

FIELD
HANDOUT

94 SEP 19 PM 4:57



Chevron

*Ice
9/20/94*

September 16, 1994

Chevron U.S.A. Products Company

6001 Bollinger Canyon Road
Building L
San Ramon, CA 94583
P.O. Box 5004
San Ramon, CA 94583-0804

Ms. Eva Chu
Alameda County Environmental Health
80 Swan Way, Rm 200
Oakland, CA 94621

Marketing - Northwest Region

Phone 510 842 9500

Re: Former Chevron Service Station No. 9-1723
98th & San Leandro Str., Oakland, California

Dear Ms. Chu :

Groundwater Technology, Inc.(GTI) was unable to sample well MW-5 despite repeated attempts to gain access by informing the site manager. During this sampling period wells MW-2 and MW-9 were not sampled. However, they will be sampled next quarter. The other on-site wells were sampled and the results are in the enclosed report from GTI dated September 14, 1994. If you have any questions or comments, please feel free to contact me at (510) 842-8752.

Sincerely,

Chevron U.S.A. Products Co.

Kenneth Kan
Engineer

LKAN/MacFile 9-1723R7

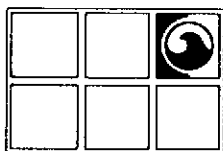
Enclosure

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

Mr. Ron Hothem
Pacific American Management Co.
369 Broadway
San Francisco, CA 94133

Ms. Bette Owen
Chevron U.S.A. Products Co.

Mr. Kenneth Johnson (w/o enclosure)
Groundwater Technology, Inc.
4057 Port Chicago Hwy
Concord, CA 94520



GROUNDWATER TECHNOLOGY, INC.

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

FAX: (415) 685-9148

September 14, 1994

Project No. 020105494

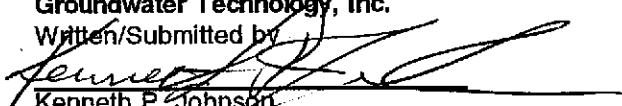
Mr. Kenneth Kan
Chevron U.S.A. Products Company
2410 Camino Ramon
San Ramon, CA 94583-0804

SUBJECT: *Groundwater Monitoring and Sampling Activities*
Chevron Service Station No. 9-1723
9757 San Leandro St., Oakland, California

Dear Mr. Kan:

Groundwater Technology, Inc. presents the attached quarterly groundwater monitoring and sampling data collected on August 26, 1994. Two of the three 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. Two attempts were made to gain access to monitoring well MW-5. The site manager was contacted both times, however neglected to move an unassembled car. A potentiometric surface map and a summary of groundwater monitoring data are presented in attachments 1 and 2, respectively. Figure 2, in attachment 1 shows the historical locations of the pump islands, sidewalk and buildings. After the DTW was measured, the monitoring wells were 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, and xylenes, and for total petroleum hydrocarbons-as-gasoline. Results of the chemical analyses are summarized in attachment 2. 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

