

ENVIRONMENTAL  
PROJECTS



**Chevron**

93 FEB -0 PM 3:36

January 30, 1998

**Chevron Products Company**

P.O. Box 6004  
San Ramon, CA 94583

Ms. Susan Hugo  
Alameda County Health Care Services  
Department of Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

**Re: Chevron Service Station #9-1740  
9550 Moraga Avenue  
Oakland, California**

Dear Ms. Hugo:

Enclosed is the Fourth Quarter Groundwater Monitoring report for 1997, prepared by our consultant Blaine Tech Services Inc. for the above noted facility. Ground water samples were analyzed for TPH-g, BTEX, and MtBE constituents.

Monitoring wells C-2 and C-4 showed a decrease in the BTEX constituents from the previous sampling event while well C-3 was below method detection limits for all constituents.

The depth to groundwater varied from 4.31 feet to 6.28 feet below grade with a direction of flow south easterly.

**Chevron requests that the monitoring frequency for well C-3 be changed to annual, and wells C-2 and C-4 to semi-annually.** The concentration of constituents in well C-3 have been below method detection limits for at least the last eight sampling events. **Chevron also requests that Oxygen Releasing Compounds (ORC) be added to wells C-2 and C-4 to assist in the natural attenuation process.**

If you have any questions or comments call me at (510) 842-9136.

Sincerely,  
**CHEVRON PRODUCTS COMPANY**

Philip R. Briggs  
Site Assessment and Remediation Project Manager

Enclosure

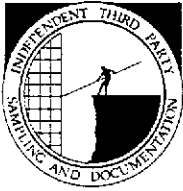
cc. Mr. Bill Scudder, Chevron

Mr. Eddie So  
RWQCB-San Francisco Bay Region, 2101 Webster Street, Suite 500, Oakland, CA 94612

10/2/98

**BLAINE**  
TECH SERVICES INC

1680 ROGERS AVENUE  
SAN JOSE, CALIFORNIA 95112  
(408) 573-7771 FAX  
(408) 573-0555 PHONE



January 21, 1998

Phil Briggs  
Chevron U.S.A. Products Company  
P.O. Box 6004  
San Ramon, CA 94583-0904

#### 4th Quarter 1997 Monitoring at 9-1740

Fourth Quarter 1997 Groundwater Monitoring at  
Chevron Service Station Number 9-1740  
6550 Moraga Avenue  
Oakland, CA

Monitoring Performed on December 15, 1997

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#### Groundwater Sampling Report 971215-A-1

This report covers the routine monitoring of groundwater wells at this Chevron facility. Blaine Tech Services, Inc.'s work at the site includes inspection, gauging, evacuation, purgewater containment, sample collection and sample handling in accordance with standard procedures that conform to Regional Water Quality Control Board requirements.

Routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, calculated volume of a three-case volume purge, elapsed evacuation time, total volume of water removed, and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purgewater is, likewise, collected and transported to McKittrick Waste Treatment Site for disposal.

Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL DATA AND ANALYTICAL RESULTS**. The full analytical report for the most recent samples is located in the **Analytical Appendix**. The table

also contains new groundwater elevation calculations taken from the computer plotted gradient map which is located in the **Professional Engineering Appendix**.

At a minimum, Blaine Tech Services, Inc. field personnel are certified upon completion of a forty-hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight hour refresher courses.

Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. concentrates on objective data collection and does not participate in the interpretation of analytical results, the definition of geological or hydrological conditions, the formulation of recommendations, or the marketing of remedial systems.

Please call if you have any questions.

Yours truly,

Francis Thie  
Vice President

FPT/ew

attachments: Professional Engineering Appendix  
Cumulative Table of Well Data and Analytical Results  
Analytical Appendix  
Field Data Sheets

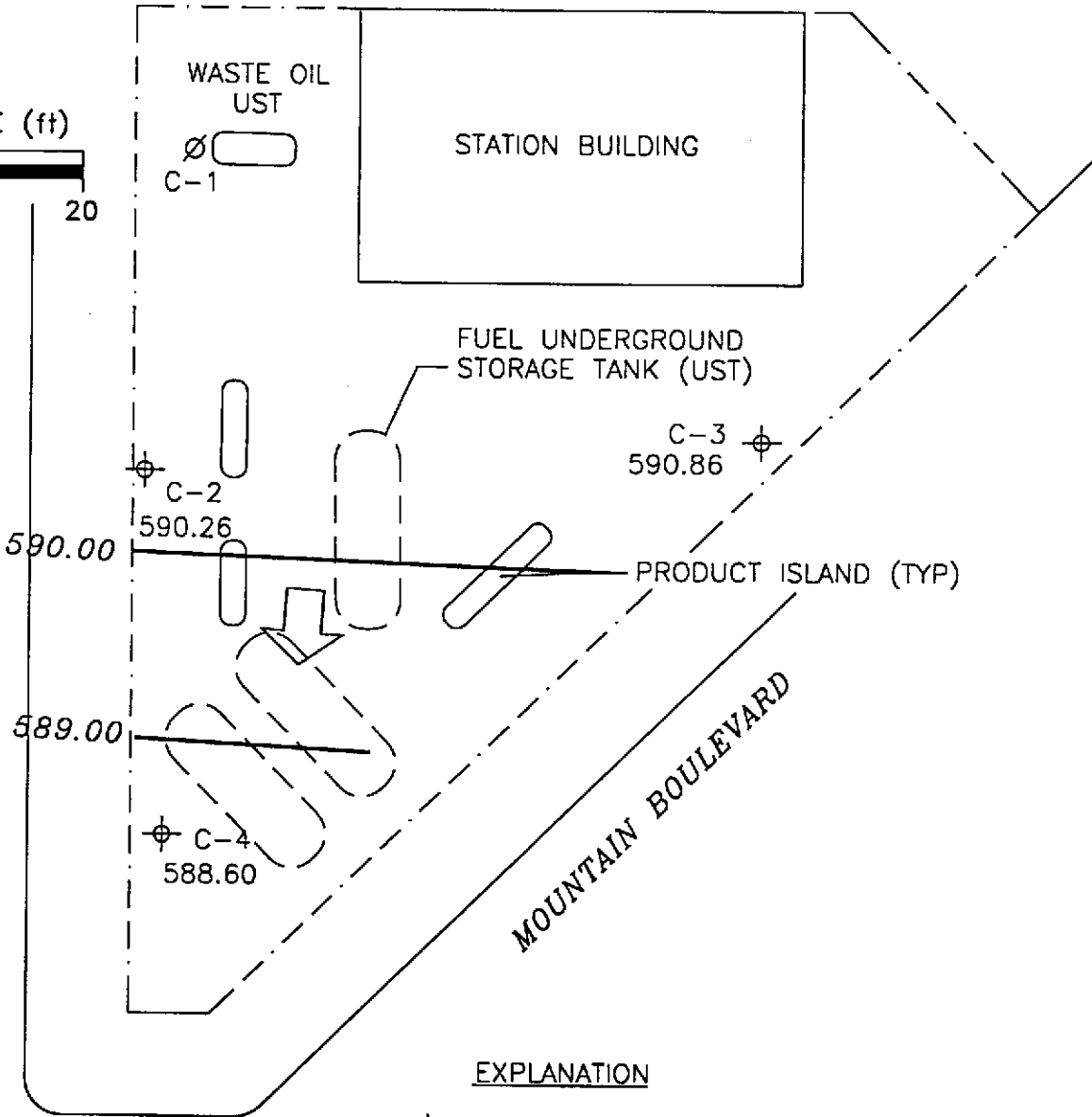
# **Professional Engineering Appendix**



SCALE (ft)



MORAGA AVENUE



EXPLANATION

- MONITORING WELL
- ABANDONED MONITORING WELL
- 588.60 GROUNDWATER ELEVATION (FT, MSL)
- 589.00 — GROUNDWATER ELEVATION CONTOUR (FT, MSL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION;  
APPROXIMATE GRADIENT = 0.03



Basemap from Cambria Environmental Technology, Inc.

PREPARED BY



Chevron Station 9-1740  
6550 Moraga Avenue  
Oakland, California

GROUNDWATER ELEVATION CONTOUR MAP,  
DECEMBER 15, 1997

FIGURE:  
1  
PROJECT:  
DAC04

# **Table of Well Data and Analytical Results**

## Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.

Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE
<b>C-1</b>										
03/25/91	595.82	592.54	3.28	--	54	0.7	<0.5	<0.5	2.0	--
07/01/91	595.82	592.39	3.43	--	730	250	3.0	16	4.8	--
09/25/91	595.82	591.67	4.15	--	160	68	1.3	6.1	1.3	--
12/23/91	595.82	592.11	3.71	--	170	70	1.6	3.5	2.4	--
03/24/92	595.82	592.80	3.02	--	60	39	4.4	3.9	9.1	--
06/23/92	595.82	592.06	3.76	--	60	19	1.1	1.1	1.0	--
<b>NO LONGER MONITORED OR SAMPLED</b>										
<b>C-2</b>										
03/25/91	594.57	571.68	22.89	--	<50	1.0	<0.5	<0.5	2.0	--
07/01/91	594.57	587.20	7.37	--	660	190	2.5	28	22	--
09/25/91	594.57	587.59	6.98	--	110	200	1.9	21	1.7	--
12/23/91	594.57	589.56	5.01	--	<50	1.2	1.2	<0.5	1.8	--
03/24/92	594.57	577.30	17.27	--	100	5.9	7.9	4.0	14	--
06/23/92	594.57	590.75	3.82	--	190	45	4.5	9.5	10	--
09/30/92	594.57	580.56	14.01	--	240	99	2.3	11	6.1	--
12/16/92	594.57	580.05	14.52	--	280	160	6.2	7.4	5.0	--
03/30/93	594.57	583.49	11.08	--	110	21	<0.5	0.8	<1.5	--
06/10/93	594.57	583.08	11.49	--	180	53	2.6	8.0	5.8	--
09/02/93	594.57	580.49	14.08	--	51	18	0.8	4.4	<1.5	--
12/06/93	594.57	579.87	14.70	--	<50	20	1.3	2.7	<0.5	--
03/02/94	594.57	579.70	14.87	--	<50	9.9	1.6	<0.5	0.8	--
06/03/94	594.57	579.35	15.22	--	440	300	2.7	61	2.1	--
09/07/94	594.57	587.27	7.30	--	80	30	<0.5	1.6	<0.5	--
12/06/94	594.57	589.29	5.28	--	120	51	<0.5	4.7	<0.5	--
03/31/95	594.57	589.13	5.44	--	770	250	<5.0	74	<5.0	--
06/15/95	594.57	589.62	4.95	--	240	76	<1.0	26	<1.0	--
09/25/95	594.57	587.78	6.79	--	<50	1.2	<0.5	<0.5	<0.5	--
12/19/95	594.57	588.94	5.63	--	<250	23	<2.5	<2.5	<2.5	860
03/31/97	594.57	589.74	4.83	--	<500	48	<5.0	<5.0	<5.0	2900
06/23/97	594.57	589.98	4.59	--	1200	240	<10	<10	<10	4900
09/02/97	594.57	590.02	4.55	--	1400	340	<5.0	54	6.9	2500
12/15/97	594.57	590.26	4.31	--	540	100	<2.5	8.7	<2.5	2400

## Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.

Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE
<b>C-3</b>										
03/25/91	597.14	591.98	5.16	--	<50	<0.5	<0.5	<0.5	0.5	--
07/01/91	597.14	591.30	5.84	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/25/91	597.14	591.20	5.94	--	<50	<0.5	<0.5	<0.5	<0.5	--
12/23/91	597.14	591.20	5.94	--	<50	1.0	<0.5	<0.5	1.5	--
03/24/92	597.14	592.37	4.77	--	<50	<0.5	<0.5	<0.5	<0.5	--
06/23/92	597.14	591.47	5.67	--	<50	0.9	1.1	0.5	1.6	--
09/30/92	597.14	590.84	6.30	--	<50	<0.5	<0.5	<0.5	<0.5	--
12/16/92	597.14	591.57	5.57	--	<50	<0.5	<0.5	<0.5	<0.5	--
03/30/93	597.14	592.08	5.06	--	<50	<0.5	<0.5	<0.5	<1.5	--
06/10/93	597.14	591.85	5.29	--	<50	0.6	1.9	0.6	3.5	--
09/02/93	597.14	591.22	5.92	--	<50	<0.5	<0.5	<0.5	<1.5	--
12/06/93	597.14	591.38	5.76	--	<50	<0.5	0.6	<0.5	<0.5	--
03/02/94	597.14	591.97	5.17	--	<50	<0.5	<0.5	<0.5	<0.5	--
06/03/94	597.14	591.74	5.40	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/07/94	597.14	591.14	6.00	--	<50	<0.5	<0.5	<0.5	<0.5	--
12/06/94	597.14	591.95	5.19	--	<50	<0.5	0.8	<0.5	<0.5	--
03/31/95	597.14	592.04	5.10	--	<50	<0.5	<0.5	<0.5	<0.5	--
06/15/95	597.14	591.78	5.36	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/25/95	597.14	591.04	6.10	--	<50	<0.5	<0.5	<0.5	<0.5	--
12/19/95	597.14	591.46	5.68	--	<50	<0.5	<0.5	<0.5	<0.5	--
03/31/97	597.14	590.65	6.49	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
06/23/97	597.14	590.63	6.51	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
09/02/97	597.14	591.07	6.07	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
12/15/97	597.14	590.86	6.28	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5



## Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.

Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE
<b>C-4</b>										
03/25/91	593.10	588.65	4.45	--	2700	240	16	<0.5	350	--
07/01/91	593.10	587.77	5.33	--	7900	1500	230	340	350	--
09/25/91	593.10	587.60	5.50	--	3200	850	160	150	220	--
12/23/91	593.10	588.18	4.92	--	4100	390	52	42	340	--
03/24/92	593.10	589.06	4.19	Free Product (0.19')	--	--	--	--	--	--
06/23/92	593.10	588.43	4.91	Free Product (0.30')	--	--	--	--	--	--
09/30/92	593.10	584.44	8.66	--	450	97	14	12	29	--
12/16/92	593.10	583.30	9.80	--	590	130	18	5.6	29	--
03/30/93	593.10	583.20	10.00	Free Product (0.12')	--	--	--	--	--	--
06/10/93	593.10	583.46	9.64	--	1300	290	36	17	73	--
09/02/93	593.10	583.02	10.08	--	630	97	12	6.6	21	--
12/06/93	593.10	582.85	10.25	--	1900	600	68	27	130	--
03/02/94	593.10	584.36	8.74	--	2600	1200	110	43	180	--
06/03/94	593.10	583.27	9.83	--	780	180	13	8.5	26	--
09/07/94	593.10	582.80	10.30	--	<50	14	<0.5	0.7	<0.5	--
12/06/94	593.10	583.90	9.20	--	980	270	21	12	38	--
03/31/95	593.10	582.86	10.24	--	1500	450	25	11	49	--
06/15/95	593.10	582.78	10.32	--	960	250	15	4.5	37	--
09/25/95	593.10	584.72	8.38	--	<500	18	<5.0	<5.0	<5.0	--
12/19/95	593.10	582.94	10.16	--	<500	32	<5.0	<5.0	<5.0	2400
03/31/97	593.10	588.42	4.68	--	3400	960	51	64	140	2100
06/23/97	593.10	588.36	4.74	--	1600	580	19	8.2	27	2300
09/02/97	593.10	588.33	4.77	--	6900	1400	59	130	410	3100
12/15/97	593.10	588.60	4.50	--	3300	1200	37	74	130	3700

## Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet.

Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE
<b>TRIP BLANK</b>										
03/25/91	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
07/01/91	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/25/91	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
12/23/91	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
03/24/92	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
06/23/92	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/30/92	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
12/16/92	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
03/30/93	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
06/10/93	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
09/02/93	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--
12/06/93	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
03/02/94	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
06/03/94	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/07/94	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
12/06/94	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
03/31/95	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
06/15/95	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
09/25/95	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
12/19/95	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--
03/31/97	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
06/23/97	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
09/02/97	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5
12/15/97	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5

Note: Blaine Tech Services, Inc. began routine monitoring of the groundwater wells at this site on March 31, 1995.  
Earlier field data and analytical results provided by Sierra Environmental.

**ABBREVIATIONS:**

TPH = Total Petroleum Hydrocarbons  
MTBE = Methyl t-Butyl Ether

# **Analytical Appendix**



# Sequoia Analytical

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

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

(650) 364-9600  
(510) 988-9600  
(916) 921-9600


FAX (650) 364-9233  
FAX (510) 988-9673  
FAX (916) 921-0100

Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Chevron 9-1740/971215-A1 Sample Descript: C-2 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9712A50-01	Sampled: 12/15/97 Received: 12/16/97 Analyzed: 12/18/97 Reported: 12/22/97
QC Batch Number: GC121897802004A Instrument ID: HP-4		

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	250	540
Methyl t-Butyl Ether	12	2400
Benzene	2.5	100
Toluene	2.5	N.D.
Ethyl Benzene	2.5	8.7
Xylenes (Total)	2.5	N.D.
Chromatogram Pattern:		Gas
Unidentified HC		< C7
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	102

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

**SEQUOIA ANALYTICAL - ELAP #1271**

  
Peggy Penner  
Project Manager





# Sequoia Analytical

680 Chesapeake Drive	Redwood City, CA 94063	(650) 364-9600	FAX (650) 364-9233
404 N. Wiget Lane	Walnut Creek, CA 94598	(510) 988-9600	FAX (510) 988-9673
819 Striker Avenue, Suite 8	Sacramento, CA 95834	(916) 921-9600	FAX (916) 921-0100

Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Chevron 9-1740/971215-A1 Sample Descript: C-3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9712A50-02	Sampled: 12/15/97 Received: 12/16/97 Analyzed: 12/18/97 Reported: 12/22/97
--	--	---

QC Batch Number: GC121897802004A  
Instrument ID: HP-4


Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70                      130	108

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

**SEQUOIA ANALYTICAL** - ELAP #1271

  
Peggy Penner  
Project Manager





# Sequoia Analytical

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

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

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

FAX (650) 364-9233  
FAX (510) 988-9673  
FAX (916) 921-0100


Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Chevron 9-1740/971215-A1 Sample Descript: C-4 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9712A50-03	Sampled: 12/15/97 Received: 12/16/97 Analyzed: 12/19/97 Reported: 12/22/97
--	--	---

QC Batch Number: GC121997802004A  
Instrument ID: HP-4

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2000	3300
Methyl t-Butyl Ether	100	3700
Benzene	20	1200
Toluene	20	37
Ethyl Benzene	20	74
Xylenes (Total)	20	130
Chromatogram Pattern: Discrete Peak		Gas >C6
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	112

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

**SEQUOIA ANALYTICAL - ELAP #1271**

  
 Peggy Penner  
 Project Manager





# Sequoia Analytical

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

Redwood City, CA 94063  
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FAX (916) 921-0100

