA METHOD 8260  
Sample Description:  
INSTRUMENT BLANK

Compound Analyzed	Detection Limit (ug/L) (Practical Quantitation Limit)	Concentration (ug/L)
Benzene	0.1	not found
Bromodichloromethane	0.1	not found
Bromoform	0.2	not found
Carbon Tetrachloride	0.1	not found
Chlorobenzene	0.1	not found
2-Chloroethyl Vinyl Ether	1.	not found
Chloroform	0.5	not found
Dibromochloromethane	0.1	not found
1,2-Dichlorobenzene	0.1	not found
1,3-Dichlorobenzene	0.1	not found
1,4-Dichlorobenzene	0.1	not found
1,1-Dichloroethane	0.1	not found
1,2-Dichloroethane (EDC)	0.1	not found
1,1-Dichloroethene	0.1	not found
c-1,2-Dichloroethene	0.1	not found
t-1,2-Dichloroethene	0.1	not found
1,2-Dichloropropane	0.1	not found
c-1,3-Dichloropropene	0.1	not found
t-1,3-Dichloropropene	0.1	not found
Ethylbenzene	0.1	not found
Ethyl Chloride	0.1	not found
Ethylene Dibromide	0.1	not found
Methyl Bromide	0.1	not found
Methyl Chloride	0.1	not found
Methylene Chloride	1.	not found
1,1,2,2-Tetrachloroethane	0.5	not found
Tetrachloroethylene (PCE)	0.1	not found
Toluene	0.1	not found
1,1,1-Trichloroethane (TCA)	0.1	not found
1,1,2-Trichloroethane	0.1	not found
Trichloroethene (TCE)	0.1	not found
Trichlorotrifluoroethane (f113)	0.5	not found
Trichlorofluoromethane(F-11)	0.5	not found
Vinyl Chloride	0.1	not found
Xylenes	0.2	not found

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 88/111/92.

04/28/89/MSD#7  
B04259v.wr1/41  
MH/bl/re/tl

Respectfully submitted,  
*Mary Havlicek*  
Mary Havlicek, Ph.D., President

2

Central  
Coast  
Analytical  
Services

Central Coast  
Analytical Services, Inc.  
141 Suburban Road, Suite C-4  
San Luis Obispo, California 93401  
(805) 543-2553

Lab Number : QS-84259  
Collected :  
Received :  
Tested : 84/25/89  
Collected by:

CCAS

EXTRACTED BY EPA METHOD 5035 (purge-and-trap)  
EPA METHOD 524.2/8268  
Sample Description:  
BOILED WATER SPIKE  
Spiked with 2 ug/L VOA Stock

Compound Analyzed	Detection Limit (ug/L)(PQL)*	Concentration w/spike (ug/L)	Percent Recovery
Benzene	0.1	1.8	90.
Bromodichloromethane	0.1	2.5	123.
Bromoform	0.2	1.8	88.
Carbon Tetrachloride	0.1	1.7	85.
Chlorobenzene	0.1	1.2	58.
2-Chloroethyl Vinyl Ether	1.	not spiked	----
Chloroform	0.5	1.9	97.
Dibromochloromethane	0.1	1.8	88.
1,2-Dichlorobenzene	0.1	1.3	64.
1,3-Dichlorobenzene	0.1	1.1	56.
1,4-Dichlorobenzene	0.1	1.2	61.
1,1-Dichloroethane	0.1	1.8	91.
1,2-Dichloroethane (EDC)	0.1	2.4	121.
1,1-Dichloroethene	0.1	1.4	71.
c-1,2-Dichloroethene	0.1	1.8	90.
t-1,2-Dichloroethene	0.1	1.7	86.
1,2-Dichloropropane	0.1	1.9	95.
c-1,3-Dichloropropene	0.1	not spiked	----
t-1,3-Dichloropropene	0.1	not spiked	----
Ethylbenzene	0.1	1.2	58.
Ethyl Chloride	0.1	1.6	80.
Ethylene Dibromide	0.1	not spiked	----
Methyl Bromide	0.1	2.4	119.
Methyl Chloride	0.1	not spiked	----
Methylene Chloride	1.	1.8	91.
1,1,2,2-Tetrachloroethane	0.5	not spiked	----
Tetrachloroethylene (PCE)	0.1	1.2	58.
Toluene	0.1	1.2	61.
1,1,1-Trichloroethane (TCA)	0.1	2.8	142.
1,1,2-Trichloroethane	0.1	1.8	91.
Trichloroethene (TCE)	0.1	1.9	95.
Trichlorotrifluoroethane	0.5	1.7	85.
Trichlorofluoromethane	0.5	1.7	87.
Vinyl Chloride	0.1	not spiked	----
Xylenes	0.2	3.4	57.

Percent Recoveries of Sample-Specific Quality Assurance Spikes are: 84/59/65.

05/01/89/MSD#7  
QS#4259v.wr1/41  
MH/jg/tl/tl

Respectfully submitted,

*Mary Havlicek*  
Mary Havlicek, Ph.D., President