Chevron U.S.A. Inc.
2410 Camino Ramon, San Ramon, California • Phone (415) 842-9500
Mail Address. P.O. Box 5004, San Ramon, CA 94583-0804

91 MAR 18 AM 11:17

Marketing Operations

R. B. Bellinger
Manager, Operations
S. L. Patterson
Area, Manager, Operations
C. G. Trimbach
Manager, Engineering

March 13, 1991

Mr. Dennis Byrne
Alameda County Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Re: Chevron Service Station #9-4587
609 Oak Street
Oakland, CA 94607

Dear Mr. Byrne:

Enclosed we are forwarding the Site Update Report dated March 11, 1991, prepared by our consultant GeoStrategies, Inc. for the above referenced site. This report documents the installation of an additional off-site groundwater monitor well. Analytic results of the soils and groundwater samples collected did not detect any petroleum hydrocarbon contaminants except for Toluene at a concentration of .8 ppb in only the groundwater sample.

Groundwater samples were also collected at this time from the existing seven (7) monitor wells and three (3) tank backfill wells. Analytical results of these samples detected petroleum hydrocarbon contaminants. Separate-phase hydrocarbons were observed in Wells CR-1, Tank Backfill Wells B and C at measured thicknesses of .02, .01 and .11 feet, respectively. Purging of these wells will continue until a dedicated recovery system can be designed and installed.

Chevron has instructed GeoStrategies, Inc. to design and install a dedicated recovery system. A remediation work plan will be prepared and forwarded to your office upon finalization of the system design.

Chevron will continue to examine all monitor wells for the presence of separate-phase hydrocarbons on a weekly basis and perform quarterly chemical analysis. Monitor wells which exhibit separate-phase hydrocarbons are bailed during this inspection. Plume migration is surmised to be slow based on the relatively flat gradient and the low permeable geology that exists beneath the site.

GeoStrategies Inc.

SITE UPDATE

Chevron Service Station No. 4587
609 Oak Street
Oakland, California

719101-9

May 10, 1991

GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545
(415) 352-4800

May 10, 1991

Gettler-Ryan Inc.
2150 West Winton Avenue
Hayward, California 94545

Attn: Mr. Jeff Monroe

Re: SITE UPDATE
Chevron Service Station No. 4587
609 Oak Street
Oakland, California

Gentlemen:

This Site Update has been prepared by GeoStrategies Inc. (GSI) and presents the results of the second quarter ground-water sampling for 1991 at the above referenced site (Plate 1). Ground-water sampling was performed by Gettler-Ryan Inc. (G-R) on April 3, 1991. The scope of work presented in this document was performed at the request of Chevron U.S.A. Inc. Field work and laboratory analyses were performed to comply with current State of California Water Resources Control Board guidelines.

CURRENT QUARTERLY SAMPLING RESULTS

Potentiometric Data

Prior to ground-water sampling, depth to ground-water levels were measured in each well using an electronic oil-water interface probe. Static ground-water levels were measured from the surveyed top of the well box and recorded to the nearest ± 0.01 foot. Corresponding ground-water elevations referenced to mean sea level (MSL) are presented in Table 1. Water-level data have been plotted and contoured and are presented as a potentiometric map (Plate 1). Shallow ground-water flow is to the southeast at a calculated hydraulic gradient of 0.01.

Separate-phase Hydrocarbon Measurements

Each well was monitored for the presence of separate-phase hydrocarbons using an electronic oil-water interface probe. A clear acrylic bailer was used to confirm probe results. Separate-phase hydrocarbons were detected in tank backfill wells B, C and monitoring well C-1 at measured thicknesses of 1.00 feet, 0.02 feet, and 0.02 feet, respectively.

Water levels in the monitoring wells are measured weekly by G-R and observed separate-phase hydrocarbons are bailed from the wells. During the period from March 1991 through May, 1991, approximately 8.5 gallons of separate-phase hydrocarbons were recovered from monitoring well C-1 and tank backfill wells B and C. Bailing estimates are included with the G-R ground-water monitoring data presented in Appendix A.

Chemical Analytical Data

Ground-water samples were collected from site monitoring wells on April 3, 1991 by G-R. No samples were collected from the recovery well (CR-1) because it is located adjacent to monitoring well C-1, which was sampled. The samples were analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline) according to EPA Method 8015 (Modified) and Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) according to EPA Method 8020. Samples were analyzed by Superior Analytical Laboratory (Superior), a State-certified environmental laboratory located in San Francisco, California.

Detectable levels of TPH-Gasoline were reported in five ground-water monitoring wells with concentrations ranging from 59000 parts per billion (ppb) in tank backfill Well A, to 53 ppb in monitoring well C-3. Detectable levels of benzene were reported in four wells, at concentrations ranging from 33000 ppb in tank backfill Well A to 3 ppb in monitoring well C-4. TPH-Gasoline was reported as not detected (ND) in monitoring Wells C-6, C-7 and benzene was reported as ND in monitoring well C-3, C-6 and C-7.

A summary of field monitoring data is presented in Table 1. A summary of the current and available historical chemical analytical data are presented in Table 2. A copy of the Superior analytical data and Chain-of-Custody forms are presented in Appendix B.

Quality Control

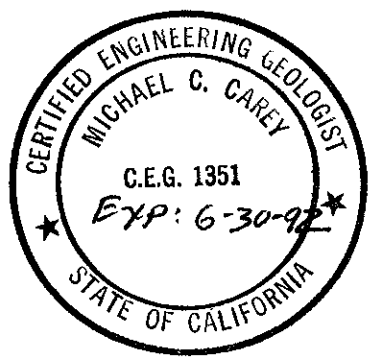
Quality Control (QC) samples for this quarter's sampling consisted of a duplicate sample (CD-2), and a trip blank (TB). The duplicate sample was collected as a split (second) sample from Well C-2 to assess laboratory analytical precision. The trip blank was prepared in the laboratory using organic-free water to evaluate laboratory and field handling procedures. The results of QC sample analyses are presented in Table 2.

If you have any questions, please call.

GeoStrategies Inc. by,

Randall S. Young
Project Geologist

Michael C. Carey
Engineering Geologist
C.E.G. 1351



RSY/MCC/mlg

Plate 1. Potentiometric Map

Appendix A: Gettler-Ryan Inc. Groundwater Monitoring Data
Appendix B: Laboratory Analytical Report

QC Review:

TABLE 1

FIELD MONITORING DATA

WELL NO.	MONITORING DATE	CASING DIA. (IN)	TOTAL WELL DEPTH (FT)	WELL ELEV. (FT)	DEPTH TO WATER (FT)	PRODUCT THICKNESS (FT)	STATIC WATER ELEV. (FT)	PURGED WELL VOLUMES	pH	TEMPERATURE (F)	CONDUCTIVITY (u MHOS/CM)
A	03-Apr-91	2	20.0	----	9.82	----	----	3	6.59	66.8	967
B	03-Apr-91	4	----	----	9.55	1.00	----	----	----	----	----
C	03-Apr-91	----	----	----	9.19	0.02	----	----	----	----	----
C-1	03-Apr-91	3	----	16.07	9.43	0.02	6.66	----	----	----	----
C-2	03-Apr-91	3	17.9	16.84	9.53	----	7.31	5	6.46	66.6	782
C-3	03-Apr-91	3	17.9	16.48	9.01	----	7.47	4	6.70	60.9	430
C-4	03-Apr-91	2	30.0	16.53	10.00	----	6.53	5	6.46	68.2	464
C-5	03-Apr-91	2	30.0	14.70	8.72	----	5.98	5	6.63	68.1	586
C-6	03-Apr-91	2	30.0	13.87	8.66	----	5.21	5	7.17	66.7	492
C-7	03-Apr-91	2	29.3	15.78	9.04	----	6.74	5	6.45	64.6	627

Notes: 1. Water level elevations referenced to Mean Sea Level (MSL).
2. Physical parameter measurements represent stabilized values.
3. pH values reported in pH units.
4. Static water levels corrected for floating product (conversions factor = 0.80).
5. Recovery well CR-1 was not sampled because it is adjacent to monitoring well C-1.

TABLE 2

HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
06-Dec-89	A	44000	20000	66	1600	2220
30-Oct-90	A	31000	23000	110	1100	160
14-Jan-91	A	12000	30000	540	1400	560
03-Apr-91	A	59000	33000	2400	2200	3100
06-Dec-89	B	Floating product - 0.01 ft				
30-Oct-90	B	Floating product - 0.01 ft				
14-Jan-91	B	Floating product - 0.01 ft				
03-Apr-91	B	Floating product - 1.00 ft				
06-Dec-89	C	Floating product - 0.15 ft				
30-Oct-90	C	Floating product - 0.03 ft				
14-Jan-91	C	Floating product - 0.11 ft				
03-Apr-91	C	Floating product - 0.02 ft				
06-Dec-89	C-1	Floating product - 0.20 ft				
30-Oct-90	C-1	Floating product - 0.02 ft				
14-Jan-91	C-1	Floating product - 0.02 ft				
03-Apr-91	C-1	Floating product - 0.02 ft				
06-Dec-89	C-2	16000	250	1200	550	1400
30-Oct-90	C-2	28000	37000	1900	1200	4300
14-Jan-91	C-2	24000	3300	1200	1100	4100
03-Apr-91	C-2	12000	1100	840	650	1800
06-Dec-89	C-3	<500.	<0.5	<0.5	<0.5	0.74
30-Oct-90	C-3	410	4	4	2	9
14-Jan-91	C-3	80	<0.5	<0.5	<0.5	1
03-Apr-91	C-3	53	<0.5	<0.5	<0.5	2

TABLE 2

HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
30-Oct-90	C-4	<50	<0.5	<0.5	<0.5	<0.5
14-Jan-91	C-4	<50	<0.5	<0.5	<0.5	<0.5
03-Apr-91	C-4	150	3	<0.5	12	9
30-Oct-90	C-5	<50	<0.8	<0.5	<0.5	0.5
14-Jan-91	C-5	54	<0.5	<0.5	<0.5	<0.5
03-Apr-91	C-5	1800	330	200	52	170
30-Oct-90	C-6	<50	<0.5	<0.5	<0.5	<0.5
14-Jan-91	C-6	<50	<0.5	<0.5	<0.5	<0.5
03-Apr-91	C-6	<50	<0.5	<0.5	<0.5	<0.5
07-Feb-91	C-7	<50	<0.5	0.8	<0.5	<0.5
03-Apr-91	C-7	<50	<0.5	<0.5	<0.5	<0.5
14-Jan-91	CR-1	1500	3200	52	190	77
03-Apr-91	CR-1	Not sampled				
03-Apr-91	CD-2	14000	1100	990	680	1800
03-Apr-91	TB	<50	<0.5	<0.5	<0.5	<0.5

TABLE 2

HISTORICAL GROUND-WATER QUALITY DATABASE

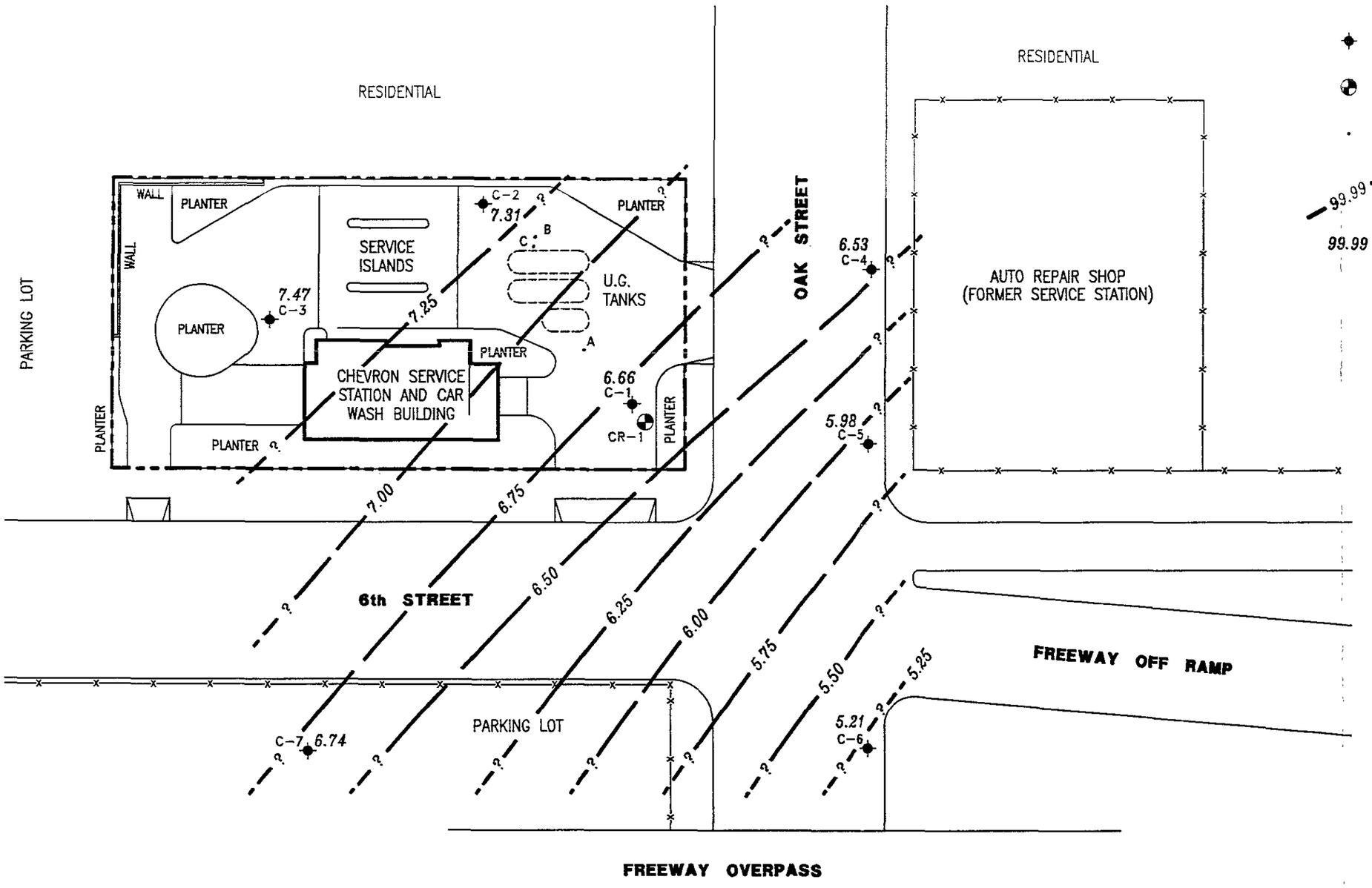
Current Regional Water Quality Control Board Maximum Contaminant Levels
Benzene 1. ppb Xylenes 1750. ppb Ethylbenzene 680. ppb

Current DHS Action Levels Toluene 100.0 ppb

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
PPB = Parts Per Billion CD = Duplicate Sample CR = Field Blank TB = Trip Blank
NOTE: 1. DHS Action levels and MCL's are subject to change pending State of California review.
2. All data shown as <X are reported as ND (none detected).
3. Recovery well (CR-1) was not sampled because it is adjacent to monitoring well C-1.

ILLUSTRATIONS

PLATE 1



EXPLANATION

- Ground-water monitoring well
- Ground-water recovery well
- Tank excavation monitoring well
- 99.99 Ground-water elevation contour Approximate Gradient = 0.01
- 99.99 Ground-water elevation in feet referenced to Mean Sea Level (MSL) measured on April 3, 1991

Note: Contours may be influenced by irrigation practices and/or site construction activities.

POTENTIOMETRIC MAP
Chevron Service Station #4587
609 Oak Street
Oakland, California

GeoStrategies Inc.

GSI

JOB NUMBER 719101-9

REVIEWED BY RSY

DATE 5/91

REVISED DATE

APPENDIX A
GETTLER-RYAN INC.
GROUND-WATER MONITORING DATA

CHEVRON USA 4587 OAKLAND - 609 OAK ST/6th JOB 5191

DATE	WELL	DTH	DTW	HT	BAILED	FLOWMETER	PT-LIQ.	PT-H2O	EMP	C.ELEV
07-Mar-91	1	10.05	(1.00)	0.00					SM	
14-Mar-91	1	9.94	(1.00)	0.00					RA	
21-Mar-91	1	9.82	(1.00)	0.00					SM	
28-Mar-91	1		9.27	0.00					RA	
04-Apr-91	1	9.40	9.44	0.04	0.25				RA	
11-Apr-91	1	9.58	9.62	0.04	0.1				SM	
18-Apr-91	1	9.71	9.77	0.06	0.25				RA	
25-Apr-91	1	9.80	9.97	0.17	0.1				SM	
02-May-91	1	9.85	9.89	0.04	0.25				RA	
09-May-91	1	9.94	9.97	0.03	0.1				SM	
07-Mar-91	2		10.27	0.00						
14-Mar-91	2		10.14	0.00						
21-Mar-91	2		9.48	0.00						
28-Mar-91	2		9.33	0.00						
04-Apr-91	2		9.50	0.00						
11-Apr-91	2		9.73	0.00						
18-Apr-91	2		9.89	0.00						
25-Apr-91	2		9.95	0.00						
02-May-91	2		10.05	0.00						
09-May-91	2		10.15	0.00						
07-Mar-91	3		N/A							
14-Mar-91	3		N/A							
21-Mar-91	3		9.40	0.00						
28-Mar-91	3		N/A							
04-Apr-91	3		N/A							
11-Apr-91	3		9.15	0.00						
18-Apr-91	3		9.26	0.00						
25-Apr-91	3		9.30	0.00						
02-May-91	3		9.40	0.00						
09-May-91	3		9.51	0.00						
07-Mar-91	4		10.82	0.00						
14-Mar-91	4		10.68	0.00						
21-Mar-91	4		10.61	0.00						
28-Mar-91	4		9.43	0.00						
04-Apr-91	4		10.02	0.00						
11-Apr-91	4		10.24	0.00						
18-Apr-91	4		10.36	0.00						
25-Apr-91	4		10.44	0.00						
02-May-91	4		10.51	0.00						
09-May-91	4		10.62	0.00						
07-Mar-91	5		9.23	0.00						
14-Mar-91	5		9.13	0.00						
21-Mar-91	5		9.05	0.00						
28-Mar-91	5		8.56	0.00						

DATE	WELL	DTH	DTW	HT	BAILED	FLOWMETER	PT-LIQ.	PT-H2O	EMP	C.ELEV
04-Apr-91	5		8.72	0.00						
11-Apr-91	5		8.87	0.00						
18-Apr-91	5		9.01	0.00						
25-Apr-91	5		9.05	0.00						
02-May-91	5		9.14	0.00						
09-May-91	5		9.20	0.00						
07-Mar-91	6		9.03	0.00						
14-Mar-91	6		8.97	0.00						
21-Mar-91	6		8.91	0.00						
28-Mar-91	6		8.64	0.00						
04-Apr-91	6		8.66	0.00						
11-Apr-91	6		8.74	0.00						
18-Apr-91	6		8.82	0.00						
25-Apr-91	6		8.85	0.00						
02-May-91	6		8.88	0.00						
09-May-91	6		8.95	0.00						
04-Apr-91	7		9.04	0.00						
11-Apr-91	7		9.19	0.00						
18-Apr-91	7		N/A							
25-Apr-91	7		9.28	0.00						
02-May-91	7		N/A							
09-May-91	7		9.46	0.00						
07-Mar-91	A	10.32	(1.00)	0.00						
14-Mar-91	A		10.26	0.00						
21-Mar-91	A		10.27	0.00						
28-Mar-91	A		9.90	0.00						
04-Apr-91	A		9.58	0.00						
11-Apr-91	A		9.87	0.00						
18-Apr-91	A		10.02	0.00						
25-Apr-91	A		10.06	0.00						
02-May-91	A		10.28	0.00						
09-May-91	A		10.30	0.00						
07-Mar-91	B	10.32	10.35	0.03	0.1					
14-Mar-91	B	9.54	9.74	0.20	0.25					
21-Mar-91	B	9.94	10.08	0.14	0.1					
28-Mar-91	B	9.53	9.56	0.03	0.10					
04-Apr-91	B	9.48	10.54	1.06	0.75					
11-Apr-91	B	9.65	10.65	1.00	0.5					
18-Apr-91	B	9.90	10.57	0.67	0.75					
25-Apr-91	B	9.94	10.44	0.50	0.1					
02-May-91	B	10.10	10.45	0.35	0.75					
09-May-91	B	10.10	10.35	0.25	0.1					
07-Mar-91	C	10.31	10.51	0.2	0.5					
14-Mar-91	C	10.03	10.18	0.15	0.25					

DATE	WELL	DTH	DTW	HT	BAILED	FLOWMETER	PT-LIQ.	PT-H2O	EMP	C.ELEV
21-Mar-91	C	9.73	9.88	0.15	0.5					
28-Mar-91	C	8.94	9.15	0.21	0.25					
04-Apr-91	C	9.18	9.43	0.25	0.75					
11-Apr-91	C	9.42	9.61	0.19	0.5					
18-Apr-91	C	9.61	9.72	0.11	0.25					
25-Apr-91	C	9.55	9.72	0.17	0.2					
02-May-91	C	9.72	9.88	0.16	0.25					
09-May-91	C	9.87	10.00	0.13	0.5					
07-Mar-91	CR1		9.80	0.00						
14-Mar-91	CR1		9.68	0.00						
21-Mar-91	CR1		9.57	0.00						
28-Mar-91	CR1		9.20	0.00						
04-Apr-91	CR1		9.35	0.00						
11-Apr-91	CR1		9.49	0.00						
18-Apr-91	CR1		9.60	0.00						
25-Apr-91	CR1		9.60	0.00						
02-May-91	CR1		9.42	0.00						
09-May-91	CR1		9.72	0.00						
TOTAL GALLONS BAILED					8.50					

gettler — ryan inc. (415) 783-7500
general and environmental contractors

APPENDIX B

LABORATORY ANALYTICAL REPORT

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

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 11710
CLIENT: Chevron, USA
CLIENT JOB NO.: 3191.01

DATE RECEIVED: 04/08/91
DATE REPORTED: 04/17/91

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
11710- 1	A	04/03/91	04/11/91
11710- 2	C-2	04/03/91	04/11/91
11710- 3	C-3	04/03/91	04/11/91
11710- 4	C-4	04/03/91	04/11/91
11710- 5	C-5	04/03/91	04/11/91
11710- 6	C-6	04/03/91	04/11/91
11710- 7	C-7	04/03/91	04/11/91
11710- 8	CD-2	04/03/91	04/11/91
11710- 9	TRIP BLANK	04/03/91	04/11/91

Laboratory Number:	11710 1	11710 2	11710 3	11710 4	11710 5
ANALYTE LIST	Amounts/Quantitation Limits (ug/L)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	59000	12000	53	150	1800
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	33000	1100	ND<0.5	3	330
TOLUENE:	2400	840	ND<0.5	ND<0.5	200
ETHYL BENZENE:	2200	650	ND<0.5	12	52
XYLENES:	3100	1800	2	9	170

Laboratory Number:	11710 6	11710 7	11710 8	11710 9
ANALYTE LIST	Amounts/Quantitation Limits (ug/L)			
OIL AND GREASE:	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<50	ND<50	14000	ND<50
TPH/DIESEL RANGE:	NA	NA	NA	NA
BENZENE:	ND<0.5	ND<0.5	1100	ND<0.5
TOLUENE:	ND<0.5	ND<0.5	990	ND<0.5
ETHYL BENZENE:	ND<0.5	ND<0.5	680	ND<0.5
XYLENES:	ND<0.5	ND<0.5	1800	ND<0.5

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

CERTIFICATE OF ANALYSIS

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 11710

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

OIL AND GREASE ANALYSIS By Standard Methods Method 503E:
Minimum Detection Limit in Water: 5000ug/L

Modified EPA-SW846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 50ug/l
Standard Reference: NA

EPA-SW846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 50ug/l
Standard Reference: 08/24/90

SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Water: 0.5ug/l
Standard Reference: 04/09/91

ANALYTE	REFERENCE	SPIKE LEVEL	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Oil & Grease	NA	NA	NA	NA	NA
Diesel	NA	NA	NA	NA	NA
Gasoline	08/24/90	200ng	87/86	1.1	63-111
Benzene	04/09/91	200ng	92/90	1.7	72-119
Toluene	04/09/91	200ng	90/89	1.1	70-116
Ethyl Benzene	04/09/91	200ng	94/92	1.6	73-119
Total Xylene	04/09/91	600ng	94/92	1.6	71-118

Richard Srna, Ph.D.
Laboratory Director

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

Chevron Facility Number 1587
Facility Address 609 Oak St 16th Oakland
Consultant Project Number 3191.01
Consultant Name Getter Ryan Inc
Address 2150 W Winton Hayward
Project Contact (Name) TOM Paulson
(Phone) 783-7500 (Fax Number)

Chevron Contact (Name) N. Vukelich
(Phone) 832-3321
Laboratory Name Superior
Laboratory Release Number 246840
Samples Collected by (Name) Randall F. Hedegaard
Collection Date 4-3-91
Signature

Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air 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)	Chlorinated HC (8010)	Non Chlorinated HC (8020)	Total Lead (AA)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)	Remarks
A	2	W		1300	HCl	Yes	✓							
C-2				1136			✓							
C-3				1255			✓							
C-4				1109			✓							
C-5				1040			✓							
C-6				1012			✓							
C-7				1013			✓							
TB-2				—			✓							
Trip Blk	1	↓		—	↓	↓	✓							

Analyses To Be Performed

Please initial:
Samples Stored in ice. Yes
Appropriate containers. Yes
Samples preserved. Yes
VOA's without headspace. Yes
Comments: OK

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	G/R	4-3-91/1330	Refrig #1	G/R	4-3-91/1330
	G/R	4-3-91 0800		G/R	4-3-91 0800
	G/R	4-3-91 1630	Received For Laboratory By (Signature)	SAC	4/8/91 1635

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