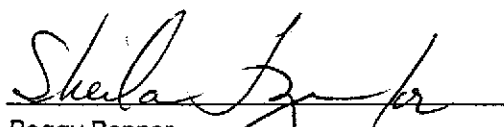
Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Chevron 9-1740/971215-A1 Sample Descript: TB Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9712A50-04	Sampled: 12/15/97 Received: 12/16/97  Analyzed: 12/18/97 Reported: 12/22/97
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QC Batch Number: GC121897802004A  
Instrument ID: HP-4

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	106

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

**SEQUOIA ANALYTICAL - ELAP #1271**

  
 Peggy Penner  
 Project Manager





Blaine Tech Services, Inc.  
1680 Rogers Ave.  
San Jose, CA 95112  
Attention: Fran Thie

Client Project ID: Chevron 9-1740 / 971215-A1  
Matrix: Liquid

Work Order #: 9712A50 -01, 02, 04

Reported: Dec 29, 1997

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC121897802004A	GC121897802004A	GC121897802004A	GC121897802004A	GC121897802004A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8021
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb
MS/MSD #:	7121269	7121269	7121269	7121269	7121269
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97
Analyzed Date:	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	310 µg/L
Result:	20	20	20	62	340
MS % Recovery:	100	100	100	103	110
Dup. Result:	20	20	19	60	340
MSD % Recov.:	100	100	95	100	110
RPD:	0.0	0.0	5.1	3.3	0.0
RPD Limit:	0-20	0-20	0-20	0-20	0-50

LCS #:	LCS121897	LCS121897	LCS121897	LCS121897	LCS121897
Prepared Date:	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97
Analyzed Date:	12/18/97	12/18/97	12/18/97	12/18/97	12/18/97
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	310 µg/L
LCS Result:	20	20	20	62	310
LCS % Recov.:	100	100	100	103	100

MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

SEQUOIA ANALYTICAL  
Elap #1271

Peggy Penner  
Project Manager

**Please Note:**

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

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

9712A50.BLA <1>







Blaine Tech Services, Inc. 1680 Rogers Ave. San Jose, CA 95112 Attention: Fran Thie	Client Project ID: Chevron 9-1740 / 971215-A1 Matrix: Liquid  Work Order #: 9712A50-03	Reported: Dec 29, 1997
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**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC121997802004A	GC121997802004A	GC121997802004A	GC121997802004A	GC121997802004A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8021
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb
MS/MSD #:	7121254	7121254	7121254	7121254	7121254
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	12/19/97	12/19/97	12/19/97	12/19/97	12/19/97
Analyzed Date:	12/19/97	12/19/97	12/19/97	12/19/97	12/19/97
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	310 µg/L
Result:	18	18	18	56	310
MS % Recovery:	90	90	90	93	100
Dup. Result:	18	18	18	56	310
MSD % Recov.:	90	90	90	93	100
RPD:	0.0	0.0	0.0	0.0	0.0
RPD Limit:	0-20	0-20	0-20	0-20	0-50

LCS #:	LCS121997	LCS121997	LCS121997	LCS121997	LCS121997
Prepared Date:	12/19/97	12/19/97	12/19/97	12/19/97	12/19/97
Analyzed Date:	12/19/97	12/19/97	12/19/97	12/19/97	12/19/97
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	310 µg/L
LCS Result:	16	16	16	50	280
LCS % Recov.:	80	80	80	83	90

MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

**SEQUOIA ANALYTICAL**  
Elap #1271  
  
Peggy Penner  
Project Manager

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

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

9712A50.BLA <2>





Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112  
Attention: Fran Thie

Client Proj. ID: Chevron 9-1740/971215-A1

Received: 12/16/97

Lab Proj. ID: 9712A50

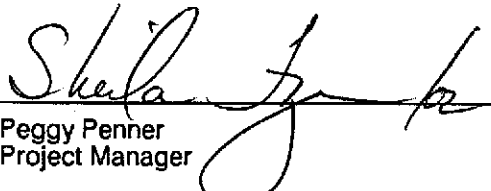
Reported: 12/22/97

### LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 4 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

TPPH Note: Sample 9712A50-01 was diluted 5-fold.  
Sample 9712A50-03 was diluted 40-fold.

SEQUOIA ANALYTICAL

  
Peggy Penner  
Project Manager





# **Field Data Sheets**



## CHEVRON WELL MONITORING DATA SHEET

Project #: 971215-A1	Station #: 9-1740
Sampler: AL	Date: 12-15-97
Well I.D.: C-2	Well Diameter: (2) 3 4 6 8
Total Well Depth: 27.67	Depth to Water: 4.31
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVG Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius <sup>2</sup> * 0.163

Purge Method: Bailer  Disposable Bailer Middleburg Electric Submersible Extraction Pump Other: \_\_\_\_\_

Sampling Method: Bailer  Disposable Bailer Extraction Port Other: \_\_\_\_\_

3.7	x	3	=	11.71	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Gals. Removed	Observations
0927	67.0	6.8	800	4.0	
0929	66.8	6.8	800	8.0	
0933	66.4	6.6	700	12.0	

Did well dewater? Yes  (No)  Gallons actually evacuated: 12.0

Sampling Time: 0938 Sampling Date: 12-15-97

Sample I.D.: C-2 Laboratory: Sequoia GTEL N. Creek Assoc. Labs

Analyzed for: (TPH-G) (BTEX) (MTBE) TPH-D Other: \_\_\_\_\_

Duplicate I.D.: Analyzed for: TPH-G BTEX MTBE TPH-D Other: \_\_\_\_\_

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

## CHEVRON WELL MONITORING DATA SHEET

Project #: <u>971215-A1</u>	Station #: <u>9-1740</u>
Sampler: <u>AL</u>	Date: <u>12-15-97</u>
Well I.D.: <u>C-3</u>	Well Diameter: <u>(2)</u> 3 4 6 8 <u>    </u>
Total Well Depth: <u>1861</u>	Depth to Water: <u>6.28</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd):            YSI            HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius <sup>2</sup> * 0.163

Purge Method:                      Bailer <input checked="" type="checkbox"/> Disposable Bailer Middleburg Electric Submersible Extraction Pump Other: _____	Sampling Method:                  Bailer <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Other: _____
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<u>1.97</u>	x	<u>3</u>	=	<u>5.91</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Gals. Removed	Observations
0900	65.2	7.4	800	2.0	
0902	65.8	7.2	700	4.0	
0904	66.0	7.0	700	6.0	

Did well dewater?    Yes                       No                      Gallons actually evacuated: 6.0

Sampling Time: 0908                                      Sampling Date: \_\_\_\_\_

Sample I.D.: C-3                                      Laboratory: Sequoia GTEL N. Creek Assoc. Labs

Analyzed for: TPH-G BTEX MTBE TPH-D    Other: \_\_\_\_\_

Duplicate I.D.: \_\_\_\_\_                      Analyzed for: TPH-G BTEX MTBE TPH-D    Other: \_\_\_\_\_

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
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O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV
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## CHEVRON WELL MONITORING DATA SHEET

Project #: 971215-A1	Station #: 9-1740
Sampler: AL	Date: 12-15-97
Well I.D.: C-4	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 24.86	Depth to Water: 4.50
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius <sup>2</sup> * 0.163

Purge Method: Bailer  Disposable Bailer Middleburg Electric Submersible Extraction Pump Other: \_\_\_\_\_

Sampling Method: Bailer  Disposable Bailer Extraction Port Other: \_\_\_\_\_

3.25	x	3	=	9.75	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Gals. Removed	Observations
0959	68.0	7.0	700	3.0	SLIGHT odor
1003	67.6	6.8	600	6.0	
1005	67.6	6.8	600	10.0	

Did well dewater? Yes  No  Gallons actually evacuated: 10.0

Sampling Time: 1009 Sampling Date: 12-15-97

Sample I.D.: C-4 Laboratory: Sequoia GTEL N. Creek Assoc. Labs

Analyzed for:  TPH-G  BTEX  MTBE  TPH-D Other:

Duplicate I.D.: Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV