Chevron

Chevron U.S.A. Products Company
6001 Bollinger Canyon Rd., Bldg. L
P.O. Box 5004
San Ramon, CA 94583-0804

Site Assessment & Remediation Group
Phone (510) 842-9500

December 22, 1994

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

Re: Chevron Service Station #9-0121
3026 Lakeshore Avenue, Oakland, CA

Dear Ms. Eberle:

Enclosed is the Groundwater Monitoring and Sampling Report dated October 19, 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), total petroleum hydrocarbons as diesel (TPH-D), BTEX, and MTBE.

Separate phase hydrocarbons were observed in monitor well MW-2 at a measured thickness of 0.01 feet. Benzene was detected in monitor wells MW-1, MW-3, and MW-4, at concentrations of 1500, 130, and 340 ppb, respectively. MTBE was detected in MW-1, MW-3, MW-4 at concentrations of 12000, 130, and 63000 ppb. Depth to ground water was measured at 4.1 to 12.9 feet below grade and the direction of flow is to the west.

According to Chevron's maintenance records, overspill containment has been installed on all the fill risers to the underground storage tanks.

The Remediation Feasibility Study dated October 4, 1994, prepared by our consultant Pacific Environmental Group, recommended implementing Alternative Points of Compliance (Non-Attainment Areas) at this site. Based on the detection of MTBE in ground water we feel it is inappropriate to implement Non Attainment Areas at this time.

Chevron will continue to monitor and sample all wells at this site on a quarterly basis to determine what impact the recent detection of MTBE may have on ground water. 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. S.A. Willer

File: 9-0121 QM9

GROUNDWATER TECHNOLOGY, INC.

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

FAX: (415) 685-9148

October 19, 1994

Project No. 020104097

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

SUBJECT: *Groundwater Monitoring and Sampling Report*
Chevron Service Station No. 9-0121
3026 Lakeshore Avenue, Oakland, California

Dear Mr Miller:

Groundwater Technology, Inc. presents the quarterly groundwater monitoring and sampling data collected on September 12, 1994. The eight monitoring wells at this site were gauged to measure depth to groundwater and to check for separate-phase hydrocarbons. Separate-phase hydrocarbons were detected in monitoring well MW-2 at a thickness of 0.01. 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. Groundwater monitoring and sample collection protocol and field data sheets are presented in attachment 3. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes, total petroleum hydrocarbons-as-gasoline, total petroleum hydrocarbons-as-diesel and for volatile organic compounds with MTBE distinction. Results of the chemical analyses are summarized in attachment 2. The laboratory reports and chain-of-custody records are included in attachment 4. Monitoring-well purge water was removed by Groundwater Technology and transported 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

Kenneth P. Johnson
Project Manager

PR

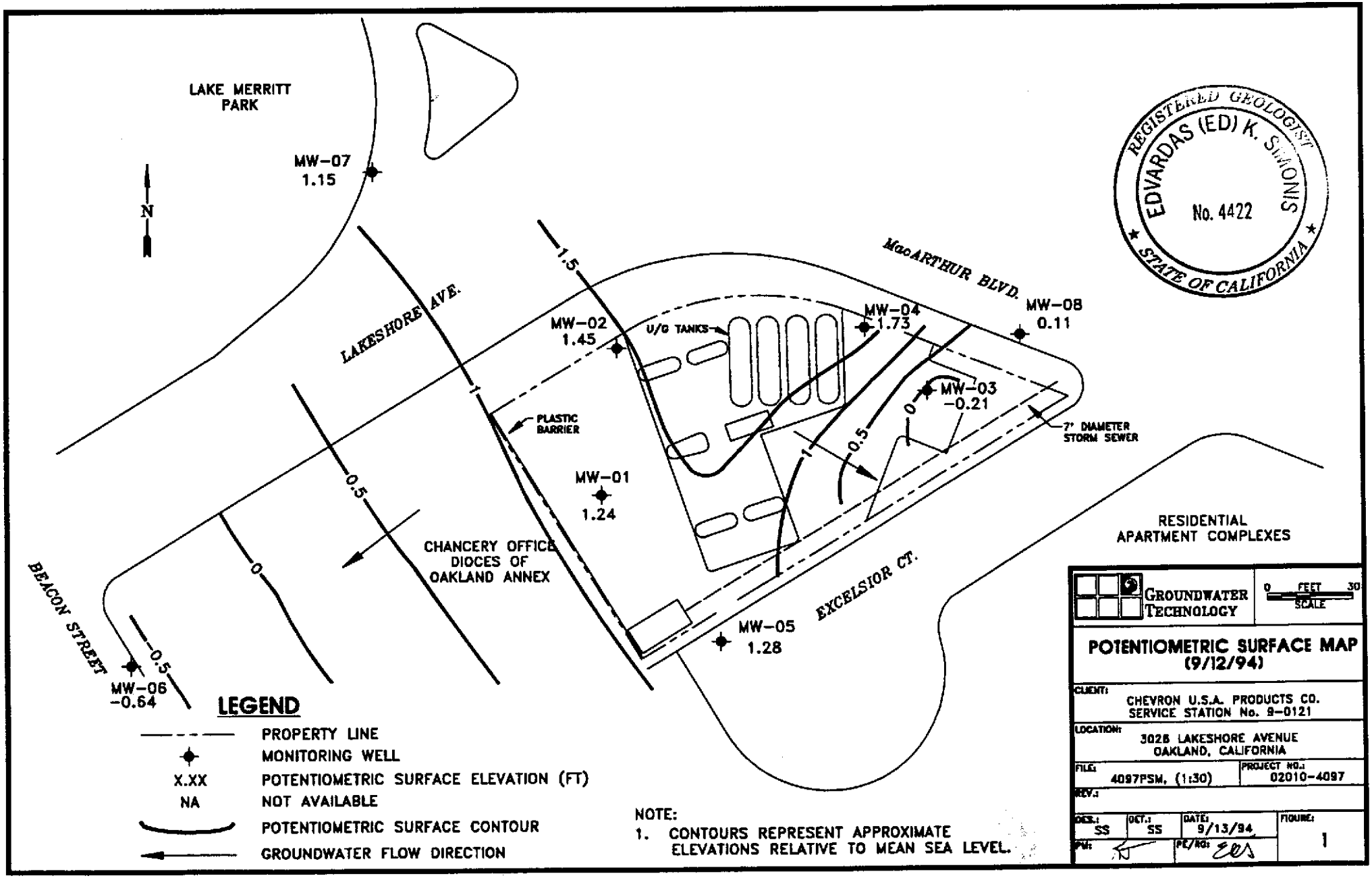
Attachment 1 Figure
Attachment 2 Table
Attachment 3 Protocol and Field Data Sheets
Attachment 4 Laboratory Report

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

4097qmsr.294

ATTACHMENT 1

Figures


LAKE MERRITT PARK
MW-07
1.15
N
LAKESHORE AVE.
MacARTHUR BLVD.
MW-02
1.45
U/G TANKS
MW-04
1.73
MW-08
0.11
MW-03
-0.21
PLASTIC BARRIER
7" DIAMETER STORM SEWER
MW-01
1.24
CHANCERY OFFICE DIOCES OF OAKLAND ANNEX
BEACON STREET
MW-06
-0.64
MW-05
1.28
EXCELSIOR CT.
RESIDENTIAL APARTMENT COMPLEXES
1.5
1
0.5
0
-0.5
REGISTERED GEOLOGIST
EDVARDAS (ED) K. SIMONS
No. 4422
STATE OF CALIFORNIA
LEGEND
PROPERTY LINE
MONITORING WELL
X.XX POTENTIOMETRIC SURFACE ELEVATION (FT)
NA NOT AVAILABLE
POTENTIOMETRIC SURFACE CONTOUR
GROUNDWATER FLOW DIRECTION
NOTE:
1. CONTOURS REPRESENT APPROXIMATE ELEVATIONS RELATIVE TO MEAN SEA LEVEL.
GROUNDWATER TECHNOLOGY
0 FEET 30
SCALE
POTENTIOMETRIC SURFACE MAP (9/12/94)
CLIENT: CHEVRON U.S.A. PRODUCTS CO. SERVICE STATION No. 9-0121
LOCATION: 3028 LAKESHORE AVENUE OAKLAND, CALIFORNIA
FILE: 4097PSM, (1:30)
PROJECT NO.: 02010-4097
REV.:
DES.: SS
DFT.: SS
DATE: 9/13/94
FIGURE: 1
PM:
PE/RG:

ATTACHMENT 2

Table

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0121
3026 Lakeshore Avenue, Oakland, California

Well	Casing Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylene	TPH-D	TDS	MTBE	DTW (ft)	SPT (ft)	WTE (ft)
MW-1		08/20/91	5,100	1,700	21	220	34	260	---	---	5.20	0.00	1.62
	6.82	09/30/91	Separate-phase hydrocarbons present						---	---	5.67	Sheen	1.15
		10/28/91									5.30	0.03	1.50
	6.89	01/08/92	5,400	770	13	95	31	---	---	---	5.15	Sheen	1.67
		01/13/92	---	---	---	---	---	*4,400	---	---	---	---	---
		06/23/92	7,700	1,500	40	230	100	*2,000	---	---	5.41	0.00	1.48
		08/24/92	---	---	---	---	---	---	---	---	5.77	0.00	1.12
		09/21/92	3,500	1,700	28	190	78	<50	---	---	5.89	0.00	1.00
		10/26/92	---	---	---	---	---	---	---	---	5.94	0.00	.95
		12/23/92	60,000	7,100	240	2,000	1,300	*5,500	---	---	4.71	0.00	2.18
		01/08/93	---	---	---	---	---	---	---	---	---	---	---
		03/25/93	***530	1,100	41	67	79	<10	---	---	4.72	0.00	2.17
		06/11/93	****7,000	1,900	33	120	69	---	840	9,600	5.07	0.00	5.37
		09/29/93	6,600	1,600	28	43	74	<10	---	---	5.76	0.00	1.13
		12/20/93	****6,300	1,900	36	82	65	<10	---	---	5.15	0.00	1.74
		03/07/94	7,700	1,100	55	66	38	#<10	---	12,000	4.68	0.00	2.21
		06/17/94	****4,300	710	12	90	38	2,200	---	---	5.06	0.00	1.83
		09/12/94	****6,400	1,500	<25	180	<25	2,500[1]	---	12,000[3]	5.65	0.00	1.24

GROUNDWATER TECHNOLOGY ®

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HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0121
3026 Lakeshore Avenue, Oakland, California

Well	Casing Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylene	TPH-D	TDS	MTBE	DTW (ft)	SPT (ft)	WTE (ft)
MW-2	6.27	08/20/91	9,300	3,700	55	530	75	600	---	---	4.35	0.00	1.92
		09/30/91	3,500	2,600	47	440	68	---	---	---	4.99	0.00	1.28
		10/28/91	4,600	1,800	29	290	53	---	---	---	4.91	0.00	1.36
		01/08/92	14,000	4,300	70	<25	130	---	---	---	4.64	Sheen	1.63
		01/13/92	---	---	---	---	---	*38,000	---	---	---	---	---
		06/23/92	---	---	---	---	---	---	---	---	4.64	0.02	1.63
		08/24/92	Separate-phase hydrocarbons present						---	---	4.94	0.02	1.34
		09/21/92							---	---	5.08	0.01	1.20
		10/26/92	---	---	---	---	---	---	---	---	5.93	0.00	.34
		12/23/92	21,000	5,400	59	1,300	160	160,000	---	---	---	---	---
		01/08/93	---	---	---	---	---	---	---	---	3.70	0.00	2.57
		03/25/93	---	---	---	---	---	---	---	---	3.38	Sheen	2.89
		06/11/93	5,900	1,100	23	240	51	---	2,300	---	4.18	0.00	2.09
		09/29/93	---	---	---	---	---	---	---	---	6.20	0.00	0.07
		12/20/93	---	---	---	---	---	---	---	---	4.35	0.02	1.94
		03/07/94	26,000	5,700	170	1000	150	*<10	---	---	3.67	0.00	2.60
		06/17/94	---	---	---	---	---	---	---	---	4.02	Sheen	2.25
		09/12/94	---	---	---	---	---	---	---	---	4.83	0.01	1.45

TABLE 1
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Chevron Service Station No. 9-0121
3026 Lakeshore Avenue, Oakland, California

Well	Casing Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylene	TPH-D	TDS	MTBE	DTW (ft)	SPT (ft)	WTE (ft)
MW-3	8.71	08/20/91	3,100	200	13	15	12	200	---	---	8.45	0.00	0.26
		09/30/91	1,000	150	8.3	13	6.7	---	---	---	8.74	0.00	-0.03
		10/28/91	1,200	120	6.7	11	7.5	---	---	---	8.76	0.00	-0.05
		01/08/92	410	120	0.9	4.1	3.4	---	---	---	8.77	0.00	-0.06
		01/13/92	---	---	---	---	---	*220	---	---	---	---	---
		06/23/92	630	43	0.8	8.2	3.4	<50	---	---	8.68	0.00	0.03
		08/24/92	---	---	---	---	---	---	---	---	8.85	0.00	-0.14
		09/21/92	1,800	730	1.4	66	39	<50	---	---	8.94	0.00	-0.23
		10/26/92	---	---	---	---	---	---	---	---	9.07	0.00	-0.36
		12/23/92	840	270	3.4	15	4.2	*850	---	---	---	---	---
		01/08/93	---	---	---	---	---	---	---	---	7.69	0.00	1.02
		03/25/93	760	270	4	10	5	<10	---	---	7.74	0.00	0.97
		06/11/93	200	32	1	5	2	---	5,600	---	8.52	0.00	0.19
		09/29/93	9,300	2,800	60	270	62	---	---	---	6.05	0.00	2.66
		12/20/93	****460	250	4	8	4	<10	---	---	8.83	0.00	-0.12
		03/07/94	2,400	260	13	35	18	#<10	---	---	8.07	0.00	0.64
		06/17/94	****1,000	200	4.0	6.6	6.7	<50	---	---	8.52	0.00	0.19
		09/12/94	****360	130	3.4	4.8	3.3	<50	---	130	8.92	0.00	-0.21

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Chevron Service Station No. 9-0121
3026 Lakeshore Avenue, Oakland, California

Well	Casing Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylene	TPH-D	TDS	MTBE	DTW (ft)	SPT (ft)	WTE (ft)
MW-4	7.37	08/20/91	1,800	870	4	3	9	160	---	---	5.05	0.00	1.32
		09/30/91	670	830	5.5	2.7	12	---	---	---	5.67	0.00	1.70
		10/28/91	2,800	990	5.8	4.8	19	---	---	---	5.81	0.00	1.56
		01/08/92	2,900	1,200	10	7	18	---	---	---	5.34	0.00	2.03
		01/13/92	---	---	---	---	---	*1,000	---	---	---	---	---
		06/23/92	1,600	380	6.5	3	12	<50	---	---	5.37	0.00	2.00
		08/24/92	---	---	---	---	---	---	---	---	5.75	0.00	1.62
		09/21/92	1,200	480	5.6	3.7	11	<50	---	---	5.95	0.00	1.42
		10/26/92	---	---	---	---	---	---	---	---	5.96	0.00	1.41
		12/23/92	1,500	700	3.6	3.2	11	*1,800	---	---	---	---	---
		01/08/93	---	---	---	---	---	---	---	---	4.64	0.00	2.73
		03/25/93	***520	160	3	1	4	<10	---	---	4.42	0.00	2.95
		06/11/93	****1,200	430	5	6	11	---	2,600	---	5.12	0.00	2.25
		09/29/93	1,300	210	8	2	14	---	---	---	5.80	0.00	1.57
		12/20/93	****570	230	5	4	8	3,900	---	---	5.10	0.00	2.27
		03/07/94	****2,200	290	18	2.5	11	2,600	---	22,000	5.01	0.00	2.36
		06/17/94	****2,100	480	11	4.3	9.5	2,800	---	---	5.82	0.00	1.55
		09/12/94	****1,700	340	6.1	2.7	9.7	3,000	---	63,000[3]	5.64	0.00	1.73
MW-5	14.14	06/23/92	<50	<0.5	<0.5	<0.5	<0.5	<50	---	---	12.24	0.00	1.90
		08/24/92	---	---	---	---	---	---	---	---	12.29	0.00	1.85
		09/21/92	<50	<0.5	<0.5	<0.5	<0.5	*60	---	---	12.46	0.00	1.68
		10/26/92	---	---	---	---	---	---	---	---	12.52	0.00	1.62
		12/23/92	---	---	---	---	---	---	---	---	11.12	0.00	3.02
		01/08/93	---	---	---	---	---	---	---	---	---	---	---
		03/25/93	<50	<0.5	<0.5	<0.5	0.9	<10	---	---	9.74	0.00	4.40
		06/11/93	<50	<0.5	<0.5	<0.5	<0.5	---	770	---	10.44	0.00	3.70
		09/29/93	<50	<0.5	0.6	<0.5	0.6	<10	---	---	11.92	0.00	2.22
		12/20/93	---	---	---	---	---	---	---	---	---	---	---
		03/07/94	<50	<0.5	<0.5	<0.5	<0.5	<10	---	---	11.34	0.00	2.80
		06/17/94	<50	<0.5	<0.5	<0.5	<0.5	<50	---	---	11.27	0.00	2.87
		09/12/94	<50	<0.5	<0.5	<0.5	<0.5	<50	---	<5	12.86	0.00	1.28

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-0121
3026 Lakeshore Avenue, Oakland, California

Well	Casing Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylene	TPH-D	TDS	MTBE	DTW (ft)	SPT (ft)	WTE (ft)
MW-6	4.46	06/23/92	<50	4.3	<0.5	0.8	0.9	120	---	---	5.14	0.00	-0.68
		08/24/92	---	---	---	---	---	---	---	---	4.95	0.00	-0.49
		09/21/92	<250	<2.5	<2.5	<2.5	<2.5	<50	---	---	4.90	0.00	-0.44
		10/26/92	---	---	---	---	---	---	---	---	5.52	0.00	-1.06
		12/23/92	<50	<0.5	<0.5	<0.5	<0.5	81	---	---	5.40	0.00	-0.94
		01/08/93	---	---	---	---	---	---	---	---	---	---	---
		03/25/93	<50	<0.5	<0.5	<0.5	0.7	<10	---	---	6.10	0.00	-1.64
		06/11/93	<50	<0.5	<0.5	<0.5	<0.5	---	15,000	---	6.56	0.00	-2.10
		09/29/93	<50	<0.5	<0.5	<0.5	<0.5	<10	---	---	5.17	0.00	-0.71
		12/20/93	<50	<0.5	<0.5	<0.5	<0.5	<10	---	---	5.93	0.00	-1.47
		03/07/94	54	<0.5	<0.5	<0.5	0.6	<10	---	---	5.27	0.00	-0.81
		06/17/94	---	---	---	---	---	---	---	---	---	---	---
		09/12/94	<50	<0.5	<0.5	<0.5	<0.5	<50	---	<50[3,4]	5.10	0.00	-0.64
MW-7	5.26	06/23/92	<50	4.7	<0.5	<0.5	<0.5	<50	---	---	4.38	0.00	0.88
		08/24/92	---	---	---	---	---	---	---	---	5.55	0.00	-0.29
		09/21/92	<50	<0.5	<0.5	<0.5	<0.5	<50	---	---	5.65	0.00	-0.39
		10/26/92	---	---	---	---	---	---	---	---	5.51	0.00	-0.25
		12/23/92	<50	2.9	<0.5	<0.5	<0.5	60	---	---	3.95	0.00	1.31
		01/08/93	---	---	---	---	---	---	---	---	---	---	---
		03/25/93	<50	<0.5	<0.5	<0.5	<0.5	<10	---	---	2.50	0.00	2.76
		06/11/93	<50	0.6	<0.5	<0.5	<0.5	---	2,200	---	3.46	0.00	1.80
		09/29/93	<50	2	1	1	7	<10	---	---	5.52	0.00	-0.26
		12/20/93	<50	2	<0.5	<0.5	<0.5	<10	---	---	4.41	0.00	0.85
		03/07/94	<50	<0.5	<0.5	<0.5	<0.5	<10	---	---	2.62	0.00	2.64
		06/17/94	<50	<0.5	<0.5	<0.5	<0.5	<50	---	---	3.27	0.00	1.99
		09/12/94	<50	<0.5	<0.5	<0.5	<0.5	<50	---	<5	4.11	0.00	1.15

TABLE 1
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Well	Casing Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylene	TPH-D	TDS	MTBE	DTW (ft)	SPT (ft)	WTE (ft)
MW-8	8.94	06/23/92	<50	<0.5	<0.5	<0.5	<0.5	<50	---	---	24.14	0.00	-15.20
		08/24/92	---	---	---	---	---	---	---	---	8.60	0.00	0.34
		09/21/92	**94	<0.5	<0.5	<0.5	<0.5	<50	---	---	8.39	0.00	0.55
		10/26/92	---	---	---	---	---	---	---	---	9.12	0.00	-0.18
		12/23/92	<50	0.7	5.0	0.7	2.9	79	---	---	8.11	0.00	0.83
		01/08/93	---	---	---	---	---	---	---	---	---	---	---
		03/25/93	---	---	---	---	---	---	---	---	---	---	---
		06/11/93	<50	<0.5	<0.5	<0.5	<0.5	---	3,500	---	8.39	0.00	0.55
		09/29/93	<50	<0.5	<0.5	<0.5	<0.5	<10	---	---	8.25	0.00	0.69
		12/20/93	<50	<0.5	0.6	<0.5	1	<10	---	---	8.46	0.00	0.48
		03/07/94	<50	<0.5	<0.5	<0.5	<0.5	<10	---	---	8.66	0.00	0.28
		06/17/94	<50	<0.5	<0.5	<0.5	<0.5	<50	---	---	8.82	0.00	0.12
		09/12/94	<50	<0.5	<0.5	<0.5	0.8	<50	---	<5	8.83	0.00	0.11

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Chevron Service Station No. 9-0121
3026 Lakeshore Avenue, Oakland, California

Well	Casing Elevation	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylene	TPH-D	TDS	MTBE	DTW (ft)	SPT (ft)	WTE (ft)
TBLB		08/24/92	---	---	---	---	---	---	---	---	---	---	---
		09/21/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
		10/26/92	---	---	---	---	---	---	---	---	---	---	---
		12/23/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
		01/08/93	---	---	---	---	---	---	---	---	---	---	---
		03/25/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
		06/11/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
		09/29/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
		12/20/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
		03/07/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
		06/17/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
		09/12/94	<50	<0.5	<0.5	<0.5	1.0	---	---	---	---	---	---

TPH-G = Total petroleum hydrocarbons-as-gasolines
TPH-D = Total petroleum hydrocarbons-as-diesel fuel
TDS = Total dissolved solids
MTBE = Methyl-tert-butyl-ether
DTW = Depth to groundwater
SPT = Separate-phase hydrocarbon thickness
WTE = Water-table elevation
TB-LB = Trip blank/Lab blank
* = Diesel fuel range concentration reported. The laboratory reported that the majority of peaks were observed in the gasoline range of the chromatogram, or that the pattern observed in the chromatogram was not typical of diesel fuel.
** = Gasoline range concentration reported. A nonstandard gasoline pattern was observed in the chromatogram.
*** = Miscellaneous peak not included in gasoline total.
**** = Uncategorized compound is not included in gasoline hydrocarbon total.
# = Uncategorized compounds not indicative of diesel.
--- = Not applicable, not analyzed, not measured
1 = Estimated concentration due to overlapping fuel patterns.
2 = Surrogate recovery above control limits due to target compound interference.
$ = Sample diluted and detection limit raised due to high concentration of target and non-target compounds.
4 = Sample foams.

ATTACHMENT 3

Groundwater Monitoring and Sample Collection Protocol
and
Field Data Sheets

GROUNDWATER TECHNOLOGY GROUNDWATER MONITORING AND SAMPLE COLLECTION PROTOCOL

Groundwater Monitoring

Groundwater monitoring is accomplished using a INTERFACE PROBE™ Well Monitoring System. The INTERFACE PROBE™ Well Monitoring System is a hand held, battery operated device for measuring the depth to separate-phase hydrocarbons and depth to water. The INTERFACE PROBE™ Well Monitoring System consists of a dual-sensing probe which utilizes an optical liquid sensor and electrical conductivity to distinguish between water and petroleum products.

Monitoring is accomplished by measuring from the surveyed top of well casing or grade to groundwater and separate-phase hydrocarbons if present. The static water elevation is then calculated for each well and a potentiometric surface map is constructed. If separate-phase hydrocarbons are detected the water elevation is adjusted by the following calculation:

(Product thickness) x (0.8) + (Water elevation) = Corrected water elevation

Groundwater monitoring wells are monitored in order of wells with lowest concentrations of volatile organic compounds to wells with the highest concentrations, based upon historical concentrations. If separate-phase hydrocarbons are encountered in a well, the product is visually inspected to confirm and note color, amount, and viscosity. Monitoring equipment is washed with laboratory grade detergent and rinsed with distilled or deionized water before monitoring each well.

Groundwater Sampling

Before groundwater samples are collected, sufficient water is purged from each well to ensure representative formation water is entering the well. Wells are purged and sampled in the same order as monitoring, from wells with the lowest concentrations of volatile organic compounds to wells with the highest concentrations. Wells are purged using either a polyvinyl chloride (PVC) bailer fitted with a check valve or with a stainless steel submersible Grundfos pump. The purge equipment is decontaminated before use in each well by washing with laboratory grade detergent and tripled rinsing with deionized or distilled water. A minimum of 3 well-casing volumes of water are removed from each well while pH, electrical conductivity, and temperature are recorded to verify that "fresh" formation water is being sampled and the parameters have stabilized. If the well is low yielding, it may be purged dry and sampled before 3 casing volumes are purged. The wells are then allowed to recharge to approximately 80 percent of the initial water level before a sample is collected.

Groundwater samples are collected from each well using a new, prepackaged disposable bailer and string. The water sample is decanted from the bailer into laboratory-provided containers (appropriate for the analyses required) so that there is no headspace in the containers. Samples collected for benzene, toluene, ethylbenzene, xylene, and total petroleum hydrocarbons (TPH)-as-gasoline analyses are collected in 40-milliliter vials fitted with Teflon® septum lids. Samples are preserved with hydrochloric acid (HCL) to a pH of less than 2. Dissolved metals samples are filtered through a 0.45-micron paper filter in the field and preserved as required before submitting to the laboratory for analyses. All samples are labeled immediately upon collection and logged on the chain-of-custody record. Sample label and chain-of-custody recorded information includes the project name and number, sample identification, date and time of collection, analyses requested, and the sampler's name. Sample bottles are placed in plastic bags (to protect the bottles and labels) and on ice (frozen water) in an insulated cooler and are shipped under chain-of-custody protocol to the laboratory.

The chain-of-custody record documents who has possession of the samples until the analyses is performed. Other pertinent information is also noted for the laboratory use on the chain-of-custody record.

Trip blanks (TBLBs) are used for each project as a quality assurance/quality control measure. The TBLBs are prepared by the laboratory and are placed in the insulated cooler and accompany the field samples throughout the sampling event.

Project Name: Chevron - Lakeshore

Date: 9-12-94

Site Address: 3026 Lakeshore, Oakland

Page 1 **of** _____

Project Number: 020104096.0610

Project Manager: Ken Johnson

Well ID: MW-8

Well Diameter: 2.0

DTW Measurements:
Initial: 8.83
Recharge: _____

Calc Well Volume: 2.64 gal
Well Volume: x3 = 7.91 gal

Purge Method
Peristaltic _____
Gear Drive _____
Submersible ✓

Pump Depth _____ ft.
Hand Bailed _____
Air Lift _____
Other _____

Instruments Used
YSI: ✓
Hydac: _____
Omega: _____

Other: _____

Time	Temp ✓ C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
12:01	21.7	3.80	6.82	3.0	clear	
12:02	21.3	9.57	6.90	6.0	"	Dry

Project Name: Chevron - Lakeshore

Site Address: 3026 Lakeshore, Oakland

Project Number: 020104096.0610

Date: 9.12.94

Page 2 of _____

Project Manager: Ken Johnson

Well ID: mw-7

Well Diameter: 2.0

DTW Measurements:
Initial: 4.11
Recharge: _____

Calc Well Volume: 2.59 gal
Well Volume: x3 = 7.77 gal

Purge Method
Peristaltic _____
Gear Drive _____
Submersible ✓

Pump Depth _____ ft.
Hand Bailed _____
Air Lift _____
Other _____

Instruments Used
YSI: ✓
Hydac: _____
Omega: _____

Other: _____

Time	Temp C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
12:21	23.6	4.52	6.24	3.0	Gray silty	
12:22	24.6	4.25	6.73	6.0	"	
12:23	24.8	4.02	6.20	9.0		

Project Name: Chevron - Lakeshore

Site Address: 3026 Lakeshore, Oakland

Project Number: 020104096.0610

Date: 9.12.04

Page 3 of _____

Project Manager: Ken Johnson

Well ID: MW-6

Well Diameter: 2.0

DTW Measurements:
Initial: 5.10
Recharge: _____

Calc Well Volume: 2.43 gal
Well Volume: 7.29 gal

Purge Method
Peristaltic ✓
Gear Drive _____
Submersible _____

Pump Depth _____ ft.
Hand Bailed _____
Air Lift _____
Other _____

Instruments Used
YSI: ✓
Hydac: _____
Omega: _____

Other: _____

Time	Temp C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
12:38	23.6	19.06	6.66	2.5	Silty Grey	
12:39	22.9	20.7	6.67	5.0	"	
12:40	21.8	22.3	6.66	7.5	"	

Project Name: Chevron - Lakeshore

Date: 9.12.94

Site Address: 3026 Lakeshore, Oakland

Page 4 of

Project Number: 020104096.0610

Project Manager: Ken Johnson

Well ID: MW-5

Well Diameter: 2.0

DTW Measurements:
Initial: 12.86
Recharge:

Calc Well Volume: 3.61 gal
Well Volume: x3 = 10.83 gal

Purge Method
Peristaltic: MW
Gear Drive:
Submersible: ✓

Pump Depth ft.
Hand Bailed:
Air Lift:
Other:

Instruments Used
YSI: ✓
Hydac:
Omega:

Other:

Time	Temp ✓ C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
12:55	20.8	2.51	7.06	4.0	Silty Grey	
12:57	19.9	1.90	7.05	8.0	"	
12:59	19.7	3.09	7.03	12.0	4	

Project Name: Chevron - Lakeshore

Date: 9.12.94

Site Address: 3026 Lakeshore, Oakland

Page 5 of _____

Project Number: 020104096.0610

Project Manager: Ken Johnson

Well ID: mw-4

Well Diameter: .75

DTW Measurements:
Initial: 5.64
Recharge: _____

Calc Well Volume: .42 gal
Well Volume: x 3 = 1.27 gal

Purge Method
Peristaltic ✓
Gear Drive _____
Submersible _____

Pump Depth _____ ft.
Hand Bailed _____
Air Lift _____
Other _____

Instruments Used
YSI: ✓
Hydac: _____
Omega: _____

Other: _____

Time	Temp C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
13:40	26.4	4.26	7.06	.50	2.17 cry	
13:43	25.7	4.23	7.19	1.0	"	
13:46	25.9	4.15	7.32	1.5	"	

Project Name: Chevron - Lakeshore

Date: 9.12.94

Site Address: 3025 Lakeshore, Oakland

Page 6 of

Project Number: 020104096.0610

Project Manager: Ken Johnson

Well ID: mw-3

Well Diameter: .75

DTW Measurements:
Initial: 8.92
Recharge:

Calc Well Volume: .33 gal
Well Volume: x3 = .99 gal

Purge Method
Peristaltic ✓
Gear Drive
Submersible

Pump Depth ft.
Hand Bailed
Air Lift
Other

Instruments Used
YSI: ✓
Hydac:
Omega:

Other:

Time	Temp C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
13:55	26.8	7.04	7.02	.40	silty grey	
14:01	28.5	6.84	7.62	.50	"	Dry

Project Name: Chevron - Lakeshore

Date: 9.12.94

Site Address: 3026 Lakeshore, Oakland

Page 7 of

Project Number: 020104096.0610

Project Manager: Ken Johnson

Well ID: MW-1

Well Diameter: 4.0

DTW Measurements:
Initial: 5.65
Recharge:

Calc Well Volume: 9.37 gal
Well Volume: x3 28.13 gal

Purge Method
Peristaltic
Gear Drive
Submersible ✓

Pump Depth ft.
Hand Bailed
Air Lift
Other

Instruments Used
YSI: ✓
Hydac:
Omega:

Other:

Time	Temp ✓C F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
13:16	23.1	1.97	6.66	9.75	clear	
13:19	23.0	1.84	6.62	19.5	"	
13:22	22.8	1.87	6.59	29.25	"	

ATTACHMENT 4

Laboratory Reports

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

4080 Pike Lane
Concord, CA 94520
(510) 685-7852
(800) 544-3422 Inside CA
(800) 423-7143 Outside CA
(510) 825-0720 FAX

Client Number: 020104097
Consultant Project Number: 20104097
Facility Number: 9-0121
Project ID: 3026 Lakeshore
Oakland, CA
Work Order Number: C4-09-0192

September 26, 1994

Ken Johnson
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 09/13/94.

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.

Rashmi Shah
Laboratory Director

Client Number: 020104097
Consultant Project Number: 20104097
Facility Number: 9-0121
Project ID: 3026 Lakeshore
Oakland, CA
Work Order Number: C4-09-0192
Date Re-issued: 09-30-94

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Diesel in Water

Modified EPA Methods 3510/8015[a]

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

GTEL Sample Number		02	03	04	05
Client Identification		MW-8	MW-7	MW-6	MW-5
Date Sampled		09/12/94	09/12/94	09/12/97	09/12/94
Date Extracted		09/15/94	09/15/94	09/15/94	09/15/94
Date Analyzed		09/15/94	09/15/94	09/15/94	09/15/94
Analyte	Detection Limit, ug/L	Concentration, ug/L			
TPH as Diesel	50	<50	<50	<50	<50
Detection Limit Multiplier		1	1	1	1
O-Terphenyl surrogate, % recovery		103	111	61.6	113

GTEL Sample Number		06[b]	07	08	091594 GCK
Client Identification		MW-1	MW-4	MW-3	METHOD BLANK
Date Sampled		09/12/94	09/12/94	09/12/94	--
Date Extracted		09/15/94	09/15/94	09/15/94	09/15/94
Date Analyzed		09/15/94	09/15/94	09/15/94	09/15/94
Analyte	Detection Limit, ug/L	Concentration, ug/L			
TPH as Diesel	50	2500	3000	<50	<50
Detection Limit Multiplier		1	1	1	1
O-Terphenyl surrogate, % recovery		167[c]	476[c]	114	108

b. Estimated concentration due to overlapping fuel patterns.
c. Surrogate recovery above control limits due to targe compound interference.

Client Number: 020104097
Consultant Project Number: 20104097
Facility Number: 9-0121
Project ID: 3026 Lakeshore
Oakland, CA
Work Order Number: C4-09-0192

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240[a]

GTEL Sample Number		02	03	04[b,c]	05
Client Identification		MW-8	MW-7	MW-6	MW-5
Date Sampled		09/12/94	09/12/94	09/12/94	09/12/94
Date Analyzed		09/22/94	09/22/94	09/22/94	09/22/94
Analyte	Quantitation Limit, ug/L	Concentration, ug/L			
Chloromethane	10	<10	<10	<100	<10
Bromomethane	10	<10	<10	<100	<10
Vinyl chloride	10	<10	<10	<100	<10
Chloroethane	10	<10	<10	<100	<10
Methylene chloride	5	<5	<5	<50	<5
Acetone	20	<20	60	<200	<20
Carbon disulfide	5	<5	<5	<50	<5
1,1-Dichloroethene	5	<5	<5	<50	<5
1,1-Dichloroethane	5	<5	<5	<50	<5
1,2-Dichloroethene, total	5	<5	<5	<50	<5
Chloroform	5	<5	<5	<50	<5
1,2-Dichloroethane	5	<5	<5	<50	<5
2-Butanone	20	<20	<20	<200	<20
1,1,1-Trichloroethane	5	<5	<5	<50	<5
Carbon tetrachloride	5	<5	<5	<50	<5
Vinyl acetate	50	<50	<50	<500	<50
Bromodichloromethane	5	<5	<5	<50	<5
1,2-Dichloropropane	5	<5	<5	<50	<5
cis-1,3-Dichloropropene	5	<5	<5	<50	<5
Trichloroethene	5	<5	<5	<50	<5
Dibromochloromethane	5	<5	<5	<50	<5
1,1,2-Trichloroethane	5	<5	<5	<50	<5
MTBE	5	<5	<5	<50	<5

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Sample introduction by EPA Method 5030.
b. Samples diluted and detection limit raised due to high concentration of target and non-target compound.
c. Sample foams.

Client Number: 020104097
Consultant Project Number: 20104097
Facility Number: 9-0121
Project ID: 3026 Lakeshore
Oakland, CA
Work Order Number: C4-09-0192

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240[a]

GTEL Sample Number		02	03	04[b,c]	05
Client Identification		MW-8	MW-7	MW-6	MW-5
Date Sampled		09/12/94	09/12/94	09/12/94	09/12/94
Date Analyzed		09/22/94	09/22/94	09/22/94	09/22/94
Analyte	Quantitation Limit, ug/L	Concentration, ug/L			
Benzene	5	<5	<5	<50	<5
trans-1,3-Dichloropropene	5	<5	<5	<50	<5
2-Chloroethylvinyl ether	10	<10	<10	<100	<10
Bromoform	5	<5	<5	<50	<5
4-Methyl-2-pentanone	20	<20	<20	<200	<20
2-Hexanone	20	<20	<20	<200	<20
Tetrachloroethene	5	<5	<5	<50	<5
1,1,2,2-Tetrachloroethane	5	<5	<5	<50	<5
Toluene	5	<5	<5	<50	<5
Chlorobenzene	5	<5	<5	<50	<5
Ethylbenzene	5	<5	<5	<50	<5
Styrene	5	<5	<5	<50	<5
1,2-Dichlorobenzene	5	<5	<5	<50	<5
1,3-Dichlorobenzene	5	<5	<5	<50	<5
1,4-Dichlorobenzene	5	<5	<5	<50	<5
Xylene, total	5	<5	<5	<50	<5
Trichlorofluoromethane	5	<5	<5	<50	<5
Quantitation Limit Multiplier		1	1	10	1
DCE surrogate, % recovery		102	99.9	104	103
TOL surrogate, % recovery		97.7	98.6	99.8	99.8
BFB surrogate, % recovery		97.4	98.0	97.3	96.5

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Sample introduction by EPA Method 5030.
b. Samples diluted and detection limit raised due to high concentration of target and non-target compound.
c. Sample foams.

Client Number: 020104097
Consultant Project Number: 20104097
Facility Number: 9-0121
Project ID: 3026 Lakeshore
Oakland, CA
Work Order Number: C4-09-0192

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240[a]

GTEL Sample Number		06[b]	07[b]	08	092294 MSA-2
Client Identification		MW-1	MW-4	MW-3	METHOD BLANK
Date Sampled		09/12/94	09/12/94	09/12/94	–
Date Analyzed		09/22/94	09/22/94	09/23/94	09/22/94
Analyte	Quantitation Limit, ug/L	Concentration, ug/L			
Chloromethane	10	<100	<100	<10	<10
Bromomethane	10	<100	<100	<10	<10
Vinyl chloride	10	<100	<100	<10	<10
Chloroethane	10	<100	<100	<10	<10
Methylene chloride	5	<50	<50	<5	<5
Acetone	20	<200	<200	<20	<20
Carbon disulfide	5	<50	<50	<5	<5
1,1-Dichloroethene	5	<50	<50	<5	<5
1,1-Dichloroethane	5	<50	<50	<5	<5
1,2-Dichloroethene, total	5	<50	<50	<5	<5
Chloroform	5	<50	<50	<5	<5
1,2-Dichloroethane	5	<50	<50	<5	<5
2-Butanone	20	<200	<200	<20	<20
1,1,1-Trichloroethane	5	<50	<50	<5	<5
Carbon tetrachloride	5	<50	<50	<5	<5
Vinyl acetate	50	<500	<500	<50	<50
Bromodichloromethane	5	<50	<50	<5	<5
1,2-Dichloropropane	5	<50	<50	<5	<5
cis-1,3-Dichloropropene	5	<50	<50	<5	<5
Trichloroethene	5	<50	<50	<5	<5
Dibromochloromethane	5	<50	<50	<5	<5
1,1,2-Trichloroethane	5	<50	<50	<5	<5
MTBE	5	12000	63000	130	<5

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Sample introduction by EPA Method 5030.
b. Samples diluted and detection limit raised due to high concentration of target and non-target compound.

Client Number: 020104097
Consultant Project Number: 20104097
Facility Number: 9-0121
Project ID: 3026 Lakeshore
Oakland, CA
Work Order Number: C4-09-0192

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240[a]

GTEL Sample Number		06[b]	07[b]	08	092294 MSA-2
Client Identification		MW-1	MW-4	MW-3	METHOD BLANK
Date Sampled		09/12/94	09/12/94	09/12/94	--
Date Analyzed		09/22/94	09/22/94	09/23/94	09/22/94
Analyte	Quantitation Limit, ug/L	Concentration, ug/L			
Benzene	5	1400	340	55	<5
trans-1,3-Dichloropropene	5	<50	<50	<50	<5
2-Chloroethylvinyl ether	10	<100	<100	<100	<10
Bromoform	5	<50	<50	<50	<5
4-Methyl-2-pentanone	20	<200	<200	<200	<20
2-Hexanone	20	<200	<200	<200	<20
Tetrachloroethene	5	<50	<50	<50	<5
1,1,2,2-Tetrachloroethane	5	<50	<50	<50	<5
Toluene	5	<50	<50	<50	<5
Chlorobenzene	5	<50	<50	<50	<5
Ethylbenzene	5	200	<50	<50	<5
Styrene	5	<50	<50	<50	<5
1,2-Dichlorobenzene	5	<50	<50	<50	<5
1,3-Dichlorobenzene	5	<50	<50	<50	<5
1,4-Dichlorobenzene	5	<50	<50	<50	<5
Xylene, total	5	<50	<50	<50	<5
Trichlorofluoromethane	5	<50	<50	<50	<5
Quantitation Limit Multiplier		10	10	1	1
DCE surrogate, % recovery		109	97.0	104	97.4
TOL surrogate, % recovery		102	97.6	97.9	103
BFB surrogate, % recovery		97.3	97.3	104	96.4

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Sample introduction by EPA Method 5030.
b. Samples diluted and detection limit raised due to high concentration of target and non-target compound.

Client Number: 020104097
Consultant Project Number: 20104097
Facility Number: 9-0121
Project ID: 3026 Lakeshore
Oakland, CA
Work Order Number: C4-09-0192

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240[a]

GTEL Sample Number		092394 MSA-1			
Client Identification		METHOD BLANK			
Date Sampled		--			
Date Analyzed		09/23/94			
Analyte	Quantitation Limit, ug/L	Concentration, ug/L			
Chloromethane	10	<10			
Bromomethane	10	<10			
Vinyl chloride	10	<10			
Chloroethane	10	<10			
Methylene chloride	5	<5			
Acetone	20	<20			
Carbon disulfide	5	<5			
1,1-Dichloroethene	5	<5			
1,1-Dichloroethane	5	<5			
1,2-Dichloroethene, total	5	<5			
Chloroform	5	<5			
1,2-Dichloroethane	5	<5			
2-Butanone	20	<20			
1,1,1-Trichloroethane	5	<5			
Carbon tetrachloride	5	<5			
Vinyl acetate	50	<50			
Bromodichloromethane	5	<5			
1,2-Dichloropropane	5	<5			
cis-1,3-Dichloropropene	5	<5			
Trichloroethene	5	<5			
Dibromochloromethane	5	<5			
1,1,2-Trichloroethane	5	<5			
MTBE	5	<5			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Sample introduction by EPA Method 5030.

Client Number: 020104097
Consultant Project Number: 20104097
Facility Number: 9-0121
Project ID: 3026 Lakeshore
Oakland, CA
Work Order Number: C4-09-0192

ANALYTICAL RESULTS

Volatile Organics in Water

EPA Method 8240[a]

GTEL Sample Number		092394 MSA-1			
Client Identification		METHOD BLANK			
Date Sampled		–			
Date Analyzed		09/23/94			
Analyte	Quantitation Limit, ug/L	Concentration, ug/L			
Benzene	5	<5			
trans-1,3-Dichloropropene	5	<5			
2-Chloroethylvinyl ether	10	<10			
Bromoform	5	<5			
4-Methyl-2-pentanone	20	<20			
2-Hexanone	20	<20			
Tetrachloroethene	5	<5			
1,1,2,2-Tetrachloroethane	5	<5			
Toluene	5	<5			
Chlorobenzene	5	<5			
Ethylbenzene	5	<5			
Styrene	5	<5			
1,2-Dichlorobenzene	5	<5			
1,3-Dichlorobenzene	5	<5			
1,4-Dichlorobenzene	5	<5			
Xylene, total	5	<5			
Trichlorofluoromethane	5	<5			
Quantitation Limit Multiplier		1			
DCE surrogate, % recovery		108			
TOL surrogate, % recovery		98.8			
BFB surrogate, % recovery		100			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986 (method modified for additional compounds). Sample introduction by EPA Method 5030.

Client Number: 020104097
Consultant Project Number: 20104097
Facility Number: 9-0121
Project ID: 3026 Lakeshore
Oakland, CA
Work Order Number: C4-09-0192

QC Matrix Spike and Duplicate Spike Results

Matrix: Water

Analyte	Sample ID	Spike Amount	Units	Recovery, %	Duplicate Recovery, %	RPD, %	Control Limits
GC-FID:							
Diesel	LCS	1503	ug/L	80.6	83.7	3.8	63 - 127
EPA 8240:							
1,1-Dichloroethene	C4090187.01	50	ug/L	109	117	7.1	61 - 145
Trichloroethene	C4090187.01	50	ug/L	99.4	103	3.6	71 - 120
Benezene	C4090187.01	50	ug/L	101	106	4.8	76 - 127
Toluene	C4090187.01	50	ug/L	95.0	98.4	3.5	76 -125
Chlorobenzene	C4090187.01	50	ug/L	99.8	110	9.7	75 - 130

GTEL Client ID: 020104097
Login Number: C4090192
Project ID (number): 020104097
Project ID (name): CHEVRON/#9-0121,Oakland, CA

ANALYTICAL RESULTS

Volatile Organics
Method: EPA 8020
Matrix: Aqueous

GTEL Sample Number	C4090192-01	C4090192-02	C4090192-03	C4090192-04
Client ID	TBLB	MW-8	MW-7	MW-6
Date Sampled	09/12/94	09/12/94	09/12/94	09/12/94
Date Analyzed	09/21/94	09/22/94	09/21/94	09/22/94
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting Limit	Units	Concentration:			
Benzene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes (total)	0.5	ug/L	1.0	0.8	< 0.5	< 0.5
TPH as GAS	50.	ug/L	< 50.	< 50.	< 50.	< 50.
BFB (Surrogate)	--	%	102.	106.	112.	115.

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020:

"Test Methods for Evaluating Solid Waste, Physical and Chemical Methods, SW-846", Third Edition, Revision 1, US EPA November 1986. Bromofluorobenzene surrogate recovery acceptability limits are 62-129%. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual protocols, May 1988 revision.

GTEL ENVIRONMENTAL LABORATORIES, INC.

GTEL Client ID: 020104097
Login Number: C4090192
Project ID (number): 020104097
Project ID (name): CHEVRON/#9-0121.Oakland, CA

ANALYTICAL RESULTS

Volatile Organics
Method: EPA 8020
Matrix: Aqueous

GTEL Sample Number	C4090192-05	C4090192-06	C4090192-07	C4090192-08
Client ID	MW-5	MW-1	MW-4	MW-3
Date Sampled	09/12/94	09/12/94	09/12/94	09/12/94
Date Analyzed	09/22/94	09/22/94	09/22/94	09/22/94
Dilution Factor	1.00	50.0	1.00	1.00

Analyte	Reporting Limit	Units	Concentration:			
Benzene	0.5	ug/L	< 0.5	1500	340	130
Toluene	0.5	ug/L	< 0.5	< 25.	6.1	3.4
Ethylbenzene	0.5	ug/L	< 0.5	180	2.7	4.8
Xylenes (total)	0.5	ug/L	< 0.5	< 25.	9.7	3.3
TPH as GAS	50.	ug/L	< 50.	6400	1700	360
BFB (Surrogate)	--	%	108.	104.	112.	108.

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020:

"Test Methods for Evaluating Solid Waste, Physical and Chemical Methods, SW-846", Third Edition, Revision 1, US EPA November 1986. Bromofluorobenzene surrogate recovery acceptability limits are 62-129%. Modification for TPH as gasoline as per California State Water Resources Board LUFT Manual protocols, May 1988 revision.

C4090192-06:

Uncategorized compound is not included in gasoline concentration.

C4090192-07:

Uncategorized compound is not included in gasoline concentration.

C4090192-08:

Uncategorized compound is not included in gasoline concentration.

GTEL ENVIRONMENTAL LABORATORIES, INC.

GTEL Client ID: 020104097 QUALITY CONTROL RESULTS
Login Number: C4090192 Volatile Organics
Project ID (number): 020104097 Method: EPA 8020
Project ID (name): CHEVRON/#9-0121,Oakland, CA Matrix: Aqueous

Method Blank Results

QC Batch No: G092294-5
Date Analyzed: 22-SEP-94

Analyte	Method:EPA-8020	Concentration: ug/L
Benzene	< 0.30	
Toluene	< 0.30	
Ethylbenzene	< 0.30	
Xylenes (Total)	< 0.50	
TPH as Gasoline	< 10.0	

Notes:

GTEL ENVIRONMENTAL LABORATORIES, INC.

GTEL Client ID: 020104097 QUALITY CONTROL RESULTS
Login Number: C4090192 Volatile Organics
Project ID (number): 020104097 Method: EPA 8020
Project ID (name): CHEVRON/#9-0121,Oakland, CA Matrix: Aqueous

Matrix Spike and Matrix Spike Duplicate Results

Analyte	Original Concentration	Spike Amount	Matrix Spike Concentration	Matrix Spike Recovery, %	Matrix Spike Duplicate Concentration	Matrix Spike Duplicate Recovery, %	RPD, %	Acceptability Limits RPD, %	Acceptability Limits Recovery, %
EPA 8020	GTEL Sample ID:C4090196-01		Spike ID:G092294-1		Dup. ID:G092294-2				
Units: ug/L	Analysis Date:17-SEP-94		22-SEP-94		23-SEP-94		Client ID:Batch QC		
Benzene	0.83	20.0	19.9	95.3	19.4	92.8	2.6	34	57.3-138%
Toluene	< 0.50 **	20.0	18.0	90.0	17.8	89.0	1.1	31	63-134%
Ethylbenzene	< 0.50	20.0	17.5	87.5	17.1	85.5	2.3	38	59.3-137%
Xylenes (Total)	< 0.50	60.0	53.2	88.3	52.8	87.6	0.7	31	59.3-144%

Notes:

**: C4090196-01: Toluene: For data validation purposes an estimated concentration of 0.249, which is below the reporting limit, was used to calculate the spike recovery results.

GTEL ENVIRONMENTAL LABORATORIES, INC.

Chain-of-Custody-Rec

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

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

Chevron Facility Number 9-0121
Facility Address 3026 Lakeshore, Oakland, CA
Consultant Project Number 20104097
Consultant Name GROUNDWATER TECHNOLOGY
Address 4057 PORT CHICAGO HWY CONCORD, CA
Project Contact (Name) KEN JOHNSON
(Phone) 671 2387 (Fax Number)

Chevron Contact (Name) Mark Miller
(Phone) (510)-842-9134
Laboratory Name GTEL
Laboratory Release Number 276-6900
Samples Collected by (Name) Rick McKinney
Collection Date 9-12-94
Signature

NOTE: Do Not Bill TB-LB SAMPLES

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)	MTBE				Remarks
TBLB	01	1				HCL		X												
mw-8	02	5			14:20	"		X	X											
mw-7	03	5			14:40	"		X	X											
mw-6	04	5			15:05			X	X											mw-6 has Product
mw-5	05	5			15:15	HCL		X	X							X				
mw-1	06	5			15:30	"		X	X							X				
mw-4	07	5			15:45	"		X	X							X				
mw-3	08	5			16:30	"		X	X							X				
	If groundwater BTEX / TPH-G Chromatogram is observed on wells mw-2, mw-5, mw-4, mw-7, mw-8, then analyze for MTBE.																			

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	GTI	9/13 1200	Jon Weber	GTEL	9-13-94 0900
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	GTI	9/13 11:00			
	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time 9/13/94 11:00