



Chevron U.S.A. Inc.

2410 Camino Ramon, San Ramon, California • Phone (510) 842-9500
Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804

Marketing Department

January 29, 1992

*E/S/S
SWE to
Spec
handling*

Mr. Rafat Shahid
Alameda County Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Re: Chevron Service Station #9-1740
6550 Moraga Avenue, Oakland, CA 94611

Mr. Shahid:

Enclosed is the quarterly groundwater monitoring report dated January 22, 1992. The analytical results indicate total purgeable petroleum hydrocarbon as gasoline (TPPH-G) had decreased in monitoring well, C-2, to nondetect (<50 ppb). However, well, C-1, had an increase from 160 ppb to 170 ppb, and well, C-4, increased from 3200 ppb to 4100 ppb. Benzene levels decreased in C-2 from 200 ppb to 1.2 ppb and C-4 from 850 ppb to 390 ppb from the previous quarter. The remaining constituents, toluene, ethylbenzene, and xylenes, in wells, C-1, C-2, and C-4, ranged from 1.2 ppb to 52 ppb toluene, <0.5 ppb (ND) to 42 ppb ethylbenzene, and 1.8 ppb to 340 ppb xylenes. During this sampling period well, C-3, had 1 ppb of benzene and 1.5 ppb xylenes. Next quarter monitoring and sampling report will more information whether or not C-3 is influenced by contaminants. Depth to groundwater ranged from 3.71 feet to 5.94 feet.

If you have any questions or comments, please feel free to call me at (510) 842-8752.

Sincerely,

Kenneth Kan
Engineer

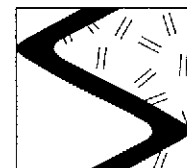
LKAN/MacFile 9-1740R

Enclosure

cc: Mr. Eddy So
RWQCB-S.F. Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

Mr. Steve Willer
Chevron U.S.A., Inc.

92 JUN 05 09:19:02



#A 27 92 LLH

January 22, 1992 /

Nancy Vukelich
Chevron USA
P.O. Box 5004
San Ramon, CA 94583

Re: Chevron Service Station #9-1740
6550 Moraga Avenue
Oakland, California
SES Project #1-221-04

Dear Ms. Vukelich:

This report presents the results of the quarterly ground water sampling at Chevron Service Station #9-1740, located at 6550 Moraga Avenue in Oakland, California (Figure 1, Appendix A). Four wells, C-1 through C-4, were sampled (Figure 2, Appendix A).

On December 23, 1991 SES personnel visited the site. Water level measurements were collected in all site wells and all wells were checked for the presence of free-phase hydrocarbons. Free-phase hydrocarbons were not present in any of the site wells. Water level data are shown in Table 1 (Appendix B) and a ground water elevation contour map is included as Figure 2 (Appendix A).

Ground water samples were collected on December 23, 1991 in accordance with SES Standard Operating Procedure - Ground Water Sampling (Appendix C). All analyses were performed by Superior Analytical Laboratory of Martinez, California. Analytic results for ground water are presented in Table 2 (Appendix B). The chain of custody document and laboratory analytic reports are included in Appendix D. SES is not responsible for laboratory omissions or errors.

Thank you for allowing us to provide services to Chevron USA. Please call if you have any questions.

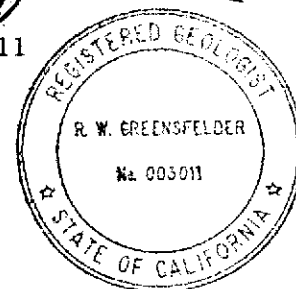
Sincerely,
Sierra Environmental Services

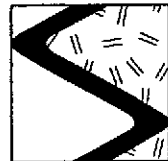
Chris J. Bramer
Senior Project Engineer

Dr. Roger Greensfelder
Registered Geologist #003011

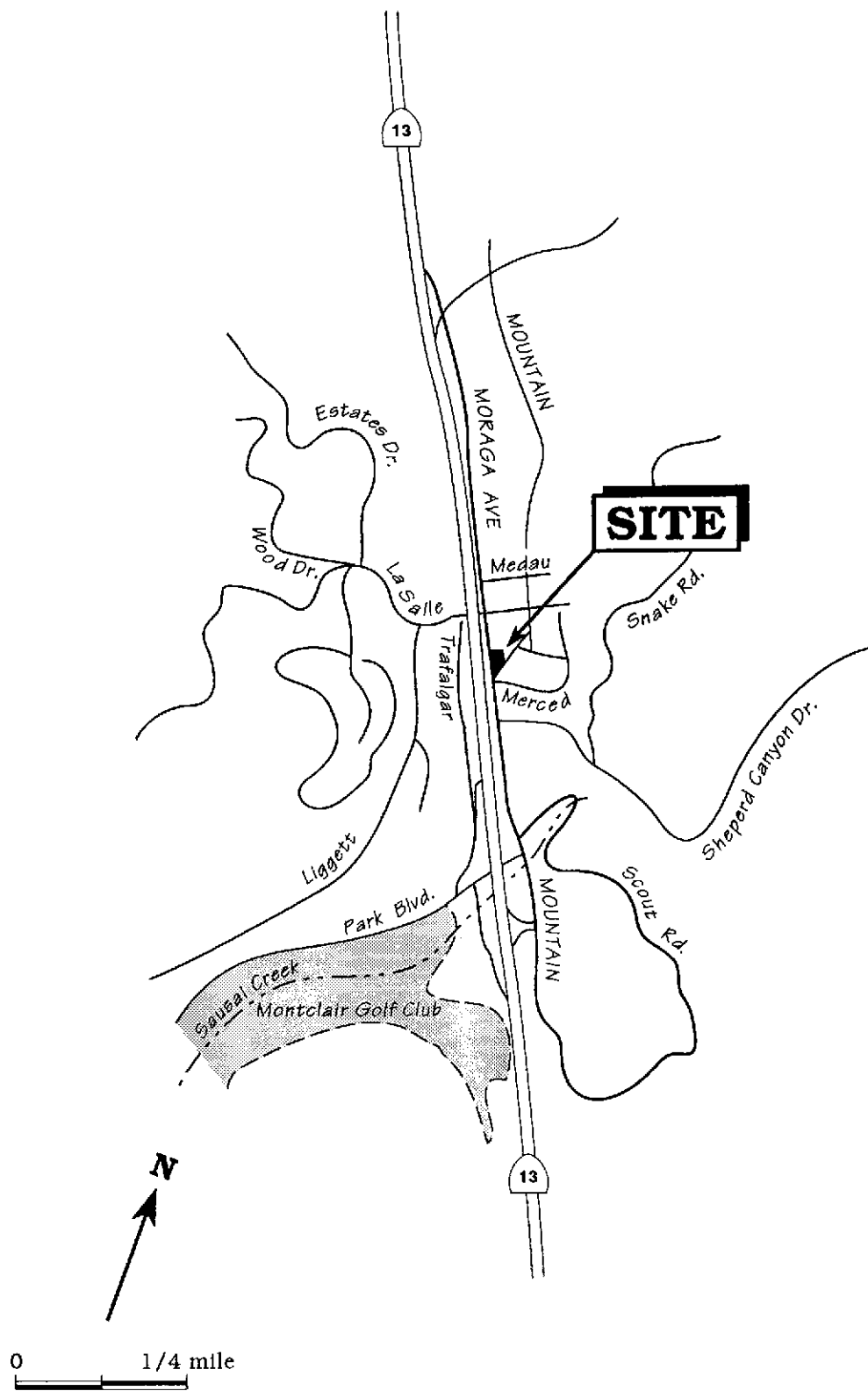
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22104QM.JA2

Appendices A - Figures
 B - Tables
 C - SES Standard Operating Procedure
 D - Chain of Custody Document and Laboratory Analytic Reports



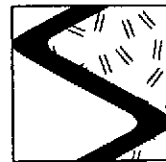


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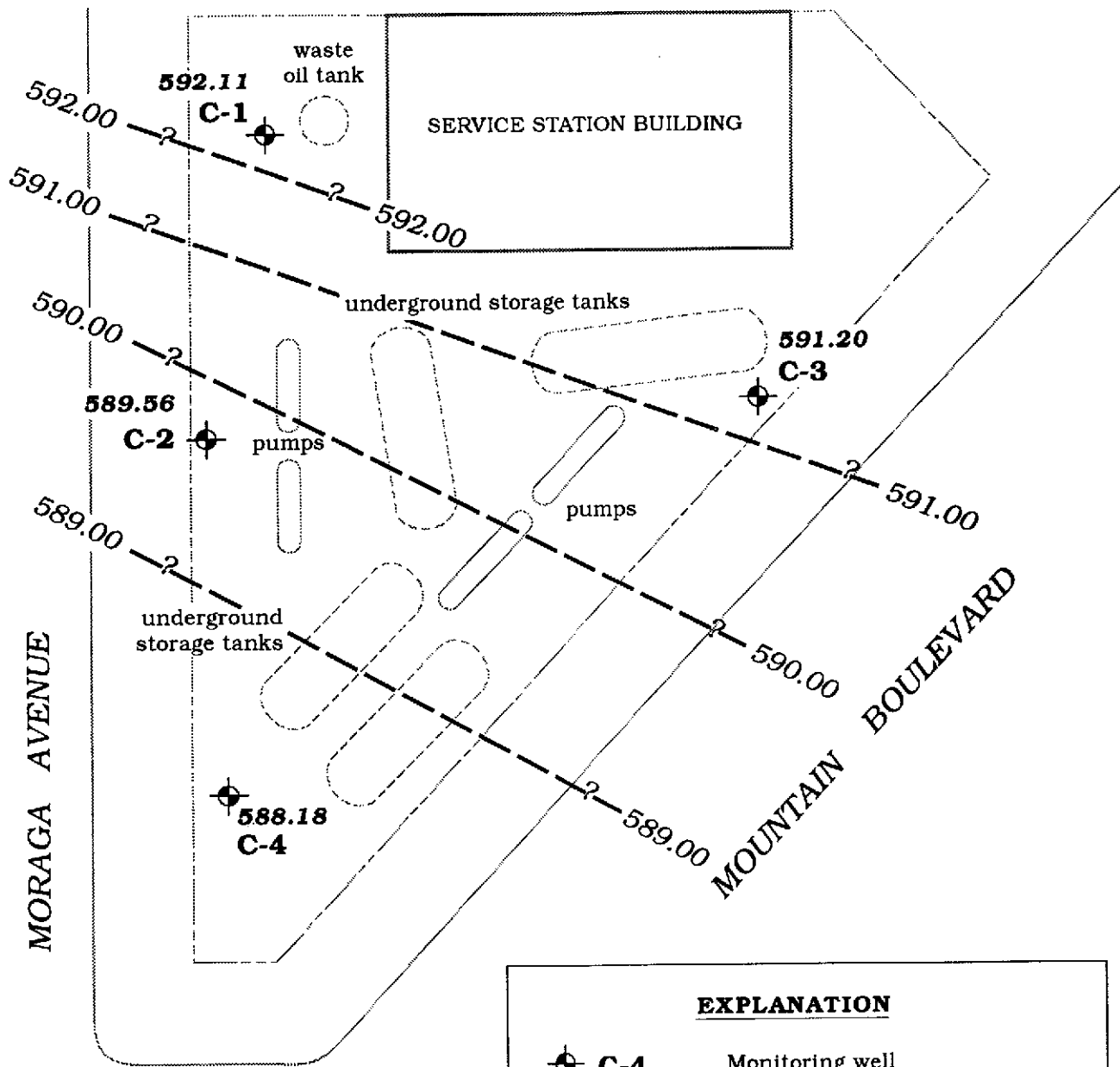
Base map ref: California Automobile Association (AAA)

Figure 1. Site Location Map – Chevron Service Station #9-1740, 6550 Moraga Avenue, Oakland, California

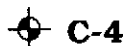


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Approximate
ground water
flow direction

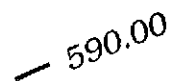


EXPLANATION



C-4

Monitoring well



591.20

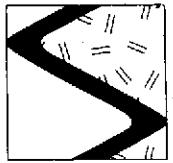
Ground water elevation, in feet

Ground water elevation contour,
dashed where inferred, queried
where uncertain

0 10 20 ft.

Base map after: Pacific Environmental Group, Inc.

Figure 2. Monitoring Well Locations and Ground Water Elevation Contour Map - December 23, 1991 - Chevron Service Station #9-1740, 6550 Moraga Avenue, Oakland, California



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Table 1. Water Level Data and Well Construction Details - Chevron Service Station #9-1740, 6550 Moraga Avenue, Oakland, California

Well ID	Date Measured	DTW (ft)	TOC (ft)	GWE (msl)	Product Thickness* (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval
						←-----feet below grade-----→		
C-1	3/25/91	3.28	595.82	592.54	0	5 - 25	4 - 25	0 - 4
	7/1/91	3.43		592.39	0			
	9/25/91	4.15		591.67	0			
	12/23/91	3.71		592.11	0			
C-2	3/25/91	22.89	594.57	571.68	0	5 - 25	4 - 25	0 - 4
	7/1/91	7.37		587.20	0			
	9/25/91	6.98		587.59	0			
	12/23/91	5.01		589.56	0			
C-3	3/25/91	5.16	597.14	591.98	0	5 - 25	4 - 25	0 - 4
	7/1/91	5.84		591.30	0			
	9/25/91	5.94		591.20	0			
	12/23/91	5.94		591.20	0			
C-4	3/25/91	4.45	593.10	588.65	0	5 - 25	4 - 25	0 - 4
	7/1/91	5.33		587.77	0			
	9/25/91	5.50		587.60	0			
	12/23/91	4.92		588.18	0			

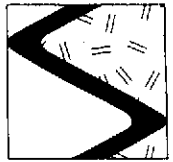
EXPLANATION:

DTW = Depth to water
 TOC = Top of casing elevation
 GWE = Ground water elevation
 msl = Measurements referenced relative to mean sea level

NOTES:

Depth to water measurements prior to July 1, 1991, top of casing elevations, and well construction details were compiled from the Soil and Groundwater Investigation Report prepared for this service station by Pacific Environmental Group, Inc. dated June 13, 1991.

* Product thickness measurements prior to July 1, 1991 were measured with a clear teflon bailer. Measurements made since July 1, 1991 used an MMC flexi-dip interface probe.



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Table 2. Analytic Results for Ground Water - Chevron Service Station #9-1740, 6550 Moraga Avenue, Oakland, California

Well ID	Date Sampled	Analytic Lab	Analytic Method	TPPH(G)	TPH(D)	O&G	B	T	E	X
				-----ppb-----						
C-1	3/25/91	SAL	8015/8020/503E	54	<50	<5,000	0.7	<0.5	<0.5	2
	7/1/91	SAL	8015/8020	730	---	---	250	3.0	16	4.8
	9/25/91	SAL	8015/8020	160	---	---	68	1.3	6.1	1.3
	12/23/91	SPA	8015/8020	170	---	---	70	1.6	3.5	2.4
C-2	3/25/91	SAL	8015/8020	<50	<50	---	1	<0.5	<0.5	2
	7/1/91	SAL	8015/8020	660	---	---	190	2.5	28	22
	9/25/91	SAL	8015/8020	110	---	---	200	1.9	21	1.7
	12/23/91	SPA	8015/8020	<50	---	---	1.2	1.2	<0.5	1.8
C-3	3/25/91	SAL	8015/8020	<50	<50	---	<0.5	<0.5	<0.5	0.5
	7/1/91	SAL	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	9/25/91	SAL	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	12/23/91	SPA	8015/8020	<50	---	---	1.0	<0.5	<0.5	1.5
C-4	3/25/91	SAL	8015/8020	2,700	<50	---	240	16	<0.5	350
	7/1/91	SAL	8015/8020	7,900	---	---	1,500	230	340	350
	9/25/91	SAL	8015/8020	3,200	---	---	850	160	150	220
	12/23/91	SPA	8015/8020	4,100	---	---	850	52	42	340
Trip Blank (AA)	3/25/91	SAL	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	7/1/91	SAL	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	9/25/91	SAL	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	12/23/91	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
Bailer Blank (BB)	3/25/91	SAL	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	7/1/91	SAL	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	9/25/91	SAL	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	12/23/91	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5



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Table 2. Analytic Results for Ground Water - Chevron Service Station #9-1740, 6550 Moraga Avenue, Oakland, California
(continued)

EXPLANATION:

TPPH(G) = Total Purgeable Petroleum Hydrocarbons as Gasoline
TPH(D) = Total Petroleum Hydrocarbons as Diesel
O&G = Oil and Grease
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes
ppb = Parts per billion
--- = Not analyzed/Not applicable

ANALYTIC METHODS:

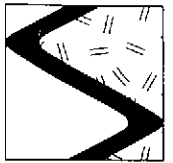
8015 = EPA Method 8015/5030 for TPPH(G)
8015 = EPA Method 8015 for TPH(D)
8020 = EPA Method 8020 for BTEX
503E = Standard Methods Method 503E for O&G

ANALYTIC LABORATORIES:

SAL = Superior Analytic Laboratory of Martinez, California
SPA = Superior Precision Analytical, Inc. of Martinez, California

NOTE:

Analytic data prior to July 1, 1991 were compiled from the Soil and Groundwater Investigation Report prepared for this service station by Pacific Environmental Group, Inc. dated June 13, 1991.



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APPENDIX C
SIERRA ENVIRONMENTAL SERVICES
STANDARD OPERATING PROCEDURES



SES STANDARD OPERATING PROCEDURE

GROUND WATER SAMPLING

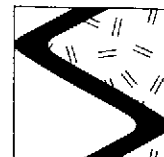
The following describes sampling procedures used by SES field personnel to collect and handle ground water samples. Before samples are collected, careful consideration is given to the type of analysis to be performed so that precautions are taken to prevent loss of volatile components or contamination of the sample, and to preserve the sample for subsequent analysis. Wells will be sampled no less than 24 hours after well development. Collection methods specific to ground water sampling are presented below.

Prior to sampling, each well is checked for the presence of free-phase hydrocarbons using an MMC flexi-dip interface probe. Product thickness (measured to the nearest 0.01 foot) is noted on the sampling form. Water level measurements are also made using either a water level meter or the interface probe. The water level measurements are also noted on the sampling form.

Prior to sampling, each well is purged of a minimum of four well casing volumes of water using a steam-cleaned PVC bailer, or a pre-cleaned pump. Temperature, pH and electrical conductivity are measured at least three times during purging. Purging is continued until these parameters have stabilized (i.e., changes in temperature, pH or conductivity do not exceed $\pm 0.5^{\circ}\text{F}$, 0.1 or 5%, respectively).

The purge water is stored temporarily on-site in 55-gallon Department of Transportation-approved drums pending analytic results. The drums are labeled with the date, contents, the SES field personnel initials and SES phone number.

Ground water samples are collected from the wells with steam-cleaned Teflon bailers. The water samples are decanted into the appropriate container for the analysis to be performed. Pre-preserved sample containers may be used or the analytic laboratory may add preservative to the sample upon arrival. Duplicate samples are collected from each well as a back-up sample and/or to provide quality control. The samples are labeled to include the project number, sample ID, date, preservative, and the field person's initials. The samples are placed in polyethylene bags and in an ice chest (maintained at 4°C with blue ice or ice) for transport under chain-of-custody to the laboratory.

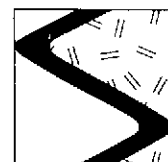


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The chain-of-custody form includes the project number, analysis requested, sample ID, date analysis and the SES field person's name. The form is signed and dated (with the transfer time) by each person who yields or receives the samples beginning with the field personnel and ending with the laboratory personnel.

A trip blank and bailer blank accompanies each sampling set, or 5% trip blanks and 5% bailer blanks are included for sets of greater than 20 samples. The bailer blank is prepared by pouring previously boiled water into a steam-cleaned Teflon bailer prior to sampling a well. The trip and bailer blanks are analyzed for some or all of the same compounds as the ground water samples.

GWTRSAMP.SOP



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APPENDIX D
CHAIN OF CUSTODY DOCUMENT AND
LABORATORY ANALYTIC REPORTS

Fax copy of Lab Report and COC to Chevron Contact: Yes No 84691

Chain-of-Custody-Record

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number 9-1740
Facility Address 6550 Moraga Ave, Oakland
Consultant Project Number 1-221-04
Consultant Name Sierra Environmental Services
Address PO Box 2546 Martinez CA 94553
Project Contact (Name) CHRIS BRAMER
(Phone) 510-370-280 (Fax Number) 510-370-7959

Chevron Contact (Name) Nancy Vukelich
(Phone) 842-9581
Laboratory Name Superior
Laboratory Release Number 4600980
Samples Collected by (Name) CHRIS BRAMER
Collection Date 12-23-91
Signature Christopher P. Conn

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed											Remarks
								BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Greases (8520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)				
1A	1	3head	W	G	2:00p	ALL	Yes	✓										Analyze in Order	
BB	2				2:00			✓											
MW-3	3				2:05			✓											
MW-1	4				2:10			✓											
MW-2	5				2:15			✓											
MW-4	6	↓	↓	↓	2:25p	↓	↓	✓											

Please Initial:

Samples Stored in ice.	✓
Appropriate containers	✓
Samples preserved	✓
VC used in headspace	✓

Relinquished By (Signature) <u>Christopher P. Conn</u>	Organization <u>SES</u>	Date/Time <u>12-23-91</u> <u>5:25p</u>	Received By (Signature)	Organization	Date/Time	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days 10 Days <u>As Contracted</u>
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature) <u>Nancy A. Nelson</u>		Date/Time <u>12/23/91</u> <u>5:25pm</u>	

COC-3.0306/05 01/7/91



Superior Precision Analytical, Inc.

825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 84691
CLIENT: Sierra Environmental
CLIENT JOB NO.: 1-221-04

DATE RECEIVED: 12/23/91
DATE REPORTED: 12/31/91

Page 1 of 2

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
84691- 1	AA	12/23/91	12/27/91
84691- 2	BB	12/23/91	12/27/91
84691- 3	MW-3	12/23/91	12/27/91
84691- 4	MW-1	12/23/91	12/27/91
84691- 5	MW-2	12/23/91	12/27/91
84691- 6	MW-4	12/23/91	12/27/91

Laboratory Number:	84691 1	84691 2	84691 3	84691 4	84691 5
--------------------	------------	------------	------------	------------	------------

ANALYTE LIST	Amounts/Quantitation Limits (ug/L)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<50	ND<50	ND<50	1.78	ND<50
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<0.5	ND<0.5	1.0	1.0	1.2
TOLUENE:	ND<0.5	ND<0.5	ND<0.5	1.6	1.2
ETHYL BENZENE:	ND<0.5	ND<0.5	ND<0.5	3.5	ND<0.5
XYLENES:	ND<0.5	ND<0.5	1.5	2.4	1.8

Laboratory Number:	84691 6
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ANALYTE LIST	Amounts/Quantitation Limits (ug/L)
OIL AND GREASE:	NA
TPH/GASOLINE RANGE:	[REDACTED]
TPH/DIESEL RANGE:	NA
BENZENE:	[REDACTED]
TOLUENE:	[REDACTED]
ETHYL BENZENE:	[REDACTED]
XYLENES:	[REDACTED]



Superior Precision Analytical, Inc.

825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

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

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

Page 2 of 2
QA/QC INFORMATION
SET: 84691

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
ug/L = part per billion (ppb)

OIL AND GREASE ANALYSIS By Standard Methods Method 5520F:
Minimum Detection Limit in Water: 5000ug/L

Modified EPA-SW846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 50ug/L
Standard Reference: NA

EPA-SW846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 50ug/L
Standard Reference: 10/04/91

SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Water: 0.5ug/L
Standard Reference: 10/11/91

ANALYTE	REFERENCE	SPIKE LEVEL	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Oil & Grease	NA	NA	NA	NA	NA
Diesel	NA	NA	NA	NA	NA
Gasoline	10/04/91	200 ng	89/77	14	70-130
Benzene	12/02/91	200 ng	89/94	5	70-130
Toluene	12/02/91	200 ng	90/93	3	70-130
Ethyl Benzene	12/02/91	200 ng	88/91	3	70-130
Total Xylenes	12/02/91	200 ng	97/100	3	70-130

Richard Srna, Ph.D.

Richard Srna
Laboratory Director