Kenneth P. Johnson
Project Manager

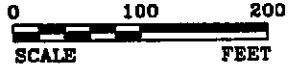
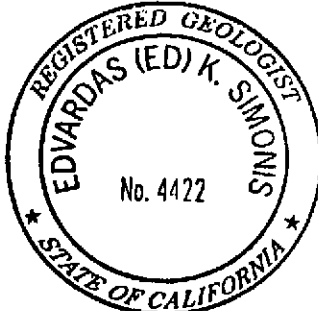
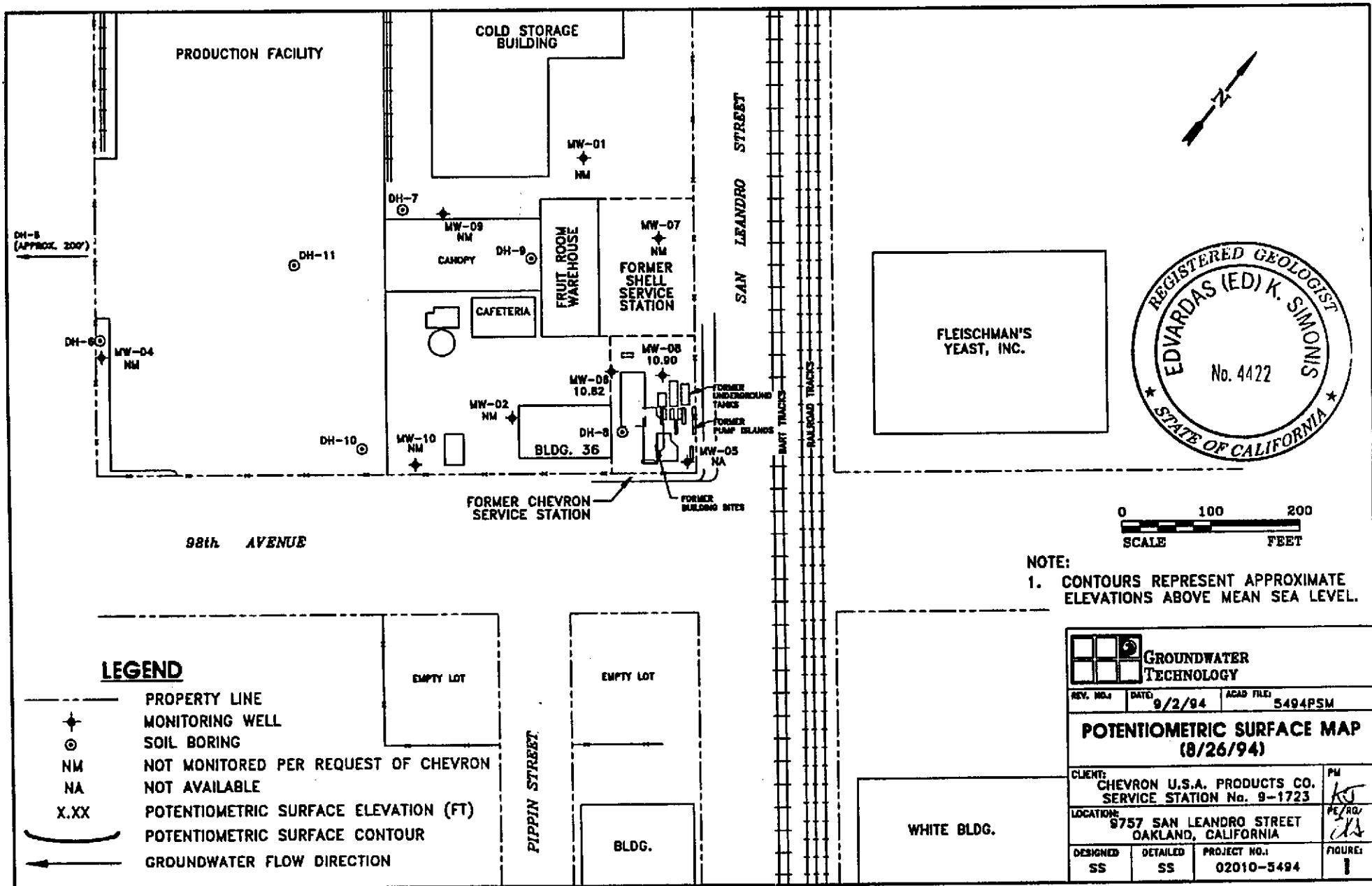
PR 

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

ATTACHMENT 1

Figures



NOTE:
 1. CONTOURS REPRESENT APPROXIMATE ELEVATIONS ABOVE MEAN SEA LEVEL.

LEGEND

- PROPERTY LINE
- ◆ MONITORING WELL
- ⊙ SOIL BORING
- NM NOT MONITORED PER REQUEST OF CHEVRON
- NA NOT AVAILABLE
- X.XX POTENTIOMETRIC SURFACE ELEVATION (FT)
- () POTENTIOMETRIC SURFACE CONTOUR
- ← GROUNDWATER FLOW DIRECTION

REV. NO. 1	DATE 9/2/94	ACAD. FILE: 5494PSM	
POTENTIOMETRIC SURFACE MAP (8/26/94)			
CLIENT: CHEVRON U.S.A. PRODUCTS CO. SERVICE STATION No. 9-1723			PM <i>KJS</i>
LOCATION: 975 SAN LEANDRO STREET OAKLAND, CALIFORNIA			
DESIGNED SS	DETAILED SS	PROJECT NO. 02010-5494	FIGURE 1

FRUIT ROOM
WAREHOUSE

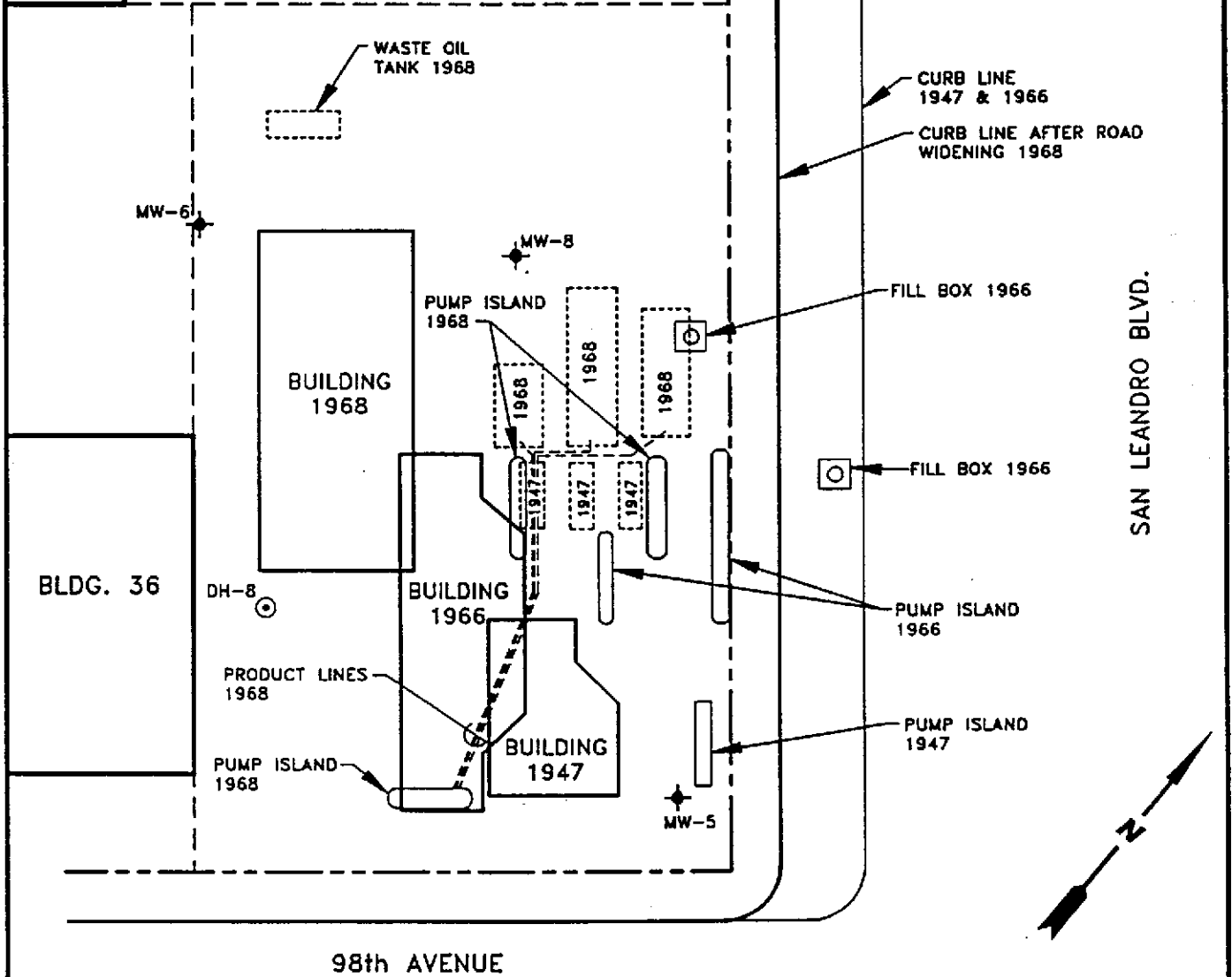
NOTES

1. BUILDING, PUMPS, AND TANKS HAVE BEEN REMOVED
2. SITE IS CURRENTLY USED AS A PARKING LOT FOR AN AUTOMOBILE REPAIR SHOP
3. THE LOCATION OF 1966 UNDERGROUND STORAGE TANKS AND THE 1947 AND 1966 PRODUCT LINES ARE UNKNOWN AT THIS TIME

LEGEND

- ◆ MONITORING WELL
- ⊙ SOIL BORING

FORMER SHELL SERVICE STATION



**GROUNDWATER
TECHNOLOGY**



**SITE PLAN
1947/1966/1968**

CLIENT: CHEVRON U.S.A. PRODUCTS CO. SERVICE STATION No. 9-1723	FILE: SP494	PROJECT NO: 020105494	PM	RG/PE
LOCATION: 9757 SAN LEANDRO BLVD. OAKLAND, CALIFORNIA	REV: 1	DES: TW	DET: ML	DATE: 5/2/94
				FIGURE: 2

ATTACHMENT 2

Table

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-1723
9757 San Leandro St., Oakland, California

Well ID/ Elev	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	Lead	DTW (ft)	SPT (ft)	WTE (ft)
MW-1 20.92	11/02/93 02/10/94 05/12/94 08/26/94	---	---	---	---	---	---	10.24 --- --- ---	0.00 --- --- ---	10.68 --- --- ---
Suspended										
MW-2 21.31	11/02/93 02/10/93 05/12/94 08/26/94	---	---	---	---	---	---	10.48 --- 9.37 ---	0.00 --- 0.00 ---	10.83 --- 11.94 ---
Suspended		390	6.8	2.0	6.3	14				
MW-4 ---	11/02/93 02/10/93 05/12/94 08/26/94	---	---	---	---	---	---	10.23 --- --- ---	0.00 --- --- ---	--- --- --- ---
Suspended										
MW-5 21.84	11/02/93 02/10/94 05/12/94 08/26/94	790 1,400 1,800 ---	43 52 87 ---	3.4 3 6.2 ---	22 50 77 ---	12 40 66 ---	<400 --- --- ---	10.69 8.74 9.44 ---	0.00 0.00 0.00 ---	11.15 13.10 12.40 ---
MW-6 21.71	11/02/93 02/10/94 05/12/94 08/26/94	300 200 210 310	19 10 10 16	1.8 0.9 1.1 1.4	2.5 2 1.2 2.3	5.0 4 3.1 7.1	<400 --- --- ---	10.78 8.85 9.63 10.89	0.00 0.00 0.00 0.00	10.93 12.86 12.08 10.82
MW-7 20.95	11/02/93 02/10/94 05/12/94 08/26/94	---	---	---	---	---	---	10.07 --- --- ---	0.00 --- --- ---	10.88 --- --- ---
Suspended										

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-1723
9757 San Leandro St., Oakland, California

Well ID/ Elev	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	Lead	DTW (ft)	SPT (ft)	WTE (ft)
MW-8 21.84	11/02/93	15,000	2,000	440	420	1,400	---	10.82	0.00	11.02
	02/10/94	6,500	1,200	380	250	7,900	---	8.87	0.00	12.97
	05/12/94	30,000	1,400	2,900	800	3,800	---	9.65	0.00	12.19
	08/26/94	17,000	720	200	330	930	---	10.94	0.00	10.90
MW-9 20.55 Suspended	11/02/93	---	---	---	---	---	---	10.02	0.00	10.53
	02/10/94	---	---	---	---	---	---	---	---	---
	05/12/94	<50	<0.5	<0.5	<0.5	<0.5	---	8.95	0.00	11.60
	08/26/94	---	---	---	---	---	---	---	---	---

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-1723
9757 San Leandro St., Oakland, California

Well ID/ Elev	Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	Lead	DTW (ft)	SPT (ft)	WTE (ft)
MW-10 21.25 Suspended	11/02/93	---	---	---	---	---	---	10.32	0.00	10.93
	02/10/94	---	---	---	---	---	---	---	---	---
	05/12/94	---	---	---	---	---	---	---	---	---
	08/26/94	---	---	---	---	---	---	---	---	---
Rinsate	02/10/94	<50	<0.5	0.5	<0.5	<0.5	---	---	---	---
TBLB	02/10/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	05/12/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	08/26/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---

TPH-G = Total petroleum hydrocarbons-as-gasoline
DTW = Depth to water
SPT = Separate-phase hydrocarbon thickness
WTE = Water-table elevation
Concentrations are in parts per billion.

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:

$$(\text{Product thickness}) \times (0.8) + (\text{Water elevation}) = \text{Corrected water elevation}$$

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 triple 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.

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

September 6, 1994

Ken Johnson
Groundwater Technology, Inc.
4057 Port Chicago Hwy
Concord, CA 94520

RE: GTEL Client ID: 020105494
Login Number: C4080450
Project ID (number): 020105494
Project ID (name): CHEVRON/#9-1723, Oakland, CA *9757 San Leandro*

Dear Ken Johnson:

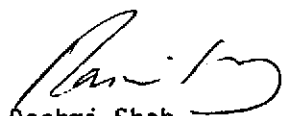
Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 08/29/94.

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 Department of Health Service under Certification Number E1075.

If you have any questions regarding 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

GTEL Client ID: 020105494 ANALYTICAL RESULTS
 Login Number: C4080450
 Project ID (number): 020105494
 Project ID (name): CHEVRON/#9-1723, Oakland, CA

Volatile Organics
 Method: EPA 8020
 Matrix: Aqueous

GTEL Sample Number	C4080450-01	C4080450-02	C4080450-03	--
Client ID	TBLB	MW-6	MW-8	--
Date Sampled	08/26/94	08/26/94	08/26/94	--
Date Analyzed	09/02/94	09/02/94	09/05/94	--
Dilution Factor	1.00	1.00	1.00	--

Analyte	Reporting		Concentration:			
	Limit	Units				
Benzene	0.5	ug/L	< 0.5	16.	720	--
Toluene	0.5	ug/L	< 0.5	1.4	200	--
Ethylbenzene	0.5	ug/L	< 0.5	2.3	330	--
Xylenes (total)	0.5	ug/L	< 0.5	7.1	930	--
TPH as GAS	50.	ug/L	< 50.	310	17000	--
BFB (Surrogate)	--	%	87.9	93.6	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.

GTEL Concord, CA
 C4080450:1



GTEL Client ID: 020105494
Login Number: C4080450
Project ID (number): 020105494
Project ID (name): CHEVRON/#9-1723, Oakland, CA

QUALITY CONTROL RESULTS

Volatile Organics
Method: EPA 8020
Matrix: Aqueous

Method Blank Results

QC Batch No: Q090194-1
Date Analyzed: 01-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	

Notes:

GTEL Client ID: 020105494
 Login Number: C4080450
 Project ID (number): 020105494
 Project ID (name): CHEVRON/#9-1723. Oakland, CA

QUALITY CONTROL RESULTS

Volatile Organics
 Method: EPA 8020
 Matrix: Aqueous

Matrix Spike and Matrix Spike Duplicate Results

Analyte	Original Concentration	Spike Amount	Matrix Spike	Matrix Spike	Matrix Spike Duplicate	Matrix Spike Duplicate	RPD, %	Acceptability Limits	
			Concentration	Recovery, %	Concentration	Recovery, %		RPD, %	Recovery, %
EPA 8020	GTEL Sample ID: C4080438-02		Spike ID: Q090194-3		Dup. ID: Q090194-4				
Units: ug/L	Analysis Date: 01-SEP-94		01-SEP-94		02-SEP-94			Client ID: Batch QC	
Benzene	< 0.50	20.0	18.6	93.0	18.4	92.0	1	34	57.3-138%
Toluene	< 0.50	20.0	18.4	92.0	18.2	91.0	1	31	63-134%
Ethylbenzene	< 0.50	20.0	18.2	91.0	17.9	89.5	1.6	38	59.3-137%
Xylenes (Total)	< 0.50	60.0	56.3	93.8	55.1	91.8	2.1	31	59.3-144%

Notes:

