Chevron

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

90 MAY 11 AM 10:59

May 9, 1990

Marketing Operations

D. Moller
Manager, Operations
S. L. Patterson
Area Manager, Operations
C. G. Trimbach
Manager, Engineering

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

Re: Chevron Service Station #9-1924
4904 Southfront Road
Livermore, CA

Dear Mr. Shahid:

Enclosed we are forwarding the Quarterly Groundwater Sampling report dated April 23, 1990, conducted by our consultant Western Geologic Resources, Inc., at the above referenced site.

We have completed permitting and begun operation of the groundwater extraction and treatment system. We will keep you aprised of our recovery progress.

Chevron will continue to sample this 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 comments please do not hesitate to call me at (415) 842 - 9625.

Very truly yours,

C. G. Trimbach

By John Randall

JMR/jmr
Enclosure

cc: Mr. Lester Feldman
RWQCB-Bay Area
1800 Harrison Street
Suite # 700
Oakland, CA 94612

WESTERN GEOLOGIC RESOURCES, INC.

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

23 April 1990

Gordon Davitt
Chevron USA
2410 Camino Ramon
San Ramon, CA 94583

Re: Quarterly Groundwater Monitoring
Sampled January 1990
Chevron Service Station #91924
Livermore, California
WGR Project #1-024.01

Dear Mr. Davitt:

This letter report presents the results of the quarterly groundwater sampling performed in January 1990 by Western Geologic Resources, Inc. (WGR) at the Chevron Service Station #91924, located at 4904 Southfront Road, Livermore, California (Figure 1).

GROUNDWATER SAMPLING

On 3-4 January 1990, WGR staff measured depth-to-water and collected groundwater samples from monitor wells C-1 through C-3 and C-5 through C-19 with the dedicated sampling systems. Monitor well C-14 was purged dry after a grab sample was taken and the well was sampled again after an overnight recovery to 113% of static water level. All groundwater samples were collected according to WGR standard operating procedure for groundwater sampling included as Appendix A. Field forms are included as Attachment B.

All purge water evacuated was contained in 55-gallon drums and temporarily stored on-site pending analytical results. The groundwater samples and a laboratory-supplied travel blank, consisting of deionized water, were shipped under chain-of-custody to Superior Analytical Laboratory, Inc. (SAL) of San Francisco, California.

GROUNDWATER FLOW

Figure 2 is the potentiometric surface map of the shallow groundwater, based on depth-to-water measurements taken on 3 January 1990. Water-elevation data are tabulated in Table 1. Hydrographs

showing groundwater elevations over time are included as Attachment C. The estimated groundwater flow for 3 January 1990 was to the west-southwest at a gradient of 2.1%.

ANALYTIC RESULTS

Groundwater samples from monitor wells C-1 through C-3 and C-5 through C-19 were analyzed for total petroleum hydrocarbons (TPH) and aromatic hydrocarbons by EPA Methods 8015/8020, and for halocarbons by EPA Method 8010. Analytic results are presented in Table 2. Chain-of-custody forms and laboratory reports with quality assurance/quality control (QA/QC) documentation are included as Attachments D and E. Distribution maps for TPH and benzene in shallow groundwater are presented as Figures 3 and 4, respectively.

COMMENTS

The analytic results for January 1990 indicated concentrations of TPH and aromatic hydrocarbons similar to those reported in the October 1989 analysis. Low concentrations of vinyl chloride were detected for the first time in both samples collected from well C-14; at 3 ppb in the grab sample taken on 3 January 1990, and at 1 ppb in the sample taken on 4 January 1990 after an overnight recovery.

Western Geologic Resources, Inc. is pleased to conduct geologic and environmental consulting services for Chevron and we trust that this report will meet your needs. Please call us at (415) 457-7595 if you have any questions.

Sincerely,
Western Geologic Resources, Inc.

Kenneth R. Leonard
Staff Geologist

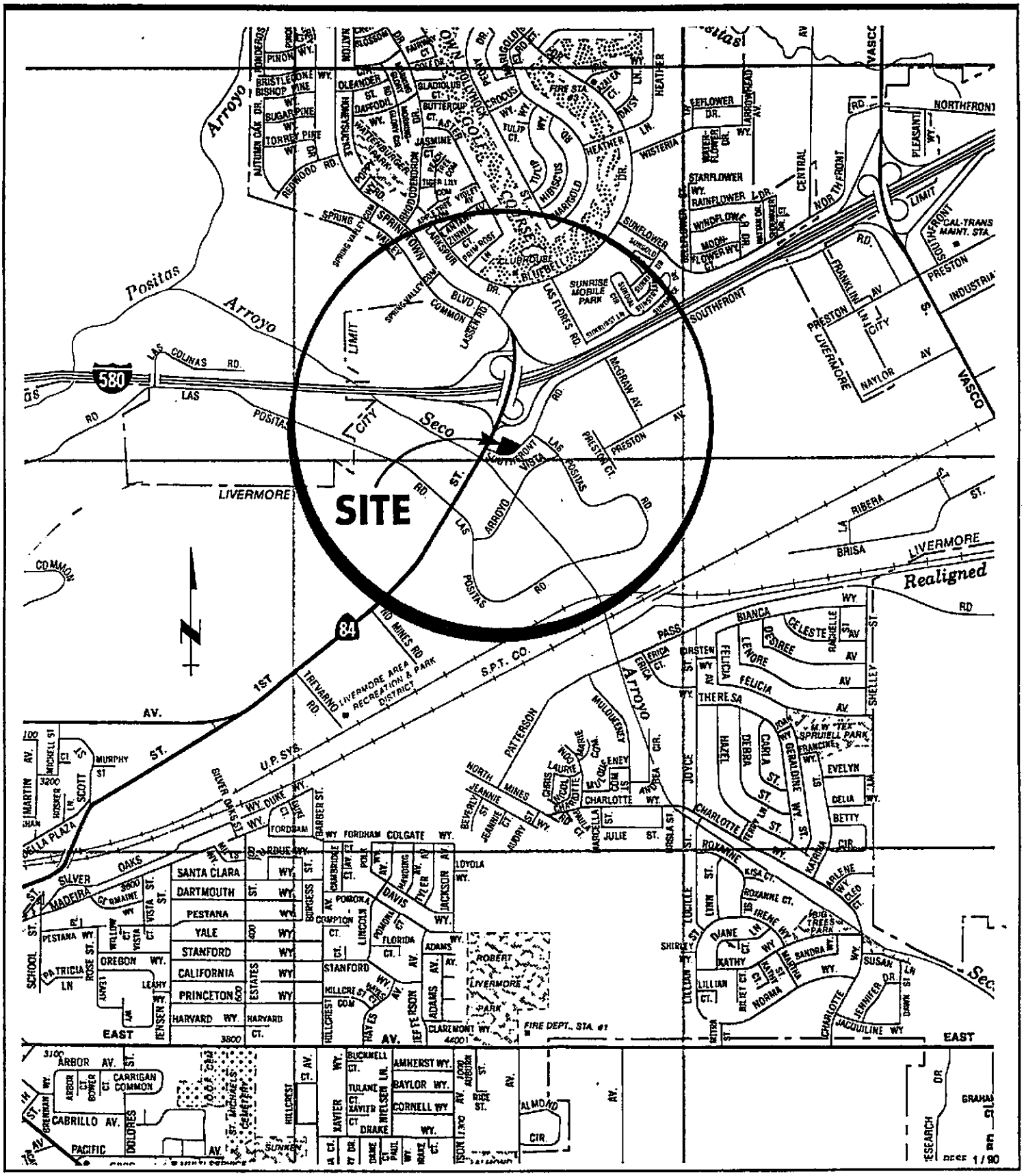
Thomas J. Echols
Project Geologist

KRL/TJE:ag

FIGURES

TABLES

ATTACHMENTS



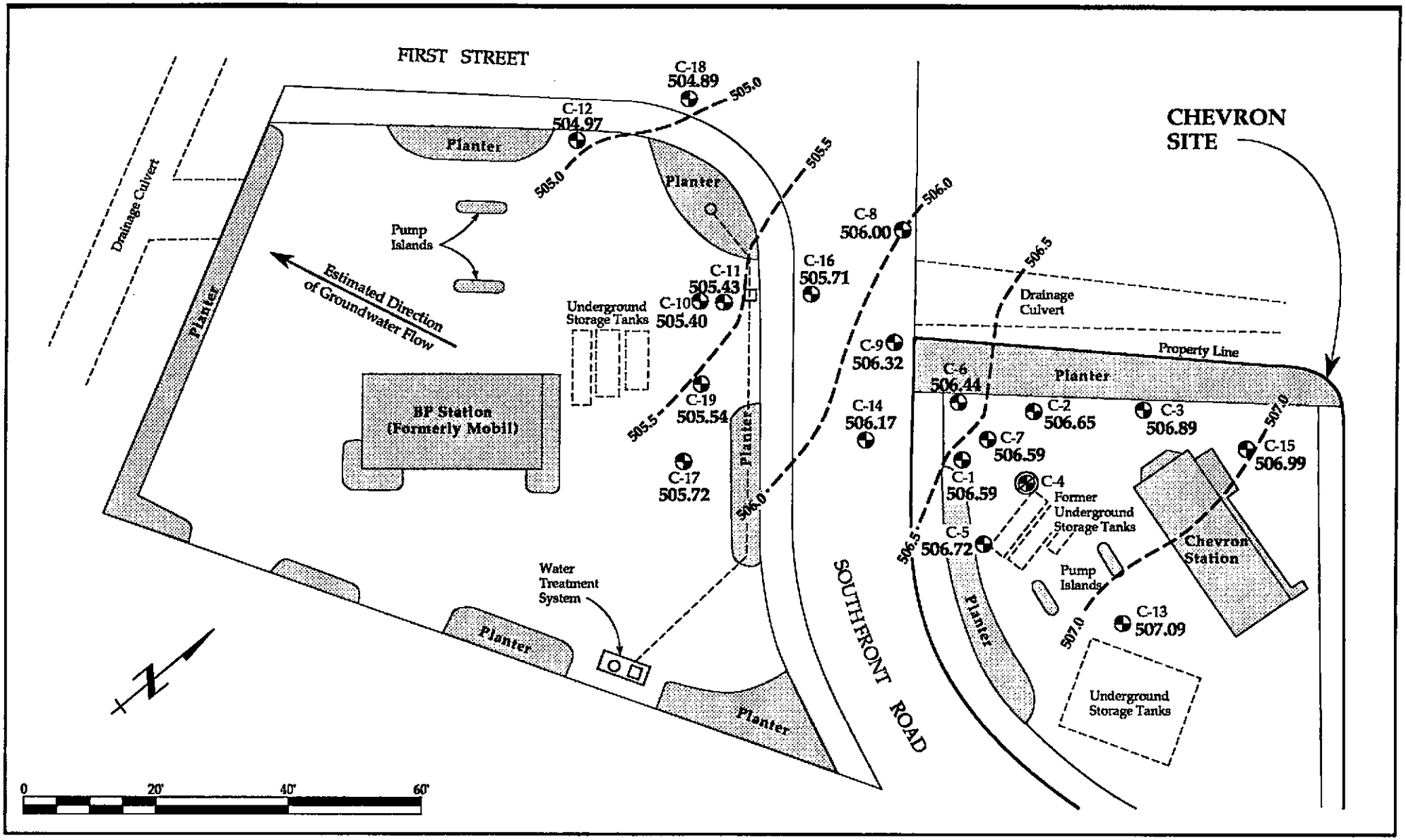
NOT TO SCALE

Site Location Map
Chevron Service Station #91924, Livermore, California

FIGURE
1

WESTERN GEOLOGIC RESOURCES, INC.

1-024.01



LEGEND

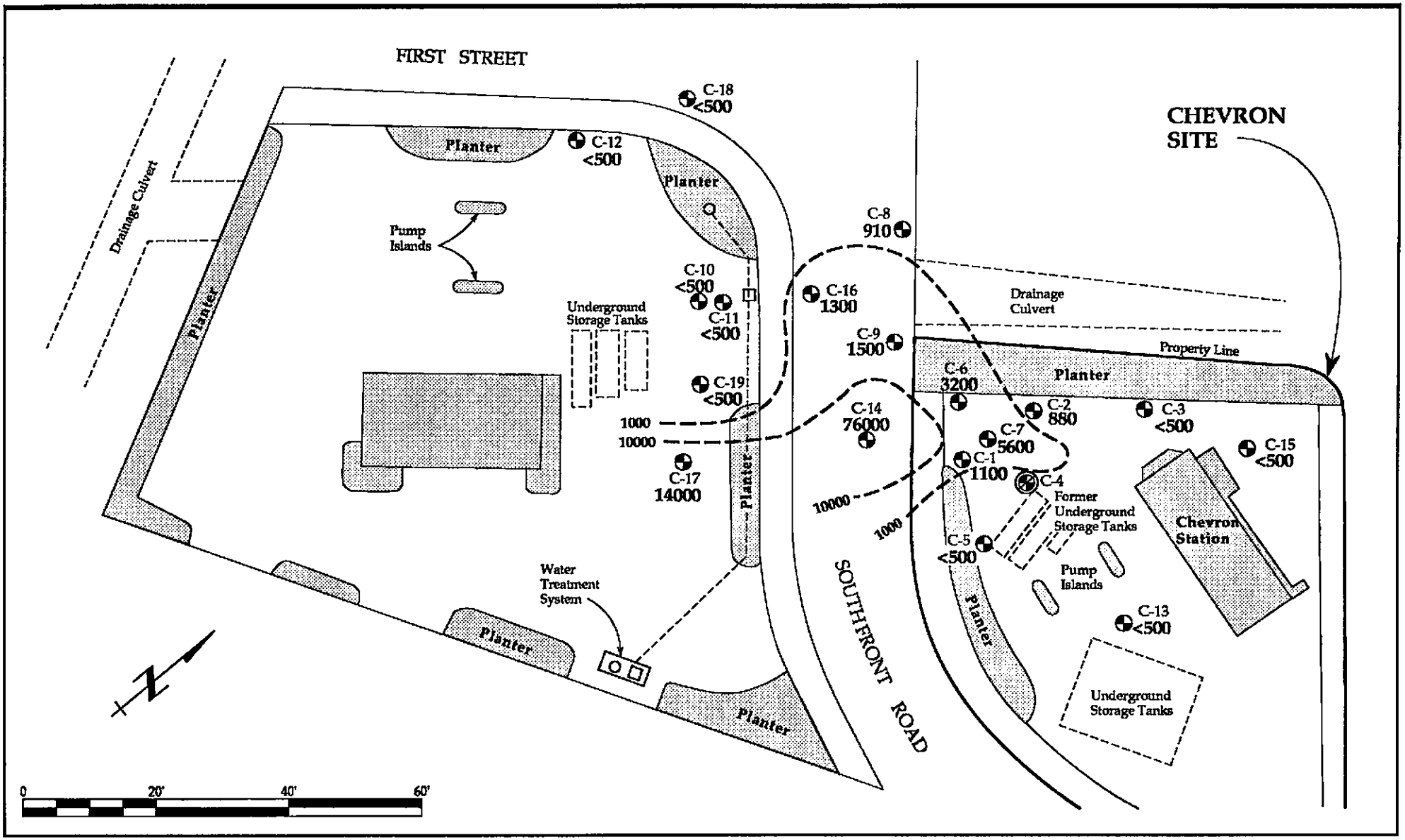
- C-1 506.59 — Monitor Well Location and Groundwater Elevation, feet above mean sea level
- C-4 — Destroyed Monitor Well Location
- 506.0 — Groundwater elevation contour, feet above mean sea level, dashed where inferred

Potentiometric Surface of Shallow Groundwater
3 January 1990
Chevron Service Station #91924, Livermore, California

FIGURE
2

WESTERN GEOLOGIC RESOURCES, INC.

1-024.01



LEGEND

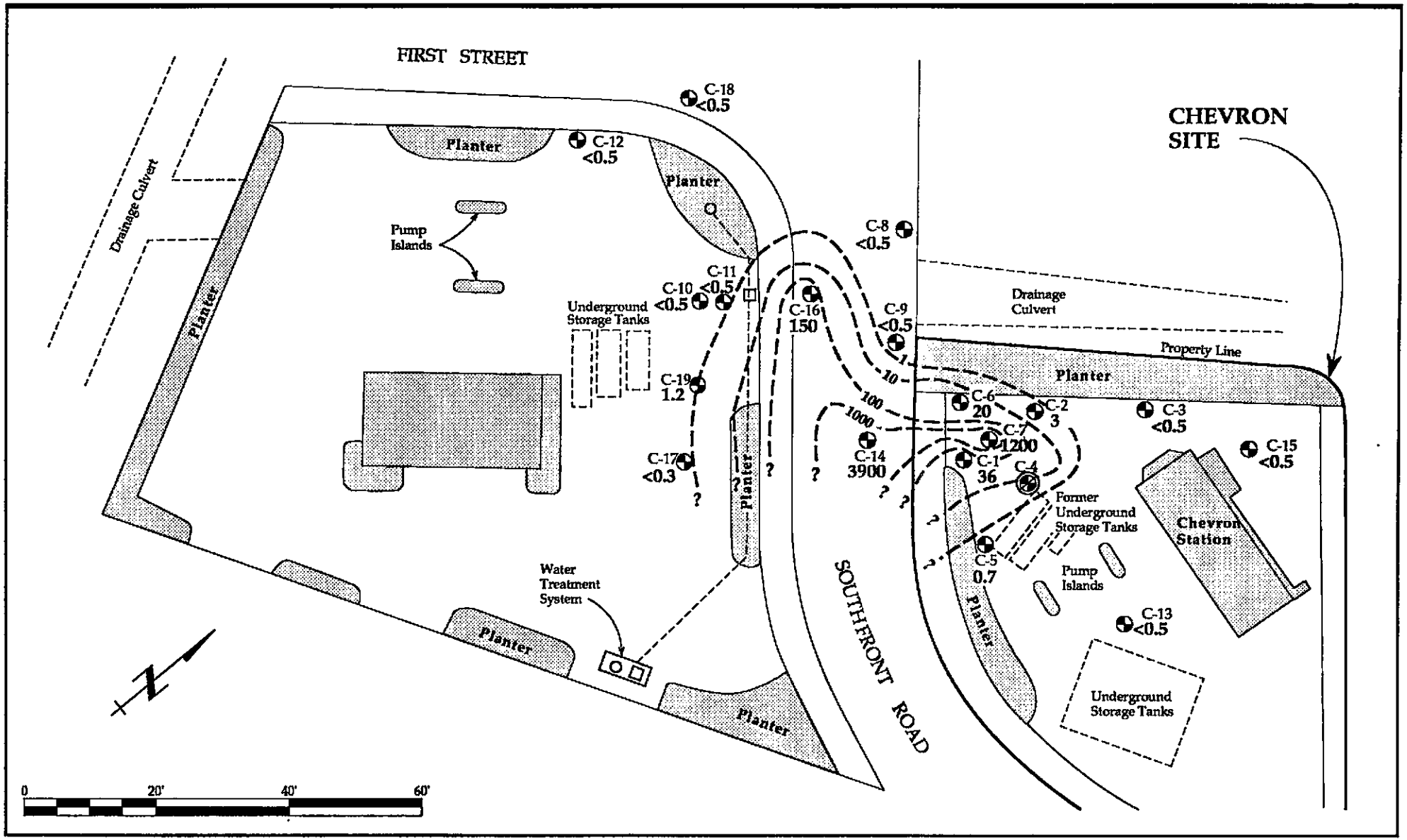
- C-1 1100 — Monitor Well Location and Total Petroleum Hydrocarbons in ppb (parts per billion)
- C-4 — Destroyed Monitor Well Location
- 1000 — Isoconcentration contour for TPH in ppb, dashed where inferred

Distribution of Total Petroleum Hydrocarbons (TPH) in Shallow Groundwater
3-4 January 1990
Chevron Service Station #91924, Livermore, California

FIGURE 3

WESTERN GEOLOGIC RESOURCES, INC.

1-024.01



LEGEND

C-1 36	Monitor Well Location and Benzene Concentration in ppb (parts per billion)
C-4	Destroyed Monitor Well Location
— 1 · — –?	Isoconcentration for Benzene in ppb, dashed where inferred, queried where uncertain

Distribution of Benzene in Shallow Groundwater
3-4 January 1990
Chevron Service Station #91924, Livermore, California

FIGURE 4

WESTERN GEOLOGIC RESOURCES, INC.

1-024.01

TABLE 1. Liquid Level and Top-of-Casing Elevations
Chevron Service Station # 91924
4904 Southfront Road
Livermore, California

Monitor Well	Date	TOC	DTLH	DTW	LHT	Elev.-LH	Elev.-W
		<-----feet----->					
		ONSITE WELLS					
C - 1	28 Mar 86	520.39	---	11.75	---	---	508.64
C - 1	15 Mar 88	520.39	---	13.50	---	---	506.89
C - 1	10 May 88	520.39	---	13.65	---	---	506.74
C - 1	10 Jun 88	520.39	---	14.72	---	---	505.67
C - 1	25 Jul 88	520.39	---	13.50	---	---	506.89
C - 1	13 Oct 88	520.39	---	13.50	---	---	506.89
C - 1	1 Jan 89	520.39	---	12.89	---	---	507.50
C - 1	10 Apr 89	520.39	---	13.65	---	---	506.74
C - 1	26 Jun 89	520.39	---	13.94	---	---	506.45
C - 1	12 Oct 89	520.39	---	13.92	---	---	506.47
C - 1	3 Jan 90	520.39	---	13.80	---	---	506.59
C - 2	28 Mar 86	520.76	---	11.98	---	---	508.78
C - 2	15 Mar 88	520.76	---	13.77	---	---	506.99
C - 2	10 May 88	520.76	---	14.03	---	---	506.73
C - 2	10 Jun 88	520.76	---	15.12	---	---	505.64
C - 2	25 Jul 88	520.76	---	13.86	---	---	506.90
C - 2	13 Oct 88	520.76	---	14.11	---	---	506.65
C - 2	1 Jan 89	520.76	---	12.83	---	---	507.93
C - 2	10 Apr 89	520.76	---	14.04	---	---	506.72
C - 2	26 Jun 89	520.76	---	14.34	---	---	506.42
C - 2	12 Oct 89	520.76	---	13.92	---	---	506.42
C - 2	3 Jan 90	520.76	---	14.11	---	---	506.65
C - 3	28 Mar 86	521.31	---	12.24	---	---	509.07
C - 3	15 Mar 88	521.31	---	14.21	---	---	507.10
C - 3	10 May 88	521.31	---	14.43	---	---	506.88
C - 3	10 Jun 88	521.31	---	15.53	---	---	505.78
C - 3	25 Jul 88	521.31	---	14.22	---	---	507.09
C - 3	13 Oct 88	521.31	---	14.10	---	---	507.21
C - 3	1 Jan 89	521.31	---	12.70	---	---	508.61
C - 3	10 Apr 89	521.31	---	14.36	---	---	506.95
C - 3	26 Jun 89	521.31	---	14.74	---	---	506.57
C - 3	12 Oct 89	521.31	---	14.70	---	---	506.61
C - 3	3 Jan 90	521.31	---	14.42	---	---	506.89
C - 5	28 Mar 86	520.82	---	12.00	---	---	508.82
C - 5	15 Mar 88	520.82	---	13.75	---	---	507.07
C - 5	10 May 88	520.82	---	13.92	---	---	506.90
C - 5	10 Jun 88	520.82	---	14.98	---	---	505.84
C - 5	25 Jul 88	520.82	---	13.72	---	---	507.10
C - 5	13 Oct 88	520.82	---	13.84	---	---	506.98
C - 5	1 Jan 89	520.82	---	13.41	---	---	507.41
C - 5	10 Apr 89	520.82	---	13.88	---	---	506.94
C - 5	26 Jun 89	520.82	---	14.14	---	---	506.68

TABLE 1. Liquid Level and Top-of-Casing Elevations
Chevron Service Station # 91924
4904 Southfront Road
Livermore, California

Monitor Well	Date	TOC	DTLH	DTW	LHT	Elev.-LH	Elev.-W
		<--------		feet			-------->
C - 5	12 Oct 89	520.82	---	14.15	---	---	506.68
C - 5	3 Jan 90	520.82	---	14.10	---	---	506.72
C - 6	28 Mar 86	519.62	---	11.12	---	---	508.50
C - 6	15 Mar 88	519.62	---	12.93	---	---	506.69
C - 6	10 May 88	519.62	---	13.03	---	---	506.59
C - 6	10 Jun 88	519.62	14.10	14.11	0.01	---	505.51
C - 6	25 Jul 88	519.62	---	12.95	---	---	506.67
C - 6	13 Oct 88	519.62	---	13.14	---	---	506.48
C - 6	1 Jan 89	519.62	---	12.14	---	---	507.48
C - 6	10 Apr 89	519.62	---	12.98	---	---	506.64
C - 6	26 Jun 89	519.62	---	13.39	---	---	506.23
C - 6	12 Oct 89	519.62	---	13.40	---	---	506.22
C - 6	3 Jan 90	519.62	---	13.18	---	---	506.44
C - 7	28 Mar 86	520.30	---	11.67	---	---	508.63
C - 7	15 Mar 88	520.30	---	13.48	---	---	506.82
C - 7	10 May 88	520.30	---	13.60	---	---	506.70
C - 7	10 Jun 88	520.30	---	14.68	---	---	505.62
C - 7	25 Jul 88	520.30	---	13.43	---	---	506.87
C - 7	13 Oct 88	520.30	---	13.61	---	---	506.69
C - 7	1 Jan 89	520.30	---	12.66	---	---	507.64
C - 7	10 Apr 89	520.30	---	13.60	---	---	506.70
C - 7	26 Jun 89	520.30	---	13.88	---	---	506.42
C - 7	12 Oct 89	520.30	---	13.81	---	---	506.49
C - 7	3 Jan 90	520.30	---	13.71	---	---	506.59
C -13	28 Mar 86	522.24	---	12.95	---	---	509.29
C -13	15 Mar 88	522.24	---	14.82	---	---	507.42
C -13	10 May 88	522.24	---	15.03	---	---	507.21
C -13	10 Jun 88	522.24	---	16.10	---	---	506.14
C -13	25 Jul 88	522.24	---	14.73	---	---	507.51
C -13	13 Oct 88	522.24	---	14.91	---	---	507.33
C -13	1 Jan 89	522.24	---	14.10	---	---	508.14
C -13	10 Apr 89	522.24	---	14.99	---	---	507.25
C -13	26 Jun 89	522.24	---	15.16	---	---	507.08
C -13	12 Oct 89	522.24	---	15.23	---	---	507.01
C -13	3 Jan 90	522.24	---	15.15	---	---	507.09
C -15	28 Mar 86	522.41	---	13.14	---	---	509.27
C -15	15 Mar 88	522.41	---	15.13	---	---	507.28
C -15	10 May 88	522.41	---	15.40	---	---	507.01
C -15	10 Jun 88	522.41	---	16.49	---	---	505.92
C -15	25 Jul 88	522.41	---	15.17	---	---	507.24
C -15	13 Oct 88	522.41	---	15.33	---	---	507.08

TABLE 1. Liquid Level and Top-of-Casing Elevations
Chevron Service Station # 91924
4904 Southfront Road
Livermore, California

Monitor Well	Date	TOC	DTLH	DTW	LHT	Elev.-LH	Elev.-W
		<-------feet------->					
C -15	1 Jan 89	522.41	---	13.70	---	---	508.71
C -15	10 Apr 89	522.41	---	15.34	---	---	507.07
C -15	26 Jun 89	522.41	---	15.72	---	---	506.69
C -15	12 Oct 89	522.41	---	15.96	---	---	506.45
C -15	3 Jan 90	522.41	---	15.42	---	---	506.99
			FIRST STREET WELL				
C -18	28 Mar 86	518.96	---	---	---	---	---
C -18	15 Mar 88	518.96	---	---	---	---	---
C -18	10 May 88	518.96	---	---	---	---	---
C -18	10 Jun 88	518.96	---	14.89	---	---	504.07
C -18	25 Jul 88	518.96	---	13.79	---	---	505.17
C -18	13 Oct 88	518.96	---	13.86	---	---	505.10
C -18	1 Jan 89	518.96	---	13.94	---	---	505.02
C -18	10 Apr 89	518.96	---	14.86	---	---	504.10
C -18	26 Jun 89	518.96	---	14.02	---	---	504.94
C -18	12 Oct 89	518.96	---	15.06	---	---	503.90
C -18	3 Jan 90	518.96	---	14.07	---	---	504.89
			SOUTHFRONT ROAD WELLS				
C - 8	28 Mar 86	519.74	---	11.78	---	---	507.96
C - 8	15 Mar 88	519.74	---	13.63	---	---	506.11
C - 8	10 May 88	519.74	---	13.74	---	---	506.00
C - 8	10 Jun 88	519.74	---	14.89	---	---	504.85
C - 8	25 Jul 88	519.74	---	13.65	---	---	506.09
C - 8	13 Oct 88	519.74	---	13.78	---	---	505.96
C - 8	1 Jan 89	519.74	---	12.68	---	---	507.06
C - 8	10 Apr 89	519.74	---	13.77	---	---	505.97
C - 8	26 Jun 89	519.74	---	14.03	---	---	505.71
C - 8	12 Oct 89	519.74	---	14.06	---	---	505.68
C - 8	3 Jan 90	519.74	---	13.74	---	---	506.00
C - 9	28 Mar 86	519.52	---	11.24	---	---	508.28
C - 9	15 Mar 88	519.52	---	12.92	---	---	506.60
C - 9	10 May 88	519.52	---	13.12	---	---	506.40
C - 9	10 Jun 88	519.52	---	14.16	---	---	505.36
C - 9	25 Jul 88	519.52	---	13.00	---	---	506.52
C - 9	13 Oct 88	519.52	---	13.13	---	---	506.39
C - 9	1 Jan 89	519.52	---	12.19	---	---	507.33
C - 9	10 Apr 89	519.52	---	13.11	---	---	506.41
C - 9	26 Jun 89	519.52	---	13.40	---	---	506.12
C - 9	12 Oct 89	519.52	---	13.46	---	---	506.06
C - 9	3 Jan 90	519.52	---	13.20	---	---	506.32

TABLE 1. Liquid Level and Top-of-Casing Elevations
Chevron Service Station # 91924
4904 Southfront Road
Livermore, California

Monitor Well	Date	TOC	DTLH	DTW	LHT	Elev.-LH	Elev.-W
		<--------		feet			-------->
C -14	28 Mar 86	520.08	---	---	---	---	---
C -14	15 Mar 88	520.08	---	---	---	---	---
C -14	10 May 88	520.08	---	13.39	---	---	506.69
C -14	10 Jun 88	520.08	---	14.65	---	---	505.43
C -14	25 Jul 88	520.08	---	13.47	---	---	506.61
C -14	13 Oct 88	520.08	---	13.58	---	---	506.50
C -14	1 Jan 89	520.08	---	13.00	---	---	507.08
C -14	10 Apr 89	520.08	---	13.47	---	---	506.61
C -14	26 Jun 89	520.08	---	13.80	---	---	506.28
C -14	12 Oct 89	520.08	---	13.62	---	---	506.46
C -14	3 Jan 90	520.08	---	13.91	---	---	506.17
C -16	28 Mar 86	519.68	---	---	---	---	---
C -16	15 Mar 88	519.68	---	---	---	---	---
C -16	10 May 88	519.68	---	13.78	---	---	505.90
C -16	10 Jun 88	519.68	---	14.88	---	---	504.80
C -16	25 Jul 88	519.68	---	13.69	---	---	505.99
C -16	13 Oct 88	519.68	---	13.80	---	---	505.88
C -16	1 Jan 89	519.68	---	13.45	---	---	506.23
C -16	10 Apr 89	519.68	---	13.78	---	---	505.90
C -16	26 Jun 89	519.68	---	14.02	---	---	505.66
C -16	12 Oct 89	519.68	---	14.01	---	---	505.67
C -16	3 Jan 90	519.68	---	13.97	---	---	505.71
			MOBIL STATION WELLS				
C -10	28 Mar 86	520.41	---	Dry	---	---	---
C -10	15 Mar 88	520.41	---	14.86	---	---	505.55
C -10	10 May 88	520.41	---	14.90	---	---	505.51
C -10	10 Jun 88	520.41	---	15.94	---	---	504.47
C -10	25 Jul 88	520.41	---	14.85	---	---	505.56
C -10	13 Oct 88	520.41	---	14.90	---	---	505.51
C -10	1 Jan 89	520.41	---	14.83	---	---	505.58
C -10	10 Apr 89	520.41	---	14.90	---	---	505.51
C -10	26 Jun 89	520.41	---	15.12	---	---	505.29
C -10	12 Oct 89	520.41	---	15.11	---	---	505.30
C -10	3 Jan 90	520.41	---	15.01	---	---	505.40
C -11	28 Mar 86	520.04	---	13.82	---	---	506.22
C -11	15 Mar 88	520.04	---	14.49	---	---	505.55
C -11	10 May 88	520.04	---	14.31	---	---	505.73
C -11	10 Jun 88	520.04	---	15.47	---	---	504.57
C -11	25 Jul 88	520.04	---	13.60	---	---	506.44
C -11	13 Oct 88	520.04	---	14.53	---	---	505.51
C -11	1 Jan 89	520.04	---	14.10	---	---	505.94
C -11	10 Apr 89	520.04	---	14.36	---	---	505.68

TABLE 1. Liquid Level and Top-of-Casing Elevations
Chevron Service Station # 91924
4904 Southfront Road
Livermore, California

Monitor Well	Date	TOC	DTLH	DTW	LHT	Elev.-LH	Elev.-W
		<-------feet------->					
C -11	26 Jun 89	520.04	---	14.58	---	---	505.46
C -11	12 Oct 89	520.04	---	14.71	---	---	505.33
C -11	3 Jan 90	520.04	---	14.61	---	---	505.43
C -12	28 Mar 86	519.82	---	13.61	---	---	506.21
C -12	15 Mar 88	519.82	---	14.55	---	---	505.27
C -12	10 May 88	519.82	---	14.57	---	---	505.25
C -12	10 Jun 88	519.82	---	15.63	---	---	504.19
C -12	25 Jul 88	519.82	---	14.51	---	---	505.31
C -12	13 Oct 88	519.82	---	14.60	---	---	505.22
C -12	13 Jan 89	519.82	---	14.62	---	---	505.20
C -12	10 Apr 89	519.82	---	14.61	---	---	505.21
C -12	26 Jun 89	519.82	---	14.75	---	---	505.07
C -12	12 Oct 89	519.82	---	14.77	---	---	505.05
C -12	3 Jan 90	519.82	---	14.85	---	---	504.97
C -17	28 Mar 86	520.82	---	13.48	---	---	507.34
C -17	15 Mar 88	520.82	---	14.76	Trace	---	506.06
C -17	10 May 88	520.82	---	14.77	---	---	506.05
C -17	10 Jun 88	520.82	---	15.84	---	---	504.98
C -17	25 Jul 88	520.82	---	14.63	---	---	506.19
C -17	13 Oct 88	520.82	---	14.83	---	---	505.99
C -17	1 Jan 89	520.82	---	14.78	---	---	506.04
C -17	10 Apr 89	520.82	---	14.83	---	---	506.06
C -17	26 Jun 89	520.82	---	15.03	---	---	505.79
C -17	12 Oct 89	520.82	---	15.02	---	---	505.80
C -17	3 Jan 90	520.82	---	15.10	---	---	505.72
C -19	28 Mar 86	520.99	---	---	---	---	---
C -19	15 Mar 88	520.99	---	---	---	---	---
C -19	10 May 88	520.99	---	15.23	---	---	505.76
C -19	10 Jun 88	520.99	---	16.58	---	---	504.41
C -19	25 Jul 88	520.99	---	15.19	---	---	505.80
C -19	13 Oct 88	520.99	---	15.27	---	---	505.72

TABLE 1. Liquid Level and Top-of-Casing Elevations
Chevron Service Station # 91924
4904 Southfront Road
Livermore, California

Monitor Well	Date	TOC	DTLH	DTW	LHT	Elev.-LH	Elev.-W
		<--------		feet			-------->
C -19	1 Jan 89	520.99	---	15.20	---	---	505.79
C -19	10 Apr 89	520.99	---	15.24	---	---	505.75
C -19	26 Jun 89	520.99	---	15.44	---	---	505.55
C -19	12 Oct 89	520.99	---	15.47	---	---	505.52
C -19	3 Jan 90	520.99	---	15.45	---	---	505.54

Notes:
TOC = Top Of Casing Elevation
DTLH = Depth To Liquid Hydrocarbon
DTW = Depth To Water
LHT = Liquid Hydrocarbon Thickness
Elev.-LH = Elevation Of Liquid Hydrocarbon
Elev.-W = Elevation Of Water
RW = Recovery Well

TABLE 2. Analytic Results for Groundwater Samples
Chevron Service Station # 91924
4904 Southfront Road
Livermore, California

Well	Date	LAB	EPA Method	O & G ppm	FC	TFH	TPH	TPPH	Benzene	Toluene	E-Benzene	Xylenes	1,2-DCA	Other
						<--------			ppb					-------->
								Onsite Wells						
C - 1	15 Mar 88	GTEL	8015/8020	---	---	27000	---	---	770	87	610	2100	---	---
C - 1	13 Oct 88	BC	8015/8020	---	Gas	3200	---	---	220	11	62	130	---	---
C - 1	12 Jan 89	SAL	8015/8020	---	Gas	---	4000	---	820	43	490	260	---	---
C - 1	10 Apr 89	CCAS	524.2/8260	<3.0	Gas	---	---	4000	100	<5	70	50	<5	---
C - 1D	10 Apr 89	CCAS	524.2/8260	---	Gas	---	---	4000	100	<5	60	50	<5	---
C - 1	26 Jun 89	CCAS	8260	<3.0	Gas	---	---	600	97	20	60	50	3	---
C - 1D	26 Jun 89	CCAS	8260	---	Gas	---	---	570	86	15	44	35	1.7	---
C - 1	13 Oct 89	SAL	8015/8040	<5	Gas	---	1600	---	64	<5	51	48	<5	5
C - 1	03 Jan 90	SAL	8015/8020*	---	Gas	---	1100	---	36	0.68	30	30	1	---
C - 2	15 Mar 88	GTEL	8015/8020	---	---	22000	---	---	3900	1900	1200	1200	---	---
C - 2	13 Oct 88	BC	8015/8020	---	---	<1000.0	---	---	<0.5	<0.5	<0.5	<0.5	---	---
C - 2	12 Jan 89	SAL	8015/8020	---	---	---	1000	---	25	3	83	59	---	---
C - 2	10 Apr 89	CCAS	524.2/8260	<3.0	Gas	---	---	600	2.5	<0.2	15	12	<0.2	---
C - 2D	10 Apr 89	CCAS	524.2/8260	---	---	---	---	<10000	<10	<10	11	11	<10	---
C - 2	26 Jun 89	CCAS	8260	<3.0	Gas	---	---	640	5.3	8	18	14	<0.5	---
C - 2D	26 Jun 89	CCAS	8260	---	Gas	---	---	750	3.7	0.6	13	8.2	2	---
C - 2	13 Oct 89	SAL	8015/8040	<5	Gas	---	630	---	<5	<5	17	10	<5	---
C - 2	03 Jan 90	SAL	8015/8020*	---	Gas	---	880	---	3	<0.5	19	17	1	---
C - 3	15 Mar 88	GTEL	8015/8020	---	---	2100	---	---	86	8	30	36	---	---
C - 3	13 Oct 88	BC	8015/8020	---	---	<1000.0	---	---	<0.5	<0.5	<0.5	<0.5	---	---
C - 3	12 Jan 89	SAL	8015/8020	---	---	---	<1000.0	---	7	2	8	11	---	---
C - 3	10 Apr 89	CCAS	524.2/8260	<3.0	Gas	---	---	200	2.1	<0.2	4.4	2.6	1.4	---
C - 3	26 Jun 89	CCAS	8260	<3.0	Gas	---	---	260	1.1	0.7	4.9	1.6	1.5	---
C - 3	13 Oct 89	SAL	8015/8040	<5	---	---	<500	---	<5	<5	<5	<5	<5	---
C - 3	03 Jan 90	SAL	8015/8020*	---	---	---	<500	---	<0.5	<0.5	0.9	1.4	0.7	---
C - 5	15 Mar 88	GTEL	8015/8020	---	---	1600	---	---	82	7	77	95	---	---
C - 5	13 Oct 88	BC	8015/8020	---	Gas	2500	---	---	<0.5	<0.5	<0.5	<0.5	---	---

TABLE 2. Analytic Results for Groundwater Samples
Chevron Service Station # 91924
4904 Southfront Road
Livermore, California

Well	Date	LAB	EPA Method	O & G ppm	FC	TFH	TPH	TPPH	Benzene	Toluene	E-Benzene	Xylenes	1,2-DCA	Other
						<--------			ppb					-------->
C - 5	12 Jan 89	SAL	8015/8020	---	---	---	<1000.0	---	42	3	44	52	---	---
C - 5	10 Apr 89	CCAS	524.2/8260	<3.0	Gas	---	---	180	2.6	<0.2	6.2	5.5	1.4	---
C - 5	26 Jun 89	CCAS	8260	<3.0	Gas	---	---	420	7.6	0.8	40	56	1.5	---
C - 5	13 Oct 89	SAL	8015/8040	<5	Gas	---	620	---	<5	<5	10	<5	<5	---
C - 5	03 Jan 90	SAL	8015/8020*	---	---	---	<500	---	0.7	<0.5	8	6	<0.5	---
C - 6	15 Mar 88	GTEL	8015/8020	---	---	46000	---	---	870	4600	1500	8200	---	---
C - 6	10 May 88	GTEL	8015/8020	---	---	86000	---	---	1400	10000	3000	19000	---	---
C - 6	13 Oct 88	BC	8015/8020	---	Gas	5300	---	---	300	600	260	1600	---	---
C - 6	12 Jan 89	SAL	8015/8020	---	Gas	---	5000	---	260	110	270	720	---	---
C - 6	12 Apr 89	CCAS	524.2/8260	4.0	Gas	---	---	5000	90	190	190	680	<20	---
C - 6	26 Jun 89	CCAS	8260	<3.0	Gas	---	---	3600	77	250	140	610	<5.0	---
C - 6	13 Oct 89	SAL	8015/8040	<5	Gas	---	3500	---	32	81	100	530	<50	---
C - 6	03 Jan 90	SAL	8015/8020*	---	Gas	---	3200	---	20	97	65	410	1	---
C - 7	15 Mar 88	GTEL	8015/8020	---	---	8000	---	---	98	69	120	120	---	---
C - 7	13 Oct 88	BC	8015/8020	---	Gas	16000	---	---	4400	220	1000	3000	---	---
C - 7	12 Jan 89	SAL	8015/8020	---	Gas	---	8000	---	950	47	670	640	---	---
C - 7	12 Apr 89	CCAS	524.2/8260	<3.0	Gas	---	---	6000	1100	30	760	370	<20	---
C - 7	26 Jun 89	CCAS	8260	<3.0	Gas	---	---	6000	1300	50	600	340	<10	---
C - 7	13 Oct 89	SAL	8015/8040	<5	Gas	---	3900	---	1300	<50	160	150	<50	---
C - 7	03 Jan 90	SAL	8015/8020*	---	Gas	---	5600	---	1200	13	180	200	1	---
C -13	15 Mar 88	GTEL	8015/8020	---	---	250	---	---	2	<0.5	9	3	---	---
C -13	13 Oct 88	BC	8015/8020	---	---	<1000.0	---	---	1.9	<0.5	<0.5	<0.5	---	---
C -13	12 Jan 89	SAL	8015/8020	---	---	---	<1000	---	<0.3	0.6	4	<0.3	---	---
C -13	10 Apr 89	CCAS	524.2/8260	<3.0	---	---	---	<100	<0.2	<0.2	8	<0.4	<0.2	---
C -13	26 Jun 89	CCAS	8260	<3.0	---	---	---	<50	0.3	<2.0	<2.0	<2.0	<0.2	---
C -13	13 Oct 89	SAL	8015/8040	<5	---	---	<500	---	<5	<5	<5	<5	<5	---
C -13	03 Jan 90	SAL	8015/8020*	---	---	---	<500	---	<0.5	<0.5	0.5	0.6	<0.5	---

TABLE 2. Analytic Results for Groundwater Samples
Chevron Service Station # 91924
4904 Southfront Road
Livermore, California

Well	Date	LAB	EPA Method	O & G ppm	FC	TFH	TPH	TPPH	Benzene	Toluene	E-Benzene	Xylenes	1,2-DCA	Other
						<--------			ppb					-------->
C -15	15 Mar 88	GTEL	8015/8020	---	---	<1.0	---	---	<0.5	<0.5	<0.5	<0.5	---	---
C -15	13 Oct 88	BC	8015/8020	---	---	<1000.0	---	---	<0.5	<0.5	<0.5	<0.5	---	---
C -15	12 Jan 89	SAL	8015/8020	---	---	---	<1000	---	<0.3	<0.3	<0.3	<0.3	---	---
C -15	10 Apr 89	CCAS	524.2/8260	<3.0	---	---	---	<100	<0.2	<0.2	<0.2	<0.4	<0.2	---
C -15	26 Jun 89	CCAS	8260	<3.0	---	---	---	<50	<0.2	<2.0	<2.0	<2.0	<0.2	---
C -15	13 Oct 89	SAL	8015/8040	<5	---	---	<500	---	<5	<5	<5	<5	<5	---
C -15	03 Jan 90	SAL	8015/8020*	---	---	---	<500	---	<0.5	<0.5	<0.5	<0.5	<0.5	---
									Southfront Road Wells					
C - 8	15 Mar 88	GTEL	8015/8020	---	---	7500	---	---	360	25	10	<0.5	---	---
C - 8	13 Oct 88	BC	8015/8020	---	---	<1000.0	---	---	6	5.3	<0.5	<0.5	---	---
C - 8	12 Jan 89	SAL	8015/8020	---	---	---	<1000	---	37	4	1	5	---	---
C - 8	12 Apr 89	CCAS	524.2/8260	12.0	Gas	---	---	3000	13	<5	<5	<5	5	---
C - 8	26 Jun 89	CCAS	8260	<3.0	Gas	---	---	780	14	6	<2.0	6	4	---
C - 8	13 Oct 89	SAL	8015/8040	<5	---	---	<500	---	<5	<5	<5	<5	<5	---
C - 8	03 Jan 90	SAL	8015/8020*	---	Gas	---	910	---	<0.5	<0.5	1	1	1.5	---
C - 9	15 Mar 88	GTEL	8015/8020	---	---	29000	---	---	540	560	580	3900	---	---
C - 9	13 Oct 88	BC	8015/8020	---	Gas	2200	---	---	57	8	20	150	---	---
C - 9	12 Jan 89	SAL	8015/8020	---	Gas	---	2000	---	39	12	51	46	---	---
C - 9	11 Apr 89	CCAS	524.2/8260	<3.0	Gas	---	---	6000	16	20	55	240	2.1	---
C - 9D	11 Apr 89	CCAS	524.2/8260	---	Gas	---	---	6000	14	25	45	290	<5.0	---
C - 9	26 Jun 89	CCAS	8260	<3.0	Gas	---	---	9300	37	63	140	690	<5.0	---
C - 9	13 Oct 89	SAL	8015/8040	<5	Gas	---	1300	---	7	<5	26	50	<5	---
C - 9	03 Jan 90	SAL	8015/8020*	---	Gas	---	1500	---	<0.5	0.7	2.2	37	1.5	---
C -14	10 May 88	GTEL	8015/8020	---	---	120000	---	---	13000	29000	2700	18	---	---
C -14	13 Oct 88	---	---	---	---	NS	NS	---	NS	NS	NS	NS	---	---
C -14	12 Jan 89	---	---	---	---	NS	NS	---	NS	NS	NS	NS	---	---
C -14	12 Apr 89	---	---	NS	---	NS	NS	---	NS	NS	NS	NS	NS	---
C -14	26 Jun 89	CCAS	8260	---	Gas	---	---	140000	14000	25000	3400	26000	30	---

TABLE 2. Analytic Results for Groundwater Samples
Chevron Service Station # 91924
4904 Southfront Road
Livermore, California

Well	Date	LAB	EPA Method	O & G ppm	FC	TFH	TPH	TPPH	Benzene	Toluene	E-Benzene	Xylenes	1,2-DCA	Other
						<--------			ppb					-------->
C -14G	13 Oct 89	SAL	8015/8040	---	Gas	---	86000	---	12000	16000	1600	13000	<250	<250
C -14	03 Jan 90	SAL	8015/8020*	---	Gas	---	120000	---	9500	16000	1800	13000	25	3
C -14G	04 Jan 90	SAL	8015/8020*	---	Gas	---	76000	---	3900	8100	1200	7700	18	1
C -16	10 May 88	GTEL	8015/8020	---	---	4500	---	---	1000	73	140	180	---	---
C -16	13 Oct 88	BC	8015/8020	---	Gas	1600	---	---	16	5.5	<1.0	16	---	---
C -16	12 Jan 89	SAL	8015/8020	---	Gas	---	1000	---	360	11	78	51	---	---
C -16	11 Apr 89	CCAS	524.2/8260	<3.0	Gas	---	---	1500	130	4	21	19	8	---
C -16	26 Jun 89	CCAS	8260	<3.0	Gas	---	---	1300	170	8	37	43	<1.0	---
C -16	13 Oct 89	SAL	8015/8040	<5	Gas	---	1000	---	20	<5	7	<5	<5	---
C -16	03 Jan 90	SAL	8015/8020*	---	Gas	---	1300	---	150	3	41	24	5	---
								First Street Wells						
C -18	13 Oct 88	BC	8015/8020	---	---	<1000.0	---	---	<0.5	<0.5	<0.5	<0.5	---	---
C -18	12 Jan 89	SAL	8015/8020	---	---	---	<1000.0	---	<0.3	<0.3	<0.3	<0.3	---	---
C -18	11 Apr 89	CCAS	524.2/8260	<3.0	---	---	---	<200	<0.2	<0.2	<0.2	<0.4	3.6	---
C -18	26 Jun 89	CCAS	8260	<3.0	---	---	---	<50	<0.2	<2.0	<2.0	<2.0	3.1	---
C -18	13 Oct 89	SAL	8015/8040	<5	---	---	<500	---	<5	<5	<5	<5	<5	---
C -18	03 Jan 90	SAL	8015/8020*	---	---	---	<500	---	<0.5	<0.5	<0.5	<0.5	1	---
								Mobil Station Wells						
C -10	15 Mar 88	GTEL	8015/8020	---	---	90	---	---	7	<0.5	<0.5	<0.5	---	---
C -10	13 Oct 88	BC	8015/8020	---	---	<1000.0	---	---	<0.5	<0.5	<0.5	<0.5	---	---
C -10	12 Jan 89	SAL	8015/8020	---	---	---	<1000	---	<0.3	<0.3	<0.3	<0.3	---	---
C -10	11 Apr 89	CCAS	524.2/8260	<3.0	---	---	---	<300	4.8	<0.5	<0.5	<1	6.1	---
C -10	26 Jun 89	CCAS	8260	4.0	---	---	---	<100	0.7	<0.5	<0.5	1.5	<0.5	---
C -10	13 Oct 89	SAL	8015/8040	<5	---	---	<500	---	<5	<5	<5	<5	<5	---
C -10	03 Jan 90	SAL	8015/8020*	---	---	---	<500	---	<0.5	<0.5	<0.5	<0.5	3	---
C -11	14 Oct 88	BC	8015/8020	---	Gas	1.9	---	---	240	33	4.7	67	---	---
C -11	12 Jan 89	SAL	8015/8020	---	---	---	<1000.0	---	<0.3	0.8	<0.3	<0.3	---	---

TABLE 2. Analytic Results for Groundwater Samples
Chevron Service Station # 91924
4904 Southfront Road
Livermore, California

Well	Date	LAB	EPA Method	O & G	FC	TFH	TPH	TPPH	Benzene	Toluene	E-Benzene	Xylenes	1,2-DCA	Other
				ppm		ppb								
C -11	12 Apr 89	CCAS	524.2/8260	<3.0	---	---	---	<50	4.3	<1	<1	<1	<1	---
C -11	26 Jun 89	CCAS	8260	4.0	---	---	---	<50	2	<2.0	<2.0	<2.0	<0.2	---
C -11	13 Oct 89	SAL	8015/8040	<5	---	---	<500	---	<5	<5	<5	<5	<5	---
C -11	03 Jan 90	SAL	8015/8020*	---	---	---	<500	---	<0.5	<0.5	<0.5	0.7	<0.5	---
C -12	15 Mar 88	GTEL	8015/8020	---	---	<1.0	---	---	<0.5	<0.5	<0.5	<0.5	---	---
C -12	13 Oct 88	BC	8015/8020	---	---	<1000.0	---	---	<0.5	<0.5	<0.5	<0.5	---	---
C -12	12 Jan 89	SAL	8015/8020	---	---	---	<1000.0	---	<0.3	<0.3	<0.3	<0.3	---	---
C -12	11 Apr 89	CCAS	524.2/8260	<3.0	---	---	---	<100	<0.2	<0.2	<0.2	<0.4	<0.2	---
C -12	26 Jun 89	CCAS	8260	<3.0	---	---	---	<50	<0.2	<2.0	<2.0	<2.0	<0.2	---
C -12	13 Oct 89	SAL	8015/8040	<5	---	---	<500	---	<5	<5	<5	<5	<5	---
C -12	03 Jan 90	SAL	8015/8020*	---	---	---	<500	---	<0.5	<0.5	<0.5	0.6	<0.5	---
C -17	13 Oct 88	BC	8015/8020	---	Gas	270,000	---	---	18	900	760	5500	---	---
C -17	12 Jan 89	SAL	8015/8020	---	Gas	---	190,000	---	<15	490	2100	6700	---	---
C -17	11 Apr 89	CCAS	524.2/8260	6.0	Gas	---	---	27,000	30	150	320	1000	<10	---
C -17	26 Jun 89	CCAS	8260	<3.0	Gas	---	---	20,000	50	390	660	2000	<10	---
C -17D	26 Jun 89	CCAS	8260	---	Gas	---	---	27,000	40	420	740	2200	<10	---
C -17	13 Oct 89	SAL	8015/8040	<5	Gas	---	17000	---	<25	48	230	480	<25	---
C -17	03 Jan 90	SAL	8015/8020*	---	Gas	---	14000	---	<0.3	29	120	210	<0.5	---
C -19	10 May 88	GTEL	8015/8020	---	---	18	---	---	1400	360	350	1300	---	---
C -19	13 Oct 88	BC	8015/8020	---	---	<1000.0	---	---	8.3	4.7	4.4	<0.5	---	---
C -19	12 Jan 89	SAL	8015/8020	---	---	---	<1000	---	5	4	<0.3	<0.3	---	---
C -19	11 Apr 89	CCAS	524.2/8260	<3.0	---	---	---	<1000	1.8	<2	<2	<4	13	---
C -19D	11 Apr 89	CCAS	524.2/8260	---	Gas	---	---	500	1.2	<0.2	0.6	0.6	14	---
C -19	26 Jun 89	CCAS	8260	<3.0	Gas	---	---	500	2.5	<5.0	<5.0	<5.0	26	---
C -19	13 Oct 89	SAL	8015/8040	<5	Gas	---	540	---	<5	<5	<5	<5	13	13
C -19	03 Jan 90	SAL	8015/8020*	---	---	---	<500	---	1.2	0.7	1.3	0.9	11	---
TB	12 Jan 89	SAL	8015/8020	---	---	---	---	---	<0.3	<0.3	<0.3	<0.3	---	---

TABLE 2. Analytic Results for Groundwater Samples
Chevron Service Station # 91924
4904 Southfront Road
Livermore, California

Well	Date	LAB	EPA Method	O & G ppm	FC	TFH	TPH	TPPH	Benzene	Toluene	E-Benzene	Xylenes	1,2-DCA	Other
						<--------			ppb					-------->
TB	12 Apr 89	CCAS	524.2/8260	---	---	---	---	<50	<0.5	<1.0	<1.0	<1.0	<1.0	---
TB	26 Jun 89	CCAS	8260	---	---	---	---	<50	<0.1	<1.0	<1.0	<1.0	<0.1	---
TB	13 Oct 89	SAL	8015/8040	---	---	---	<500	---	<5	<5	<5	<5	<5	---
TB	03 Jan 90	SAL	8015/8020*	---	---	---	<500	---	<0.5	0.5	<0.5	0.7	<0.5	---

Notes:
FC = Fuel characterization
E-Benzene = Ethylbenzene
TFH = Total Fuel Hydrocarbons
TPH = Total Petroleum Hydrocarbons
TPPH = Total Purgeable Petroleum Hydrocarbons
1,2 DCA = 1,2-Dichloroethane
O&G = Oil and Grease by California Standard Method 503E
ppb = Parts per billion
ppm = Parts-per-million
NS = Not sampled because of poor recovery
TB = Travel Blank
D = Duplicate Analysis

GTEL = GTEL Environmental Laboratories
BC = Brown and Caldwell Laboratories
SAL = Superior Analytical Laboratories
CCAS = Central Coast Analytical Services

1 = Carbon Disulfide
2 = Acetone
3 = Vinyl Chloride

D = Duplicate Analysis
G = Grab Sample
* = Halogenated Volatile Organics Analyzed by EPA Method 8010

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 from each well. This sample is put on hold at the laboratory. 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.

LIQUID-LEVEL DATA SHEET

Job Livermore Date 1-3-90
Job # 1-024.01 Initials RS/BA

WELL	HISTORIC DATA/ DATE: DTW	DTLH	LHT	CURRENT DATA DTW	DTLH	LHT	METHOD WLP, PB or IP*	TIME	COMMENTS
C-1				13.80				8:59	
C-2				14.11				8:56	
C-3				14.42				8:55	
C-5				14.10				9:01	
C-6				13.15				9:04	
C-7				12.71				8:54	
C-8				13.74				9:09	
C-9				13.20				9:07	
C-10				15.01				9:15	
C-11				14.61				9:16	

* WLP = Water-Level Probe
PB = Product Bailer
IP = Interface Probe

LIQUID-LEVEL DATA SHEET

Job Livermore Date 1-3-90
Job # 1-0244.01 Initials 125 BB

WELL	HISTORIC DATA/ DATE: DTW	DTLH	LHT	CURRENT DATA DTW	DTLH	LHT	METHOD WLP, PB or IP*	TIME	COMMENTS
C-12				14.85				9:14	
C-13				15.15				9:02	
C-14				13.91				9:05	
C-15				15.42				8:53	
C-16				13.92				9:10	
C-17				15.10				9:18	
C-18				14.07				9:24	
C-19				15.45				9:22	

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* WLP = Water-Level Probe
PB = Product Bailer
IP = Interface Probe

WGR

WATER SAMPLING DATA Well Name C-1 Date 1.3.90 Time 1230
Job Name Livermore Job Number 1-024.01 Initials BB
WELL DATA: Well type M (M=monitoring well; Describe _____)
Depth to Water 13.8 ft.
Well Depth 18.8 ft. (spec.) Sounded Depth - ft.
Well Diameter 3 in. Date _____ Time -

EVACUATION: Sampling Equipment:
PVC Bailer: ¾ - in. - Dedicated: Bladder Pump X ;Bailer -
Sampling Port:Number _____ Rate - gpm. Volume _____ gal.
Other -
Initial Height of Water in Casing 5.0 ft; Volume 1.84 gal.
Volume To Be Evacuated = 5.51 gal. (initial volume x3 x, x4 _____)

	Evacuated	Evacuated	Evacuated
Time: Stop	1247		
Start	1238		
Total minutes	9		
Amount Evacuated			
Total Evacuated	6.0 gal.		
Evacuation Rate	0.67 gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
2" casing = 0.163 gal/ft
3" casing = 0.367 gal/ft
4" casing = 0.653 gal/ft
4.5" casing = 0.826 gal/ft
6" casing = 1.47 gal/ft
8" casing = 2.61 gal/ft

Depth to water during pumping 14.65 ft. 1242 time
Pumped dry? NO After - gal. Recovery rate -
Depth to water for 80% recovery _____ ft.

CHEMICAL DATA: Temp. Probe # ___ Ph Probe # ___ Cond. Probe # ___

Time		°C	umhos
	1		
	2		
	3		
	4		

SAMPLING: Point of collection: PE Hose X ; End of bailer - ; Other -
Samples taken 1248 time Depth to water 14.75 ft. Refrigerated: X
Sample description: Water color CLEAR Odor SLIGHT
Sediment/Foreign matter none

Sample ID no.		Container VOA / other	Preservative $NaHSO_4$/Azide/other	Analysis	Lab
01040-01A	40 ml		none	601	Superior
B	ml		↓	↓	
C	ml		HCl	602/8015	
D	ml		↓	↓	
	ml				
	ml				
	ml				
	ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: _____

WGR

WATER SAMPLING DATA Well Name C-2 Date 1-3-90 Time 1110
Job Name LIVERMORE Job Number 1-024.01 Initials BB
WELL DATA: Well type M (M=monitoring well; Describe —)
Depth to Water 14.11 ft.
Well Depth 23.9 ft. (spec.) Sounded Depth — ft.
Well Diameter 3 in. Date — Time —

EVACUATION: Sampling Equipment:
PVC Bailer: — in. Dedicated: Bladder Pump ^ ;Bailer —
Sampling Port:Number — Rate — gpm. Volume — gal.
Other —
Initial Height of Water in Casing 9.79 ft; Volume 3.59 gal.
Volume To Be Evacuated = 10.8 gal. (initial volume x3 x , x4)

	Evacuated	Evacuated	Evacuated
Time: Stop	1128		
Start	1113		
Total minutes	15		
Amount Evacuated			
Total Evacuated	11.0 gal.		
Evacuation Rate	0.73 gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
¾" casing = 0.163 gal/ft
2" casing = 0.367 gal/ft
4" casing = 0.653 gal/ft
5.9" casing = 0.826 gal/ft
6" casing = 1.47 gal/ft
8" casing = 2.61 gal/ft

Depth to water during pumping 14.99 ft. 1119 time
Pumped dry? NO After — gal. Recovery rate —
Depth to water for 80% recovery — ft.

CHEMICAL DATA: Temp. Probe # — Ph Probe # — Cond. Probe # —

Time		°C		umhos
	1			
	2			
	3			
	4			

SAMPLING: Point of collection: PE Hose ^ ; End of bailer — ; Other —
Samples taken 1129 time Depth to water 14.90 ft. Refrigerated: ^
Sample description: Water color CLEAR Odor NONE
Sediment/Foreign matter NONE

Sample ID no.			Container (VOA / other)	Preservative $NaHSO_4$/Azide/other	Analysis	Lab
01040-02A	40	ml		none	601	SUPERIOR
B	40	ml		↓	↓	↓
C	40	ml		HCl	602-18015	
D	40	ml		↓	↓	
		ml				
		ml				
		ml				
		ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: —

WGR

WATER SAMPLING DATA Well Name C-3 Date 1.30.90 Time 1200
Job Name Livermore Job Number 1-024.01 Initials BJB
WELL DATA: Well type M (M=monitoring well; Describe -)
Depth to Water 14.42 ft.
Well Depth 17.8 ft. (spec.) Sounded Depth - ft.
Well Diameter 3 in. Date - Time -

EVACUATION: Sampling Equipment:
PVC Bailer: - in. Dedicated: Bladder Pump ^ ;Bailer -
Sampling Port:Number - Rate - gpm. Volume - gal.
Other -
Initial Height of Water in Casing 3.38 ft; Volume 1.21 gal.
Volume To Be Evacuated = 3.72 gal. (initial volume x3 X, x4)

	Evacuated	Evacuated	Evacuated
Time: Stop	1209		
Start	1203		
Total minutes	6		
Amount Evacuated			
Total Evacuated	4.0 gal.		
Evacuation Rate	0.67 gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
2" casing = 0.163 gal/ft
3" casing = 0.367 gal/ft
4" casing = 0.653 gal/ft
4.5" casing = 0.826 gal/ft
6" casing = 1.47 gal/ft
8" casing = 2.61 gal/ft

Depth to water during pumping 15.89 ft. 1207 time
Pumped dry? NO After - gal. Recovery rate -
Depth to water for 80% recovery - ft.

CHEMICAL DATA: Temp. Probe # ___ Ph Probe # ___ Cond.Probe # ___

Time		°C		umhos
	1			
	2			
	3			
	4			

SAMPLING: Point of collection: PE Hose ^ ; End of bailer - ; Other -
Samples taken 1209 time Depth to water 15.44 ft. Refrigerated: X
Sample description: Water color CLEAR Odor none
Sediment/Foreign matter none

Sample ID no.		Container (VOA / other)	Preservative NaHSO₄/Azide/other	Analysis	Lab
G10/0-03A	40 ml		None	601	Superior
B	ml		↓	↓	
C	ml		HCl	602/8015	
D	ml		↓	↓	
	ml				
	ml				
	ml				
	ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: -

WGR

WATER SAMPLING DATA Well Name C-5 Date 1-3-90 Time 1255 ~~1300~~
Job Name Livermore Job Number 1-024.01 Initials BM
WELL DATA: Well type M (M=monitoring well; Describe ____)
Depth to Water 14.10 ft.
Well Depth 18.3 ft. (spec.) Sounded Depth — ft.
Well Diameter 3 in. Date — Time —

EVACUATION: Sampling Equipment:
PVC Bailer: ____ in. Dedicated: Bladder Pump ^ ;Bailer —
Sampling Port:Number ____ Rate — gpm. Volume ____ gal.
Other ____
Initial Height of Water in Casing 4.2 ft; Volume 1.54 gal.
Volume To Be Evacuated = 4.6 gal. (initial volume x3 x, x4 ____)

	Evacuated	Evacuated	Evacuated
Time: Stop	1303		
Start	1257		
Total minutes	6.0		
Amount Evacuated			
Total Evacuated	5.0 gal.		
Evacuation Rate	.083 gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
V_2" casing = 0.163 gal/ft
V_3" casing = 0.367 gal/ft
V_4" casing = 0.653 gal/ft
$V_{4.5}$" casing = 0.826 gal/ft
V_5" casing = 1.47 gal/ft
V_6" casing = 2.61 gal/ft

Depth to water during pumping 16.75 ft. 1300 time
Pumped dry? No After — gal. Recovery rate —
Depth to water for 80% recovery — ft.

CHEMICAL DATA: Temp. Probe # ___ Ph Probe # ___ Cond. Probe # ___

Time		°C	umhos
	1		
	2		
	3		
	4		

SAMPLING: Point of collection: PE Hose ^; End of bailer —; Other —
Samples taken 1304 time Depth to water 17.50 ft. Refrigerated: x
Sample description: Water color clear Odor none
Sediment/Foreign matter fine brown sediment

Sample ID no.		Container (VOA / other)	Preservative NaHSO₄/Azide/other	Analysis	Lab
010416-05A	40 ml		none	601	Superior
B	ml		↓	↓	
C	ml		HCl	602/8015	
D	ml		↓	↓	
	ml				
	ml				
	ml				
	ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: ____

WGR

WATER SAMPLING DATA Well Name C-6 Date 1-3-90 Time 10:55
Job Name Livermore Job Number 1-024.01 Initials BB
WELL DATA: Well type M (M=monitoring well; Describe _____)
Depth to Water ~~13.18~~ 13.18 ft.
Well Depth 21.6 ft. (spec.) Sounded Depth _____ ft.
Well Diameter 3 in. Date _____ Time _____

EVACUATION: Sampling Equipment:
PVC Bailer: _____ in. Dedicated: Bladder Pump ^ ;Bailer _____
Sampling Port:Number _____ Rate _____ gpm. Volume _____ gal.
Other _____
Initial Height of Water in Casing 6.42 ft; Volume 2.36 gal.
Volume To Be Evacuated = 7.10 gal. (initial volume x3 ^, x4 _____)

	Evacuated	Evacuated	Evacuated
Time: Stop	1107		
Start	1058		
Total minutes	9		
Amount Evacuated			
Total Evacuated	7.5 gal.		
Evacuation Rate	0.83 gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
2" casing = 0.163 gal/ft
3" casing = 0.367 gal/ft
4" casing = 0.653 gal/ft
4.5" casing = 0.826 gal/ft
6" casing = 1.47 gal/ft
8" casing = 2.61 gal/ft

Depth to water during pumping 13.82 ft. 11:03 time
Pumped dry? No After ~ gal. Recovery rate _____
Depth to water for 80% recovery _____ ft.

CHEMICAL DATA: Temp. Probe # ____ Ph Probe # ____ Cond. Probe # ____

Time		°C	umhos
	1		
	2		
	3		
	4		

SAMPLING: Point of collection: PE Hose ^ ; End of bailer ~ ; Other ~
Samples taken 11:08 time Depth to water 13.67 ft. Refrigerated: ^
Sample description: Water color CLEAR Odor STRONG
Sediment/Foreign matter NONE

Sample ID no.	Container VOA / other	Preservative NaHSO₄/Azide/other	Analysis	Lab
010490-06A 40 ml		none	601	Superior
B ml		↓	↓	
C ml		HCl	8015/602	
D ml		↓	↓	
ml				
ml				
ml				
ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: _____

WGR

WATER SAMPLING DATA Well Name C-7 Date 1-3-90 Time 1130
Job Name Livermore Job Number 1-024.01 Initials BB
WELL DATA: Well type M (M=monitoring well; Describe -)
Depth to Water 13.71 ft.
Well Depth 21.62 ft. (spec.) Sounded Depth - ft.
Well Diameter 3 in. Date - Time -

EVACUATION: Sampling Equipment:
PVC Bailer: - in. Dedicated: Bladder Pump ^ ;Bailer -
Sampling Port:Number - Rate - gpm. Volume - gal.
Other
Initial Height of Water in Casing 7.49 ft; Volume 2.75 gal.
Volume To Be Evacuated = 8.3 gal. (initial volume x3 ^, x4)

	Evacuated	Evacuated	Evacuated
Time: Stop	1144		
Start	1132		
Total minutes	12		
Amount Evacuated			
Total Evacuated	8.5 gal.		
Evacuation Rate	0.71 gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
1½" casing = 0.163 gal/ft
2½" casing = 0.367 gal/ft
4" casing = 0.653 gal/ft
4½" casing = 0.826 gal/ft
6" casing = 1.47 gal/ft
8" casing = 2.61 gal/ft

Depth to water during pumping 14.19 ft. 11:38 time
Pumped dry? NO After - gal. Recovery rate -
Depth to water for 80% recovery - ft.

CHEMICAL DATA: Temp. Probe # Ph Probe # Cond.Probe #

Time		°C	umhos
	1		
	2		
	3		
	4		

SAMPLING: Point of collection: PE Hose ^; End of bailer -; Other -
Samples taken 1145 time Depth to water 14.04 ft. Refrigerated: x
Sample description: Water color CLEAR Odor STRONG
Sediment/Foreign matter none

Sample ID no.		Container VOA / other	Preservative $NaHSO_4$/Azide/other	Analysis	Lab
01040-07A	40 ml		none	601	SUPERIOR
B	ml		↓	↓	
C	ml		HCl	602/P015	
E	ml		↓	↓	
	ml				
	ml				
	ml				
	ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS:

WGR

WATER SAMPLING DATA Well Name C-8 Date 1.30.90 Time 1030
Job Name Livermore Job Number 1-024.01 Initials BB
WELL DATA: Well type M (M=monitoring well; Describe _____)
Depth to Water 13.74 ft.
Well Depth 22.1 ft. (spec.) Sounded Depth _____ ft.
Well Diameter 3 in. Date _____ Time _____

EVACUATION: Sampling Equipment:
PVC Bailer: _____ in. Dedicated: Bladder Pump X ; Bailer _____
Sampling Port: Number _____ Rate _____ gpm. Volume _____ gal.
Other _____
Initial Height of Water in Casing 8.36 ft; Volume 3.07 gal.
Volume To Be Evacuated = 9.21 gal. (initial volume x3 X, x4 _____)

	Evacuated	Evacuated	Evacuated
Time: Stop	10:47		
Start	1035		
Total minutes	12		
Amount Evacuated			
Total Evacuated	9.5 gal.		
Evacuation Rate	0.79 gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
V_2" casing = 0.163 gal/ft
V_3" casing = 0.367 gal/ft
V_4" casing = 0.653 gal/ft
$V_{4.5}$" casing = 0.826 gal/ft
V_6" casing = 1.47 gal/ft
V_8" casing = 2.61 gal/ft

Depth to water during pumping 15.39 ft. 10:47 time
Pumped dry? NO After _____ gal. Recovery rate _____
Depth to water for 80% recovery _____ ft.

CHEMICAL DATA: Temp. Probe # ____ Ph Probe # ____ Cond. Probe # ____

Time		°C		umhos
	1			
	2			
	3			
	4			

SAMPLING: Point of collection: PE Hose X ; End of bailer _____ ; Other _____
Samples taken 10:48 time Depth to water 15.10 ft. Refrigerated: X
Sample description: Water color CLEAR Odor STRONG
Sediment/Foreign matter none

Sample ID no.			Container VOA / other	Preservative $NaHSO_4$/Azide/other	Analysis	Lab
01040-08A	40	ml		none	601	Superior
B		ml		↓	↓	↓
C	↓	ml		HCl	602 / 8015	
D		ml		↓	↓	
		ml				
		ml				
		ml				
		ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: _____

WGR

WATER SAMPLING DATA Well Name C-9 Date 1·3·90 Time 10:00
Job Name Livermore Job Number 1-024.01 Initials BB
WELL DATA: Well type M (M=monitoring well; Describe —)
Depth to Water 13.20 ft.
Well Depth 22.2 ft. (spec.) Sounded Depth — ft.
Well Diameter 3 in. Date — Time —

EVACUATION: Sampling Equipment:
PVC Bailer: — in. Dedicated: Bladder Pump ^ ; Bailer —
Sampling Port: Number — Rate — gpm. Volume — gal.
Other —
Initial Height of Water in Casing 9.0 ft; Volume 3.30 gal.
Volume To Be Evacuated = 9.91 gal. (initial volume x3 ^, x4 —)

	Evacuated	Evacuated	Evacuated
Time: Stop	1025		
Start	1009		
Total minutes	16		
Amount Evacuated			
Total Evacuated	10.5 gal.		
Evacuation Rate	0.66 gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
¾" casing = 0.163 gal/ft
2" casing = 0.367 gal/ft
4" casing = 0.653 gal/ft
4.5" casing = 0.826 gal/ft
6" casing = 1.47 gal/ft
8" casing = 2.61 gal/ft

Depth to water during pumping 14.00 ft. 10:17 time
Pumped dry? NO After — gal. Recovery rate —
Depth to water for 80% recovery — ft.

CHEMICAL DATA: Temp. Probe # — Ph Probe # — Cond. Probe # —

Time		°C	umhos
	1		
	2		
	3		
	4		

SAMPLING: Point of collection: PE Hose ^ ; End of bailer — ; Other —
Samples taken 10:28 time Depth to water 13.57 ft. Refrigerated: ^
Sample description: Water color GREY Odor STRONG
Sediment/Foreign matter none

Sample ID no.		Container VOA / other	Preservative $NaHSO_4$/Azide/other	Analysis	Lab
D1040-09A	40 ml		none	601	Superior
B	ml		↓	↓	
C	ml		HCl	8015/602	
D	ml		↓	↓	
	ml				
	ml				
	ml				
	ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: —

WGR

WATER SAMPLING DATA Well Name C-10 Date 1.3.94 (90) Time 10:21
Job Name Livermore Job Number 1-024.01 Initials PS
WELL DATA: Well type M (M=monitoring well; Describe -)
Depth to Water 15.01 ft.
Well Depth 33.3 ft. (spec.) Sounded Depth - ft.
Well Diameter 3 in. Date - Time -

EVACUATION: Sampling Equipment:
PVC Bailer: - in. Dedicated: Bladder Pump ✓ ;Bailer -
Sampling Port:Number - Rate - gpm. Volume - gal.
Other
Initial Height of Water in Casing 18.29 ft; Volume 6.77 gal.
Volume To Be Evacuated = 20.3 gal. (initial volume x3 ✓, x4)

	Evacuated	Evacuated	Evacuated
Time: Stop	10:59		
Start	10:29		
Total minutes	30		
Amount Evacuated	20.5		
Total Evacuated	gal.		
Evacuation Rate	0.68 gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
2" casing = 0.163 gal/ft
3" casing = 0.367 gal/ft
4" casing = 0.653 gal/ft
5" casing = 0.826 gal/ft
6" casing = 1.47 gal/ft
8" casing = 2.61 gal/ft

Depth to water during pumping 15.96 ft. 10:41 time
Pumped dry? NO After - gal. Recovery rate -
Depth to water for 80% recovery - ft.

CHEMICAL DATA: Temp. Probe # - Ph Probe # - Cond. Probe # -

Time		°C	umhos
-	1 -	-	-
-	2 -	-	-
-	3 -	-	-
-	4 -	-	-

SAMPLING: Point of collection: PE Hose ✓; End of bailer -; Other -
Samples taken 11:05 time Depth to water 16.20 ft. Refrigerated: ✓
Sample description: Water color Cloudy tan Odor -
Sediment/Foreign matter some fine silt

Sample ID no.			Container VOA / other	Preservative NaHSO₄/Azide/other	Analysis	Lab
010410-10A	40	ml		none	601	Superior
B		ml		↓	↓	
C		ml		HCl	602 8015	
D	↓	ml	↓	↓	↓	↓
-	-	ml	-	-	-	-
-	-	ml	-	-	-	-
-	-	ml	-	-	-	-
-	-	ml	-	-	-	-

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: -

WGR

WATER SAMPLING DATA Well Name C-11 Date 1-30-90 Time 9:52
Job Name Livermore Job Number 1-024.01 Initials RS
WELL DATA: Well type M (M=monitoring well; Describe –)
Depth to Water 14.61 ft.
Well Depth 15.4 ft. (spec.) Sounded Depth – ft.
Well Diameter 2 in. Date – Time –

EVACUATION: Sampling Equipment:
PVC Bailer: _____ in. Dedicated: Bladder Pump – ;Bailer ✓
Sampling Port:Number – Rate – gpm. Volume – gal.
Other
Initial Height of Water in Casing 0.79 ft; Volume 0.39 gal.
Volume To Be Evacuated = 0.9 gal. (initial volume x3 X, x4 _____)

	Evacuated	Evacuated	Evacuated
Time: Stop	10:00		
Start	9:57		
Total minutes	3		
Amount Evacuated	1.0		
Total Evacuated		gal.	
Evacuation Rate	0.33	gpm.	

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
V_2" casing = 0.163 gal/ft
V_3" casing = 0.367 gal/ft
V_4" casing = 0.653 gal/ft
$V_{4.5}$" casing = 0.826 gal/ft
V_6" casing = 1.47 gal/ft
V_8" casing = 2.61 gal/ft

Depth to water during pumping – ft. – time
Pumped dry? NO After _____ gal. Recovery rate _____
Depth to water for 80% recovery _____ ft.

CHEMICAL DATA: Temp. Probe # ___ Ph Probe # ___ Cond. Probe # ___

Time		°C		umhos
	1			
	2			
	3			
	4			

SAMPLING: Point of collection: PE Hose –; End of bailer X; Other –
Samples taken 10:13 time Depth to water 12.05 ft. Refrigerated: Y
Sample description: Water color Lt. brown Odor – none
Sediment/Foreign matter some silt/sand

Sample ID no.			Container VOA / other	Preservative $NaHSO_4$/Azide/other	Analysis	Lab
01040-11 A	40	ml		none	601	Superior
B		ml		↓	↓	↓
C	↓	ml		HCl	602 8015	
D	↓	ml	↓	↓	↓	
		ml				
		ml				
		ml				
		ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: _____

WGR

WATER SAMPLING DATA Well Name C-12 Date 1.3.89 (90) Time 11:20
Job Name Livermore Job Number 1-024.01 Initials RS
WELL DATA: Well type M (M=monitoring well; Describe –)
Depth to Water 14.85 ft.
Well Depth 18.0 ft. (spec.) Sounded Depth – ft.
Well Diameter 3 in. Date – Time –

EVACUATION: Sampling Equipment:
PVC Bailer: – in. Dedicated: Bladder Pump ^ ; Bailer –
Sampling Port: Number – Rate – gpm. Volume – gal.
Other –
Initial Height of Water in Casing 3.15 ft; Volume 1.16 gal.
Volume To Be Evacuated = 3.47 gal. (initial volume x3 ^, x4)

	Evacuated	Evacuated	Evacuated
Time: Stop	11:28		
Start	11:21		
Total minutes	7		
Amount Evacuated			

Total Evacuated 3.5 gal.
Evacuation Rate 0.5 gpm.

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
¾" casing = 0.163 gal/ft
1" casing = 0.367 gal/ft
1¼" casing = 0.653 gal/ft
1½" casing = 0.826 gal/ft
2" casing = 1.47 gal/ft
3" casing = 2.61 gal/ft

Depth to water during pumping – ft. – time
Pumped dry? NO After – gal. Recovery rate –
Depth to water for 80% recovery – ft.

CHEMICAL DATA: Temp. Probe # – Ph Probe # – Cond. Probe # –

Time		°C	umhos
	1		
	2		
	3		
	4		

SAMPLING: Point of collection: PE Hose ^ ; End of bailer – ; Other –
Samples taken 11:32 time Depth to water 14.86 ft. Refrigerated: ^
Sample description: Water color MURKY Odor NONE
Sediment/Foreign matter some fine silt

Sample ID no.			Container VOA / other	Preservative $NaHSO_4$/Azide/other	Analysis	Lab
01040-12A	40	ml		none	601	Sunrise
B		ml		↓	↓	↓
C		ml		HCl	602 / 8015	
D	↓	ml	↓	↓	↓	
		ml				
		ml				
		ml				
		ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: –

WGR

WATER SAMPLING DATA Well Name C-13 Date 1-30-90 Time 1315
Job Name Livermore Job Number 1-02301 Initials BB
WELL DATA: Well type M (M=monitoring well; Describe —)
Depth to Water 15.15 ft.
Well Depth 20.8 ft. (spec.) Sounded Depth — ft.
Well Diameter 3 in. Date — Time —

EVACUATION: Sampling Equipment:
PVC Bailer: — in. Dedicated: Bladder Pump ^ ;Bailer —
Sampling Port:Number — Rate — gpm. Volume — gal.
Other —
Initial Height of Water in Casing 5.65 ft; Volume 2.07 gal.
Volume To Be Evacuated = 6.23 gal. (initial volume x3 ^, x4 —)

	Evacuated	Evacuated	Evacuated
Time: Stop	1335		
Start	1324		
Total minutes	11		
Amount Evacuated			
Total Evacuated	6.5 gal.		
Evacuation Rate	0.59 gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
2" casing = 0.163 gal/ft
3" casing = 0.367 gal/ft
4" casing = 0.653 gal/ft
4.5" casing = 0.826 gal/ft
6" casing = 1.47 gal/ft
8" casing = 2.61 gal/ft

Depth to water during pumping 16.5 ft. 1332 time
Pumped dry? — After — gal. Recovery rate —
Depth to water for 80% recovery — ft.

CHEMICAL DATA: Temp. Probe # — Ph Probe # — Cond. Probe # —

Time		°C		umhos
	1			
	2			
	3			
	4			

SAMPLING: Point of collection: PE Hose ^; End of bailer —; Other —
Samples taken 1337 time Depth to water 16.44 ft. Refrigerated: Y
Sample description: Water color TAN Odor —
Sediment/Foreign matter none

Sample ID no.		Container VOA / other	Preservative $NaHSO_4$/Azide/other	Analysis	Lab
D1040-13A	40 ml		none	601	Superlocal
B	ml		↓	↓	
C	ml		HCl	602.18015	
D	ml		↓	↓	
	ml				
	ml				
	ml				
	ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: —

WGR

WATER SAMPLING DATA Well Name C-14 Date 1.3.90 Time 935
Job Name Livermore Job Number 1-024.01 Initials BJB
WELL DATA: Well type M (M=monitoring well; Describe —)
Depth to Water 13.91 ft.
Well Depth 14.1 ft. (spec.) Sounded Depth 14.39 ft.
Well Diameter 3 in. Date 1.3.90 Time 10:02

EVACUATION: Sampling Equipment:
PVC Bailer: ____ in. Dedicated: Bladder Pump — ;Bailer X
Sampling Port:Number — Rate — gpm. Volume — gal.
Other
Initial Height of Water in Casing 0.19 ft; Volume 0.07 gal.
Volume To Be Evacuated = 0.21 gal. (initial volume x3 X, x4 ____)

	Evacuated	Evacuated	Evacuated
Time: Stop			
Start	GRAB SAMPLE		
Total minutes			
Amount Evacuated			
Total Evacuated	gal.		
Evacuation Rate	gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
2" casing = 0.163 gal/ft
3" casing = 0.367 gal/ft
4" casing = 0.653 gal/ft
5" casing = 0.826 gal/ft
6" casing = 1.47 gal/ft
8" casing = 2.61 gal/ft

Depth to water during pumping ____ ft. ____ time
Pumped dry? YES After ____ gal. Recovery rate ____
Depth to water for 80% recovery 13.95 ft.

CHEMICAL DATA: Temp. Probe # ____ Ph Probe # ____ Cond. Probe # ____

Time		°C		umhos
	1			
	2			
	3			
	4			

SAMPLING: Point of collection: PE Hose —; End of bailer X; Other —
Samples taken 10:00 time Depth to water 14.15 ft. Refrigerated: 1
Sample description: Water color CLEAR Odor MODER ATE
Sediment/Foreign matter BROWN FLOCCULENT MATTER

Sample ID no.		Container (VOA / other)	Preservative NaHSO₄/Azide/other	Analysis	Lab
D1040-14E	40 ml		none	601	Superior
E	ml		↓	↓	
G	ml		HCl	602/8015	
H	ml		↓	↓	
	ml				
	ml				
	ml				
	ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: GRAB SAMPLE TAKEN 1.3.90
DRY AFTER SAMPLING
W/ DTW 14.15
14.02' @ 14:19
OVERNIGHT REC. SAMPLE TAKEN ALSO - 1.4.90 9:05 (2 VOAs 602/8015 1 VOA GAS)

WGR

WATER SAMPLING DATA Well Name C-14 Date 1-4-90 Time 8:49
Job Name Livermore Job Number _____ Initials RS
WELL DATA: Well type M (M=monitoring well; Describe _____)
Depth to Water [redacted] ft. (8:52)
Well Depth 14.1 ft. (spec.) Sounded Depth _____ ft.
Well Diameter 3 in. Date _____ Time _____

EVACUATION: Sampling Equipment:
PVC Bailer: _____ in. Dedicated: Bladder Pump _____ ;Bailer _____
Sampling Port:Number _____ Rate _____ gpm. Volume _____ gal.
Other _____
Initial Height of Water in Casing _____ ft; Volume _____ gal.
Volume To Be Evacuated = _____ gal. (initial volume x3 ___, x4 ___)

	Evacuated	Evacuated	Evacuated
Time: Stop			
Start			
Total minutes			
Amount Evacuated			
Total Evacuated	gal.		
Evacuation Rate	gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
V_1" casing = 0.163 gal/ft
V_2" casing = 0.367 gal/ft
V_4" casing = 0.653 gal/ft
$V_{4.5}$" casing = 0.826 gal/ft
V_6" casing = 1.47 gal/ft
V_8" casing = 2.61 gal/ft

Depth to water during pumping ___ ft. ___ time
Pumped dry? YES After _____ gal. Recovery rate _____
Depth to water for 80% recovery _____ ft.

CHEMICAL DATA: Temp. Probe # ___ Ph Probe # ___ Cond.Probe # ___

Time		°C		umhos
_____	1 _____	_____	_____	_____
_____	2 _____	_____	_____	_____
_____	3 _____	_____	_____	_____
_____	4 _____	_____	_____	_____

(X) SAMPLING: Point of collection: PE Hose ___; End of bailer ✓; Other _____
Samples taken 9:05 time Depth to water 14.25 ft. Refrigerated: _____
Sample description: Water color clear Odor none noticeable
Sediment/Foreign matter large pieces of sediment

Sample ID no.	Container	VOA / other	Preservative NaHSO₄/Azide/other	Analysis	Lab
01040-14A	40 ml		NONE	EPA 601	SJP
" -14C	" ml	↓	HCl	EPA 602/8015	↓
" -14D	" ml	↓	"	" "	
	ml				
	ml				
	ml				
	ml				
	ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: (X) Sampled after overnight recovery to 13.85' ≈

WGR

WATER SAMPLING DATA Well Name C-15 Date 1-30-90 Time 1215
Job Name Livermore Job Number 1-024.01 Initials BB
WELL DATA: Well type M (M=monitoring well; Describe _____)
Depth to Water 15.42 ft.
Well Depth 20.2 ft. (spec.) Sounded Depth — ft.
Well Diameter 3 in. Date — Time —

EVACUATION: Sampling Equipment:
PVC Bailer: _____ in. Dedicated: Bladder Pump ✓ ;Bailer —
Sampling Port:Number — Rate — gpm. Volume — gal.
Other —
Initial Height of Water in Casing 4.78 ft; Volume 1.75 gal.
Volume To Be Evacuated = 5.3 gal. (initial volume x3 ✓, x4 ____)

	Evacuated	Evacuated	Evacuated
Time: Stop	1227		
Start	1217		
Total minutes	10		
Amount Evacuated			
Total Evacuated	5.5 gal.		
Evacuation Rate	0.55 gpm.		

Formules / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
¾" casing = 0.163 gal/ft
1" casing = 0.367 gal/ft
1¼" casing = 0.653 gal/ft
1½" casing = 0.826 gal/ft
2" casing = 1.47 gal/ft
3" casing = 2.61 gal/ft

Depth to water during pumping 15.98 ft. 1222 time
Pumped dry? NO After — gal. Recovery rate —
Depth to water for 80% recovery — ft.

CHEMICAL DATA: Temp. Probe # ___ Ph Probe # ___ Cond.Probe # ___

Time		°C		umhos
	1			
	2			
	3			
	4			

SAMPLING: Point of collection: PE Hose ✓; End of bailer —; Other —
Samples taken 1228 time Depth to water 15.86 ft. Refrigerated: ✓
Sample description: Water color TAN Odor none
Sediment/Foreign matter none

Sample ID no.			Container (VOA) / other	Preservative NaHSO₄/Azide/other	Analysis	Lab
D1040151	40	ml		none	601	Superior
B	40	ml		↓	↓	↓
C	40	ml		HCl	602/8015	
D	40	ml		↓	↓	
		ml				
		ml				
		ml				
		ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: _____

WGR

WATER SAMPLING DATA Well Name C-16 Date 1-30-90 Time 13:22
Job Name Livermore Job Number 1-024.01 Initials (RS)
WELL DATA: Well type M (M=monitoring well; Describe –)
Depth to Water 13.97 ft.
Well Depth 28.4 ft. (spec.) Sounded Depth – ft.
Well Diameter 3 in. Date – Time –

EVACUATION: Sampling Equipment:
PVC Bailer: – in. Dedicated: Bladder Pump ~ ;Bailer –
Sampling Port:Number – Rate – gpm. Volume – gal.
Other –
Initial Height of Water in Casing 14.43 ft; Volume 5.29 gal.
Volume To Be Evacuated = 15.9 gal. (initial volume x3 ~, x4)

	Evacuated	Evacuated	Evacuated
Time: Stop	13:40		
Start	13:24		
Total minutes	16		
Amount Evacuated	16 gal.		
Total Evacuated			
Evacuation Rate	1.0 gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
2" casing = 0.163 gal/ft
3" casing = 0.367 gal/ft
4" casing = 0.653 gal/ft
4.5" casing = 0.826 gal/ft
6" casing = 1.47 gal/ft
8" casing = 2.61 gal/ft

Depth to water during pumping 16.03 ft. 13:34 time
Pumped dry? ND After – gal. Recovery rate –
Depth to water for 80% recovery – ft.

CHEMICAL DATA: Temp. Probe # – Ph Probe # – Cond.Probe # –

Time		°C	umhos
–	1	–	–
–	2	–	–
–	3	–	–
–	4	–	–

SAMPLING: Point of collection: PE Hose ~ ; End of bailer – ; Other –
Samples taken 13:45 time Depth to water 16.55 ft. Refrigerated: ~
Sample description: Water color murky - lt. grey Odor slight product odor
Sediment/Foreign matter small amount of fine silt

Sample ID no.		Container (VOA) / other	Preservative NaHSO₄/Azide/other	Analysis	Lab
0104016A	40 ml		none	601	Superior
B	ml		↓	↓	↓
C	ml		HCl	602 | 8015	
D	ml		↓	↓	
	ml				
	ml				
	ml				
	ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: –

WGR

WATER SAMPLING DATA Well Name C-17 Date 1-30-90 Time 12:45
Job Name Livermore Job Number 1-024.01 Initials CS
WELL DATA: Well type M (M=monitoring well; Describe _____)
Depth to Water 15.10 ft.
Well Depth 20.0 ft. (spec.) Sounded Depth _____ ft.
Well Diameter 3 in. Date _____ Time _____

EVACUATION: Sampling Equipment:
PVC Bailer: _____ in. Dedicated: Bladder Pump (\) ;Bailer _____
Sampling Port:Number _____ Rate _____ gpm. Volume _____ gal.
Other _____
Initial Height of Water in Casing 4.90 ft; Volume 1.8 gal.
Volume To Be Evacuated = 5.4 gal. (initial volume x3 ____, x4 ____)

	Evacuated	Evacuated	Evacuated
Time: Stop	13:00		
Start	12:48		
Total minutes	12		
Amount Evacuated			
Total Evacuated	5.5 gal.		
Evacuation Rate	0.46 gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
V," casing = 0.163 gal/ft
V," casing = 0.367 gal/ft
V," casing = 0.653 gal/ft
V,," casing = 0.826 gal/ft
V," casing = 1.47 gal/ft
V," casing = 2.61 gal/ft

Depth to water during pumping 17.13 ft. 12:55 time
Pumped dry? NO After _____ gal. Recovery rate _____
Depth to water for 80% recovery _____ ft.

CHEMICAL DATA: Temp. Probe # ____ Ph Probe # ____ Cond. Probe # ____

Time				
_____	1 _____	°C	_____	_____ umhos
_____	2 _____		_____	_____
_____	3 _____		_____	_____
_____	4 _____		_____	_____

SAMPLING: Point of collection: PE Hose x ; End of bailer ___ ; Other _____
Samples taken 13:05 time Depth to water 18.08 ft. Refrigerated: x
Sample description: Water color Dark grey Odor slight product odor
Sediment/Foreign matter dark sediments (silt?)

Sample ID no.		Container VOA / other	Preservative NaHSO₄/Azide/other	Analysis	Lab
D10-10-17A	40 ml		none	601	Superior
B	ml		↓	↓	
C	ml		HCl	602 8015	
D	ml		↓	↓	
	ml				
	ml				
	ml				
	ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: _____

WGR

WATER SAMPLING DATA Well Name C-18 Date 1-30-90 Time 11:45
Job Name Livermore Job Number 1-024.01 Initials (RS)
WELL DATA: Well type: M (M=monitoring well; Describe _____)
Depth to Water: 14.07 ft.
Well Depth 26.7 ft. (spec.) Sounded Depth _____ ft.
Well Diameter 2 in. Date _____ Time _____

EVACUATION: Sampling Equipment:
PVC Bailer: _____ in. Dedicated: Bladder Pump ✓ ;Bailer _____
Sampling Port:Number _____ Rate _____ gpm. Volume _____ gal.
Other _____
Initial Height of Water in Casing 11.63 ft; Volume ~~5.7~~ 1.89 gal.
Volume To Be Evacuated = ~~5.7~~ gal. (initial volume x3 ✓, x4 ____)

	Evacuated	Evacuated	Evacuated
Time: Stop	11:57		
Start	11:47		
Total minutes	10		
Amount Evacuated	6.0		
Total Evacuated	____ gal.		
Evacuation Rate	0.6 gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
V_1" casing = 0.163 gal/ft
V_2" casing = 0.367 gal/ft
V_4" casing = 0.653 gal/ft
$V_{4.5}$" casing = 0.826 gal/ft
V_6" casing = 1.47 gal/ft
V_8" casing = 2.61 gal/ft

Depth to water during pumping 14.17 ft. 11:53 time
Pumped dry? NO After _____ gal. Recovery rate _____
Depth to water for 80% recovery _____ ft.

CHEMICAL DATA: Temp. Probe # ____ Ph Probe # ____ Cond.Probe # ____

Time		°C	umhos
_____	1 _____	_____	_____
_____	2 _____	_____	_____
_____	3 _____	_____	_____
_____	4 _____	_____	_____

SAMPLING: Point of collection: PE Hose ✓; End of bailer —; Other —
Samples taken 12:02 time Depth to water 14.06 ft. Refrigerated: ✓
Sample description: Water color murky lt. brown Odor —
Sediment/Foreign matter some silt

Sample ID no.		Container VOA / other	Preservative $NaHSO_4$/Azide/other	Analysis	Lab
B1040-18A	40 ml		none	601	Superior
B	ml		↓	↓	↓
C	ml		HCl	602/8015	
D	ml		↓	↓	
_____	ml				
_____	ml				
_____	ml				
_____	ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: _____

WGR

WATER SAMPLING DATA Well Name C-19 Date 1.30.90 Time 12:15
Job Name Livermore Job Number 1-024.01 Initials RS
WELL DATA: Well type M (M=monitoring well; Describe –)
Depth to Water 15.45 ft.
Well Depth 24.3 ft. (spec.) Sounded Depth – ft.
Well Diameter 2 in. Date – Time –

EVACUATION: Sampling Equipment:
PVC Bailer: – in. Dedicated: Bladder Pump ~ ;Bailer –
Sampling Port:Number – Rate – gpm. Volume – gal.
Other –
Initial Height of Water in Casing 8.85 ft; Volume 3.25 gal.
Volume To Be Evacuated = 9.75 gal. (initial volume x3 ✓, x4 ____)

	Evacuated	Evacuated	Evacuated
Time: Stop	12:31		
Start	12:17		
Total minutes	14		
Amount Evacuated			
Total Evacuated	9.75 gal.		
Evacuation Rate	0.69 gpm.		

Formulas / Conversions
r = well radius in ft
h = ht of water col in ft
vol. of col. = $\pi r^2 h$
7.48 gal/ft³
V_1" casing = 0.163 gal/ft
V_2" casing = 0.367 gal/ft
V_4" casing = 0.653 gal/ft
$V_{4.5}$" casing = 0.826 gal/ft
V_6" casing = 1.47 gal/ft
V_8" casing = 2.61 gal/ft

Depth to water during pumping 15.69 ft. 12:26 time
Pumped dry? NO After ____ gal. Recovery rate ____
Depth to water for 80% recovery ____ ft.

CHEMICAL DATA: Temp. Probe # ___ Ph Probe # ___ Cond.Probe # ___

Time		°C		umhos
____	1 ____	____	____	____
____	2 ____	____	____	____
____	3 ____	____	____	____
____	4 ____	____	____	____

SAMPLING: Point of collection: PE Hose ^; End of bailer –; Other –
Samples taken 12:36 time Depth to water 15.71 ft. Refrigerated: ✓
Sample description: Water color cloudy Odor –
Sediment/Foreign matter small amount of v. fine sediment

Sample ID no.		Container VOA / other	Preservative NaHSO₄/Azide/other	Analysis	Lab
610940-194	40 ml		none	601	Superior
B	ml		↓	↓	↓
C	ml		HCl	602/8015	
P	ml		↓	↓	
	ml				
	ml				
	ml				
	ml				

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

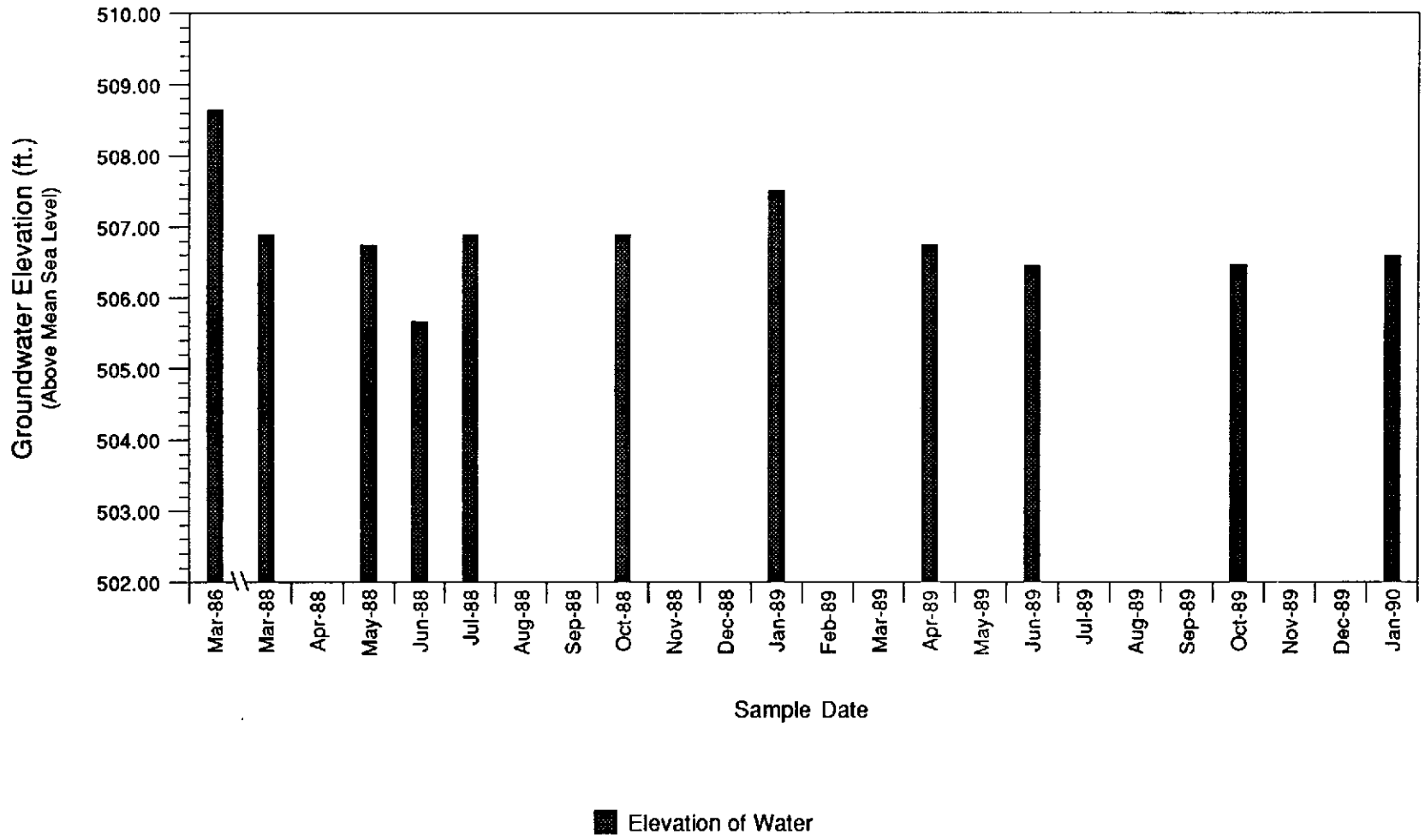
COMMENTS: ____

ATTACHMENT C

HYDROGRAPHS

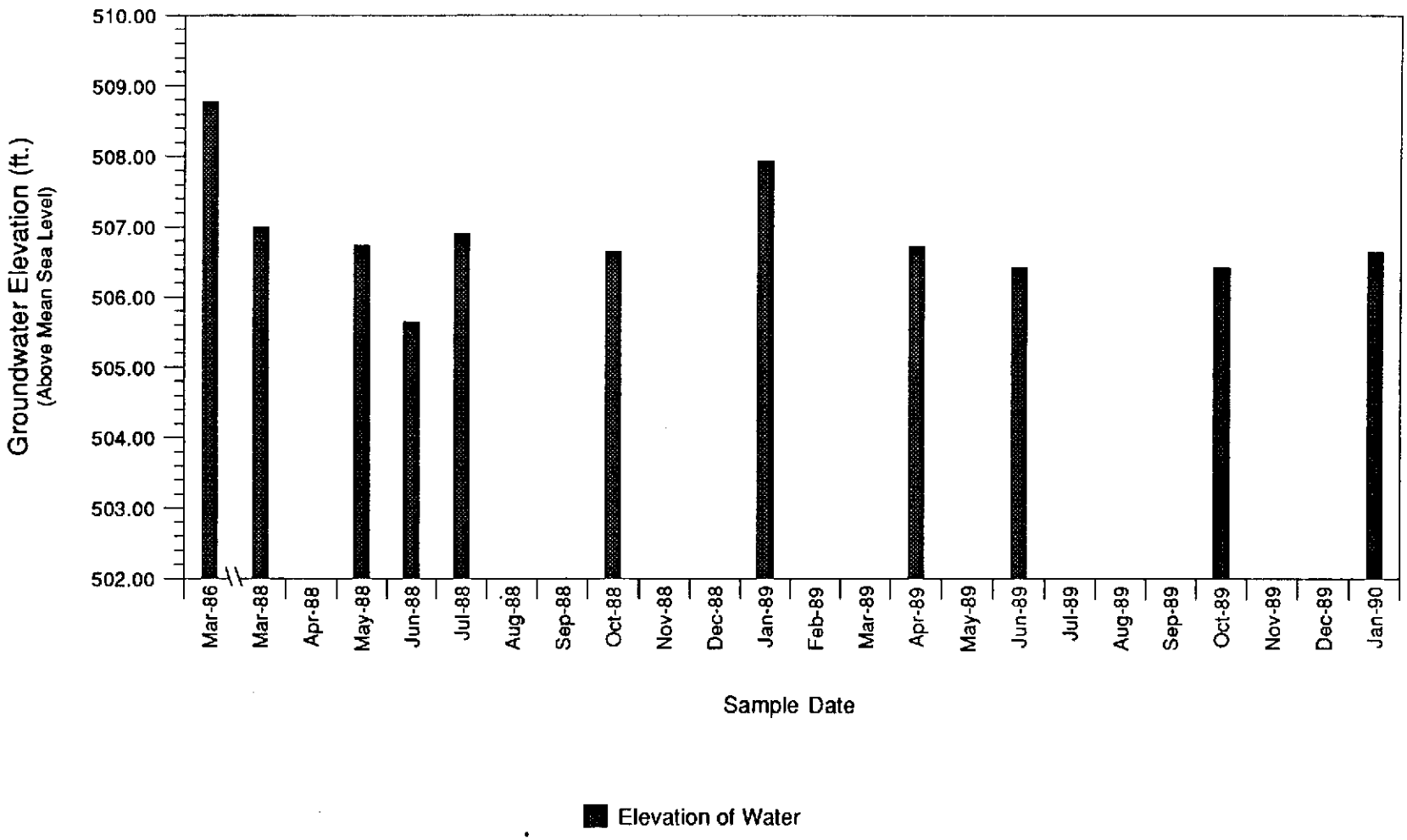
GROUNDWATER MONITOR WELL C-1

Chevron Service Station #91924 Livermore, California



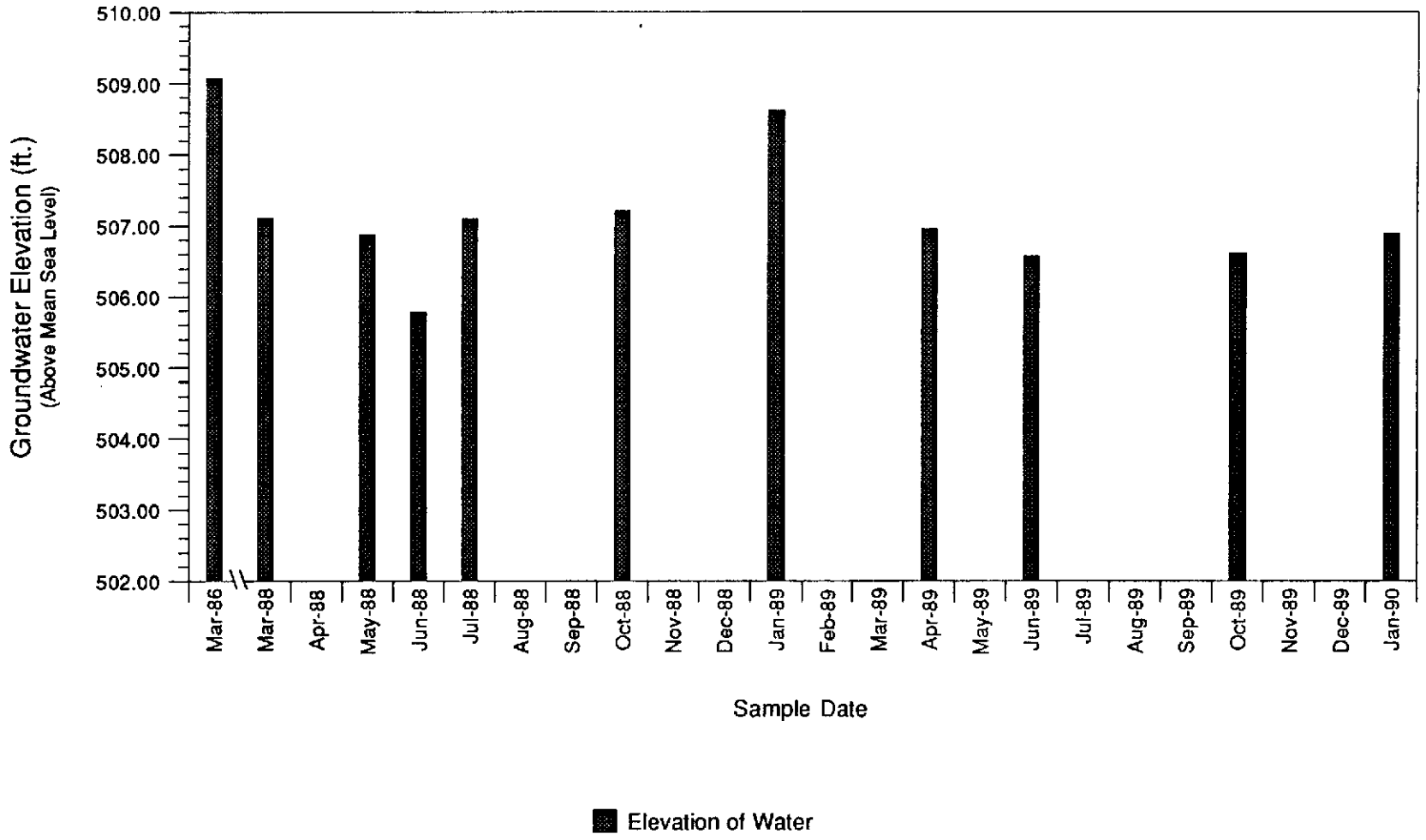
GROUNDWATER MONITOR WELL C-2

Chevron Service Station #91924 Livermore, California



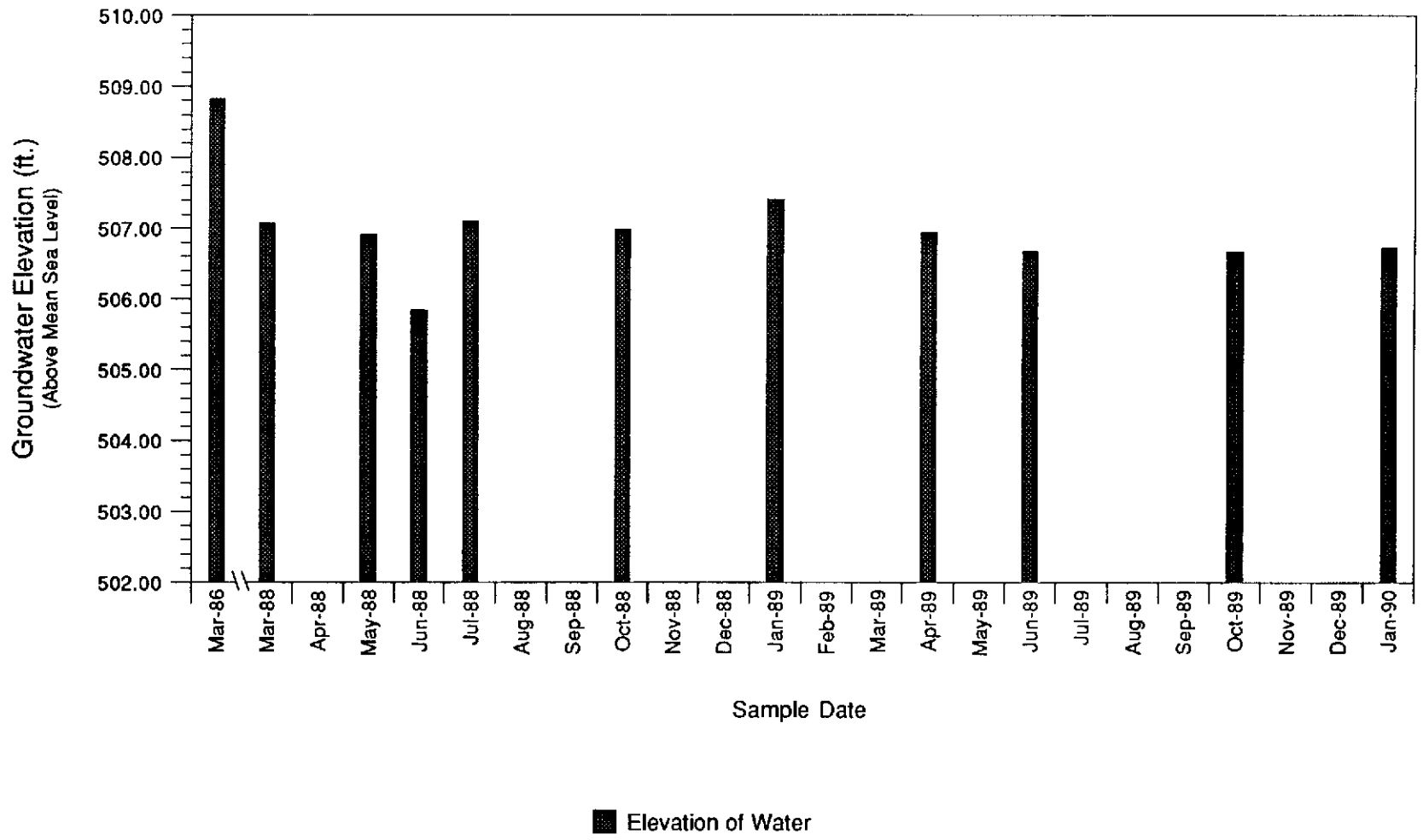
GROUNDWATER MONITOR WELL C-3

Chevron Service Station #91924 Livermore, California



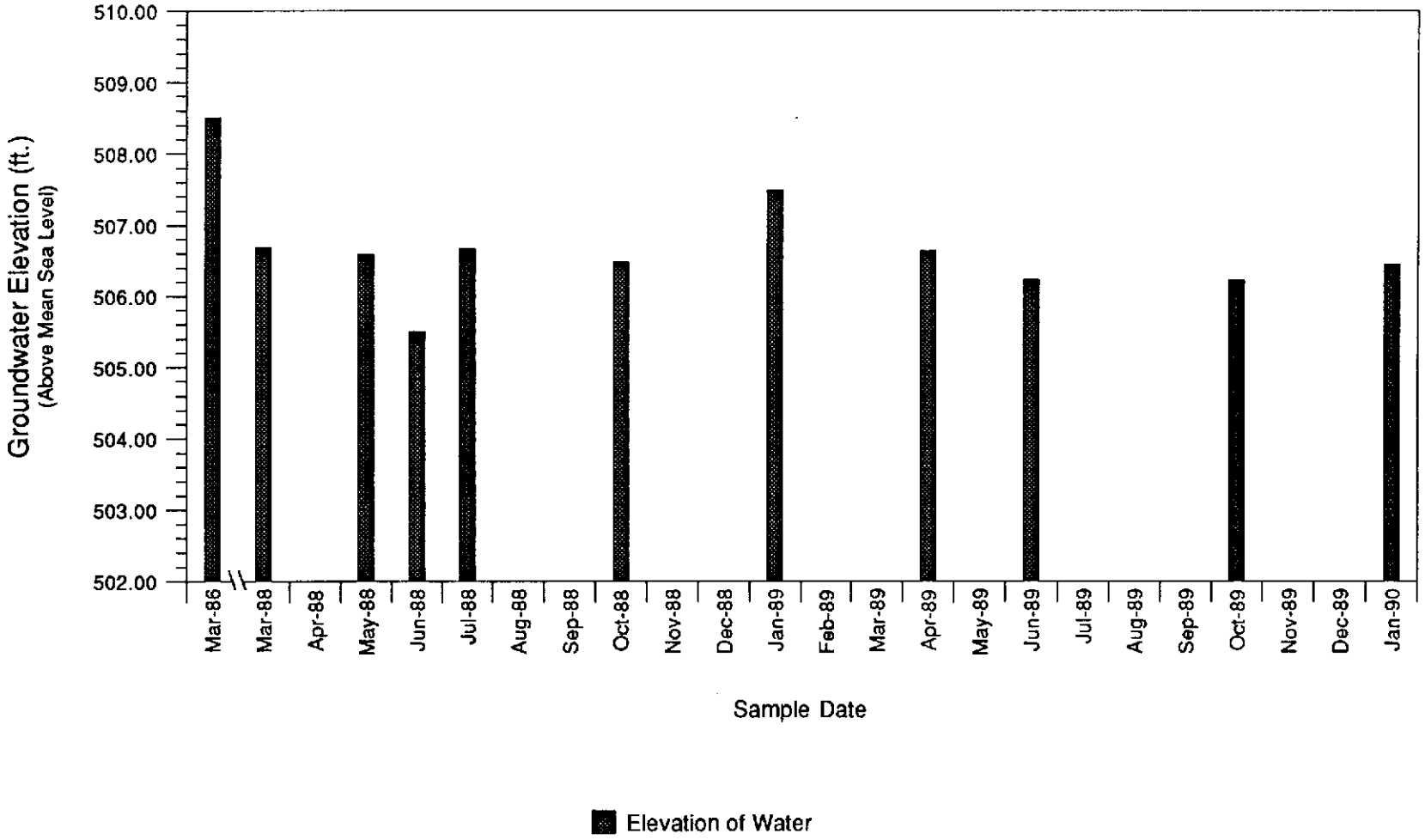
GROUNDWATER MONITOR WELL C-5

Chevron Service Station #91924 Livermore, California



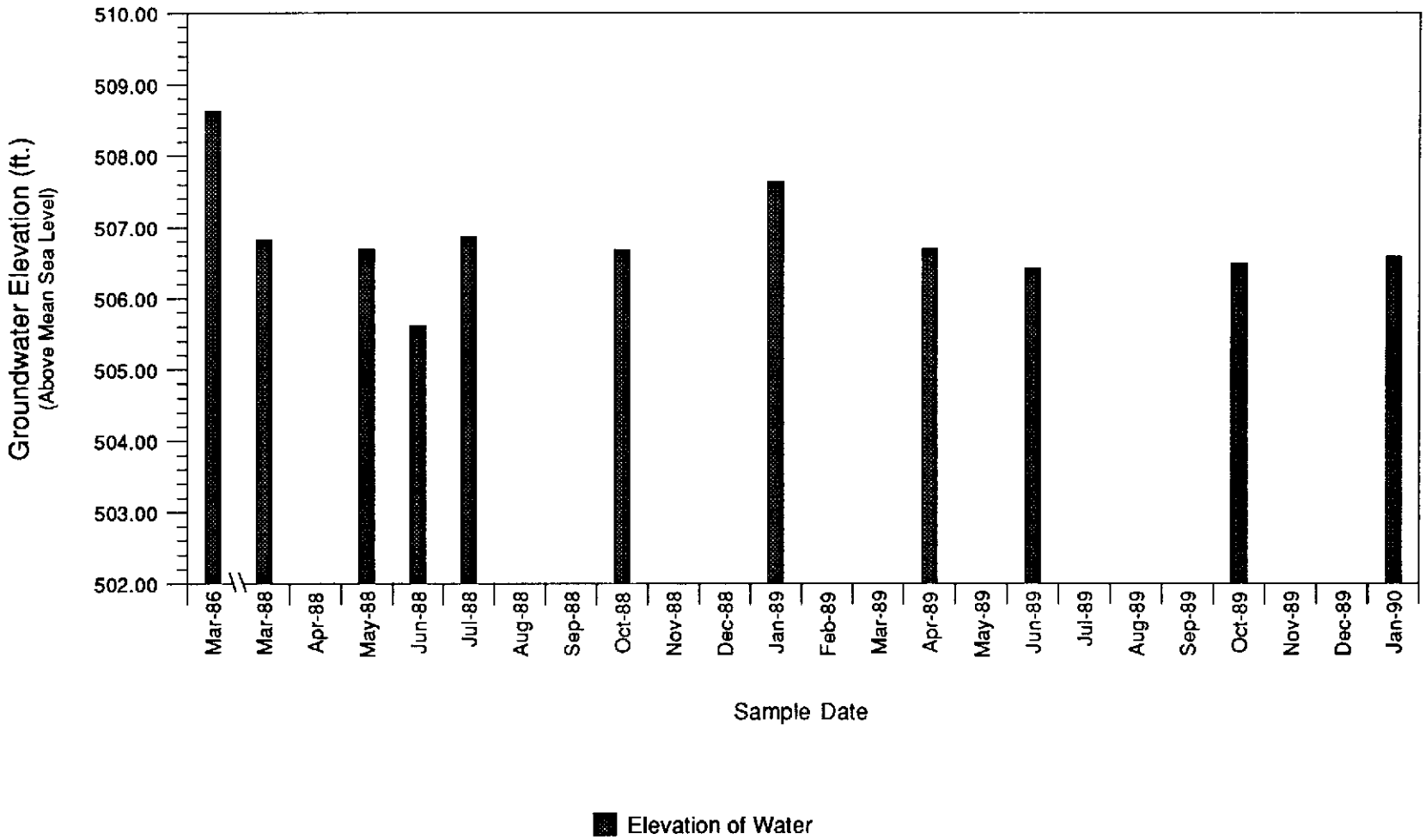
GROUNDWATER MONITOR WELL C-6

Chevron Service Station #91924 Livermore, California



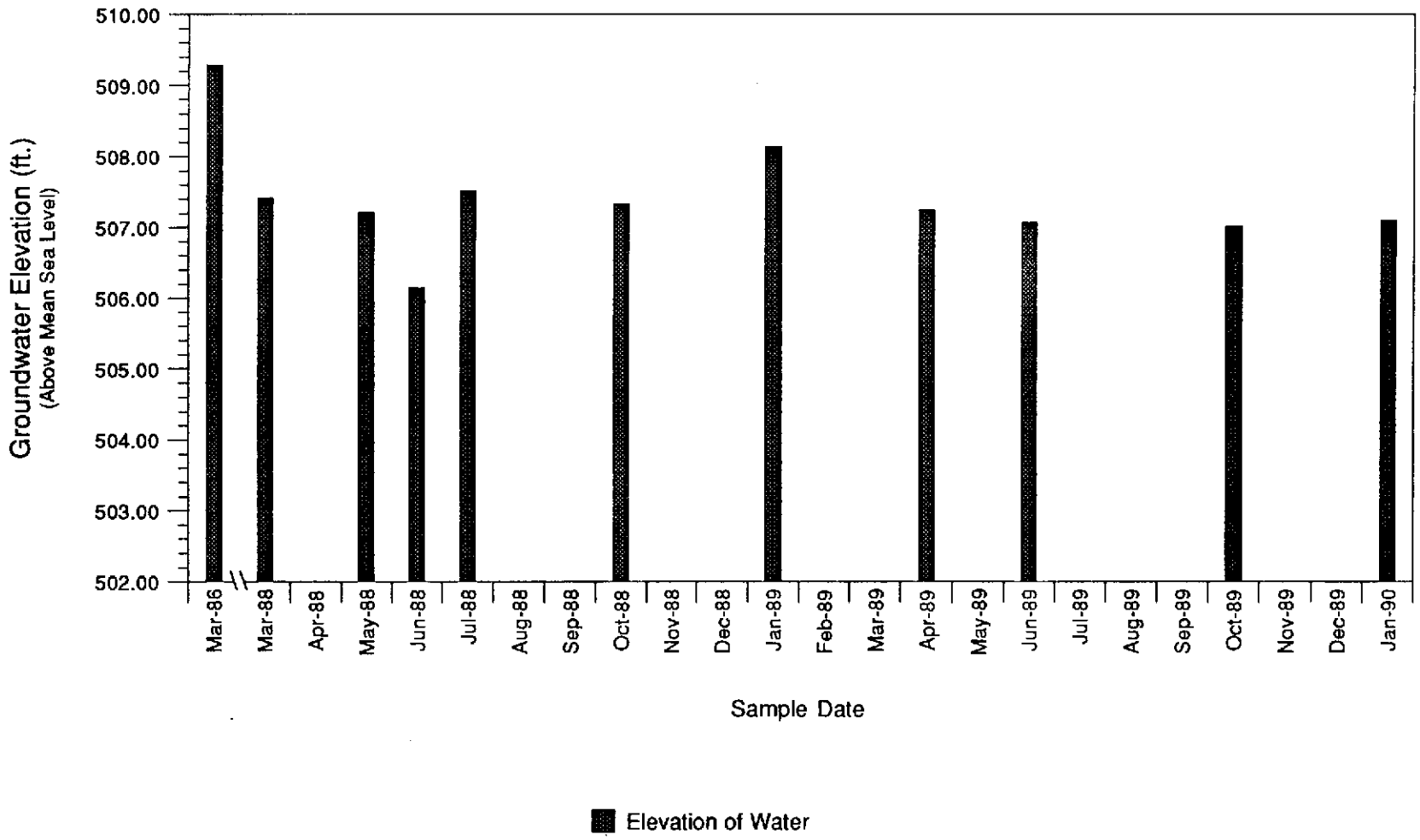
GROUNDWATER MONITOR WELL C-7

Chevron Service Station #91924 Livermore, California



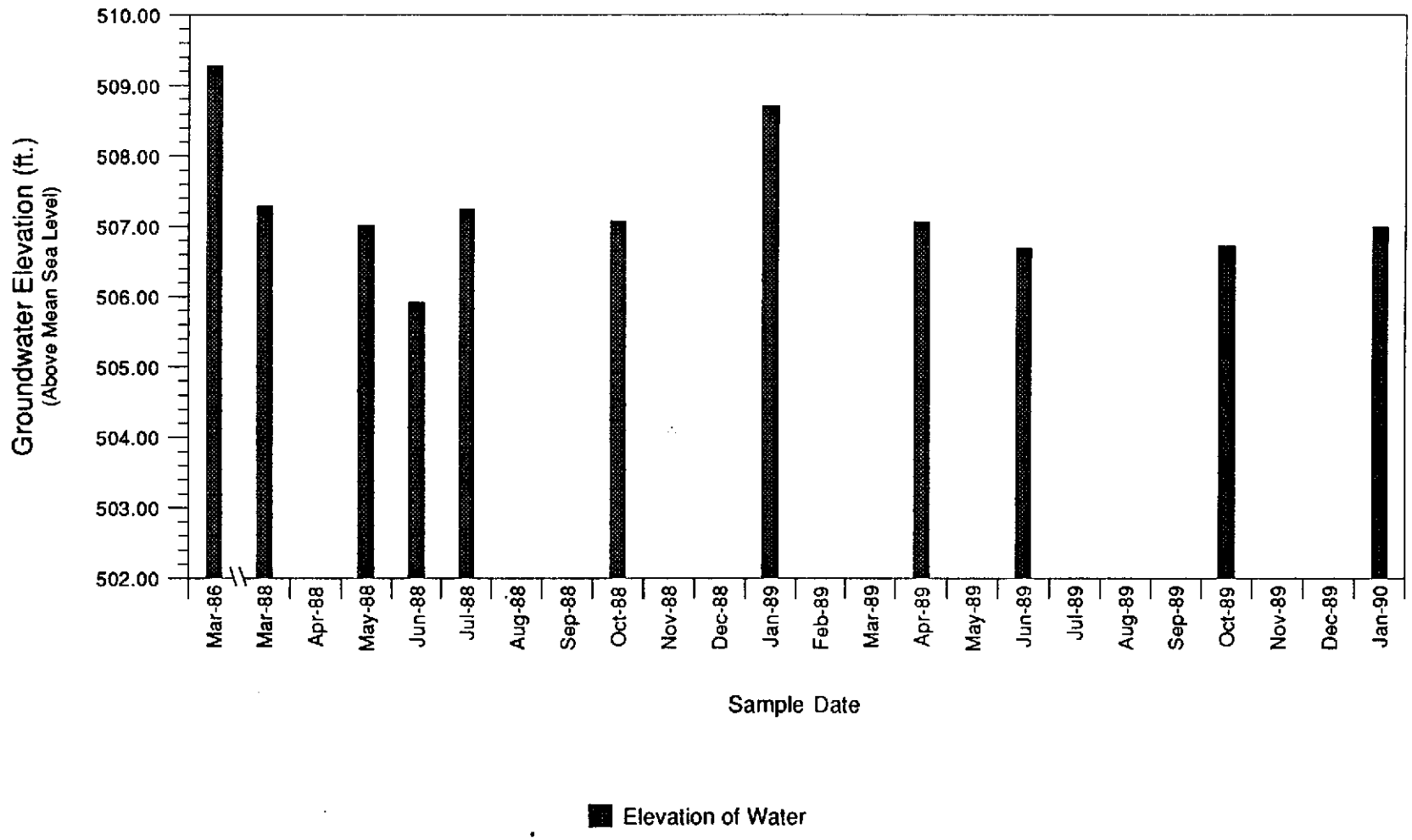
GROUNDWATER MONITOR WELL C-13

Chevron Service Station #91924 Livermore, California



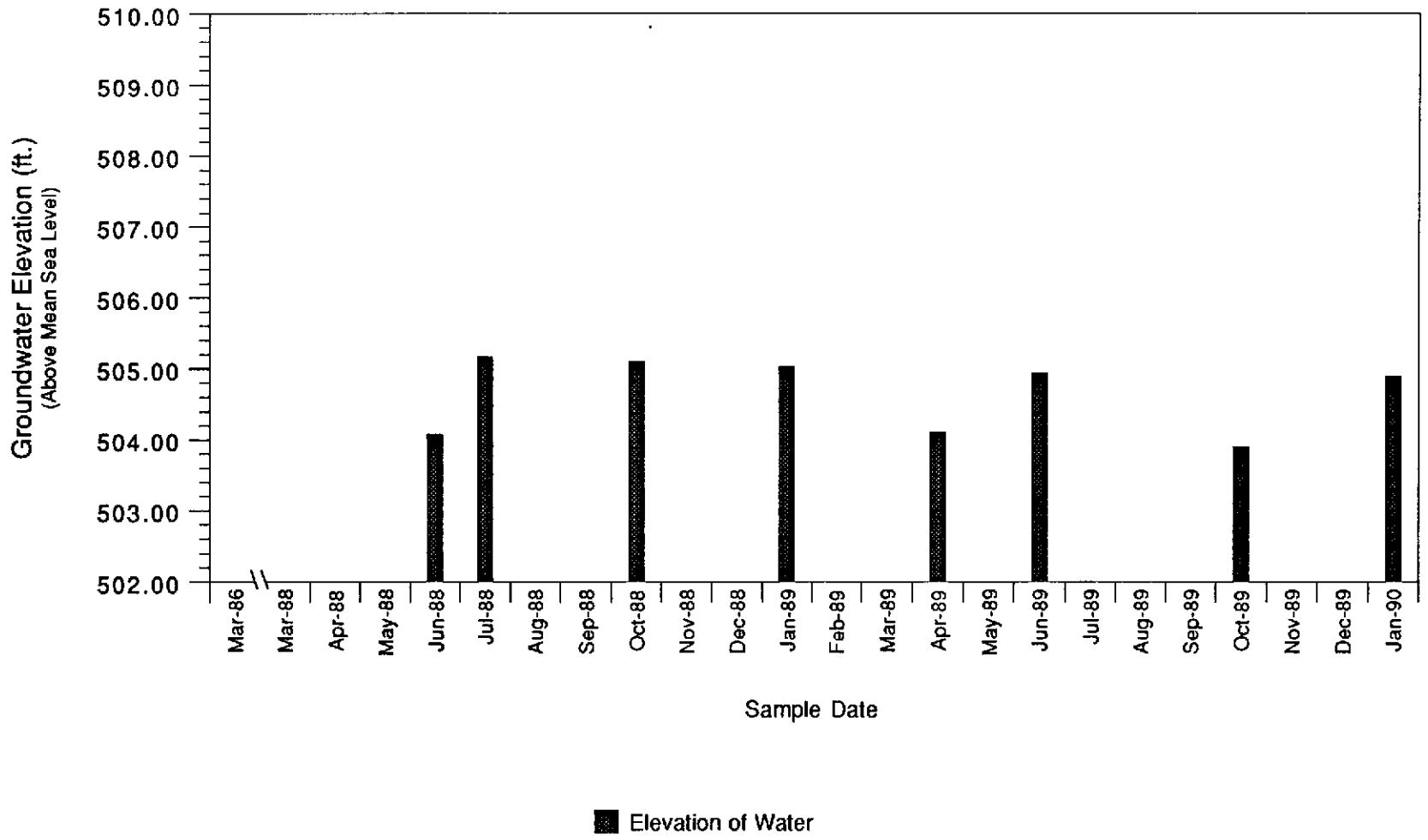
GROUNDWATER MONITOR WELL C-15

Chevron Service Station #91924 Livermore, California



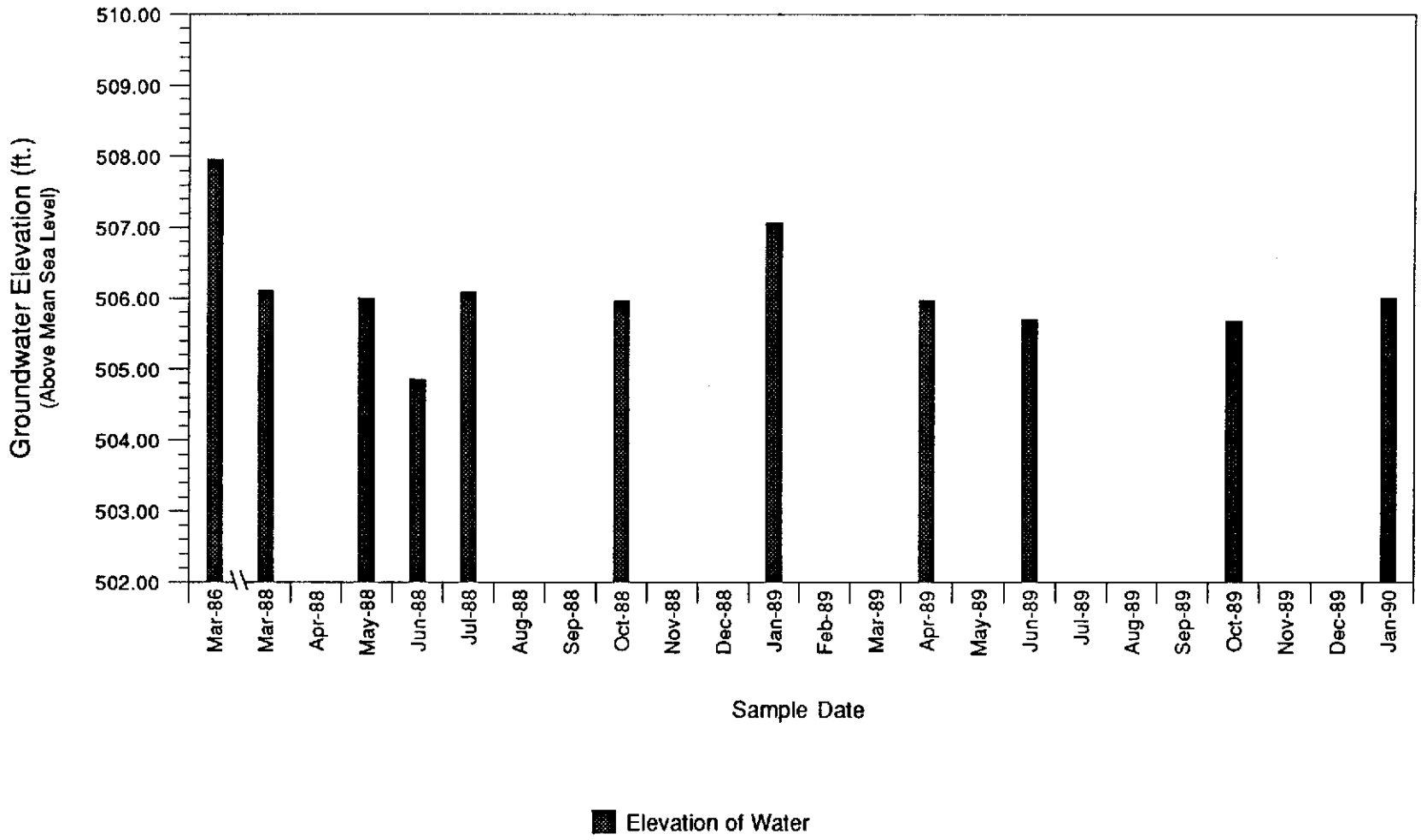
GROUNDWATER MONITOR WELL C-18

Chevron Service Station #91924 Livermore, California



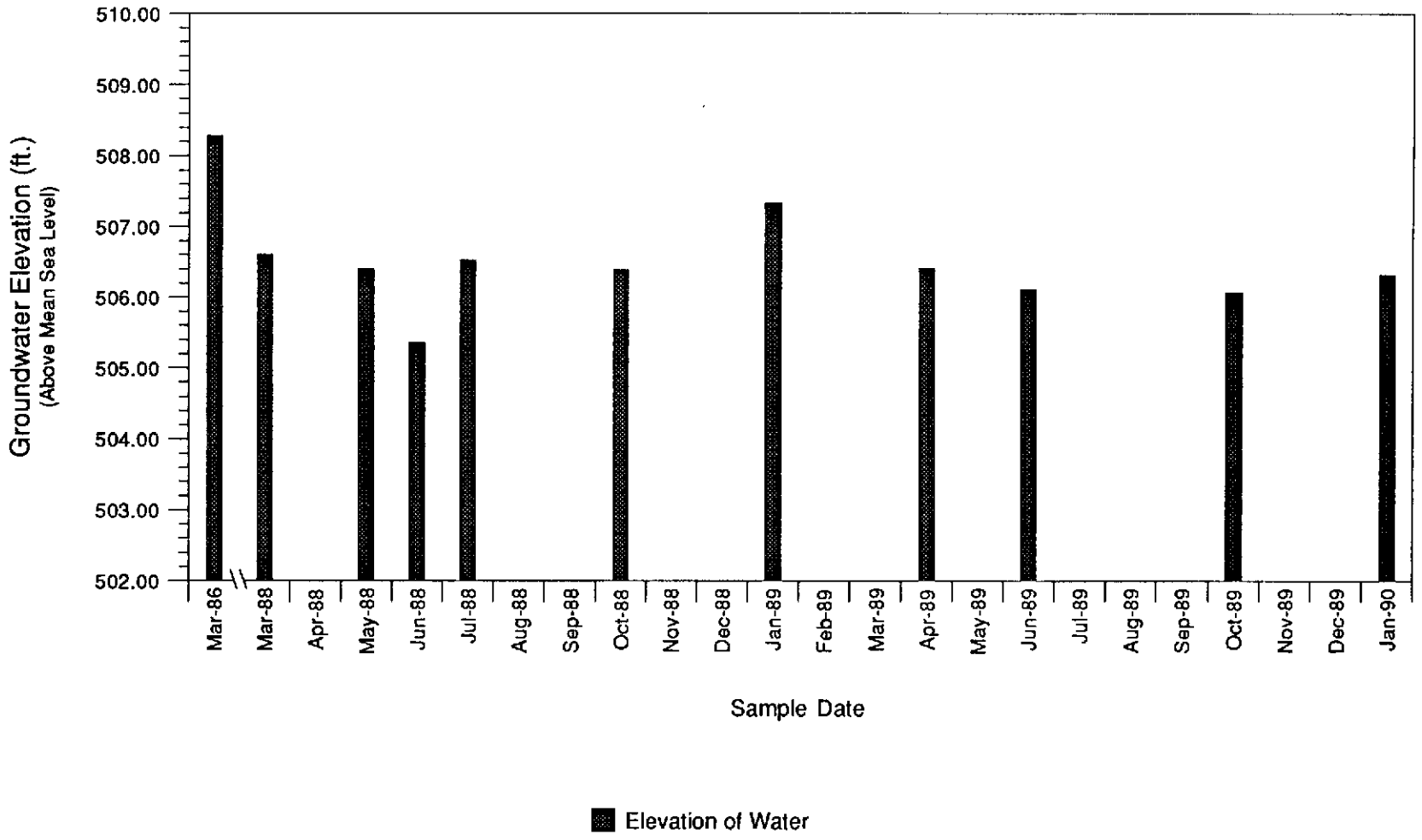
GROUNDWATER MONITOR WELL C-8

Chevron Service Station #91924 Livermore, California



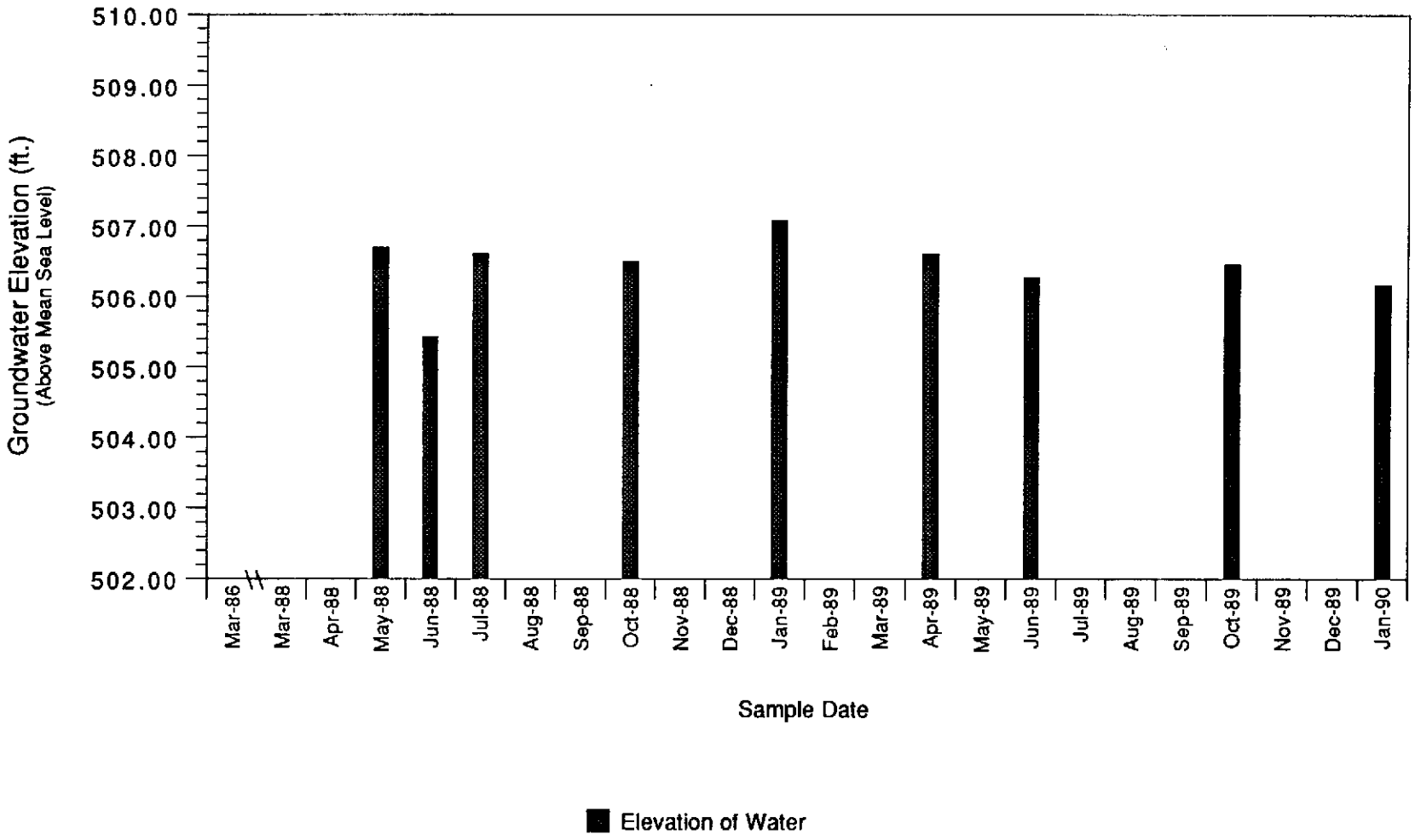
GROUNDWATER MONITOR WELL C-9

Chevron Service Station #91924 Livermore, California



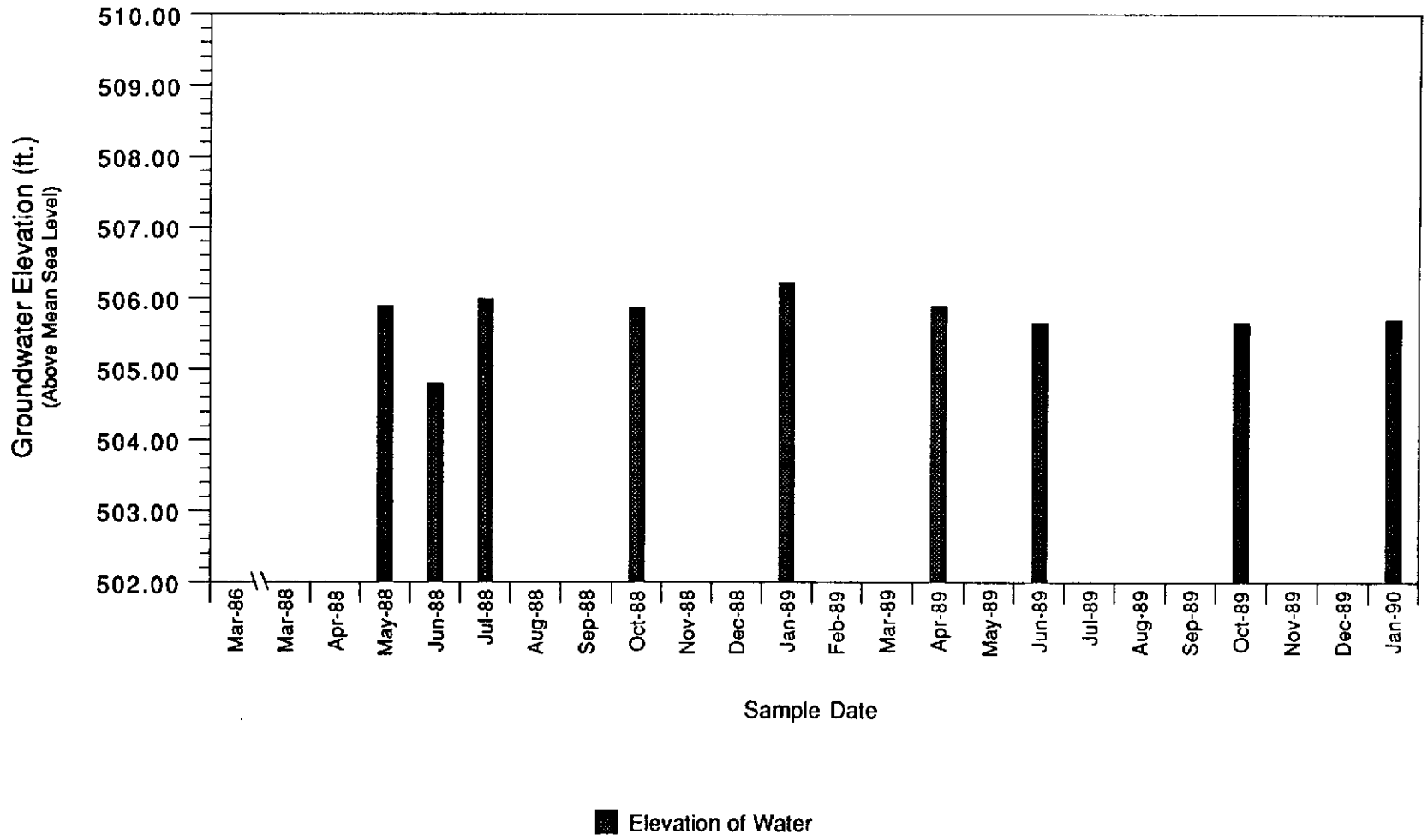
GROUNDWATER MONITOR WELL C-14

Chevron Service Station #91924 Livermore, California



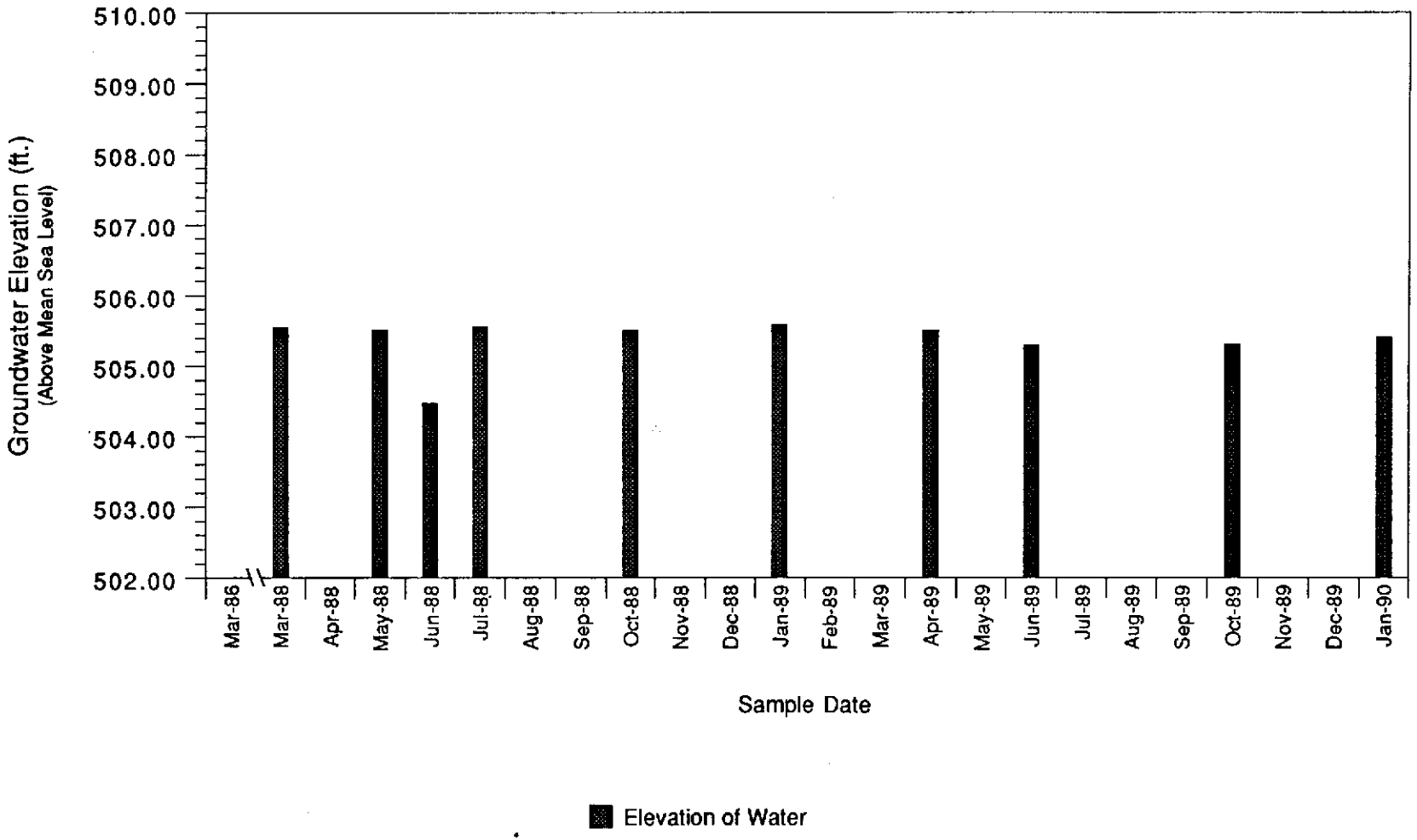
GROUNDWATER MONITOR WELL C-16

Chevron Service Station #91924 Livermore, California



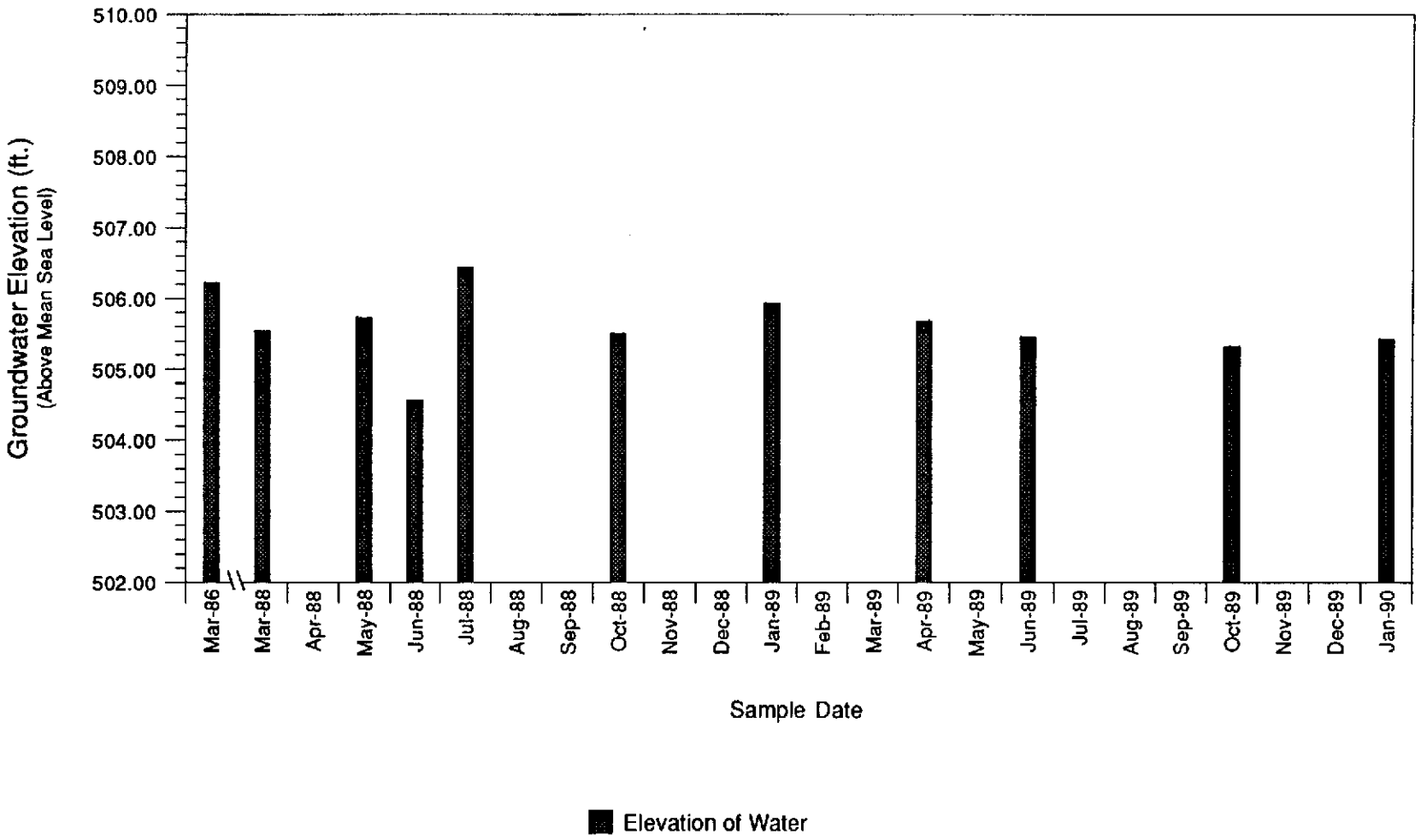
GROUNDWATER MONITOR WELL C-10

Chevron Service Station #91924 Livermore, California



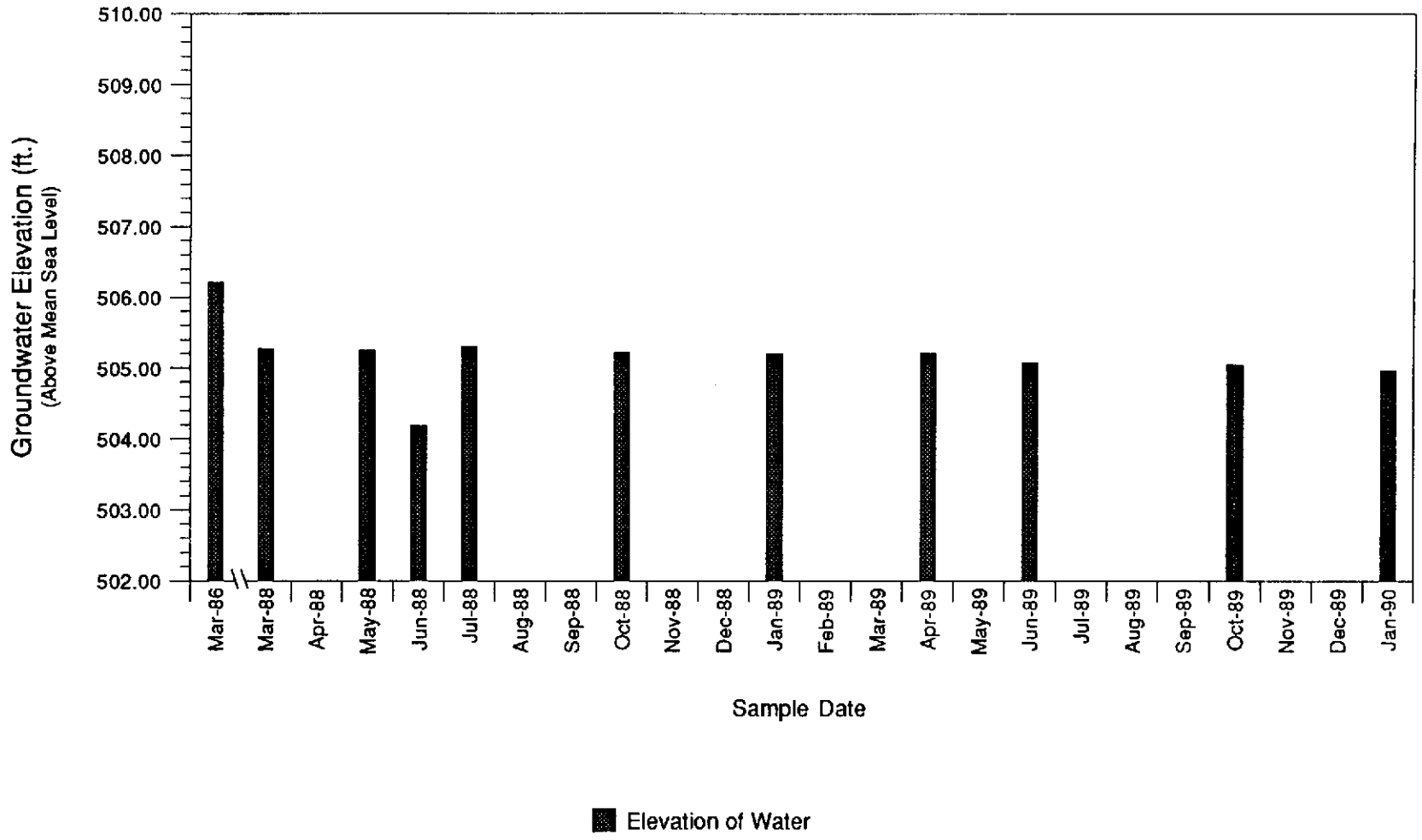
GROUNDWATER MONITOR WELL C-11

Chevron Service Station #91924 Livermore, California



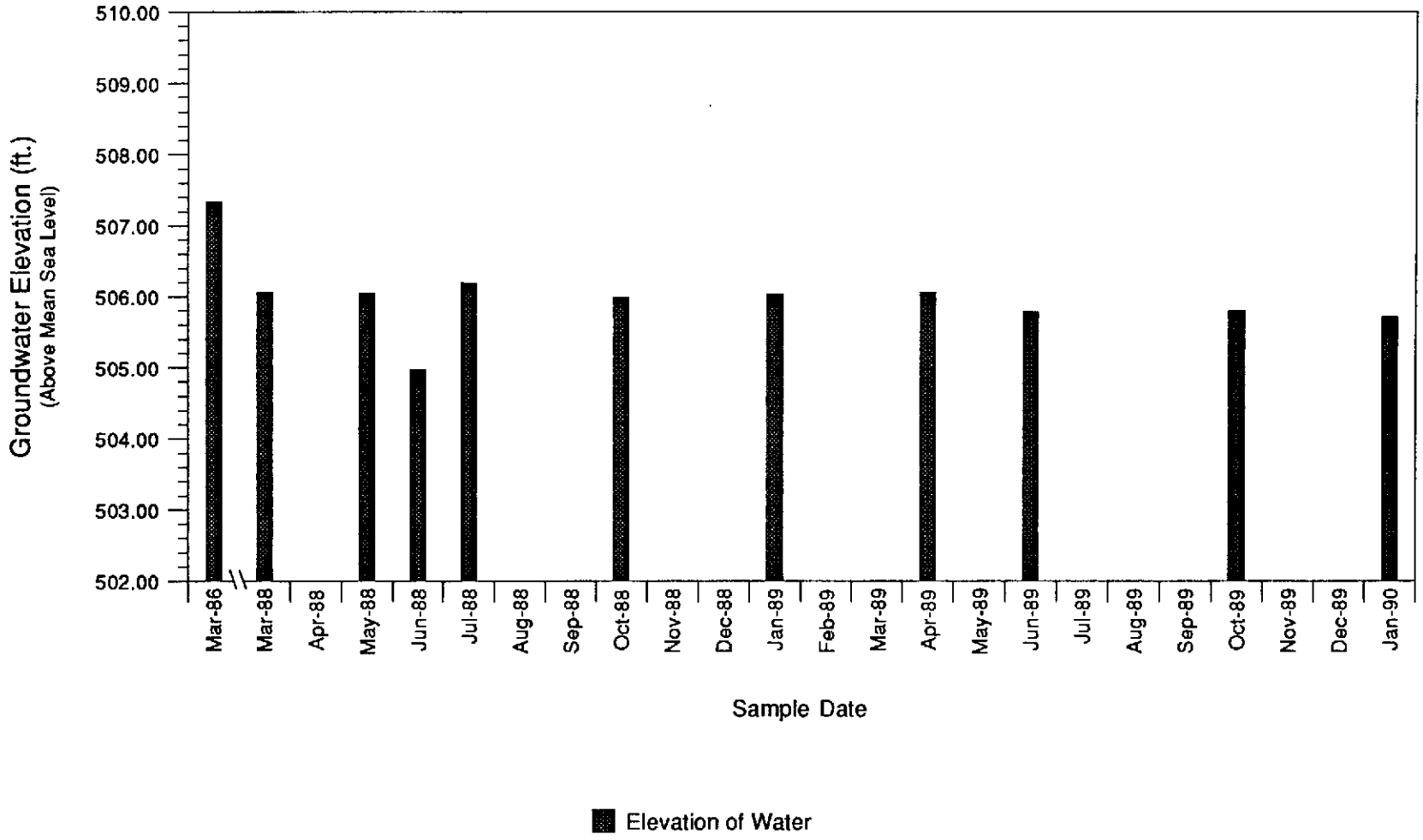
GROUNDWATER MONITOR WELL C-12

Chevron Service Station #91924 Livermore, California



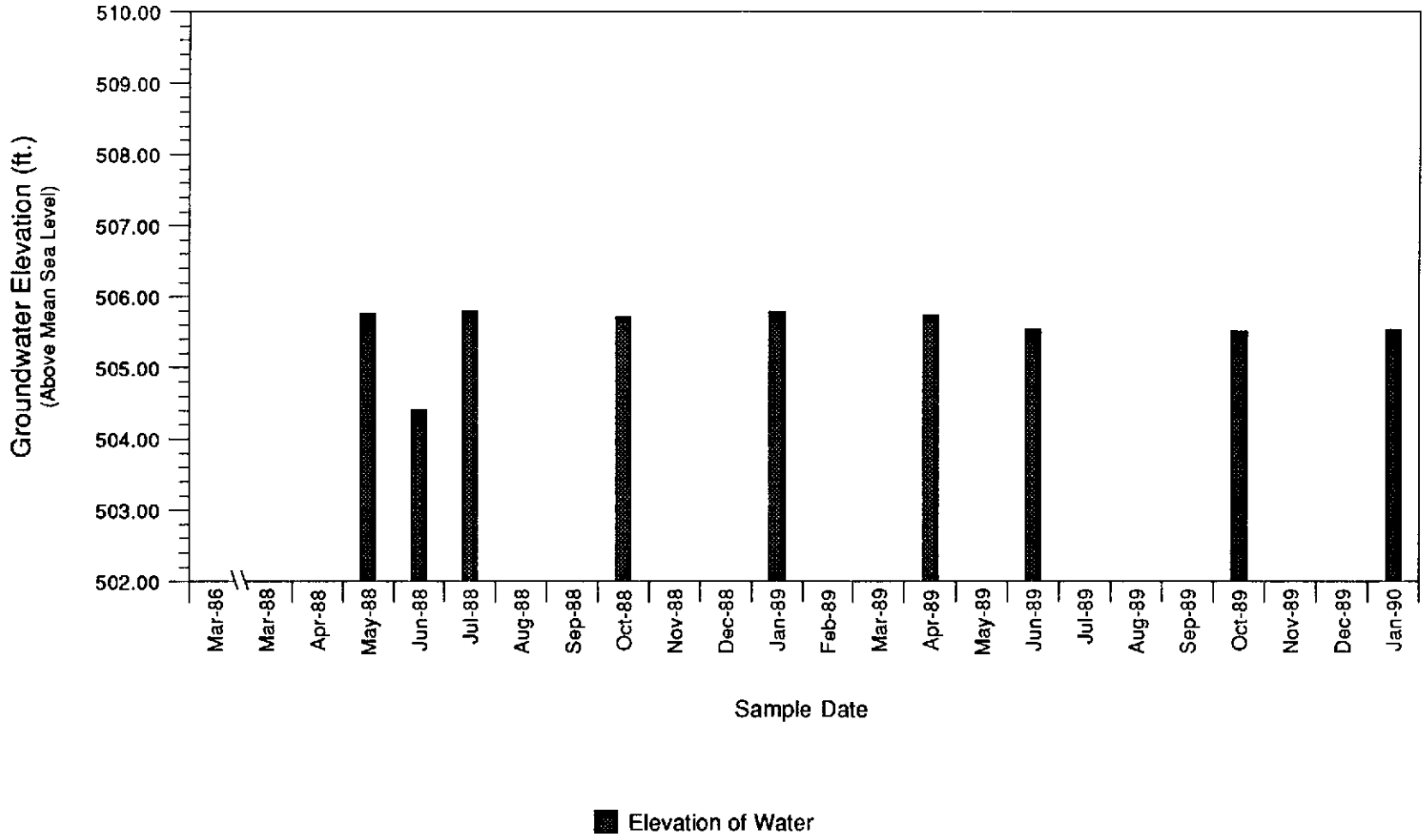
GROUNDWATER MONITOR WELL C-17

Chevron Service Station #91924 Livermore, California



GROUNDWATER MONITOR WELL C-19

Chevron Service Station #91924 Livermore, California



ATTACHMENT D

CHAIN-OF-CUSTODY FORMS

1 of 2

Chain-of-Custody Record

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

Chevron Facility Number: 91924
Consultant Release Number:
Consultant Project Number: 1-024.01
Consultant Name: Western Geo. Resources, Inc.
Address: 2169 E. Francisco Bl., San Rafael 94901
Fax Number: 415-457-8521
Project Contact (Name): Scott Weber
(Phone): 415-457-2595

Chevron Contact (Name): Gordon Davitt
(Phone): 415-842-9525
Laboratory Name: Superior Analytical
Contract Number: 253240
Samples Collected by (Name): R. Smith / B Baldwin
Collection Date: 1-3-90 & 1-4-90
Signature: R. D. Smith

Sample Number	Lab Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite	Time	Sample Preservation	Iced	Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline	Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline + Diesel	503 Oil and Grease	Arom. Volatiles - BTXE Soil: 8020/Wtr.: 602	Arom. Volatiles - BTXE Soil: 8240/Wtr.: 624	Total Lead DHS-Luft	EDB DHS-AB 1803	EPA 601			Remarks
01040-01 AB CD		4	W		1248	NONE / HCl	X	X			X				X			AB have no pres. CD pres. w/ HCl
01040-02 ABCD		4			1429	AB = NONE CD = HCl												601 for AB 602/8015 for CD
01040-03 ABCD		↓			1209	↓		↓			↓				↓			
01040-05 ABCD					1304													
01040-06 ABCD					1108													
01040-07 ABCD					1145													
01040-08 ABCD					1048													
01040-09 ABCD					1028													
01040-10 ABCD					1105													
01040-11 ABCD					1013													
01040-12 ABCD					1132													
01040-13 ABCD		↓			1337	↓		↓			↓				↓			
01040-14 ACD		3			905	A = NONE CD = HCl		X			X				X			601 for A — only ① via 602/8015 for CD

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
R. D. Smith	WGR, Inc.	1-4-90 / 1205			
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
			[signature]		1/4/90 1207

Turn Around Time (Circle Choice)
24 Hrs
48 Hrs
~~5 Days~~
10 Days

Printed in U.S.A.

White / Project File Canary / Sampler Pink / Lab

2 of 2

Chain-of-Custody Record

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

Chevron Facility Number: 91924
Consultant Release Number:
Consultant Project Number: 1-024.01
Consultant Name: Western Geo. Resources
Address: 269 E. Francisco Blvd., San Rafael
Fax Number:
Project Contact (Name): Scott Weber
(Phone): 415-457-7595

Chevron Contact (Name): Gordon Davitt
(Phone): 415-842-9525
Laboratory Name: Superior Analytical
Contract Number: 2532410
Samples Collected by (Name): R. Smith / B. Baldwin
Collection Date: 1-3-90 / 1-4-90
Signature: R. D. Smith

Sample Number	Lab Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite	Time	Sample Preservation	Iced	Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline	Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline + Diesel	503 Oil and Grease	Arom. Volatiles - BTXE Soil: 8020/Wtr.: 602	Arom. Volatiles - BTXE Soil: 8240/Wtr.: 624	Total Lead DHS-Luft	EDB DHS-AB 1803	EPA 601			Remarks
01040-15 ABCD		4	W		1228	NONE/HCl	X	X			X				X			601 for AB 602/8015 for CD
01040-16 ABCD		11	↓		1345	AB = none CD = HCl	↓	↓			↓				↓			↓
01040-17 ABCD		↓	↓		1305	↓	↓	↓			↓				↓			↓
01040-18 ABCD		↓	↓		1202	↓	↓	↓			↓				↓			↓
01040-19 ABCD		↓	↓		1236	↓	↓	↓			↓				↓			↓
01040-TB		2	↓		—	NONE	↓											→

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
R. D. Smith	WGR, Inc.	1-4-90 / 1205			
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
					1/4/90 1210

Turn Around Time (Circle Choice)
24 Hrs
48 Hrs
~~5 Days~~
10 Days

Printed in U.S.A.

White / Project File Canary / Sampler Pink / Lab

Chain-of-Custody Record

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

Chevron Facility Number: 91924
Consultant Release Number:
Consultant Project Number: 1-024.01
Consultant Name: Western Geo. Resources
Address: 2169 E. Francisco Bl., San Rafael
Fax Number: 415-457-8521
Project Contact (Name): Scott Weber
(Phone): 415-457-7595

Chevron Contact (Name): Gordon Dewitt
(Phone): 415-842-9525
Laboratory Name: Superior Analytical
Contract Number: 253240
Samples Collected by (Name): R. Smith / B. Baldwin
Collection Date: 1-3-90
Signature: R. D. Smith

Sample Number	Lab Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite	Time	Sample Preservation	Iced	Analyses To Be Performed: Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline	Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline + Diesel	503 Oil and Grease	Arom. Volatiles - BTXE Soil: 8020/Wtr.: 602	Arom. Volatiles - BTXE Soil: 8240/Wtr.: 624	Total Lead DHS-Luft	EDB DHS-AB 1803	EPA 601			Remarks
010 40-14 EF		2	W	G	1000	NONE	✓								X			
010 40-14 GH		2	W	G	"	HCl	✓	X			X							

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
R. D. Smith	WGR, Inc.	1-4-90 / 12:05			
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time 1/4/90 1207

Turn Around Time (Circle Choice): 24 Hrs / 48 Hrs / ~~5 Days~~ / 10 Days

Printed in U.S.A.

White / Project File Canary / Sampler Pink / Lab

ATTACHMENT E

LABORATORY REPORTS WITH QUALITY ASSURANCE/ QUALITY CONTROL DOCUMENTATION

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT 1 • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394
CLIENT: Western Geologic Resources
CLIENT JOB NO.: 1-024.01

DATE RECEIVED: 01/04/90
DATE REPORTED: 01/18/90

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
10394- 1	01040-01 a,b,c,d	01/03/90	01/11/90
10394- 2	01040-02 a,b,c,d	01/03/90	01/11/90
10394- 3	01040-03 a,b,c,d	01/03/90	01/11/90
10394- 4	01040-05 a,b,c,d	01/03/90	01/11/90
10394- 5	01040-06 a,b,c,d	01/03/90	01/11/90
10394- 6	01040-07 a,b,c,d	01/03/90	01/11/90
10394- 7	01040-08 a,b,c,d	01/03/90	01/11/90
10394- 8	01040-09 a,b,c,d	01/03/90	01/11/90
10394- 9	01040-10 a,b,c,d	01/03/90	01/11/90
10394-10	01040-11 a,b,c,d	01/03/90	01/11/90

Laboratory Number:	10394 1	10394 2	10394 3	10394 4	10394 5
ANALYTE LIST	Amounts/Quantitation Limits (ug/L)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	1100	880	ND<500	ND<500	3200
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	36	3	ND<0.5	0.7	20
TOLUENE:	0.68	ND<0.5	ND<0.5	ND<0.5	97
ETHYL BENZENE:	30	19	0.9	8	65
XYLENES:	30	17	1.4	6	410

Laboratory Number:	10394 6	10394 7	10394 8	10394 9	10394 10
ANALYTE LIST	Amounts/Quantitation Limits (ug/L)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	5600	910	1500	ND<500	ND<500
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	1200	ND<0.5	ND<0.5	ND<0.5	ND<0.5
TOLUENE:	13	ND<0.5	0.7	ND<0.5	ND<0.5
ETHYL BENZENE:	180	1	2.2	ND<0.5	ND<0.5
XYLENES:	200	1	37	0.5	0.7

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT 1 • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394
CLIENT: Western Geologic Resources
CLIENT JOB NO.: 1-024.01

DATE RECEIVED: 01/04/90
DATE REPORTED: 01/18/90

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
10394-11	01040-12 a,b,c,d	01/03/90	01/11/90
10394-12	01040-13 a,b,c,d	01/03/90	01/11/90
10394-13	01040-14 a,b,c,d	01/03/90	01/11/90
10394-14	01040-15 a,b,c,d	01/03/90	01/11/90
10394-15	01040-16 a,b,c,d	01/03/90	01/11/90
10394-16	01040-17 a,b,c,d	01/03/90	01/11/90
10394-17	01040-18 a,b,c,d	01/03/90	01/11/90
10394-18	01040-19 a,b,c,d	01/03/90	01/11/90
10394-19	01040-TB	01/03/90	01/11/90
10394-20	01040-14 e,f,g,h	01/03/90	01/11/90

Laboratory Number:	10394 11	10394 12	10394 13	10394 14	10394 15
ANALYTE LIST	Amounts/Quantitation Limits (ug/L)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<500	ND<500	76000	ND<500	1300
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<0.5	ND<0.5	3900	ND<0.5	150
TOLUENE:	ND<0.5	ND<0.5	8100	ND<0.5	3
ETHYL BENZENE:	ND<0.5	0.5	1200	ND<0.5	41
XYLENES:	0.6	0.6	7700	ND<0.5	24

Laboratory Number:	10394 16	10394 17	10394 18	10394 19	10394 20
ANALYTE LIST	Amounts/Quantitation Limits (ug/L)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	14000	ND<500	ND<500	ND<500	120000
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<0.3	ND<0.5	1.2	ND<0.5	9500
TOLUENE:	29	ND<0.5	0.7	0.5	16000
ETHYL BENZENE:	120	ND<0.5	1.3	ND<0.5	1800
XYLENES:	210	ND<0.5	0.9	0.7	13000

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT 1 • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

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
Diesel by Modified EPA SW-846 Method 8015
Gasoline by Purge and Trap: EPA MEthod 8015/5030
ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

QA/QC INFORMATION
SET: 10394

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 503E:
Duplicate RPD NA
Minimum Detection Limit in Water: 5000ug/L
Modified EPA Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 1000ug/L
Daily Standard run at 200mg/L; RPD Diesel = NA
MS/MSD Average Recovery = NA: Duplicate RPD = NA
8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 500ug/L
Daily Standard run at 2mg/L; RPD Gasoline = <15
MS/MSD Average Recovery = 120%: Duplicate RPD = 2%
8020/BTXE
Minimum Quantitation Limit in Water: 0.50ug/L
Daily Standard run at 20ug/L; RPD = <15%
MS/MSD Average Recovery = 95%: Duplicate RPD = 6%

Richard Srna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT 1 • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394-1
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-01

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	1
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT 1 · SAN FRANCISCO, CA 94124 · PHONE (415) 647-2081

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

LABORATORY NO.: 10394-2
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-02

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	1
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT 1 · SAN FRANCISCO, CA 94124 · PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394-3
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-03

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	0.7
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT 1 • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394-4
CLIENT: Western Geo. Res
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-05

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	ND <0.5
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT 1 · SAN FRANCISCO, CA 94124 · PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394-5
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-06

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	1
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
Laboratory Director

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CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394-6
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-07

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	1
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.

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CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394-7
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-08

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	1.5
1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.

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

LABORATORY NO.: 10394-8
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-09

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	1.5
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.
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CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394-9
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-10

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	3
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
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CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394-10
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-11

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	ND <0.5
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
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SUPERIOR ANALYTICAL LABORATORY, INC.

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CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394-11
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-12

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	ND <0.5
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
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CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394-12
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-13

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	ND <0.5
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
Laboratory Director

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CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394-13
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
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DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-14 a,b,c,d

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	1
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	18
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.

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

LABORATORY NO.: 10394-14
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-15

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	ND <0.5
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT 1 • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394-15
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-16

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	5
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

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CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394-16
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-17

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	ND <0.5
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
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CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394-17
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-18

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	1
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

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1555 BURKE, UNIT 1 • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10394-18
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-19

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	11
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

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1555 BURKE, UNIT 1 · SAN FRANCISCO, CA 94124 · PHONE (415) 647-2081

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

LABORATORY NO.: 10394-19
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-TB

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	ND <1.0
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	ND <0.5
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

Richard Srna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.

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

LABORATORY NO.: 10394-20
CLIENT: Western Geo.Res.
JOB NO.: 1-024.01

DATE SAMPLED: 01/03/90
DATE RECEIVED: 01/04/90
DATE ANALYZED: 01/12/90

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE:01040-14 e,f,g,h

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane	0.5	ND <0.5
Bromomethane	0.5	ND <0.5
Vinyl chloride	1.0	3
Dichlorodifluoromethane	0.5	ND <0.5
Chloroethane	0.5	ND <0.5
Methylene chloride	4.0	ND <4.0
Trichlorofluoromethane	0.5	ND <0.5
1,1-Dichloroethene	0.2	ND <0.2
1,1-Dichloroethane	0.5	ND <0.5
trans-1,2-Dichloroethene	0.5	ND <0.5
Chloroform	0.5	ND <0.5
1,2-Dichloroethane	0.5	25
1,1,1-Trichloroethane	0.5	ND <0.5
Carbon tetrachloride	0.5	ND <0.5
Bromodichloromethane	0.5	ND <0.5
1,2-Dichloropropane	0.5	ND <0.5
cis-1,3-Dichloropropene	0.5	ND <0.5
Trichloroethylene	0.5	ND <0.5
1,1,2-Trichloroethane	0.5	ND <0.5
trans-1,3-Dichloropropene	0.5	ND <0.5
Dibromochloromethane	0.5	ND <0.5
2-Chloroethylvinyl ether	1.0	ND <1.0
Bromoform	0.5	ND <0.5
Tetrachloroethene / 1,1,2,2-Tetrachloroethane	0.5	ND <0.5
Chlorobenzene	0.5	ND <0.5
1,3-Dichlorobenzene	0.5	ND <0.5
1,2-Dichlorobenzene	0.5	ND <0.5
1,4-Dichlorobenzene	0.5	ND <0.5
1,1,2-Trichlorotrifluoroethane	0.5	ND <0.5

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15%
MS/MSD average recovery = 95%
MS/MSD RPD =< 3%

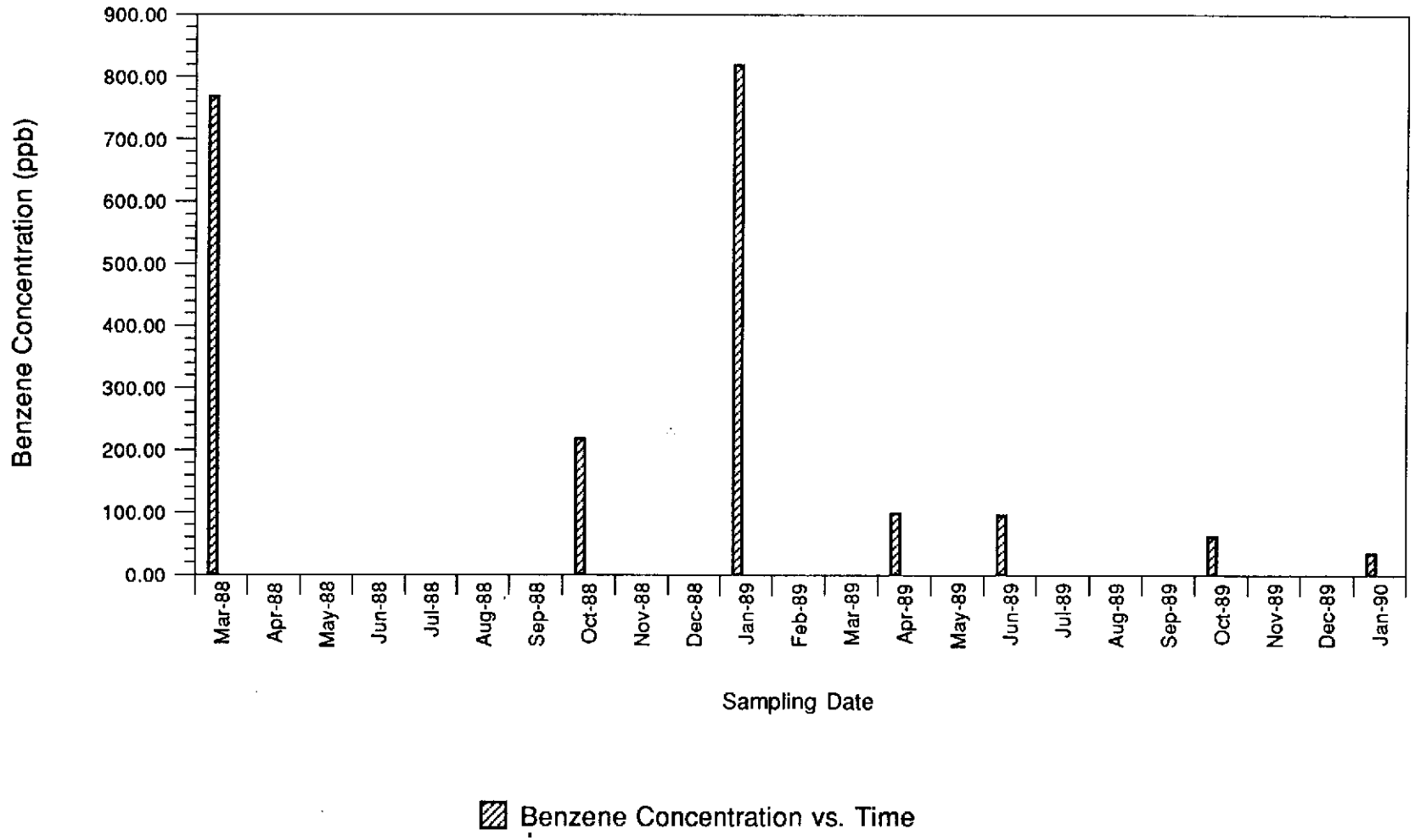
Richard Srna, Ph.D.
Laboratory Director

ATTACHMENT F

BENZENE CONCENTRATIONS OVER TIME IN SELECTED MONITOR WELLS

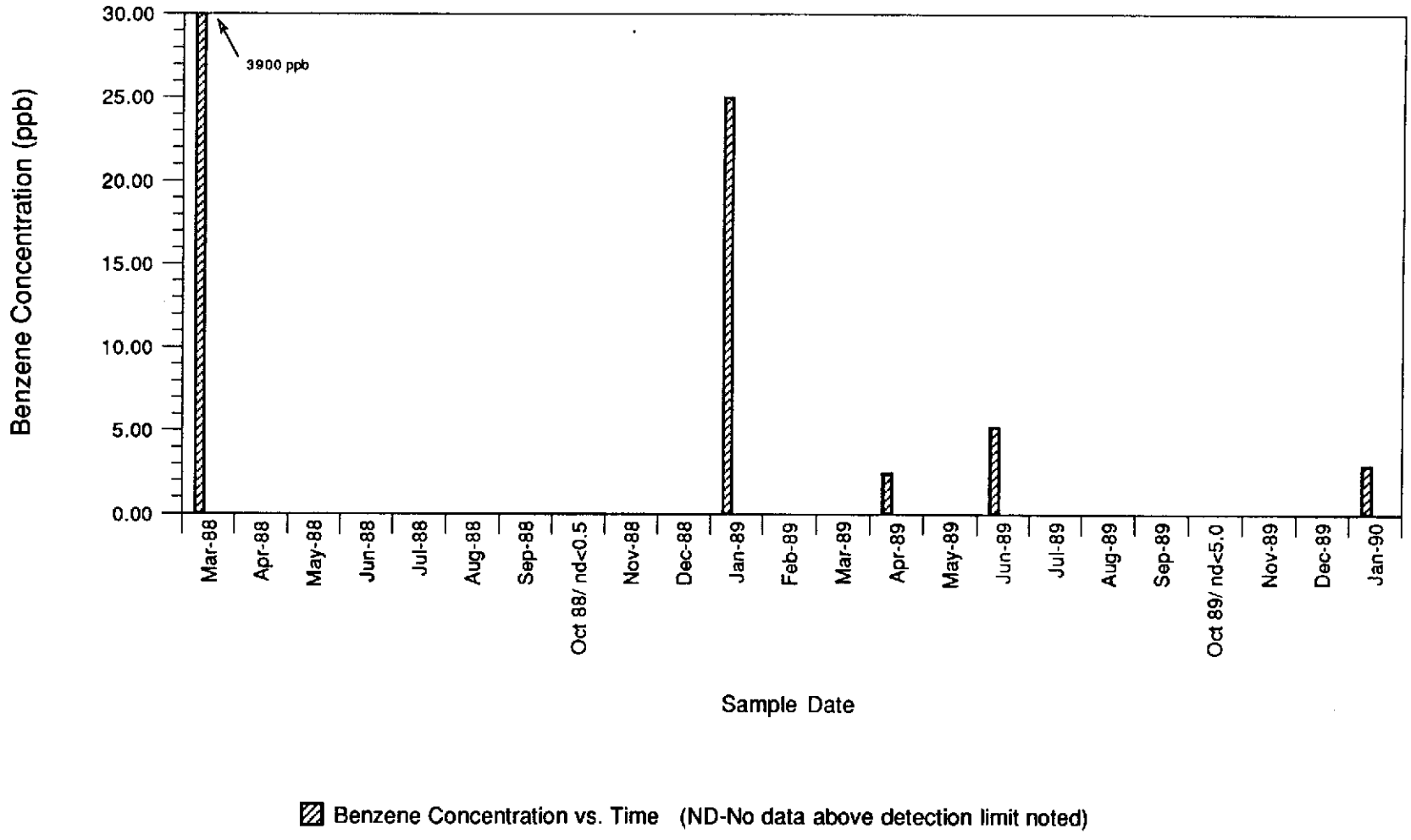
GROUNDWATER MONITOR WELL C-1

Chevron Service Station #91924 Livermore, California



GROUNDWATER MONITOR WELL C-2

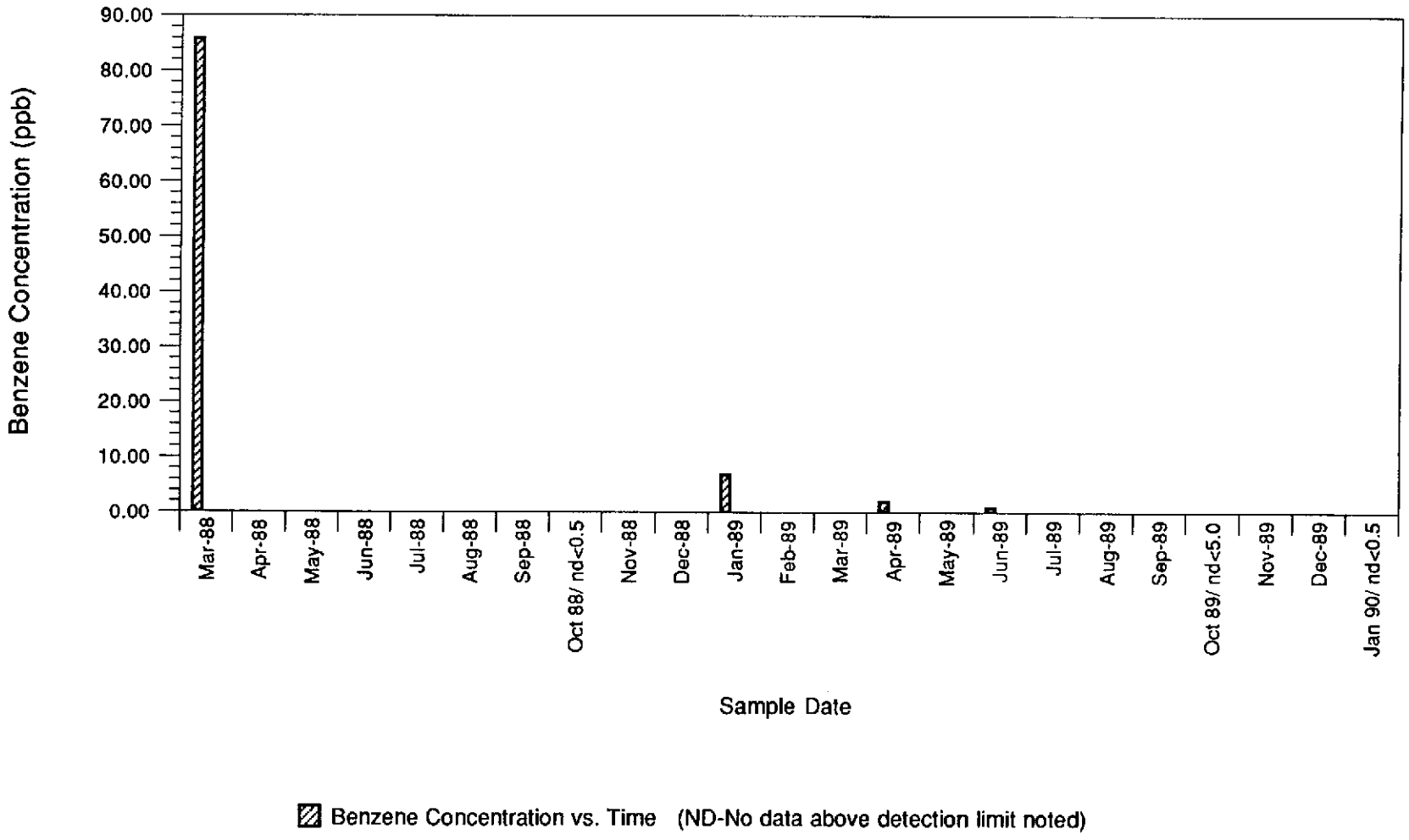
Chevron Service Station #91924 Livermore, California



Benzene Concentration vs. Time (ND-No data above detection limit noted)

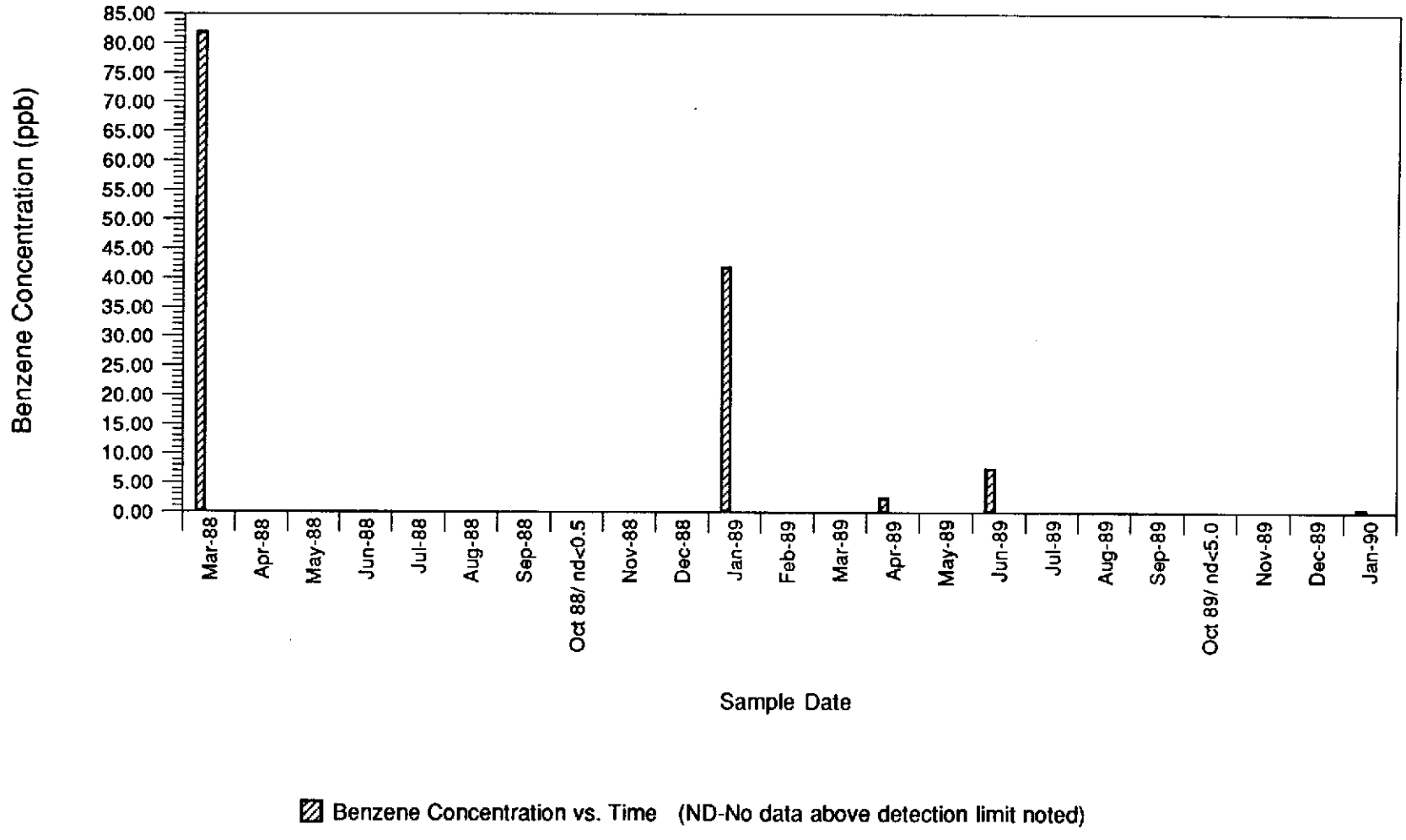
GROUNDWATER MONITOR WELL C-3

Chevron Service Station #91924 Livermore, California



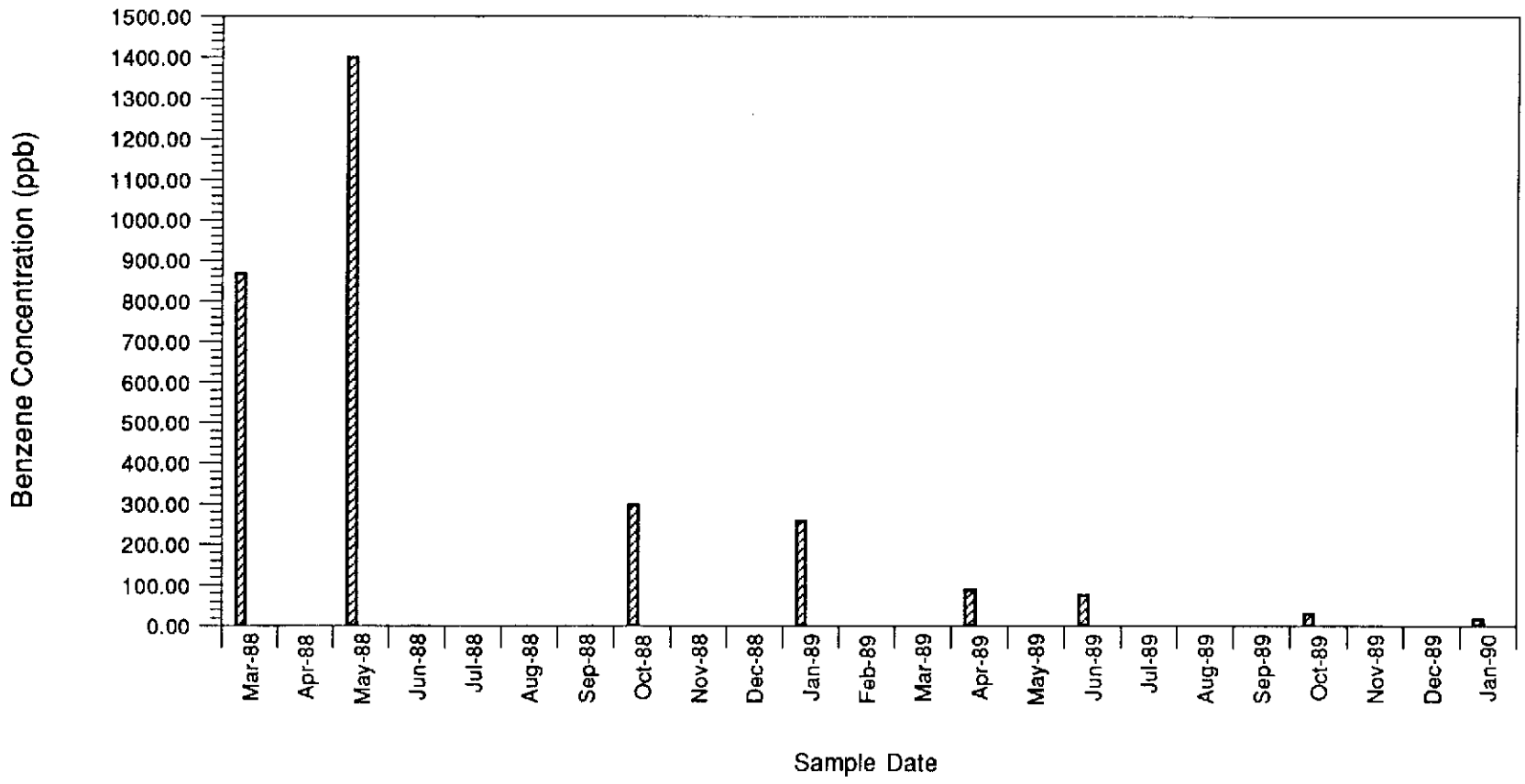
GROUNDWATER MONITOR WELL C-5

Chevron Service Station #91924 Livermore, California



GROUNDWATER MONITOR WELL C-6

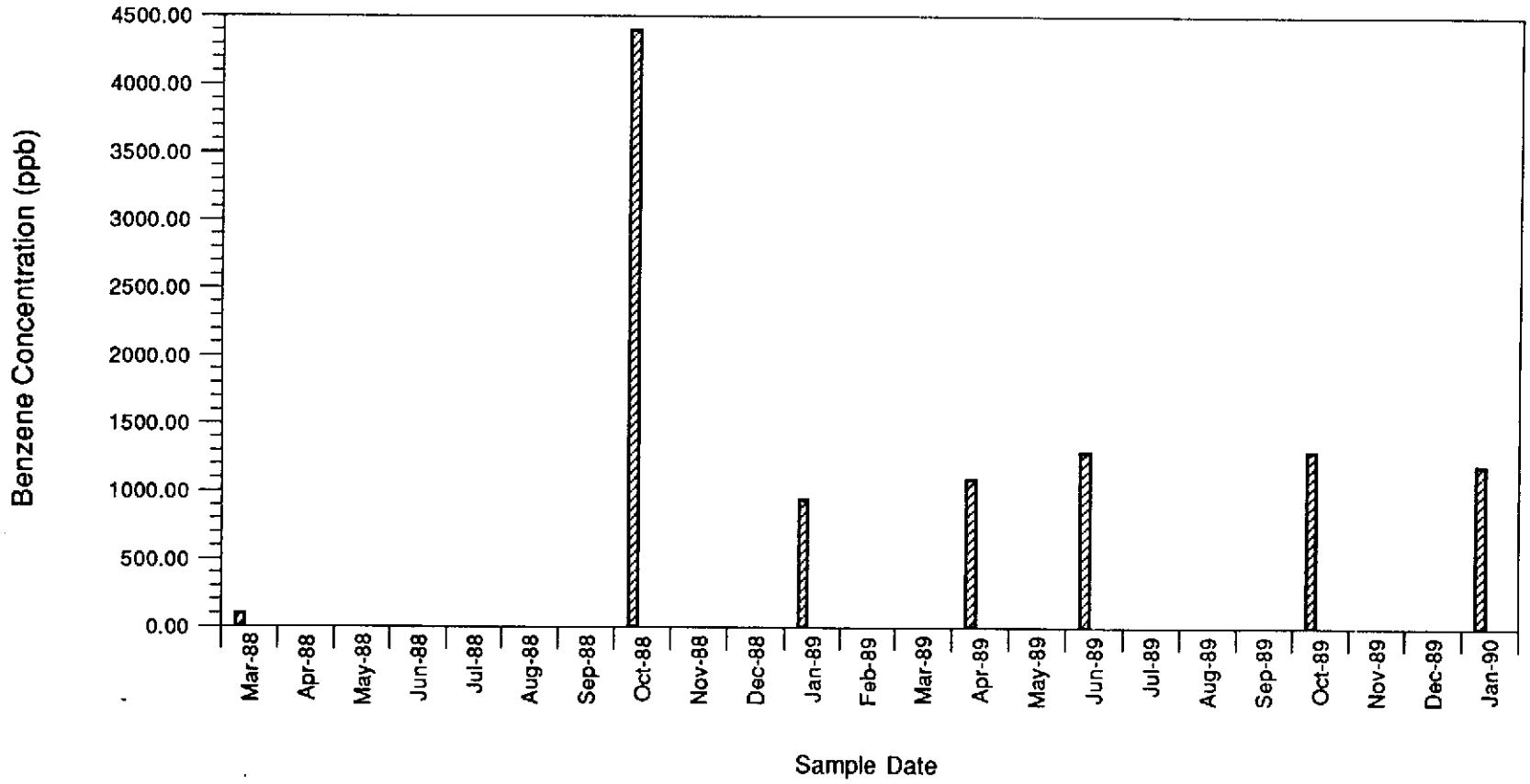
Chevron Service Station #91924 Livermore, California



Benzene Concentration vs. Time (ND-No data above detection limit noted)

GROUNDWATER MONITOR WELL C-7

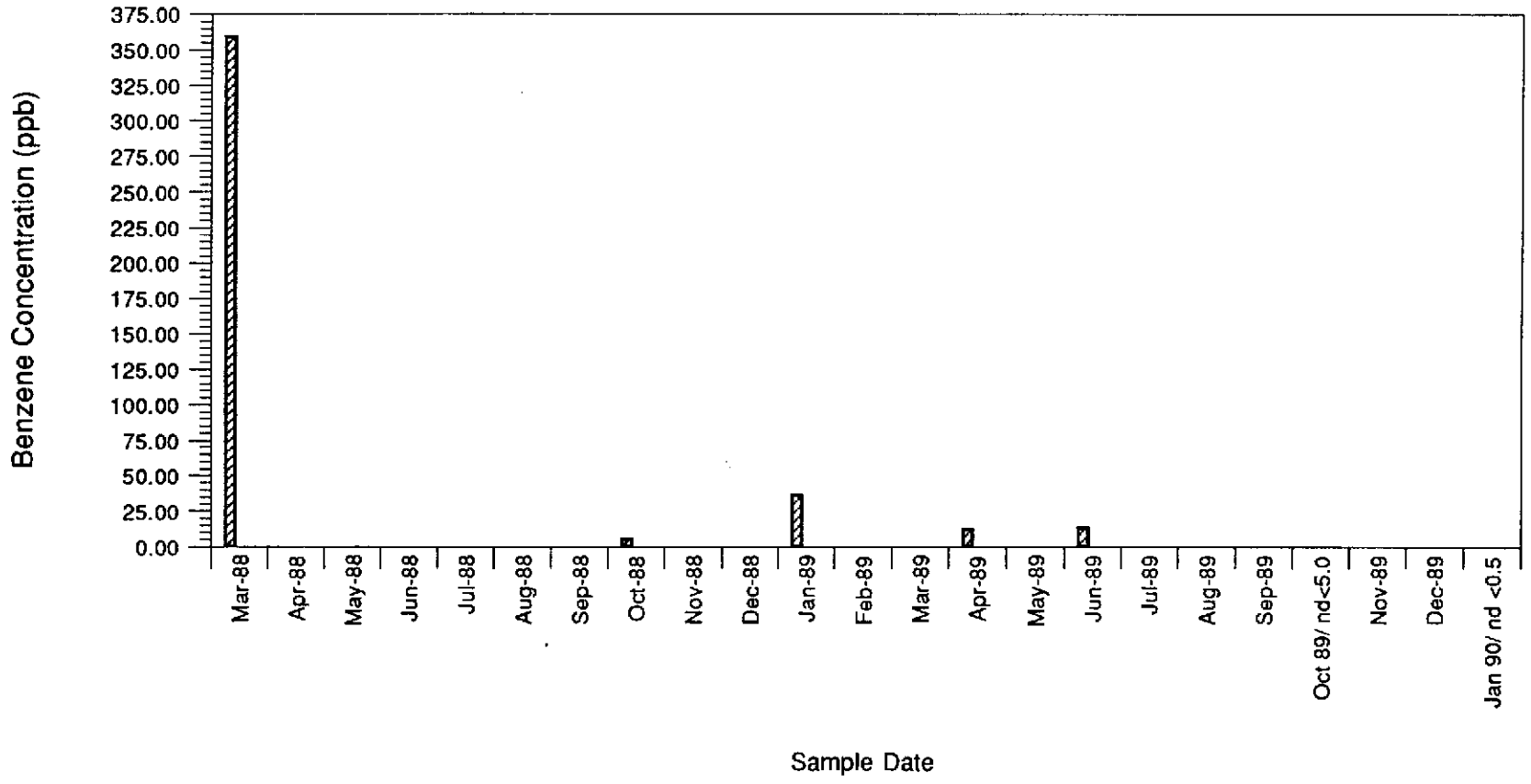
Chevron Service Station #91924 Livermore, California



Benzene Concentration vs. Time (ND-No data above detection limit noted)

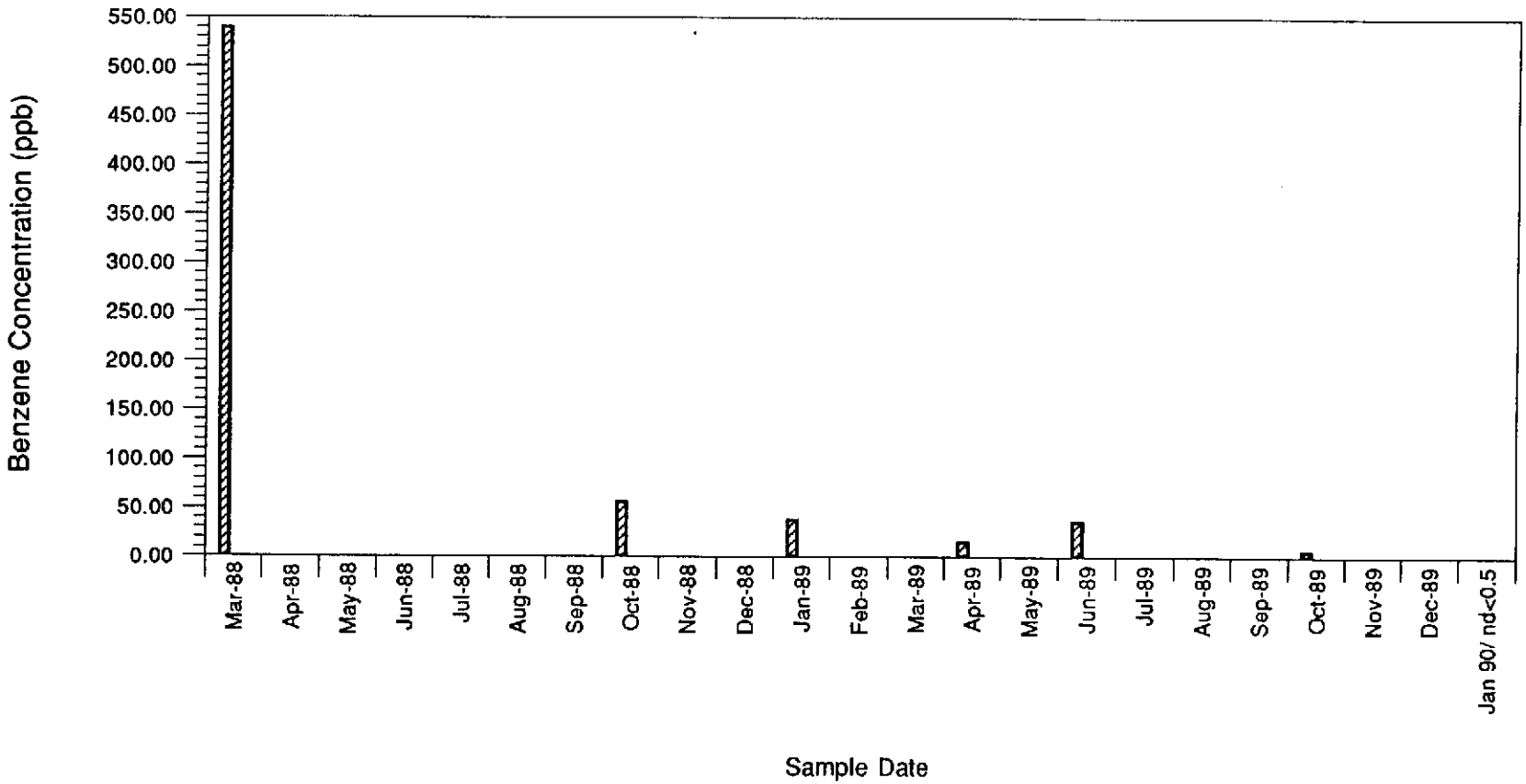
GROUNDWATER MONITOR WELL C-8

Chevron Service Station #91924 Livermore, California



GROUNDWATER MONITOR WELL C-9

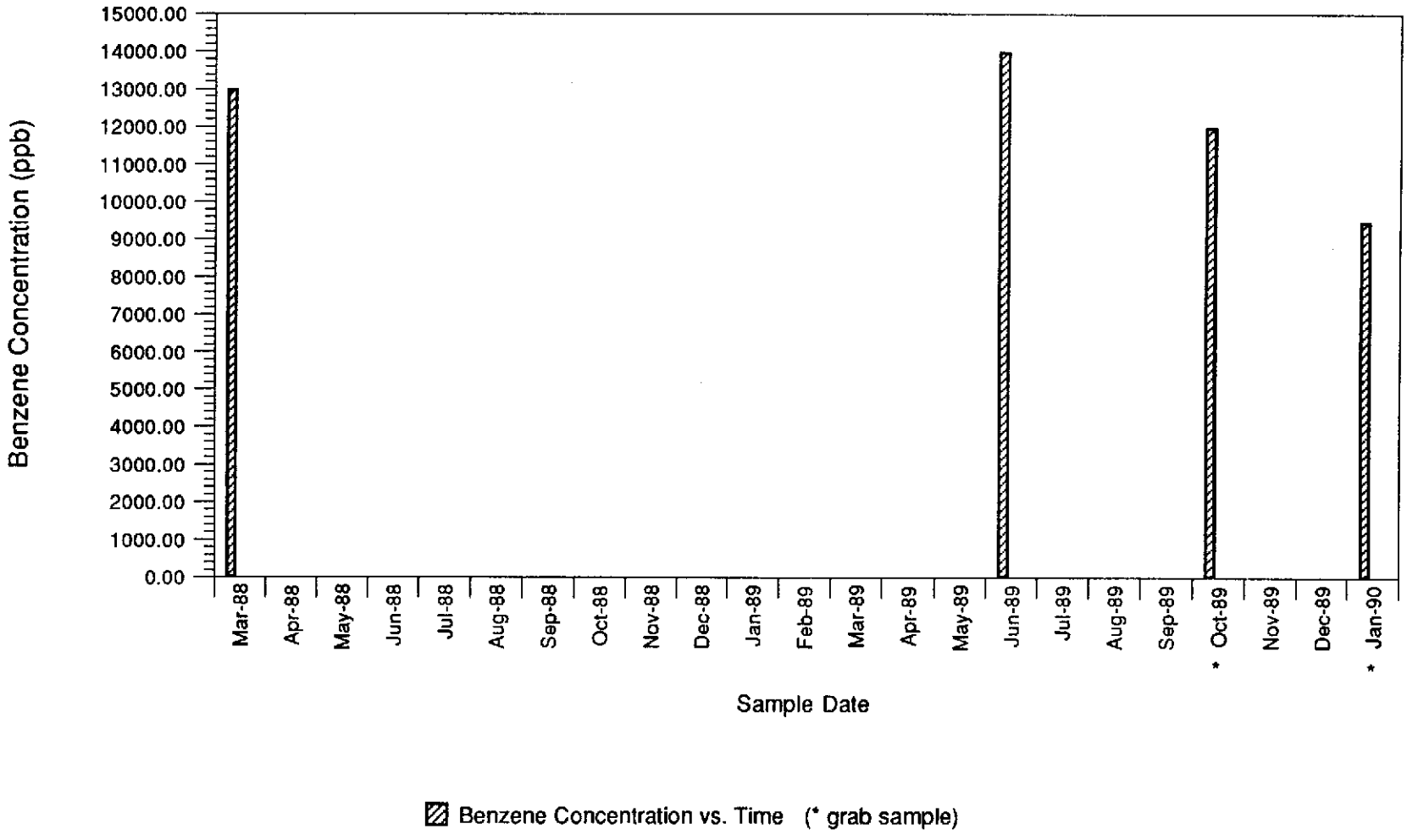
Chevron Service Station #91924 Livermore, California



Benzene Concentration vs. Time (ND-No data above detection limit noted)

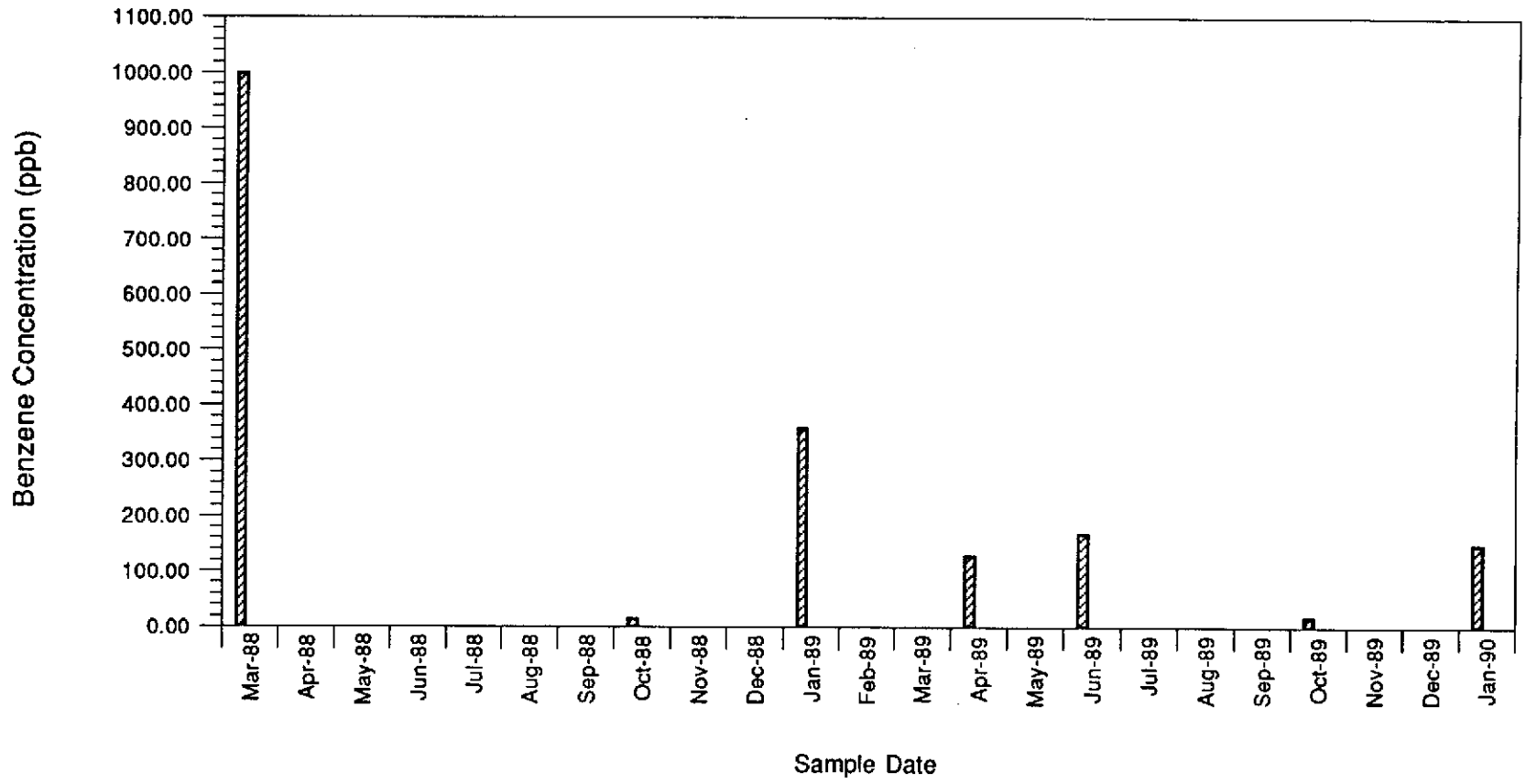
GROUNDWATER MONITOR WELL C-14

Chevron Service Station #91924 Livermore, California



GROUNDWATER MONITOR WELL C-16

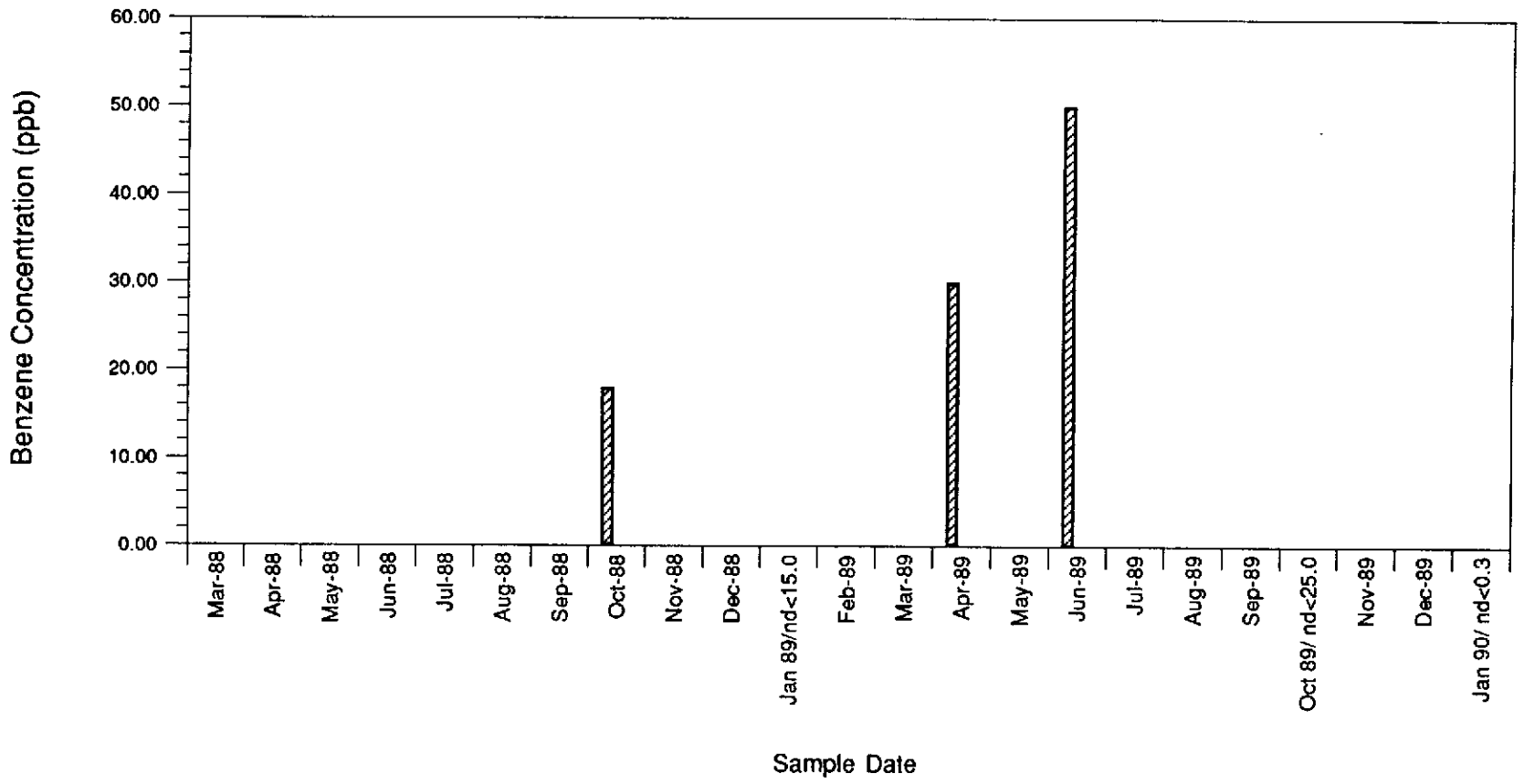
Chevron Service Station #91924 Livermore, California



Benzene Concentration vs. Time (ND-No data above detection limit noted)

GROUNDWATER MONITOR WELL C-17

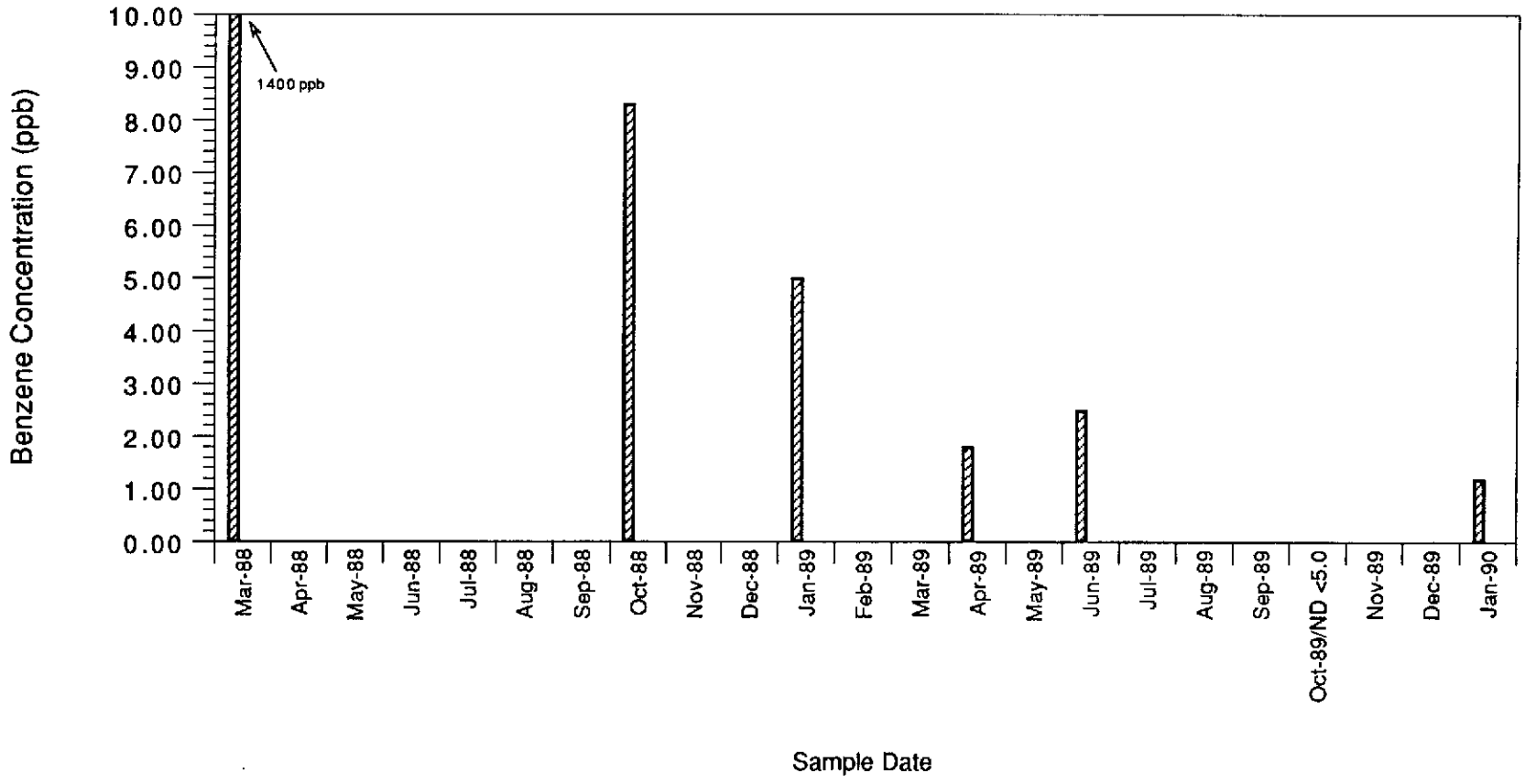
Chevron Service Station #91924 Livermore, California



Benzene Concentration vs. Time (ND-No data above detection limit noted)

GROUNDWATER MONITOR WELL C-19

Chevron Service Station #91924 Livermore, California



Benzene Concentration vs. Time (ND-No data above detection limit noted)