



**Chevron U.S.A. Products Company**

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

98 FEB 23 1993

Operations

February 23, 1993

Ms. Juliet Shin  
Alameda County Health Care Services  
Department of Environmental Health  
Hazardous Materials Program  
80 Swan Way, Room 200  
Oakland, CA 94621

Re: Chevron Service Station No. 9-6607  
2340 Otis Drive, Alameda, California

Dear Ms. Shin :

Enclosed is the quarterly monitoring and sampling report from Sierra Environmental Services (SES) dated February 19, 1993.

During this sampling event, monitoring wells MW-1 through MW-4 did not detect any total purgeable petroleum hydrocarbon as gasoline or ethylbenzene. In addition, the wells did not detect any benzene with the exception of MW-2 at 0.8 ppb. Wells MW-1, MW-3, and MW-4 did detect toluene and xylenes ranging from 0.5 to 1.0 ppb. Depth to water ranged from 3.18 to 4.34 feet.

Unless informed otherwise, diesel analysis for MW-4 will be discontinued.

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

Sincerely,

Chevron U.S.A. Products Co.

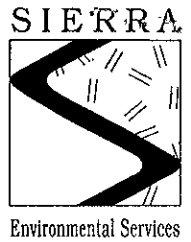
Kenneth Kan  
Engineer

LKAN/MacFile 9-6607R5

cc: Mr. Richard Hiatt  
RWQCB-San Francisco Bay Area  
2101 Webster Street, Suite 500  
Oakland, CA 94612

Mr. Steve Willer  
Chevron U.S.A. Products Co.

EB 23 '93 J.M.M.



February 19, 1993

Ken Kan  
Chevron USA  
P.O. Box 5004  
San Ramon, CA 94583

Re: Chevron Service Station #9-6607  
2340 Otis Drive  
Alameda, California  
SES Project #1-292-04

Dear Mr. Kan:

This report presents the results of the quarterly ground water sampling at Chevron Service Station #9-6607, located at 2340 Otis Drive in Alameda, California (Figure 1, Appendix A). Four wells, MW-1 through MW-4, were sampled (Figure 2, Appendix A).

On January 21, 1993, SES personnel visited the site. Water levels were measured in all 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).

The ground water samples were collected on January 21, 1993 in accordance with SES Standard Operating Procedure - Ground Water Sampling (Appendix C). All analyses were performed by GTEL of Concord, 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. Please call if you have any questions.



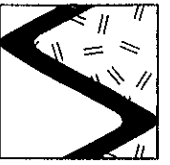
Sincerely,  
Sierra Environmental Services

*Argy Mena*  
Argy Mena  
Staff Geologist

*Chris J. Bramer*  
Chris J. Bramer  
Professional Engineer #C48846

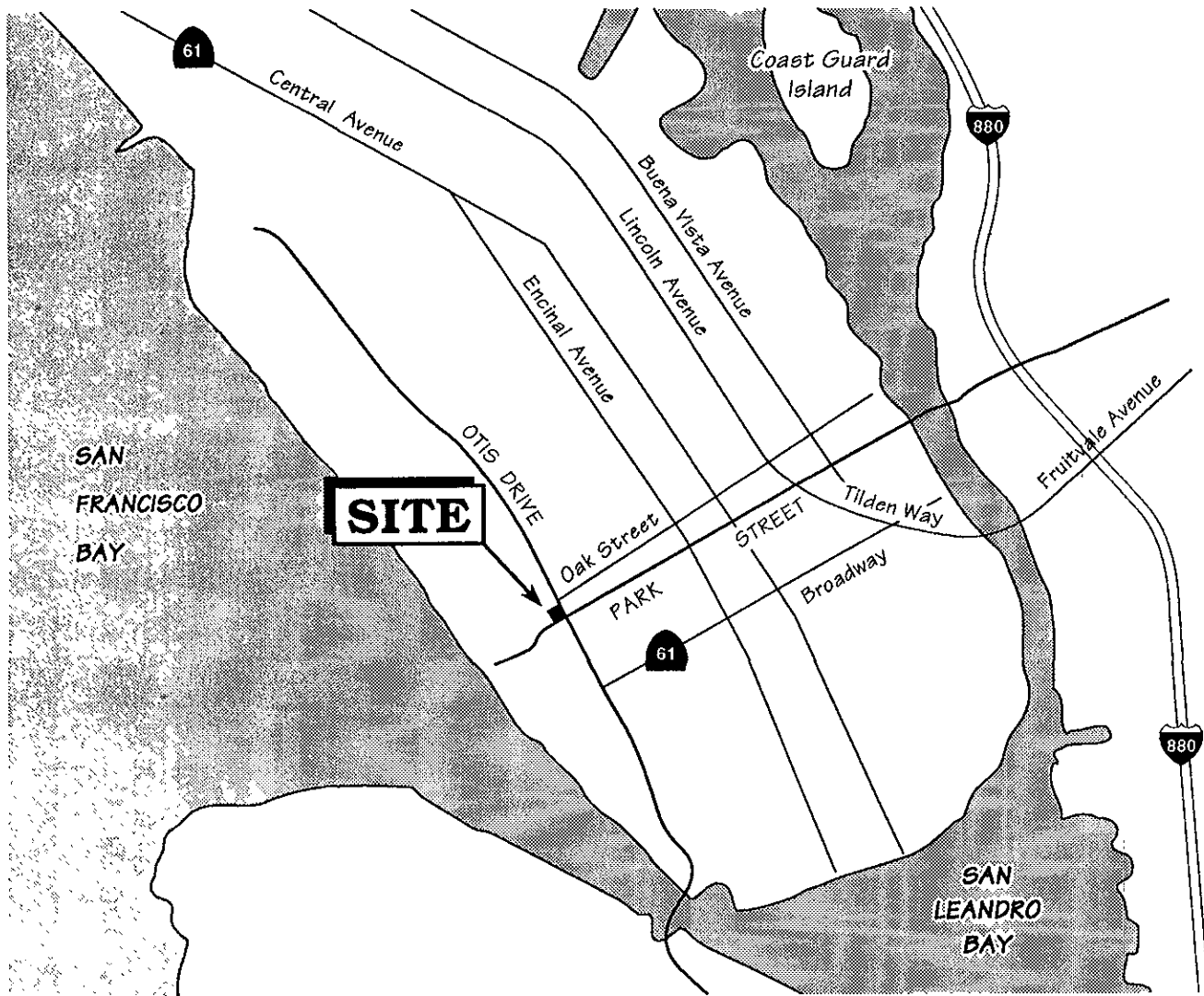
AJM/CJB/dep  
2/20/1993

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



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**APPENDIX A**  
**FIGURES**



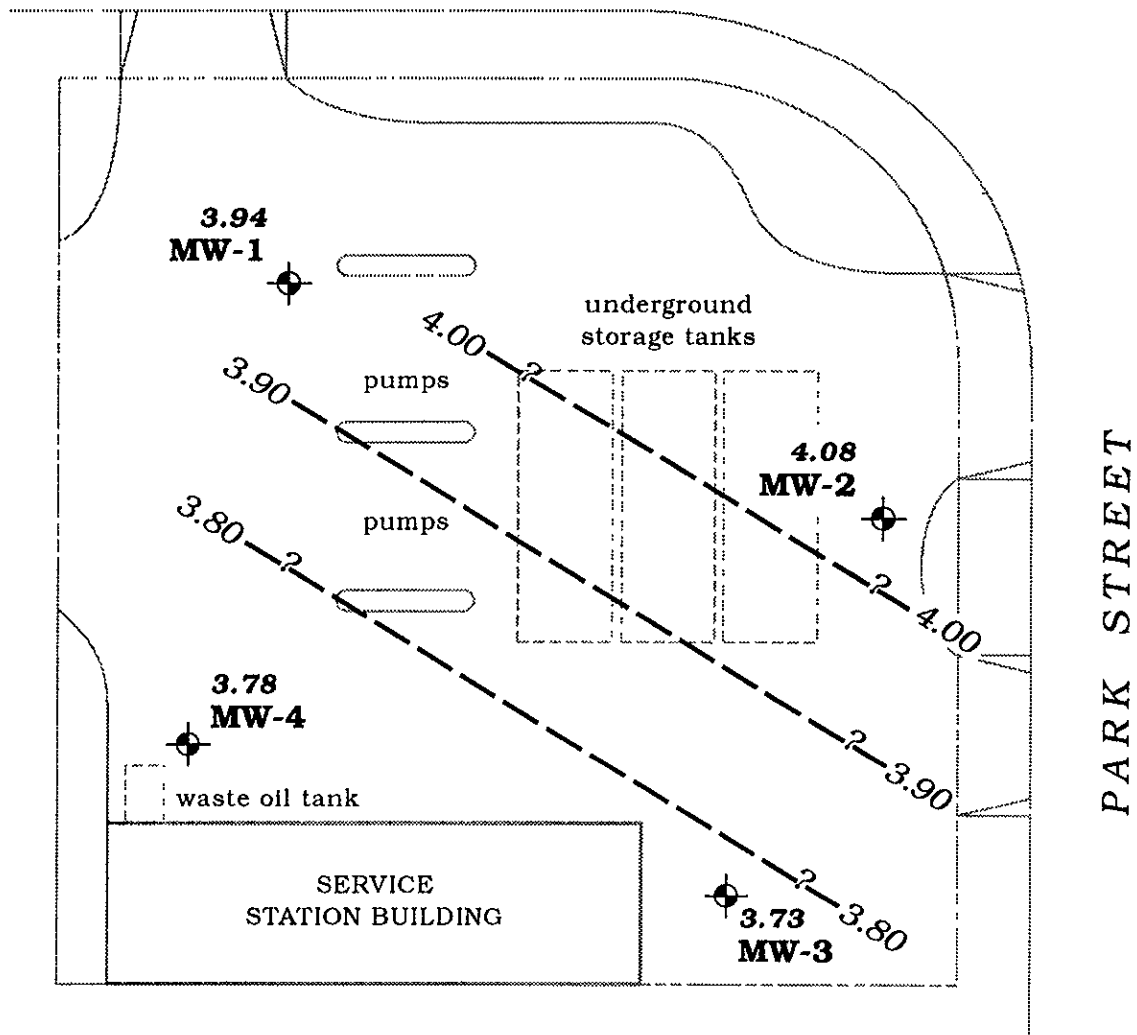
Base map ref: California State Automobile Association (AAA)

Figure 1. Site Location Map - Chevron Service Station #9-6607, 2340 Otis Drive, Alameda, California





Approximate  
ground water  
flow direction

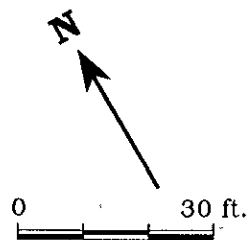
OTIS DRIVE



PARK STREET

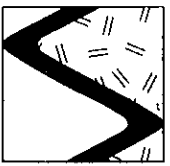
**EXPLANATION**

-  **MW-4**      Monitoring well
- 3.78**              Ground water elevation, in feet
-  **3.90**              Ground water elevation contour, dashed where inferred, queried where uncertain



Base map after Geraghty & Miller, Inc.

Figure 2. Monitoring Well Location and Ground Water Elevation Contour Map – January 21, 1993 – Chevron Service Station #9-6607, 2340 Otis Drive, Alameda, California



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**APPENDIX B**  
TABLES



Table 1. Water Level Data and Well Construction Details - Chevron Service Station #9-6607, 2340 Otis Drive, Alameda, California

Well ID	Date Measured	DTW (ft)	TOC (ft)	GWE (msl)	Product Thickness* (ft)	Screen Interval		
						-----feet below grade-----		
						Sand Pack Interval		Bentonite/Grout Interval
MW-1	8/21/91	6.10	7.12	1.02	0	3 - 24.5	2 - 24.5	1 - 2
	1/9/92	3.96		3.16				
	4/20/92	3.90		3.22				
	7/25/92	4.18		2.94				
	11/24/92	4.72		2.40				
	<b>1/21/93</b>	<b>3.18</b>		<b>3.94</b>				
MW-2	8/21/91	6.40	7.43	1.03	0	3 - 24.5	2 - 24.5	1 - 2
	1/9/92	4.23		3.20				
	4/20/92	4.17		3.26				
	7/25/92	4.47		2.96				
	11/24/92	5.82		1.61				
	<b>1/21/93</b>	<b>3.35</b>		<b>4.08</b>				
MW-3	8/21/91	7.10	8.07	0.97	0	3 - 24.5	2 - 24.5	1 - 2
	1/9/92	5.03		3.04				
	4/20/92	4.91		3.16				
	7/25/92	5.34		2.73				
	11/24/92	5.00		3.07				
	<b>1/21/93</b>	<b>4.34</b>		<b>3.73</b>				
MW-4	8/21/91	6.85	7.85	1.00	0	1.5 - 21	2 - 21	1 - 1.5
	1/9/92	4.70		3.15				
	4/20/92	4.64		3.21				
	7/25/92	4.95		2.90				
	11/24/92	5.42		2.43				
	<b>1/21/93</b>	<b>4.07</b>		<b>3.78</b>				



Table 1. Water Level Data and Well Construction Details - Chevron Service Station #9-6607, 2340 Otis Drive, Alameda, California (continued)

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EXPLANATION:

DTW = Depth to water  
TOC = Top of casing elevation  
GWE = Ground water elevation  
msl = Measurements referenced relative to mean sea level  
--- = Not available/not applicable

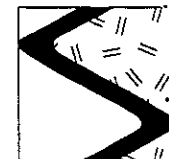
NOTES:

Top of casing elevations and well construction details were compiled from boring logs prepared for Chevron by Geraghty & Miller, Inc., August 6 & 7, 1991.

Top of casing elevations were compiled from the Quarterly Ground Water Monitoring Report prepared for Chevron by Geraghty & Miller, Inc., December 29, 1992.

\* Product thickness was measured with an MMC flexi-dip interface probe on and after January 21, 1993 .





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Table 2. Analytic Results for Ground Water - Chevron Service Station #9-6607, 2340 Otis Drive, Alameda, California

Well ID	Date Sampled	Analytic Lab	Analytic Method	TPPH(G)	TPH(D)	O&G	B T E X			
							-----ppb----->			
MW-1	8/21/91	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	1/9/92	SPA	8015/8020/503E	<50	---	<5,000	<0.5	<0.5	<0.5	<0.5
	4/20/92	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	7/25/92	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	11/24/92	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	<b>1/21/93</b>	<b>GTEL</b>	<b>8015/8020</b>	<b>&lt;50</b>	---	---	<b>&lt;0.5</b>	<b>0.7</b>	<b>&lt;0.5</b>	<b>1.0</b>
MW-2	8/21/91	SPA	8015/8020	430	---	---	170.0	0.9	1.0	3.6
	1/9/92	SPA	8015/8020/503E	58 <sup>1</sup>	---	<5,000	16.0	<0.5	<0.5	<0.5
	4/20/92	SPA	8015/8020	180	---	---	9.6	<0.5	0.8	<0.5
	7/25/92	SPA	8015/8020	220	---	---	8.0	0.7	4.0	8.6
	11/24/92	SPA	8015/8020	72	---	---	3.2	<0.5	0.5	0.6
	<b>1/21/93</b>	<b>GTEL</b>	<b>8015/8020</b>	<b>&lt;50</b>	---	---	<b>0.8</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
MW-3	8/21/91	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	1/9/92	SPA	8015/8020/503E	<50	---	<5,000	<0.5	<0.5	<0.5	<0.5
	4/20/92	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	7/25/92	SPA	8015/8020	<50	---	---	1.0	1.0	1.0	3.4
	11/24/92	SPA	8015/8020	<50	---	---	<0.5	<0.5	<0.5	<0.5
	<b>1/21/93</b>	<b>GTEL</b>	<b>8025/8020</b>	<b>&lt;50</b>	---	---	<b>&lt;0.5</b>	<b>0.5</b>	<b>&lt;0.5</b>	<b>1.0</b>
MW-4	8/21/91	SPA	8015/8020/503E	<50	---	<5,000	0.6	<0.5	<0.5	<0.5
	1/9/92	SPA	8015/8020/503E	<50	---	<5,000	<0.5	<0.5	<0.5	<0.5
	4/20/92	SPA	8015/8020/503E	<50	---	<5,000	<0.5	<0.5	<0.5	<0.5
	7/25/92	SPA	8015/8020	<50	78	---	0.5	1.1	<0.5	0.8
	11/24/92	SPA	8015/8020/503E	<50	---	<5,000	<0.5	<0.5	<0.5	1.0
	<b>1/21/93</b>	<b>GTEL</b>	<b>8015/8020</b>	<b>&lt;50</b>	<b>&lt;10</b>	---	<b>&lt;0.5</b>	<b>0.5</b>	<b>&lt;0.5</b>	<b>0.7</b>
Trip/Lab Blank										
TB-LB	<b>1/21/93</b>	<b>GTEL</b>	<b>8015/8020</b>	<b>&lt;50</b>	---	---	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
Bailer Blank										
BB	<b>1/21/93</b>	<b>GTEL</b>	<b>8015/8020</b>	<b>&lt;50</b>	---	---	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>



Table 2. Analytic Results for Ground Water - Chevron Service Station #9-6607, 2340 Otis Drive, Alameda, California (continued)

EXPLANATION:

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

ANALYTIC LABORATORIES:

SPA = Superior Precision Analytical, Inc. of Martinez, California  
GTEL = Groundwater Technology Environmental Laboratory of  
Concord, California

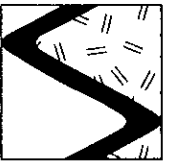
ANALYTIC METHODS:

8015 = EPA Method 8015/5030 for TPPH(G)  
8015 = Modified EPA Method 8015/3510 for TPH(D)  
8020 = EPA Method 8020 for BTEX  
503E = Standard Methods Method 503E for O&G

NOTES:

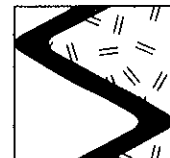
Analytic data prior to January 2, 1993 compiled from the Quarterly Ground Water Monitoring Report prepared for Chevron by Geraghty & Miller, Inc., December 29, 1992.

<sup>1</sup> Chromatogram reported as having a single peak in the gasoline range.



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**APPENDIX C**  
**SIERRA ENVIRONMENTAL SERVICES**  
**STANDARD OPERATING PROCEDURE**



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## **SES STANDARD OPERATING PROCEDURE**

### **GROUND WATER SAMPLING**

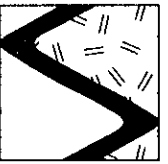
The following describes sampling procedures used by SES field personnel to collect and handle ground water samples. Before samples are collected, careful consideration is given to the type of analysis to be performed so that precautions are taken to prevent loss of volatile components or contamination 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 taken to Chevron's Richmond Refinery for disposal.

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  $4^{\circ}\text{C}$  with blue ice or ice) for transport under chain of custody to the laboratory.

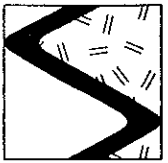


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The chain of custody form includes the project number, analysis requested, sample ID, date analysis and the SES field person's name. The form is signed and dated (with the transfer time) by each person who yields or receives the samples beginning with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

GWS-CHE.SOP



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**APPENDIX D**  
CHAIN OF CUSTODY DOCUMENT AND  
LABORATORY ANALYTIC REPORTS



**Northwest Region**  
4080-C Pike Lane  
Concord, CA 94520  
(510) 685-7852  
(800) 544-3422 from inside California  
(800) 423-7143 from outside California  
(510) 825-0720 (FAX)

Client Number: SEV01CHV08  
Project ID: Chevron, Alameda  
Work Order Number: C3-01-413, C3-01-414  
Total Number of Pages: 5

February 5, 1993

Argy Mena  
Sierra Environmental  
P.O. Box 2546  
Martinez, CA 94553

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 01/21/93.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,  
GTEL Environmental Laboratories, Inc.

A handwritten signature in cursive script that reads 'Eileen F Bullen'.

Eileen F. Bullen  
Laboratory Director

**Table 1**  
**ANALYTICAL RESULTS**  
 Aromatic Volatile Organics and  
 Total Petroleum Hydrocarbons as Gasoline in Water  
 EPA Methods 5030, 8020, and Modified 8015<sup>a</sup>

GTEL Sample Number		01	02	03	04
Client Identification		TB-LB	BB	MW-1	MW-3
Date Sampled		01/21/93	01/21/93	01/21/93	01/21/93
Date Analyzed		01/26/93	01/26/93	01/28/93	01/28/93
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.5	<0.5	<0.5	<0.5	<0.5
Toluene	0.5	<0.5	<0.5	0.7	0.5
Ethylbenzene	0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	0.5	<0.5	<0.5	1	1
BTEX, total	--	--	--	2	2
TPH as Gasoline	50	<50	<50	<50	<50
Detection Limit Multiplier		1	1	1	1
BFB surrogate, % recovery		94.5	97.2	98.0	97.0

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision.



**Table 1 (continued)**

**ANALYTICAL RESULTS**

**Aromatic Volatile Organics and  
 Total Petroleum Hydrocarbons as Gasoline in Water**

EPA Methods 5030, 8020, and Modified 8015a

GTEL Sample Number		05	06	07	
Client Identification		MW-4	MW-2	METHOD BLANK	
Date Sampled		01/21/93	01/21/93	--	
Date Analyzed		01/28/93	01/28/93	01/28/93	
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.5	<0.5	0.8	<0.5	
Toluene	0.5	0.5	<0.5	<0.5	
Ethylbenzene	0.5	<0.5	<0.5	<0.5	
Xylene, total	0.5	0.7	<0.5	<0.5	
BTEX, total	--	1	1	--	
TPH as Gasoline	50	<50	<50	<50	
Detection Limit Multiplier		1	1	1	
BFB surrogate, % recovery		96.3	98.1	101	

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision.

Client Number: SEV01CHV08  
 Project ID: Chevron, Alameda  
 Work Order Number: C3-01-414

**Table 1**

**ANALYTICAL RESULTS**

Total Petroleum Hydrocarbons as Diesel in Water

Modified EPA Methods 3510/8015<sup>a</sup>

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986.

GTEL Sample Number		01	02		
Client Identification		MW-4	METHOD BLANK		
Date Sampled		01/21/93	--		
Date Extracted		01/28/93	01/28/93		
Date Analyzed		02/02/93	02/01/93		
Analyte	Detection Limit, ug/L	Concentration, ug/L			
TPH as Diesel	10	<10	<10		
Detection Limit Multiplier		1	1		
O-Terphenyl surrogate, % recovery		108	109		

Client Number: SEV01CHV08  
 Project ID: Chevron, Alameda  
 Work Order Number: C3-01-413, C3-01-414

**QC Matrix Spike and Duplicate Spike Results**

Matrix: Water

Analyte	Sample ID	Spike Amount	Units	Recovery, %	Duplicate Recovery, %	RPD, %	Control Limits
<b>Modified EPA 8020:</b>							
Benzene	Reagent Water Spike	20.0	ug/L	94.5	94.0	0.5	70 - 147
Toluene	Reagent Water Spike	20.0	ug/L	98.0	97.0	1.0	67 - 150
Ethylbenzene	Reagent Water Spike	20.0	ug/L	94.5	94.0	0.5	68 - 145
Xylene, total	Reagent Water Spike	60.0	ug/L	99.2	98.7	0.5	71 - 152
<b>GC-FID:</b>							
Diesel	DI Water	1081	ug/L	71.4	69.7	2.41	63 - 127

Chevron U.S.A. Inc. P.O. BOX 5004 San Ramon, CA 94583 FAX (415)842-9591	Chevron Facility Number <u>9-16607</u> Facility Address <u>2340 OTIS Drive, Alameda</u> Consultant Project Number <u>1-292-04</u> Consultant Name <u>Sierra Environmental</u> Address <u>P.O. Box 2546, Martinez, CA</u> Project Contact (Name) <u>Argy Mena</u> (Phone) <u>570-1280</u> (Fax Number) <u>370-7959</u>	Chevron Contact (Name) <u>Ken Kaw</u> (Phone) <u>842-8752</u> Laboratory Name <u>GTEL</u> Laboratory Release Number <u>8617811</u> Samples Collected by (Name) <u>Gary Gross</u> Collection Date <u>1-21-93</u> Signature <u>Gary Gross</u>
--	---	---

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air 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 Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd, Cr, Pb, Zn, Ni (ICAP or AA)										
TB2B		3	W	G	930	HCL	Y	✓											Analyze in order shown						
BB		1			1108			✓																	
MW-1		1			1118			✓																	
MW-3		1			1147			✓																	
MW-4		✓			1225	✓		✓																	
MW-4		1147			1225	none	✓		✓										→ Hold Diesel Analysis (MW-4)						
MW-2		3	✓	✓	1307	HCL	✓	✓																	
* Note: all sample dates on sample labels read 1/22/93... CB																									

Note:  
Do Not Bill  
TB-LB Samples

- ① ALL on Ice 10-5°C
- ② seals Intact
- ③ HCL - all BTEX, TPH, VQAS
- ④ None for Diesel Litex

Relinquished By (Signature) <u>Gary Gross</u>	Organization <u>SES</u>	Date/Time <u>1-21-93</u>	Received By (Signature) <u>[Signature]</u>	Organization <u>CCS</u>	Date/Time <u>1/21/93 4:25</u>	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days 10 Days <u>As Contracted</u>
Relinquished By (Signature) <u>[Signature]</u>	Organization <u>CCS</u>	Date/Time <u>1-21</u>	Received By (Signature) <u>[Signature]</u>	Organization <u>[Blank]</u>	Date/Time <u>[Blank]</u>	
Relinquished By (Signature) <u>[Signature]</u>	Organization <u>[Blank]</u>	Date/Time <u>[Blank]</u>	Received For Laboratory By (Signature) <u>Rowanne Belsky</u>	Date/Time <u>1/21/93 5:00 PM</u>		

COC-3.DWG/03 91/HCH