



Chevron

54 JUL -6 PM 4:38

June 23, 1994

Chevron U.S.A. Products Company
2410 Camino Ramon
San Ramon, CA 94583
PO Box 5004
San Ramon, CA 94583-0804

Marketing Department
Phone 510 842 9500

Ms. Jennifer Eberle
Alameda County Health Care Services
Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

**Re: Former Chevron Service Station #9-4816
301 14th Street, Oakland, CA**

Dear Ms. Eberle:

Enclosed is the Groundwater Monitoring and Sampling Activities report dated April 15, 1994, prepared by our consultant Groundwater Technology, Inc. for the above referenced site. As indicated in the report, ground water samples collected were analyzed for total petroleum hydrocarbons as gasoline (TPH-G) and BTEX. The levels of dissolved hydrocarbon constituents in the ground water samples analyzed were consistent with previous observations at the site. Separate-phase hydrocarbons were not detected in any of the monitor wells during the past quarter.

Sierra Environmental Services has completed the installation of an additional down gradient ground water monitor well^{ptw-11} and a new ground water extraction well in the immediate vicinity of C-5. Due to limited access between the treatment system enclosure and the adjacent building, monitor well C-5 could not be reconstructed as an extraction well. The new well location was selected under advice from Weiss Associates and is expected to provide sufficient hydrocarbon containment. We expect to forward a report documenting field activities to your office by July 15, 1994. MW-12

Weiss Associates has recently selected a contractor to perform the remediation system modifications. All building permits have been received from the City of Oakland and construction is scheduled to begin on June 28, 1994.

If you have any questions or comments, please do not hesitate to contact me at (510) 842-8134.

Sincerely,
CHEVRON U.S.A. PRODUCTS COMPANY

Mark A. Miller
Site Assessment and Remediation Engineer

Enclosure

cc: Mr. Kevin Graves, RWQCB - Bay Area
Mr. Mike Cooke, Weiss Associates
Mr. J.N. Robbins, CHVPK/V1156
Ms. B.C. Owen

GROUNDWATER TECHNOLOGY, INC.

4057 Port Chicago Highway, Concord, CA 94520 (415) 671-2387

FAX: (415) 685-9148

April 15, 1994

Project No. 020104084

Mr. Mark Miller
Chevron U.S.A. Products Company
2410 Camino Ramon
San Ramon, CA 94583-0804

SUBJECT: *Groundwater Monitoring and Sampling Activities*
Chevron Service Station No.9-4816
301 14th Street, Oakland, California

Dear Mr. Mark Miller:

Groundwater Technology, Inc. presents the quarterly groundwater monitoring and sampling data collected on March 9, 1994. The eleven groundwater monitoring wells at this site were gauged to measure depth to groundwater (DTW) and to check for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were not detected in the monitoring wells. A potentiometric surface map and a summary of groundwater monitoring data are presented in Attachments 1 and 2, respectively. After the DTW was measured, each monitoring well was purged and sampled. Field data sheets are presented in Attachment 3. The groundwater samples collected were analyzed for benzene, toluene, ethylbenzene, xylenes and for total petroleum hydrocarbons-as-gasoline. Results of the chemical analyses are summarized in Table 1. The laboratory report and chain-of-custody record are included in Attachment 4. Monitoring-well purge water was transported by Groundwater Technology to the Chevron Terminal in Richmond, California, for recycling.

Groundwater Technology is pleased to assist Chevron on this project. If you have any questions or comments, please contact our Concord office at (510) 671-2387.

Sincerely,
Groundwater Technology, Inc.
Written/Submitted by



Tim Watchers
Project Manager

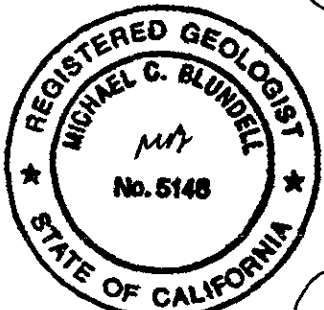
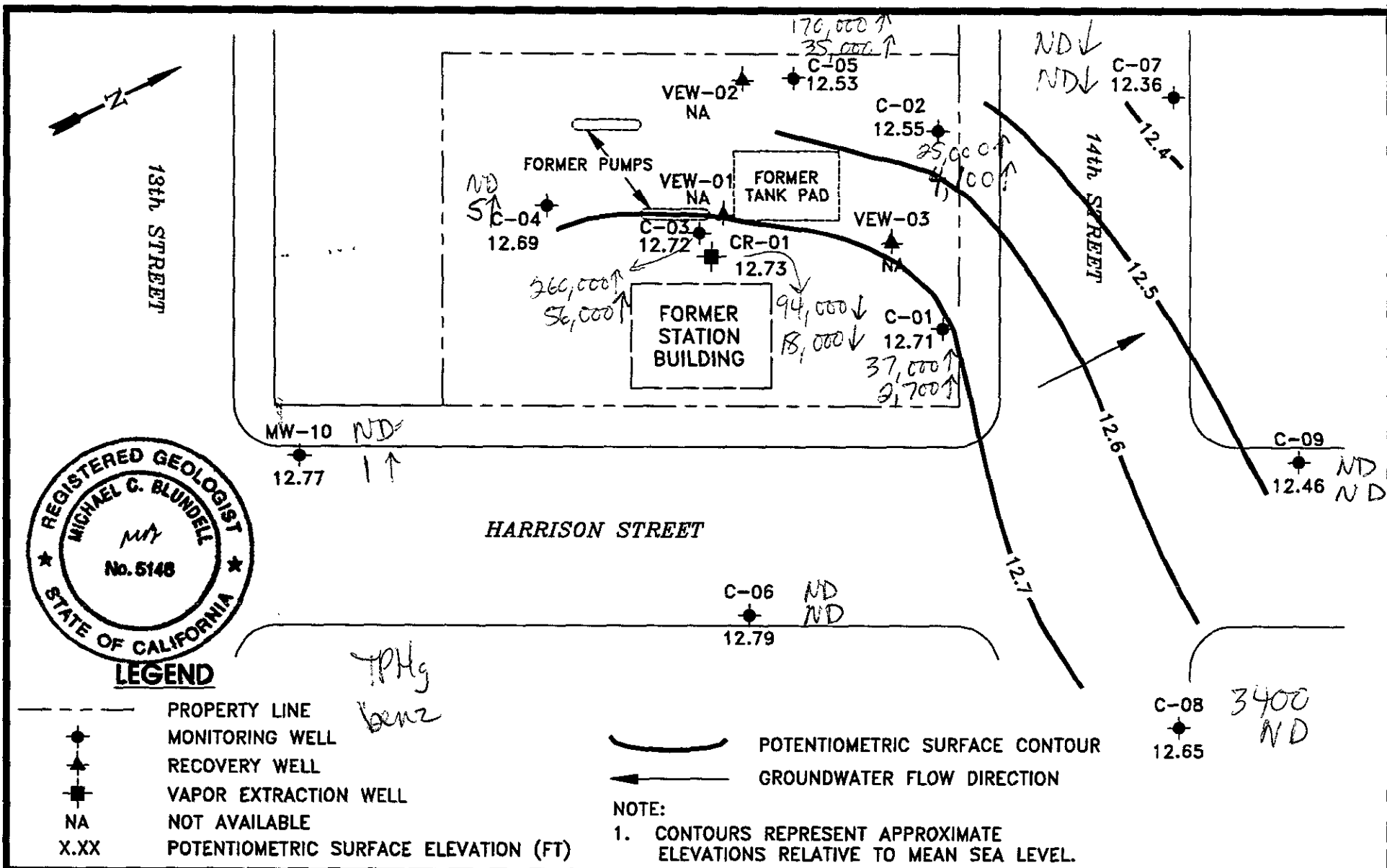
PR *KJ*

Attachment 1 Figure
Attachment 2 Table
Attachment 3 Field Data Sheets
Attachment 4 Laboratory Report

For:
Wendell C. Lattz
Vice President, General Manager
West Region

ATTACHMENT 1

Figure



*TPHg
benz*

		CLIENT: CHEVRON U.S.A. PRODUCTS CO. SERVICE STATION No. 9-4816		POTENTIOMETRIC SURFACE MAP (3/9/94)	
PROJECT NO.: 02010-4084		LOCATION: 301 14TH STREET OAKLAND, CALIFORNIA			
FILE: 4084PSM, (1:40)	REV.:	DES.: TW	DET.: SS	DATE: 3/28/94	PM: <i>JAW</i>
				PE/RG: <i>MB</i>	FIGURE: 1

ATTACHMENT 2

Table

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
 Chevron Service Station No. 9-4816
 301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-1	06/13/90	26,000	2,800	5,100	400	2,600	21.97	---	8.85
	10/30/90	67,000	6,700	8,700	900	5,000	21.72	---	9.10
30.82	01/04/91	---	---	---	---	---	21.84	---	8.98
	01/07/91	100,000	12,000	20,000	1,600	11,000	21.95	---	8.87
	01/11/91	---	---	---	---	---	21.99	---	8.83
	02/15/91	---	---	---	---	---	22.12	---	8.70
	05/02/91	59,000	5,600	7,700	700	5,200	22.06	---	8.76
	05/30/91	---	---	---	---	---	22.04	---	8.78
	06/13/91	---	---	---	---	---	21.80	---	9.02
	07/12/91	---	---	---	---	---	22.01	---	8.81
	08/07/91	7,900	2,000	150	240	330	---	---	---
	09/24/91	---	---	---	---	---	---	---	---
30.87	10/18/91	---	---	---	---	---	22.42	---	8.45
	11/05/91	8,700	1,500	1,200	150	580	22.36	---	8.51
	01/06/92	---	---	---	---	---	22.34	---	8.53
	01/16/92	---	---	---	---	---	22.28	0.03	8.61
	01/22/92	---	---	---	---	---	22.43	0.09	8.51
	01/28/92	---	---	---	---	---	22.28	0.02	8.61
	02/04/92	---	---	---	---	---	22.24	0.01	8.64
	02/14/92	---	---	---	---	---	22.16	Sheen	8.71
	02/21/92	---	---	---	---	---	22.07	Sheen	8.80
	02/25/92	---	---	---	---	---	21.95	Sheen	8.92
	03/06/92	---	---	---	---	---	21.85	0.00	9.02
	03/19/92	---	---	---	---	---	20.54	0.00	10.33
	05/06/92	---	---	---	---	---	21.39	Sheen	9.48
	08/31/92	---	---	---	---	---	21.51	Sheen	9.36
12/01/92	---	---	---	---	---	21.88	Sheen	8.99	
32.81	03/15/93	130,000	8,900	13,000	1,800	11,000	20.90	0.00	11.91
	06/08/93	23,000	2,300	2,900	540	3,300	19.46	0.00	13.35
	09/07/93	14,000	1,300	2,100	340	2,800	19.83	0.00	12.98
	03/09/94	37,000↑	2,700↑	3,400	930	5,900	20.10	0.00	12.71

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4816
301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-2	06/13/90	15,000	1,100	1,900	260	1,700	22.08	---	8.83
	10/30/90	13,000	2,800	1,900	240	1,000	21.81	---	9.10
30.91	01/04/91	---	---	---	---	---	21.90	---	9.01
	01/07/91	15,000	3,400	2,500	340	1,400	22.03	---	8.88
	01/11/91	---	---	---	---	---	22.13	---	8.78
	02/15/91	---	---	---	---	---	22.36	---	8.55
	05/02/91	19,000	4,500	3,200	660	2,900	22.44	---	8.47
	05/02/91	21,000	3,200	2,200	410	2,000	22.44	---	8.47
	05/30/91	---	---	---	---	---	22.44	---	8.47
	06/13/91	---	---	---	---	---	---	---	---
30.72	07/12/91	---	---	---	---	---	22.57	0.01	8.35
	08/07/91	---	---	---	---	---	---	0.11	---
	09/24/91	---	---	---	---	---	---	---	---
	10/18/91	---	---	---	---	---	22.34	0.07	8.44
	11/05/91	---	---	---	---	---	22.26	0.04	8.49
	01/06/92	---	---	---	---	---	22.25	---	8.47
	01/16/92	---	---	---	---	---	22.16	0.01	8.57
	01/22/92	---	---	---	---	---	22.25	0.02	8.49
	01/28/92	---	---	---	---	---	22.18	0.01	8.55
	02/04/92	---	---	---	---	---	22.15	0.01	8.58
	02/14/92	---	---	---	---	---	22.09	0.00	8.63
	02/21/92	---	---	---	---	---	22.06	Sheen	8.66
	02/25/92	---	---	---	---	---	21.96	0.00	8.76
	03/06/92	---	---	---	---	---	21.80	0.00	8.92
33.27	03/19/92	---	---	---	---	---	21.12	0.00	9.60
	05/06/92	---	---	---	---	---	21.30	Sheen	9.42
	08/31/92	---	---	---	---	---	21.43	Sheen	9.29
	12/01/92	---	---	---	---	---	21.74	Sheen	8.98
	03/15/93	66,000	2,200	3,900	1,300	7,300	20.92	0.00	12.35
	06/08/93	23,000	1,400	2,300	680	4,000	20.05	0.00	13.22
	09/07/93	22,000	1,900	2,000	620	4,000	20.37	0.00	12.90
	03/09/94	25,000	4,100	1,100	670	3,100	20.72	0.00	12.55

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4816
301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-4	06/13/90	440	47	47	3	61	22.73	---	8.69
	10/30/90	210	72	13	1	11	22.48	---	8.94
31.42	01/04/91	---	---	---	---	---	22.64	---	8.78
	01/07/91	890	100	130	15	88	22.74	---	8.68
	01/11/91	---	---	---	---	---	22.81	---	8.61
	02/15/91	---	---	---	---	---	22.55	---	8.87
	05/02/91	330	140	11	2	9	22.54	---	8.88
	05/30/91	---	---	---	---	---	22.55	---	8.87
	06/13/91	---	---	---	---	---	---	---	---
	07/12/91	---	---	---	---	---	---	---	---
	08/07/91	1,500	400	79	13	61	---	---	---
	09/24/91	---	---	---	---	---	---	---	---
31.20	10/18/91	---	---	---	---	---	22.97	---	8.23
	11/05/91	310	130	11	2.6	6.8	22.90	---	8.30
	01/06/92	---	---	---	---	---	22.84	---	8.36
	01/16/92	---	---	---	---	---	22.75	---	8.45
	01/22/92	---	---	---	---	---	22.81	---	8.39
	01/28/92	---	---	---	---	---	22.77	---	8.43
	02/04/92	300	100	26	2.4	14	22.72	---	8.48
	02/14/92	---	---	---	---	---	22.58	---	8.62
	02/21/92	---	---	---	---	---	22.60	---	8.60
	02/25/92	---	---	---	---	---	22.50	---	8.70
	03/06/92	---	---	---	---	---	---	---	---
	03/19/92	---	---	---	---	---	21.75	---	9.45
	05/06/92	200	26	<0.5	1.2	1.4	21.82	---	9.38
	08/31/92	190	20	1.2	1.7	1.7	21.88	---	9.32
	12/01/92	72	5	0.5	ND<0.5	1.3	22.23	---	8.97
	33.85	03/15/93	84	2.1	0.9	<0.5	<1.5	33.85	---
06/08/93		74	1	<0.5	<0.5	0.5	20.55	0.00	13.30
09/07/93		<50	1	<0.5	<0.5	<0.5	20.85	0.00	13.00
03/09/94		<50	5 ↑	4	<0.5	4	21.16	0.00	12.69

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4816
301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-5	10/30/90	20,000	2,500	3,300	320	2,200	22.11	---	9.14
	01/04/91	---	---	---	---	---	22.55	0.31	---
31.25	01/07/91	---	---	---	---	---	22.36	0.04	9.26
	01/11/91	---	---	---	---	---	23.08	0.73	---
	02/15/91	---	---	---	---	---	24.70	2.74	---
	05/02/91	---	---	---	---	---	22.02	2.00	---
	05/30/91	---	---	---	---	---	24.78	2.70	---
	06/13/91	---	---	---	---	---	24.70	2.77	---
	07/12/91	---	---	---	---	---	25.10	2.72	---
30.16	08/07/91	---	---	---	---	---	---	2.69	---
	09/24/91	---	---	---	---	---	---	---	---
	10/18/91	---	---	---	---	---	24.71	2.51	---#
	11/05/91	---	---	---	---	---	24.47	2.29	---#
	01/06/92	---	---	---	---	---	24.68	---	---#
	01/16/92	---	---	---	---	---	24.03	1.82	---#
	01/22/92	---	---	---	---	---	24.01	1.67	---#
	01/28/92	---	---	---	---	---	23.79	1.46	---#
	02/04/92	---	---	---	---	---	23.81	1.54	---#
	02/14/92	---	---	---	---	---	22.79	1.59	---#
	02/21/92	---	---	---	---	---	24.40	2.22	---#
	02/25/92	---	---	---	---	---	23.25	1.03	---#
	03/06/92	---	---	---	---	---	23.20	1.19	---#
	03/19/92	---	---	---	---	---	---	---	---
	05/06/92	---	---	---	---	---	---	---	---
08/31/92	---	---	---	---	---	21.86	Sheen	---	
12/01/92	---	---	---	---	---	22.24	Sheen	---	
33.85	03/15/93	---	---	---	---	---	20.96	---	20.96
	06/08/93	90,000	26,000	11,000	2,000	16,000	20.65	0.00	13.20
	09/07/93	---	---	---	---	---	---	---	---
	03/09/94	170,000 ↑	35,000 ↑	11,000	2,400	13,000	21.32	0.00	12.53

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4816
301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-6 30.41	05/02/91	<50	<0.5	<0.5	<0.5	<0.5	21.84	---	8.57
	05/30/91	---	---	---	---	---	---	---	---
	07/12/91	---	---	---	---	---	22.86	---	7.55
	08/07/91	---	---	---	---	---	---	---	---
	09/24/91	---	---	---	---	---	21.88	---	8.53
	10/18/91	---	---	---	---	---	22.18	---	8.23
	11/05/91	<50	<0.5	<0.5	<0.5	<0.5	22.14	---	8.27
	01/06/92	---	---	---	---	---	22.09	---	8.32
	01/16/92	---	---	---	---	---	22.04	---	8.37
	01/22/92	---	---	---	---	---	22.04	---	8.37
	01/28/92	---	---	---	---	---	21.99	---	8.42
	02/04/92	<50	<0.5	<0.5	<0.5	0.6	21.94	---	8.47
	02/14/92	---	---	---	---	---	21.87	---	8.54
	02/21/92	---	---	---	---	---	21.83	---	8.58
	02/25/92	---	---	---	---	---	21.71	---	8.70
	03/06/92	---	---	---	---	---	21.53	---	8.88
	03/19/92	---	---	---	---	---	20.92	---	9.49
33.09	05/06/92	<50	<0.5	<0.5	<0.5	<0.5	21.02	---	9.39
	08/31/92	80	<0.5	<0.5	<0.5	2.4	21.14	---	9.27
	01/21/93	<50	<0.5	<0.5	<0.5	<0.5	20.91	---	9.50
	03/15/93	<50	<0.5	<0.5	<0.5	<1.5	20.00	---	13.09
	06/08/93	<50	<0.5	<0.5	<0.5	<0.5	19.72	0.00	13.37
	09/07/93	<50	<0.5	<0.5	<0.5	<0.5	19.75	0.00	13.34
	03/09/94	<50	<0.5	<0.5	<0.5	<0.5	20.30	0.00	12.79

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4816
301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-7 30.56	05/02/91	<50	<0.5	<0.5	<0.5	<0.5	21.81	---	8.75
	05/30/91	---	---	---	---	---	---	---	---
	07/12/91	---	---	---	---	---	22.15	---	8.41
	08/07/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	09/24/91	---	---	---	---	---	21.53	---	9.03
	10/18/91	---	---	---	---	---	22.07	---	8.49
	11/05/91	<50	<0.5	<0.5	<0.5	<0.5	22.01	---	8.55
	01/06/92	---	---	---	---	---	22.03	---	8.53
	01/16/92	---	---	---	---	---	21.98	---	8.58
	01/22/92	---	---	---	---	---	22.05	---	8.51
	01/28/92	---	---	---	---	---	22.01	---	8.55
	02/14/92	---	---	---	---	---	21.94	---	8.62
	02/21/92	---	---	---	---	---	21.94	---	8.62
	02/25/92	---	---	---	---	---	21.82	---	8.74
33.06	03/06/92	---	---	---	---	---	21.65	---	8.91
	03/19/92	---	---	---	---	---	20.92	---	9.64
	05/06/92	<50	<0.5	<0.5	<0.5	<0.5	21.21	---	9.35
	08/31/92	<50	<0.5	0.7	<0.5	0.9	21.39	---	9.17
	12/01/92	<50	<0.5	<0.5	<0.5	0.9	21.79	---	8.77
	03/15/93	<50	<0.5	<0.5	<0.5	<1.5	20.94	---	12.12
	06/08/93	<50	<0.5	<0.5	<0.5	<0.5	19.99	0.00	13.07
	09/07/93	2,800	63	36	41	40	20.00	0.00	13.06
	03/09/94	<50	<0.5	<0.5	<0.5	<0.5	20.70	0.00	12.36

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4816
301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-8	05/02/91	5,000	<0.5	17	140	470	21.24	---	8.88
	05/30/91	---	---	---	---	---	---	---	---
30.12	07/12/91	---	---	---	---	---	---	---	---
	08/07/91	6,300	<0.5	28	100	120	---	---	---
	09/24/91	---	---	---	---	---	21.33	---	8.79
	10/18/91	---	---	---	---	---	21.76	---	8.36
	11/05/91	5,100	<0.5	20	92	74	21.70	---	8.42
	01/06/92	---	---	---	---	---	21.73	---	8.39
	01/16/92	---	---	---	---	---	21.63	---	8.49
	01/22/92	---	---	---	---	---	21.70	---	8.42
	01/28/92	---	---	---	---	---	21.65	---	8.47
	02/04/92	5,300	<2.5	2.5	97	61	21.62	---	8.50
	02/14/92	---	---	---	---	---	21.53	---	8.59
	02/21/92	---	---	---	---	---	21.51	---	8.61
	02/25/92	---	---	---	---	---	21.39	---	8.73
	03/06/92	---	---	---	---	---	21.21	---	8.91
	03/19/92	---	---	---	---	---	20.57	---	9.55
	05/06/92	3,700	<0.5	29	110	130	20.77	---	9.35
	08/31/92	1,100	1.3	2.0	31	48	20.91	---	9.21
32.77	12/01/92	3,400	<0.5	19	140	290	21.17	---	8.95
	03/15/93	4,200	<0.5	20	54	33	19.76	---	13.01
	06/08/93	3,700	53	6	74	120	19.38	0.00	13.39
	09/07/93	2,900	70	46	39	55	19.38	0.00	13.39
	03/09/94	3,400	<0.5	6	46	66	20.12	0.00	12.65

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4816
301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-9	05/02/91	<50	<0.5	<0.5	<0.5	0.8	21.27	---	8.88
	05/30/91	---	---	---	---	---	---	---	---
30.15	07/12/91	---	---	---	---	---	21.57	---	8.58
	08/07/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	08/07/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	09/24/91	---	---	---	---	---	21.10	---	9.05
	10/18/91	---	---	---	---	---	21.67	---	8.48
	11/05/91	<50	<0.5	<0.5	<0.5	<0.5	21.65	---	8.50
	11/05/91	<50	<0.5	<0.5	<0.5	<0.5	21.65	---	8.50
	01/06/92	---	---	---	---	---	21.65	---	8.50
	01/16/92	---	---	---	---	---	21.58	---	8.57
	01/22/92	---	---	---	---	---	21.65	---	8.50
	01/28/92	---	---	---	---	---	21.63	---	8.52
	02/04/92	<50	<0.5	0.7	<0.5	0.7<0.5	21.58	---	8.57
	02/04/92	<50	<0.5	<0.5	<0.5	---	21.58	---	8.57
	02/14/92	---	---	---	---	---	21.54	---	8.61
	02/21/92	---	---	---	---	---	21.52	---	8.63
	02/25/92	---	---	---	---	---	21.39	---	8.76
	03/06/92	---	---	---	---	---	21.21	---	8.94
03/19/92	---	---	---	---	<0.5	20.47	---	9.68	
05/06/92	<50	<0.5	<0.5	<0.5	<0.5	20.81	---	9.34	
08/31/92	<50	<0.5	<0.5	<0.5	<0.5	20.97	---	9.18	
12/01/92	<50	<0.5	<0.5	<0.5	<1.5	21.27	---	8.88	
32.70	03/15/93	<50	<0.5	<0.5	<0.5	<0.5	20.42	---	12.28
	06/08/93	<50	<0.5	<0.5	<0.5	<0.5	19.43	0.00	13.27
	09/07/93	<50	<0.5	<0.5	<0.5	<0.5	19.40	0.00	13.30
	03/09/94	<50	<0.5	<0.5	<0.5	<0.5	20.24	0.00	12.46

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
 Chevron Service Station No. 9-4816
 301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
CR-1	10/30/90	---	---	---	---	---	23.81	2.50	---
	01/04/91	---	---	---	---	---	24.08	2.70	---
30.17	01/07/91	---	---	---	---	---	23.30	3.00	---
	01/11/91	---	---	---	---	---	24.24	2.64	---
	02/15/91	---	---	---	---	---	24.72	2.92	---
	05/02/91	---	---	---	---	---	---	---	---
	05/30/91	---	---	---	---	---	23.07	2.42	---
	06/13/91	---	---	---	---	---	---	---	---
	07/12/91	---	---	---	---	---	---	---	---
	08/07/91	---	---	---	---	---	---	2.69	---
	09/24/91	---	---	---	---	---	---	---	---
	10/18/91	---	---	---	---	---	23.75	2.50	---#
	11/05/91	---	---	---	---	---	23.64	2.43	---#
	01/06/92	---	---	---	---	---	23.57	---	---#
	01/16/92	---	---	---	---	---	23.41	2.30	---#
	01/22/92	---	---	---	---	---	23.44	2.24	---#
	01/28/92	---	---	---	---	---	23.40	2.29	---#
	02/14/92	---	---	---	---	---	23.31	2.34	---#
	02/21/92	---	---	---	---	---	24.10	3.19	---#
02/25/92	---	---	---	---	---	23.15	1.03	---#	
03/06/92	---	---	---	---	---	---	---	---	
03/19/92	---	---	---	---	---	---	---	---	
05/06/92	---	---	---	---	---	---	---	---	
08/31/92	---	---	---	---	---	21.84	0.41	---	
12/01/92	---	---	---	---	---	22.06	0.21	---	
33.40	03/15/93	410,000	28,000	42,000	5,200	37,000	20.34	---	---
	06/08/93	85,000	10,000	21,000	3,200	20,000	20.07	0.00	13.33
	09/07/93	180,000	50,000	48,000	5,100	33,000	20.07	0.00	13.33
	03/09/94	94,000 ↓	18,000 ↓	20,000	2,500	19,000	20.67	0.00	12.73

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
 Chevron Service Station No. 9-4816
 301 14th Street, Oakland, California

Well ID/ Elevation	Date	TPH-G	Benzene	Toluene	Ethyl- benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
MW-10	01/21/93	<50	<0.5	<0.5	<0.5	<0.5	21.27	---	10.32
31.59	03/15/93	<50	<0.5	<0.5	<0.5	<1.5	21.10	---	12.18
33.28	06/08/93	<50	<0.5	<0.5	<0.5	1	19.95	0.00	13.33
	09/07/93	<250	<2.5	<2.5	<2.5	<2.5	19.93	0.00	13.35
	03/09/94	<50	1	0.5	<0.5	0.9	20.51	0.00	12.77
TBLB	05/02/91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	08/07/91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	11/05/91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	02/04/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	05/06/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	08/31/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	12/01/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	03/15/93	<50	<0.5	<0.5	<0.5	<1.5	NA	NA	NA
	06/08/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	09/07/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	03/09/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
RINSATE	08/07/91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	11/05/91	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	02/04/92	<50	<0.5	1.1	<0.5	<0.5	NA	NA	NA
	05/06/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	08/31/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	12/01/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA

TPH-G = Total petroleum hydrocarbons-as-gasoline
 DTW = Depth to groundwater
 SPT = Separate-phase hydrocarbon thickness
 WTE = Water-table elevation
 TB-LB = Trip blank, lab blank

Groundwater elevation not computed for wells containing greater than 0.20 feet of separate-phase hydrocarbons
 Groundwater elevations not compiled for wells containing greater than 0.20 feet of separate-phase hydrocarbons
 Concentrations in parts per billion
 Data from June 13, 1990 to March 15, 1993 are from Alton GeoSciences report dated April 27, 1993.

ATTACHMENT 3

Field Data Sheets

Project Name: Chevron - 14th St.

Date: H 3/9/94

Site Address: 301 14th St., Oakland

Page 1 of 11

Project Number: 020204084.0610

Project Manager: Tim Watchers

Well ID: MW-10

DTW Measurements:

Well Diameter: 2"

Initial: 20.51 Calc Well Volume: 2 gal
Recharge: _____ Well Volume: 6 gal

Purge Method Submersible ✓ Pump Depth _____ ft.
Peristaltic _____ Hand Bailed _____
Gear Drive _____ Air Lift _____
Other _____

Instruments Used
YSI: ✓ Other: _____
Hydac: _____
Omega: _____

Time	Temp ✓C F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
0902	15.1	.39	6.20	2	clear	clear
0903	17.5	.29	6.17	3	cloudy	brown
0904	18.6	.30	6.18	4	↑	↓
0905	19.1	.30	6.21	5	↓	↓
0906	19.4	.31	6.22	6	↓	↓

Project Name: Chevron - 14th St.

Date: 3/9/94

Site Address: 301 14th St., Oakland

Page 2 of 11

Project Number: 020204084.0610

Project Manager: Tim Watchers

Well ID: H C-6

DTW Measurements:

Well Diameter: 2"

Initial: 20.30 Calc Well Volume: 2 gal

Recharge: _____ Well Volume: 6 gal

Purge Method _____ Pump Depth _____ ft.
 Peristaltic _____ Hand Bailed _____
 Gear Drive _____ Air Lift _____
 Submersible Other _____

Instruments Used
 YSI: _____ Other: _____
 Hydac: _____
 Omega: _____

Time	Temp	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
	<input checked="" type="checkbox"/> C _____ F					
0913	18.8	.46	6.61	2	cloudy	brown
0914	19.0	.47	6.62	3	"	"
0915	19.2	.50	6.65	4	"	"
0916	19.3	.51	6.67	5	"	"
0917	19.3	.51	6.69	6	"	"

Project Name: Chevron - 14th St.

Date: 3/9/94

Site Address: 301 14th St., Oakland

Page 3 of 11

Project Number: 020204084.0610

Project Manager: Tim Watchers

Well ID: C-9

DTW Measurements:

Well Diameter: 2"

Initial: 20.24

Calc Well Volume: 2.25 gal

Recharge: _____

Well Volume: 7 gal

Purge Method _____ Pump Depth _____ ft.
 Peristaltic _____ Hand Bailed _____
 Gear Drive _____ Air Lift _____
 Submersible Other _____

Instruments Used
 YSI: _____ Other: _____
 Hydac: _____
 Omega: _____

Time	Temp	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
	<input checked="" type="checkbox"/> C _____ F					
1126	19.1	.46	6.80	2	cloudy	brown
1127	19.8	.46	6.82	3	"	"
1128	20.2	.47	6.83	4	"	"
1129	20.5	.45	6.86	5	"	"
1131	20.7	.42	6.88	7	"	"

Project Name: Chevron - 14th St.

Date: 3/9/94

Site Address: 301 14th St., Oakland

Page 4 of 11

Project Number: 020204084.0610

Project Manager: Tim Watchers

Well ID: C-7

DTW Measurements:

Well Diameter: 2'

Initial: 20.70

Calc Well Volume: 2 gal

Recharge: _____

Well Volume: 6 gal

Purge Method _____ Pump Depth _____ ft.
 Peristaltic _____ Hand Bailed _____
 Gear Drive _____ Air Lift _____
 Submersible Other _____

Instruments Used
 YSI: _____ Other: _____
 Hydac: _____
 Omega: _____

Time	Temp	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
	<input checked="" type="checkbox"/> C _____ F					
0938	20.3	.67	7.03	2	Cloudy	brown
0939	20.7	.51	6.97	3	"	"
0940	20.9	.55	6.97	4	"	"
0941	21.0	.56	7.01	5	"	"
0943	21.2	.51	7.01	6	"	"

Project Name: Chevron - 14th St.

Date: 3/9/94

Site Address: 301 14th St., Oakland

Page 5 of 11

Project Number: 020104084.0610

Project Manager: Tim Watchers

Well ID: CR-1

DTW Measurements:

Well Diameter: 4"

Initial: 20.67

Calc Well Volume: 55 gal

Recharge: _____

Well Volume: 17 gal

Purge Method _____ Pump Depth _____ ft.
 Peristaltic _____ Hand Bailed _____
 Gear Drive _____ Air Lift _____
 Submersible Other _____

Instruments Used
 YSI: _____ Other: _____
 Hydac: _____
 Omega: _____

Time	Temp C F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
0950	20.2	1.00	6.82	3	clear	clear / slightly amber
0952	20.8	1.02	6.84	6	"	"
0954	20.9	1.02	6.88	9	"	"
0956	21.0	1.02	6.94	12	"	"
0959	21.1	1.02	6.96	17	"	"

Project Name: Chevron - 14th St.

Date: 3/9/94

Site Address: 301 14th St., Oakland.

Page 6 of 11

Project Number: 020104084.0610

Project Manager: Tim Watchers

Well ID: C-4

DTW Measurements:

Well Diameter: 2"

Initial: 21.16 Calc Well Volume: 2 gal

Recharge: _____ Well Volume: 6 gal

Purge Method _____ Pump Depth _____ ft.
 Peristaltic _____ Hand Bailed
 Gear Drive _____ Air Lift _____
 Submersible Other _____

Instruments Used
 YSI: _____ Other: _____
 Hydac: _____
 Omega: _____

Time	Temp C F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
1002	18.6	81	6.63 6.63	2	cloudy	brown
1003	18.5	81	6.77 6.77	3	↓	↓
1004	18.4	81	6.73 6.73	4		
1005	18.3	82	6.67	5		
1006	18.3	84	6.68	6		

2

[Handwritten scribble]

[Handwritten scribble]

Project Name: Chevron - 14th St.

Date: 3/9/94

Site Address: 301 14th St., Oakland

Page 7 of 11

Project Number: 020204084.0610

Project Manager: Tim Watchers

Well ID: C-8

DTW Measurements:

Well Diameter: 2"

Initial: 20.12 Calc Well Volume: 2-35 gal

Recharge: _____ Well Volume: 7 gal

Purge Method Peristaltic Pump Depth _____ ft.
 Peristaltic _____ Hand Bailed _____
 Gear Drive _____ Air Lift _____
 Submersible Other _____

Instruments Used
 YSI: _____ Other: _____
 Hydac: _____
 Omega: _____

Time	Temp/ C F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
1007	20.4	.56	7.01	2	clear	clear
1008	19.8	.60	7.02	4	cloudy	brown
1009 bailed	19.6	.61	7.03	5	↓	↓
dry				4		
at 5 gallons				5	↓	↓

Project Name: Chevron - 14th St.

Date: 3/9/94

Site Address: 301 14th St., Oakland

Page 8 of 11

Project Number: 020204084.0610

Project Manager: Tim Watchers

Well ID: C-3

DTW Measurements:

Well Diameter: 2"

Initial: 20.56

Calc Well Volume: 1.5 gal

Recharge: _____

Well Volume: 4.5 gal

(5)

Purge Method _____ Pump Depth _____ ft.
 Peristaltic _____ Hand Bailed
 Gear Drive _____ Air Lift _____
 Submersible Other _____

Instruments Used
 YSI: _____ Other: _____
 Hydac: _____
 Omega: _____

Time	Temp	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
	<input checked="" type="checkbox"/> C _____ F					
1103	19.3	.49	6.72	1	cloudy	gray
1105	20.1	.96	6.75	2	"	"
1107	20.2	.95	6.75	3	"	"
1109	20.3	1.00	6.81	4	"	"
1111	20.3	1.01	6.85	5	"	"

Project Name: Chevron - 14th St.

Date: 3/9/94

Site Address: 301 14th St., Oakland

Page 9 of 11

Project Number: 020104084.0610

Project Manager: Tim Watchers

Well ID: C-2

DTW Measurements:

Well Diameter: 2"

Initial: 20.72 Calc Well Volume: 1.40 gal

Recharge: _____ Well Volume: 4.5 gal

(5)

Purge Method _____ Pump Depth _____ ft.
 Peristaltic _____ Hand Bailed _____
 Gear Drive _____ Air Lift _____
 Submersible _____ Other _____

Instruments Used
 YSI: _____ Other: _____
 Hydac: _____
 Omega: _____

Time	Temp <input checked="" type="checkbox"/> C _____ F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
1120	20.2	1.07	6.97	1	Cloudy	Sheen & strong odor - gray
1122	20.2	1.08	6.95	2	↓	
1124	20.3	1.09	6.94	3	↓	
1126	20.2	1.08	6.91	4	↓	
1128	20.2	1.09	6.93	5	↓	↓

Project Name: Chevron - 14th St.

Date: 3/9/94

Site Address: 301 14th St., Oakland

Page 10 of 11

Project Number: 020204084.0610

Project Manager: Tim Watchers

Well ID: C-1

DTW Measurements:

Well Diameter: 2"

Initial: 20.10

Calc Well Volume: 2 gal

Recharge: _____

Well Volume: 6 gal

Purge Method _____ Pump Depth _____ ft.
 Peristaltic _____ Hand Bailed
 Gear Drive _____ Air Lift _____
 Submersible _____ Other _____

Instruments Used
 YSI:
 Hydac: _____
 Omega: _____

Other: _____

Time	Temp C F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
1132	20.1	.68	7.23	2	cloudy	gray-strong odor
1134	20.3	.69	7.20	3	↓	
1136	20.3	.69	7.21	4		
1138	20.3	.70	7.26	5		
1140	20.3	.66	7.24	6		

Project Name: Chevron - 14th St.

Date: 3/9/94

Site Address: 301 14th St., Oakland

Page 11 of 11

Project Number: 020#04084.0610

Project Manager: Tim Watchers

Well ID: C-5

DTW Measurements:

Well Diameter: 2"

Initial: 21.32

Calc Well Volume: 2 gal

Recharge: _____

Well Volume: 6 gal

Purge Method

Pump Depth _____ ft.

Instruments Used

Peristaltic _____

Hand Bailed

YSI:

Other: _____

Gear Drive _____

Air Lift _____

Hydac: _____

Submersible

Other _____

Omega: _____

Time	Temp		Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
	<input checked="" type="checkbox"/> C	<input type="checkbox"/> F					
1755	19.6		.67	7.12	2	Cloudy	brown
1756	19.5		.76	7.05	3	↓	↓
1757	19.1		1.07	7.51	4		
1758	19.6		1.12	7.17	5		
1759	20.3		.97	6.75	6		
1808	20.5		.97	6.76	7		

* took out a little more to stabilize

ATTACHMENT 4

Laboratory Report



Northwest Region

4080 Pike Lane
Suite C
Concord, CA 94520
(510) 685-7852
(800) 544-3422 Inside CA
FAX (510) 825-0720

Client Number: 020104084
Project ID: 301 14th St.
Oakland
Work Order Number: C4-03-0202

March 18, 1994

Tim Watchers
Groundwater Technology, Inc.
4057 Port Chicago Hwy.
Concord, CA 94520

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 03/10/94.

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

GTEL is certified by the California State Department of Health Services, Laboratory certification number E1075, to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

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

Sincerely,
GTEL Environmental Laboratories, Inc.

A handwritten signature in black ink, appearing to read 'Rashmi Shah', is written over a light blue horizontal line.

Rashmi Shah
Laboratory Director

ANALYTICAL RESULTS
 Aromatic Volatile Organics and
 Total Petroleum Hydrocarbons as Gasoline in Water
 EPA Methods 5030, 8020, and Modified 8015^a

GTEL Sample Number		01	02	03	04
Client Identification		TBLB	MW-10	C-6	C-9
Date Sampled		03/09/94	03/09/94	03/09/94	03/09/94
Date Analyzed		03/13/94	03/13/94	03/13/94	03/13/94
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.5	<0.5	1	<0.5	<0.5
Toluene	0.5	<0.5	0.5	<0.5	<0.5
Ethylbenzene	0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	0.5	<0.5	0.9	<0.5	<0.5
TPH as Gasoline	50	<50	<50	<50	<50
Detection Limit Multiplier		1	1	1	1
BFB surrogate, % recovery		94.5	91.8	102	92.6

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual procedures. Bromofluorobenzene surrogate recovery acceptability limits are 70-130%.

ANALYTICAL RESULTS
 Aromatic Volatile Organics and
 Total Petroleum Hydrocarbons as Gasoline in Water
 EPA Methods 5030, 8020, and Modified 8015^a

GTEL Sample Number		05	06	07	08
Client Identification		C-7	CR-1	C-4	C-8
Date Sampled		03/09/94	03/09/94	03/09/94	03/09/94
Date Analyzed		03/13/94	03/13/94	03/13/94	03/13/94
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.5	<0.5	18000	5	<0.5
Toluene	0.5	<0.5	20000	4	6
Ethylbenzene	0.5	<0.5	2500	<0.5	46
Xylene, total	0.5	<0.5	19000	4	66
TPH as Gasoline	50	<50	94000	<50	3400
Detection Limit Multiplier		1	100	1	1
BFB surrogate, % recovery		94.3	90.0	95.2	124

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual procedures. Bromofluorobenzene surrogate recovery acceptability limits are 70-130%.

Client Number: 020104084
 Project ID: 301 14th St.
 Oakland
 Work Order Number: C4-03-0202

ANALYTICAL RESULTS
Aromatic Volatile Organics and
Total Petroleum Hydrocarbons as Gasoline in Water
EPA Methods 5030, 8020, and Modified 8015a

GTEL Sample Number		09	10	11	12
Client Identification		C-3	C-2	C-1	C-5
Date Sampled		03/09/94	03/09/94	03/09/94	03/09/94
Date Analyzed		03/14/94	03/13/94	03/13/94	03/14/94
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.5	56000	4100	2700	35000
Toluene	0.5	44000	1100	3400	11000
Ethylbenzene	0.5	5000	670	930	2400
Xylene, total	0.5	30000	3100	5900	13000
TPH as Gasoline	50	260000	25000	37000	170000
Detection Limit Multiplier		250	25	25	50
BFB surrogate, % recovery		98.1	92.6	92.0	91.6

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual procedures. Bromofluorobenzene surrogate recovery acceptability limits are 70-130%.

Client Number: 020104084
 Project ID: 301 14th St.
 Oakland
 Work Order Number: C4-03-0202

ANALYTICAL RESULTS
 Aromatic Volatile Organics and
 Total Petroleum Hydrocarbons as Gasoline in Water
 EPA Methods 5030, 8020, and Modified 8015^a

GTEL Sample Number		Q031394			
Client Identification		METHOD BLANK			
Date Sampled		--			
Date Analyzed		03/13/94			
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.5	<0.5			
Toluene	0.5	<0.5			
Ethylbenzene	0.5	<0.5			
Xylene, total	0.5	<0.5			
TPH as Gasoline	50	<50			
Detection Limit Multiplier		1			
BFB surrogate, % recovery		90.9			

- a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual procedures. Bromofluorobenzene surrogate recovery acceptability limits are 70-130%.

Client Number: 020104084
Project ID: 301 14th St.
Oakland
Work Order Number: C4-03-0202

QC Matrix Spike and Duplicate Spike Results

Matrix: Water

Analyte	Sample ID	Spike Amount	Units	Recovery, %	Duplicate Recovery, %	RPD, %	Control Limits
Modified EPA 8020:							
Benzene	C40302607	20.0	ug/L	88	88.5	0.57	57.3 - 138
Toluene	C40302607	20.0	ug/L	84	87.0	3.5	63.0 - 134
Ethylbenzene	C40302607	20.0	ug/L	84.5	84.5	0	59.3 - 137
Xylene, total	C40302607	60.0	ug/L	87.8	87.7	0.11	59.3 - 144

