Chevron

Chevron

August 8, 1994

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

Marketing Department
Phone 510 842 9500

Mr. Barney Chan
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Former Chevron Service Station #9-4612
3616 San Leandro Street, Oakland, CA

Dear Mr. Chan:

Enclosed is the quarterly Groundwater Monitoring and Sampling Activities report dated June 3, 1994, prepared by our consultant Groundwater Technology, Inc. (GTI) for the above referenced site. As indicated in the report, ground water samples collected were analyzed for total petroleum hydrocarbons as gasoline and BTEX. Selected samples were also analyzed for total petroleum hydrocarbons as diesel. Dissolved concentrations of these constituents observed during the past quarter are consistent with historical results. Depth to ground water was measured at approximately 8.1 to 8.9 feet below grade and the direction of flow is to the southeast.

Thank you for your letter of May 9, 1994 commenting on the March 25, 1994 Work Plan for Additional Site Assessment prepared by GTI and requesting up gradient delineation of the dissolved hydrocarbon plume.

GTI has reviewed historic Sanborn maps of the site and surrounding areas to identify potential up gradient off site sources. Enclosed is a copy of a June 8, 1994 letter prepared by GTI which documents the results of their review. No other potential sources could be identified in the immediate vicinity. The results of an aerial photograph review conducted by Chevron reached similar conclusions.

Based on this information, we will instruct GTI to identify potential locations for an up gradient ground water monitor well.

If you have any questions or comments, please do not hesitate to call 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
Ms. B.C. Owen

Mr. Jack Ratto
191 98th Avenue
Oakland, CA 94603

Mr. Vernon C.McIlraith
1809 Golden Rain Road, #5
Walnut Creek, CA 94595

File: 9-4612 QM5

GROUNDWATER TECHNOLOGY, INC.

4057 Port Chicago Highway, Concord, CA 94520 (415) 671-2387
FAX: (415) 685-9148

June 3, 1994

Project No. 020104099

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. 9-4612
3616 San Leandro Street, Oakland, California

Dear Mr. Miller:

Groundwater Technology, Inc. presents the quarterly groundwater monitoring and sampling data collected on May 12, 1994. 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. 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 collected were analyzed for benzene, toluene, ethylbenzene, and xylenes and total petroleum hydrocarbons-as-gasoline. Additional samples were collected from monitoring well MW-3 and analyzed for total petroleum hydrocarbons-as-diesel. 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

Wendell W. Lattz
Vice President, General Manager
West Region

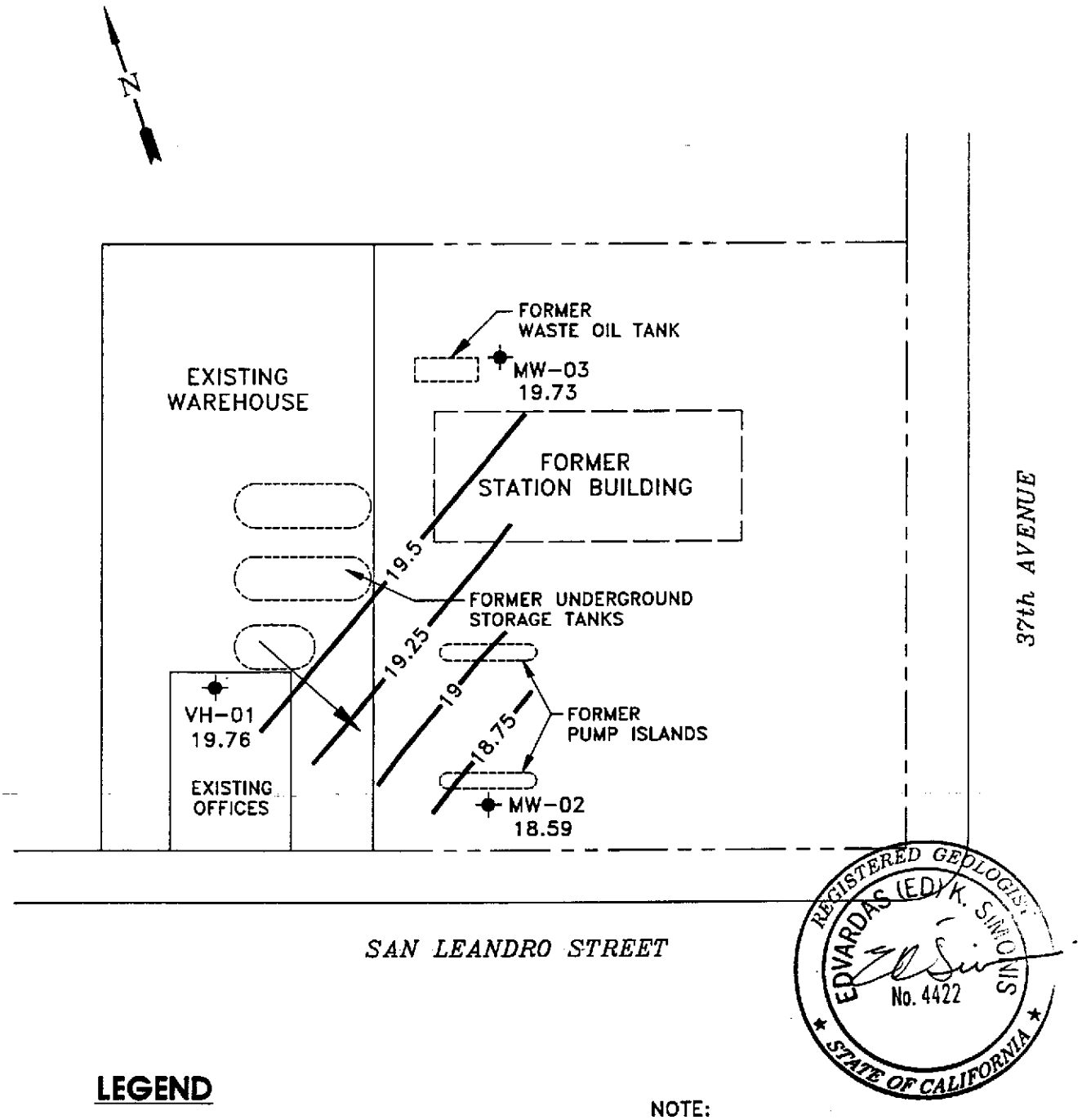
PR KJ

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

4099QMSR.294

ATTACHMENT 1

Figures



REGISTERED GEOLOGIST
EDVARDAS (EDY) K. SIMONIS
No. 4422
STATE OF CALIFORNIA

LEGEND

- PROPERTY LINE
- MONITORING WELL
- X.XX — POTENTIOMETRIC SURFACE ELEVATION (FT)
- POTENTIOMETRIC SURFACE CONTOUR
- GROUNDWATER FLOW DIRECTION

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

GROUNDWATER TECHNOLOGY

0 FEET 30
SCALE

POTENTIOMETRIC SURFACE MAP (5/12/94)

CLIENT: CHEVRON U.S.A. PRODUCTS CO. SERVICE STATION No. 9-4612	FILE: 4099PSM, (1:30)	PROJECT NO.: 02010-4099	PM: AW	PE/RG: EJS
LOCATION: 3616 SAN LEANDRO STREET OAKLAND, CALIFORNIA	REV.	DES.: TW / DET.: SS / DATE: 5/19/94	FIGURE: 1	

ATTACHMENT 2

Table

TABLE 1
MONITORING DATA AND ANALYTICAL RESULTS OF GROUNDWATER
Chevron Station No. 9-4612
3616 San Leandro Street, Oakland, California

Well ID/Elev	Date	TPH-G	Benzene	Toulene	Ethyl-benzene	Xylenes	TPH-D	TOG	HVO	DTW (ft)	SPT (ft)	GWE (ft)
VH-1	08/10/88	11,000	3,300	200	520	540	---	---	---	13.00	---	---
	06/01/89	15,000	2,200	120	540	310	---	---	---	10.32	---	---
	09/15/89	5,600	1,900	90	350	160	---	---	---	15.69	---	---
	12/08/89	11,000	1,900	69	270	99	---	---	---	14.77	---	---
	03/07/91	4,500	820	39	120	77	---	---	---	11.26	---	---
	09/24/91	3,300	520	19	39	27	---	---	---	12.98	---	---
	01/08/92	5,000	600	34	81	76	---	---	---	13.77	---	---
	04/20/92	7,400	670	60	110	140	---	---	---	8.18	---	---
27.85	03/26/93	4,900	600	40	72	94	---	---	---	6.71	0.00	21.14
	05/27/93	13,000	1,600	120	230	220	---	---	---	8.58	0.00	19.27
	08/18/93	2,700	210	10	8.1	18	---	---	---	10.46	0.00	17.39
	11/03/93	4,600	680	42	35	68	---	---	---	12.57	0.00	15.28
	02/10/94	1,900	260	19	22	29	---	---	---	9.08	0.00	18.77
	05/12/94	2,000	390	28	3.9	29	---	---	---	8.09	0.00	19.76
MW-2	02/16/93	9,200	720	110	250	170	---	---	---	---	---	---
27.51	03/26/93	---	---	---	---	---	---	---	---	7.62	0.00	19.89
	05/27/93	360	5.3	2.1	1.8	2.5	---	---	---	9.47	0.00	18.04
	08/18/93	9,400	1,100	76	110	100	---	---	---	11.05	0.00	16.46
	11/03/93	8,600	390	20	2.7	120	---	---	---	12.95	0.00	14.56
	02/10/94	2,700	370	38	44	41	---	---	---	9.79	0.00	17.72
	05/12/94	3,800	650	76	15	62	---	---	---	8.92	0.00	18.59
MW-3	02/16/93	3,500	<0.5	8.1	4.6	7.7	---	---	---	---	---	---
28.50	03/26/93	---	---	---	---	---	---	---	---	7.18	0.00	21.32
	05/27/93	4,200	580	84	150	100	---	---	---	9.33	0.00	19.17
	08/18/93	910	12	3.7	6.2	3.8	1,400	<5,000	ND	12.00	0.00	16.50
	11/03/93	5,300	29	1.9	0.6	27	---	---	---	13.29	0.00	15.21
	02/10/94	63	<0.5	0.7	<0.5	<0.5	<50	---	---	9.63	0.00	18.87
	05/12/94	<50	<0.5	0.5	<0.5	<0.5	84	---	---	8.77	0.00	19.73

TABLE 1
MONITORING DATA AND ANALYTICAL RESULTS OF GROUNDWATER
Chevron Station No. 9-4612
3616 San Leandro Street, Oakland, California

Well ID/Elev	Date	TPH-G	Benzene	Toulene	Ethyl-benzene	Xylenes	TPH-D	TOG	HVO	DTW (ft)	SPT (ft)	GWE (ft)
Rinsate	02/10/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
TBLB	05/27/93	<50	<0.5	<0.5	<0.5	<1.5	---	---	---	---	---	---
	08/18/93	<50	<0.5	<0.5	<0.5	<1.5	---	---	---	---	---	---
	11/03/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
	02/10/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---
	05/12/94	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---	---

TPH-G = Total petroleum hydrocarbons-as-gasoline
DTW = Depth to water
SPT = Separate-phase hydrocarbons
GWE = Groundwater elevation in feet above mean sea level relative to United States Geological Survey brass disc
HVO = Halogenated volatile organics
--- = Not available, not sampled, not monitored
Data for VH-1 (August 10, 1988 to April 20, 1992) from Pacific Environmental Group Inc. Report, May 18, 1992.
Concentrations are presented in parts per billion (ppb).

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 - San Leandro

Date: 5/12/94

Site Address: 3616 San Leandro Blvd., Oakland

Page 1 of 3

Project Number: 020104099.0610

Project Manager: Tim Watchers

Well ID: VH-1

Well Diameter: 4"

DTW Measurements:
Initial: 8.09
Recharge:

Calc Well Volume: 13.33 gal
Well Volume: 39.99 gal

28.57 - 8.09 = 20.42 x .653 = 13.33

Purge Method
Peristaltic
Gear Drive
Submersible X

Pump Depth ft.
Hand Bailed
Air Lift
Other [redacted]

Instruments Used
YSI: X
Hydac:
Omega:
Other:

Time	Temp X C F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
0903	18.7	0.89	6.35	4		little cloudy
0906	19.0	0.90	6.53	10		11
0911	19.2	0.91	6.60	20		clear
0916	19.5	0.91	6.63	30		11
0921	19.4	0.9[illegible]	6.62	40		11

Project Name: Chevron - San Leandro

Date: 5/12/94

Site Address: 3616 San Leandro Blvd., Oakland

Page 2 of 3

Project Number: 020104099.0610

Project Manager: Tim Watchers

Well ID: MW-2

Well Diameter: 2"

DTW Measurements:
Initial: 8.92 Calc Well Volume: 1.78 gal
Recharge: _____ Well Volume: 5.34 gal

19.85 - 8.92 = 10.93 x .163 = 1.78 x 3 =

Purge Method
Peristaltic_____
Gear Drive_____
Submersible_____

Pump Depth_____ft.
Hand Bailed X
Air Lift_____
Other_____

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

Time	Temp X C F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
0941	19.1	0.92	6.61	1		cloudy Sheen
0943	18.6	0.91	6.71	2		cloudy Brown
0945	18.7	0.91	6.71	3		"
0948	18.6	0.90	6.78	5		"

Project Name: Chevron - San Leandro

Date: 5/12/94

Site Address: 3616 San Leandro Blvd., Oakland

Page 3 of 3

Project Number: 020104099.0610

Project Manager: Tim Watchers

Well ID: MW-3

Well Diameter: 2 in

DTW Measurements:
Initial: 8.77 Calc Well Volume: 1.77 gal
Recharge: _____ Well Volume: 5.31 gal

19.65 - 8.77 = 10.88 x .163 = 1.77 x 3 = 5.31

Purge Method
Peristaltic_____
Gear Drive_____
Submersible_____

Pump Depth_____ft.
Hand Bailed X
Air Lift_____
Other_____

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

Time	Temp ___C ___F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
0956	17.9	0.66	6.85	1		cloudy Brown
0958	17.9	0.63	6.86	2		"
1000	17.9	0.64	6.81	3		"
1003	18.0	0.61	6.90	5		"

ATTACHMENT 4

Laboratory Reports

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 ▪ Martinez, California 94553 ▪ (510) 229-1512 / fax (510) 229-1526

GROUNDWATER TECHNOLOGY, INC.
Attn: TIM WATCHERS

Project 9-4612
Reported 05/25/94

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed	Matrix
30498- 1	TB-LB	05/12/94	05/20/94	Water
30498- 2	VH-1	05/12/94	05/24/94	Water
30498- 3	MW-2	05/12/94	05/24/94	Water
30498- 4	MW-3	05/12/94	05/24/94	Water

RESULTS OF ANALYSIS

Laboratory Number:	30498- 1	30498- 2	30498- 3	30498- 4
Gasoline:	ND<50	2000	3800	ND<50
Benzene:	ND<0.5	390	650	ND<0.5
Toluene:	ND<0.5	28	76	0.5
Ethyl Benzene:	ND<0.5	3.9	15	ND<0.5
Total Xylenes:	ND<0.5	29	62	ND<0.5
Diesel:	NA	NA	NA	84
Concentration:	ug/L	ug/L	ug/L	ug/L

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 ▪ Martinez, California 94553 ▪ (510) 229-1512 / fax (510) 229-1526

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

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 30498

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
ug/L = parts per billion (ppb)

OIL AND GREASE ANALYSIS By Standard Methods Method 5520F:
Minimum Detection Limit in Water: 5000ug/L

Modified EPA SW-846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 50ug/L

EPA SW-846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 50ug/L

EPA SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Water: 0.5ug/L

ANALYTE	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Gasoline:	95/82	15%	70-130
Benzene:	75/77	3%	70-130
Toluene:	73/74	1%	70-130
Ethyl Benzene:	70/70	0%	70-130
Total Xylenes:	85/85	0%	70-130
Diesel:	87/86	1%	64-142

Senior Chemist

304/98

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

Chain-of-Custody-Record

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

Chevron Facility Number 9-V612
Facility Address 3616 San Leandro, Oakland
Consultant Project Number 020104099
Consultant Name Groundwater Technology, Inc.
Address 4057 Port Chicago Hwy, Concord, CA. 94520
Project Contact (Name) Tim Watchers
(Phone) 510-671-2387 (Fax Number)

Chevron Contact (Name) [illegible]
(Phone) (510) 842-8134
Laboratory Name Sequoia Analytical
Laboratory Release Number 763-3640
Samples Collected by (Name) J. Nelson
Collection Date 5/12/94
Signature [signature]

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) Paraffinic	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)						Remarks
TB-LB		2	W	G	0930	HCL	Y	X													
MW-1		3	↓	↓	0935	↓	↓	X													
MW-2		3	↓	↓	1020	↓	↓	X													
MW-3		4	↓	↓	1025	↓	↓	X	X												

NOTE: Do NOT BILL TB-LB SAMPLES

Analyses To Be Performed

Please Initial: Samples Stored in ice. Appropriate containers. Samples preserved. VOA's without headspace. [initials] 4.0°C

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
[signature]	GTI	5/12/94	[signature]	GTI	5-13-94
[signature]	GTI	5-13-94	Paul Toy	AEKO	5/13 17:37
Paul Toy	5/13 17:50	AEKO	Received For Laboratory By (Signature) [signature]		5/13/94 5:50

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