WESTERN GEOLOGIC RESOURCES INC.

2169 E. FRANCISCO BLVD., SUITE B / SAN RAFAEL
CALIFORNIA 94901 / FAX 415.457.8521
TELE 415.457.7595

20 December 1990

Ms. Lisa Backlund
Chevron USA
2410 Camino Ramon
San Ramon, California 94583-0804

Re: Additional Soils Excavation
Western Boundary
Former Chevron Asphalt Plant
1520 Powell Street
Emeryville, California
WGR Project #1-045.47

Dear Ms. Backlund:

At your request, Western Geologic Resources, Inc. (WGR) presents this completion report for additional soils excavation at the former Chevron Asphalt Plant and Terminal located in Emeryville, California (Figure 1). The scope of work included excavation to a maximum depth of 5 feet of approximately 500 cubic yards of soil and stockpiling of the soil. Figure 2 shows the location of the two areas of soil excavation.

Excavation and Stockpiling

On 18 to 20 October 1990, approximately 500 cubic yards of soil were excavated in two locations on the western edge of the property. The soils were removed between the site enclosure fence, and/or laboratory building, outward towards the property boundary with Southern Pacific Railway. Soils were placed on visqueen plastic sheeting in linear stockpiles on-site. Each pile was then covered with additional visqueen which was anchored.

The excavation pits were backfilled with 1.5-inch diameter gravel in a manner similar to the main excavation conducted the previous year. A 6- to 8-inch cap of Class II base rock was then placed over the rock fill.

Confirmatory Sampling and Analytic Results

Confirmatory sidewall samples were collected at approximate 20 foot intervals at the western edges of each of the pits at depths between 3 and 4 feet. The location of each sample point is shown on Figure 3. All soil samples were collected according to the WGR standard operating procedure for soil sampling included as Attachment A. Soil samples were transported under chain-of-custody to GTEL Environmental Laboratories of Concord, California.

Soil samples were analyzed for total petroleum hydrocarbons and for total oil and grease by EPA Methods 8015 and 413.2, respectively. Analytic results are presented on Figure 3. The chain-of-custody form and laboratory reports with quality assurance/quality control documents are included as Attachments B and C, respectively.

Western Geologic Resources, Inc. is pleased to provide geologic and environmental consulting services for Chevron and trusts that this summary of the excavation will meet your needs. Please call us at (415) 457-7595 if you have questions.

Sincerely,
Western Geologic Resources, Inc.

Christopher S. Alger
Project Geologist

CSA:vw

045L1NV0.VW

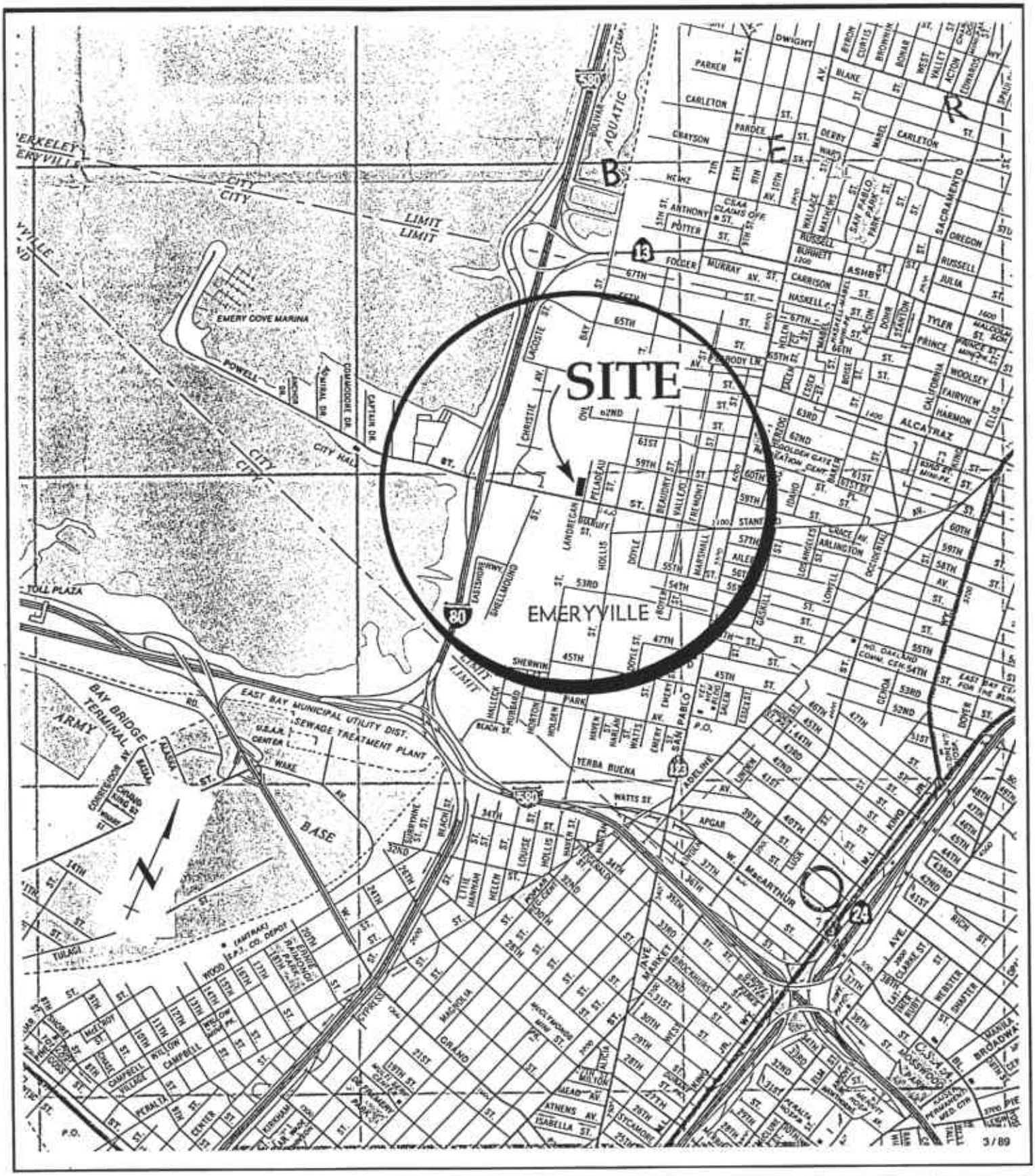
FIGURES

1. Site Location Map
2. Site Map with Additional Soil Excavation Locations
3. Site Map with Soil Excavation Sidewall Sample Locations

ATTACHMENTS

A. SOP-2: Soil Sampling
B. Chain-of-Custody Form
C. Laboratory Reports with Quality Assurance/Quality Control Documents

FIGURES



NOT TO SCALE

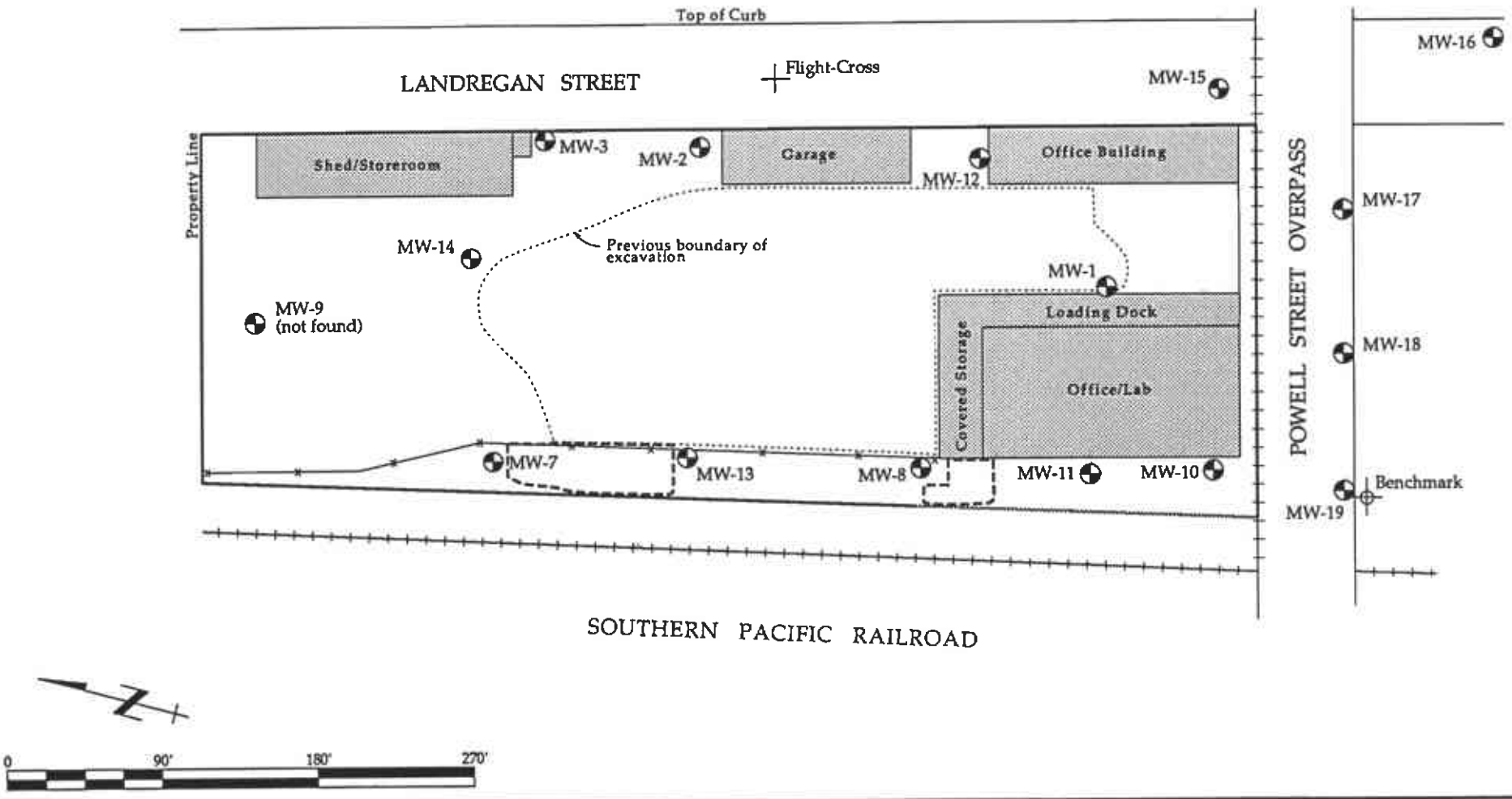
Road Map Reference: CSAA map of Oakland

Site Location Map
Former Chevron Ashpalt Plant and Terminal
Emeryville, California

FIGURE
1

WESTERN GEOLOGIC RESOURCES, INC.

1-045.47



LEGEND

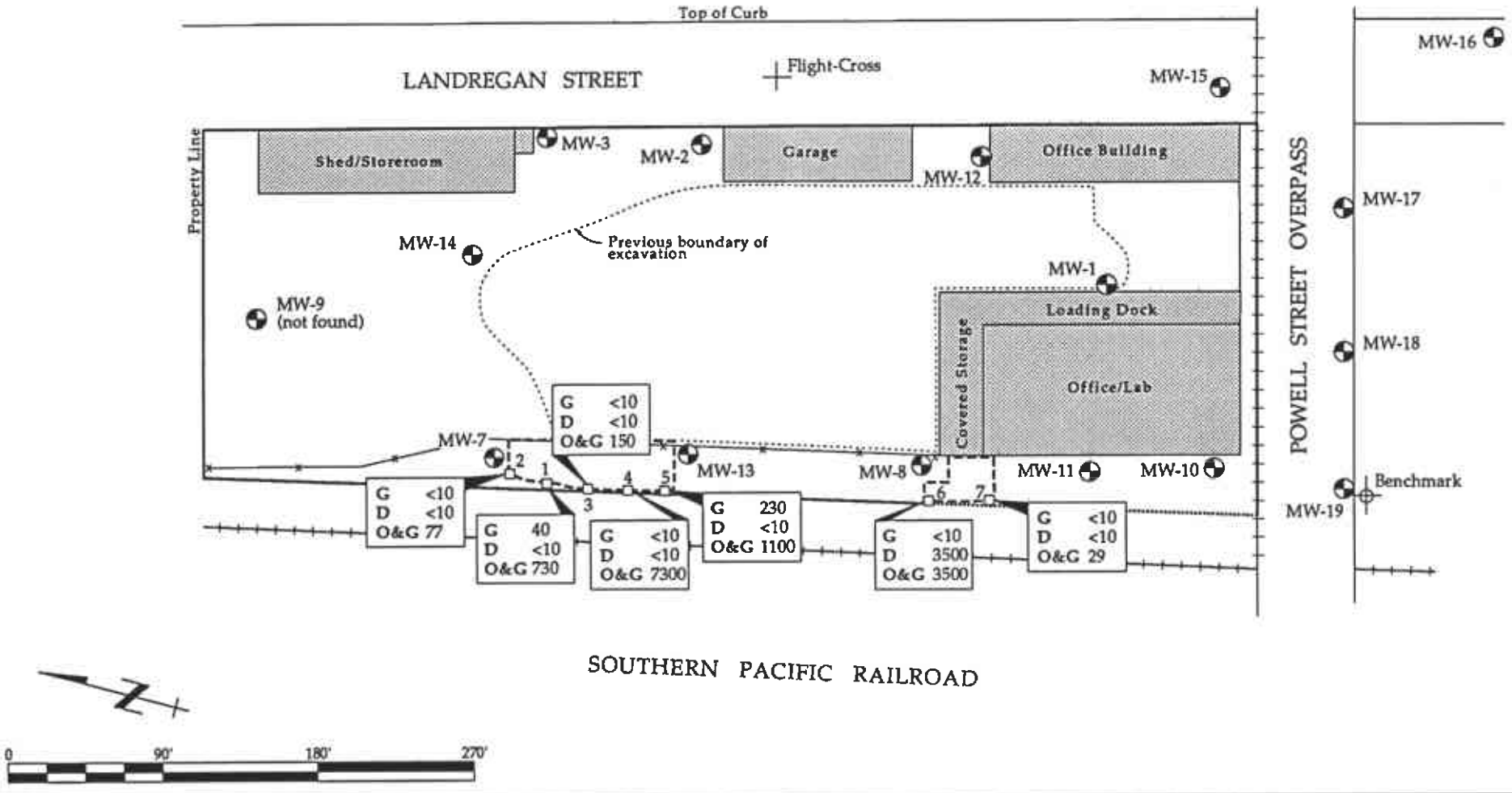
- MW-8 — Monitor Well location
- Additional soil excavation boundary
- Assumed property line

Site Map with Additional Soil Excavation Locations
Former Chevron Asphalt Plant and Terminal
Emeryville, California

FIGURE 2

WESTERN GEOLOGIC RESOURCES, INC.

1-045.47



EXPLANATION

- MW-8 — Monitor Well location
- Additional soil excavation boundary
- Assumed property line
- Soil sample location
- 2 — Soil sample location
- G <10 / D <10 / O&G 77 — Gas / Diesel / Total Oil and Grease Concentrations in parts-per-million

Site Map with Soil Excavation Sidewall Sample Locations
Former Chevron Asphalt Plant and Terminal
Emeryville, California

FIGURE 3

WESTERN GEOLOGIC RESOURCES, INC.

1-045.47

ATTACHMENT A

SOP-2: SOIL SAMPLING

STANDARD OPERATING PROCEDURES
RE: SOIL SAMPLING
SOP-2

Soil samples for chemical analysis are collected in thin-walled brass tubes, 4-inches long by 2-inches outside diameter. Four of these tubes and a spacer tube are set in a 2-inch inside diameter 18-inch split-barrel sampler.

The split-barrel sampler is driven its entire length either hydraulically or using a 140-pound drop hammer. The sampler is extracted from the borehole and the brass tubes, containing the soil samples, are removed. Upon removal from the sampler, the selected brass tubes are immediately trimmed and capped with aluminum foil and plastic caps. They are then hermetically sealed with duct tape, labeled and refrigerated for delivery, under chain-of-custody, to the analytic laboratory. These procedures minimize the potential for cross-contamination and volatilization of volatile organic compounds (VOC) prior to chemical analysis.

One soil sample collected at each sampling interval is analyzed in the field using either a photoionization detector (PID), a flame ionization detector (FID), or an explosimeter. The purpose of this field analysis is to qualitatively determine the presence or absence of hydrocarbons and to establish which soil samples will be analyzed at the laboratory. The soil sample is sealed in a zip-lock plastic bag and placed in the sun to enhance volatilization of the hydrocarbons from the sample. The data is recorded on the drill logs at the depth corresponding to the sampling point.

Other soil samples are collected to document the stratigraphy and estimate relative permeability of the subsurface materials. All drilling and sampling equipment are steam-cleaned prior to use at each site and between boreholes to minimize the potential for cross-contamination.

ATTACHMENT B

CHAIN-OF-CUSTODY FORM

Chain-of-Custody Record

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

Chevron Facility Number: N/A
Consultant Release Number:
Consultant Project Number: 1-045.47
Consultant Name: Western Geologic Resources
Address: 2169 E. Francisco, San Rafael, CA 94901
Fax Number: 415-457-8521
Project Contact (Name): Chris Alger
(Phone): 415-457-7595

Chevron Contact (Name): Lisa Backlund
(Phone): 415-842-9527
Laboratory Name: GTEL
Contract Number: 2780701
Samples Collected by (Name): K.P. Fengel
Collection Date: 9/18 – 9/20/90
Signature: Kirk P. Fengel

Sample Number	Lab Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite	Time	Sample Preservation	Iced	Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline	Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline + (Diesel)	503 Oil and Grease	Arom. Volatiles - BTXE Soil: 8020/Wtr.: 602	Arom. Volatiles - BTXE Soil: 8240/Wtr.: 624	Total Lead DHS-Luft	EDB DHS-AB 1803				Remarks
1		1	S	G	N/A	N/A	X	X	X	X								
2		↓	↓	↓	↓	↓	↓	↓	↓	↓								
3		↓	↓	↓	↓	↓	↓	↓	↓	↓								
4		↓	↓	↓	↓	↓	↓	↓	↓	↓								
5		↓	↓	↓	↓	↓	↓	↓	↓	↓								
6		↓	↓	↓	↓	↓	↓	↓	↓	↓								
7		↓	↓	↓	↓	↓	↓	↓	↓	↓								

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Kirk P. Fengel	WGR	9/25/90 0900	[signature]	CCS	9/25 1:35
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature): Kathy Bravo		Date/Time: 9/25 2:50

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

Printed in U.S.A.

White / Project File — Canary / Sampler — Pink / Lab

ATTACHMENT C

LABORATORY REPORTS WITH QUALITY ASSURANCE/
QUALITY CONTROL DOCUMENTS

Project Number: SFB-175-0204.72
Consultant Project Number: 1-045.47
Contract Number: N46CWC0244-9-X
Facility Number N/A
Work Order Number: C009605
Report Issue Date: October 5, 1990

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Gasoline, Diesel, in Soil
Modified EPA Method 8015

GTEL Sample Number		1	2	3	4
Client Identification		01	02	03	04
Date Sampled		9/18-20/90	9/18-20/90	9/18-20/90	9/18-20/90
Date Extracted		09/26/90	09/26/90	09/26/90	09/26/90
Date Analyzed		09/27/90	09/27/90	09/27/90	09/27/90
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Gasoline	10	40	<10	<10	<10
Diesel	10	<10	<10	<10	<10

GTEL Sample Number		5	6	7	
Client Identification		05	06	07	
Date Sampled		9/18-20/90	9/18-20/90	9/18-2/90	
Date Extracted		09/26/90	09/26/90	09/26/90	
Date Analyzed		09/27/90	09/27/90	09/27/90	
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Gasoline	10	230	<10	<10	
Diesel	10	<10	3500	<10	

GTEL ENVIRONMENTAL LABORATORIES, INC.

Project Number: SFB-175-0204.72
Consultant Project Number: 1-045.47
Contract Number: N46CWC0244-9-X
Facility Number: NA
Work Order Number: C009606
Report Issue Date: October 3, 1990

Table 1

ANALYTICAL RESULTS

Total Recoverable Oil and Grease in Soil by Infrared
MODIFIED EPA Method 413.2

Sample Identification		Date Sampled	Date Extracted	Date Analyzed	Concentration, mg/Kg[1]
GTEL No.	Client ID				
01	1	09/18-20/90	09/27/90	09/27/90	730
02	2	09/18-20/90	09/27/90	09/27/90	77
03	3	09/18-20/90	09/27/90	09/27/90	150
04	4	09/18-20/90	09/27/90	09/27/90	7300
05	5	09/18-20/90	09/27/90	09/27/90	1100
06	6	09/18-20/90	09/27/90	09/27/90	3500
07	7	09/18-20/90	09/27/90	09/27/90	29

1 = Method detection limit = 5.0 mg/Kg; analyte below this level would not be detected.

GTEL ENVIRONMENTAL LABORATORIES, INC.

Project Number: SFB-175-0204.72
Consultant Project Number: 1-045.47
Contract Number: N46CWC0244-9-X
Facility Number N/A
Work Order Number: C009605
Report Issue Date: October 5, 1990

QA Conformance Summary

Total Petroleum Hydrocarbons as Gasoline, Diesel, in Soil
Modified EPA Method 8015

1.0 Blanks

The Reagent blank was below the detection limit as shown in Table 2.

2.0 Surrogate Compound Recoveries

Percent recovery limits were met for the surrogate compound (Octadecane) for all samples as shown in Table 3.

3.0 Matrix Spike (MS) Accuracy

Percent recovery limits were met for diesel in the MS as shown in Table 4.

4.0 Sample Duplicate Precision

Relative percent difference (RPD) criterion was met for all analytes in the sample duplicate as shown in Table 5.

5.0 Sample Handling

5.1 Sample handling and holding time criteria were met for all samples.

5.2 There were no exceptional conditions requiring dilution of samples.

Project Number: SFB-175-0204.72
Consultant Project Number: 1-045.47
Contract Number: N46CWC0244-9-X
Facility Number N/A
Work Order Number: C009605
Report Issue Date: October 5, 1990

Table 2

REAGENT BLANK DATA

Total Petroleum Hydrocarbons as Gasoline, Diesel in Soil
Modified EPA Method 8015

Date of Analysis: 09/27/90

Analyte	Concentration, mg/Kg
Gasoline	< 10
Diesel	< 10

<# = Not detected at the indicated detection limit.

Table 3

SURROGATE COMPOUND RECOVERY

Octadecane

Total Petroleum Hydrocarbons as Gasoline, Diesel, in Soil
Modified EPA Method 8015

Acceptability Limits[1]: 70 - 130 %

GTEL No.	Expected Result, mg/Kg	Surrogate Result, mg/Kg	Surrogate Recovery, %
Blank	100	81	81
01	100	80	80
02	100	91	91
03	100	86	86
04	100	95	95
05	100	92	92
06	100	88	88
07	100	104	104
MS	100	89	89

MS = Matrix Spike Sample
1 = Acceptability limits are derived from the 99% confidence interval of all samples during the previous quarter.

GTEL ENVIRONMENTAL LABORATORIES, INC.

Project Number: SFB-175-0204.72
Consultant Project Number: 1-045.47
Contract Number: N46CWC0244-9-X
Facility Number N/A
Work Order Number: C009605
Report Issue Date: October 5, 1990

Table 4

MATRIX SPIKE (MS) RECOVERY REPORT

Total Petroleum Hydrocarbons as Diesel, in Soil
Modified EPA Method 8015

Date of Analysis: 09/27/90
Sample Spiked: C009605-02 (Spike & Spike dup)
Client ID: C009605-02
Units: mg/Kg

Analyte	Sample Result	Amount Added	Expected Result	MS Result	MS, % Recovery	Acceptability Limits, %[1]
Diesel	<10	500	500	543	108	63 - 127

1 = Acceptability limits are derived from the 99% confidence interval of all samples during the previous quarter.

<# = Not detected at the indicated detection limit.

Table 5

LABORATORY DUPLICATE SAMPLE RESULTS
AND RELATIVE PERCENT DIFFERENCE (RPD) REPORT

Total Petroleum Hydrocarbons as Gasoline, Diesel, in Soil
Modified EPA Method 8015

Date of Analysis: 09/27/90
Sample Used: C009605-02 (Spike & Spike dup)
Client ID: C009605-02
Units: mg/Kg

Analyte	Sample Result	Duplicate Result	RPD, %	Maximum RPD, %
Gasoline	<10	<10	N/A	30
Diesel	<10	<10	N/A	30

GTEL ENVIRONMENTAL LABORATORIES, INC.

Project Number: SFB-175-0204.72
Consultant Project Number: 1-045.47
Contract Number: N46CWC0244-9-X
Facility Number: NA
Work Order Number: C009606
Report Issue Date: October 3, 1990

QA Conformance Summary

Total Recoverable Oil and Grease in Soil by Infrared
MODIFIED EPA Method 413.2

1.0 Blanks

The method blank was below the detection limit as shown in Table 2.

2.0 Initial Instrument Calibration

The range of concentrations of the initial instrument calibration are shown in Table 3.

3.0 Calibration Verification Standards

3.1 The control limits were met for the initial calibration verification standard (ICVS) as shown in Table 4.

3.2 The control limits were met for the continuing calibration verification standard (CCVS) as shown in Table 4.

4.0 Matrix Spike (MS) Accuracy

The control limits were met for the reference oil in the MS as shown in Table 5.

5.0 Sample Duplicate Precision

Relative percent difference (RPD) criterion was met for the sample duplicate as shown in Table 6.

Project Number: SFB-175-0204.72
Consultant Project Number: 1-045.47
Contract Number: N46CWC0244-9-X
Facility Number: NA
Work Order Number: C009606
Report Issue Date: October 3, 1990

Table 2

METHOD BLANK DATA

Total Recoverable Oil and Grease in Soil by Infrared
MODIFIED EPA Method 413.2

Date of Analysis: 09/27/90

Analyte	Concentration, mg/Kg
Oil and Grease	<5

< # = Not detected at the indicated detection limit.

Table 3

INITIAL CALIBRATION STANDARDS DATA

Total Recoverable Oil and Grease in Soil by Infrared
MODIFIED EPA Method 413.2

Date of Analysis: 09/27/90

Standard Number	Concentration, mg/L
1	1.0
2	5.0
3	10.0
4	50.0
5	100.0

Project Number: SFB-175-0204.72
Consultant Project Number: 1-045.47
Contract Number: N46CWC0244-9-X
Facility Number: NA
Work Order Number: C009606
Report Issue Date: October 3, 1990

Table 4

INITIAL AND CONTINUING CALIBRATION
VERIFICATION STANDARDS RESULTS

Total Recoverable Oil and Grease in Soil by Infrared
MODIFIED EPA Method 413.2

Date of Analysis: 09/27/90

Initial Calibration Verification Standard				
Analyte	Expected Result, mg/L	Observed Result, mg/L	Recovery, %	Acceptability Limits, %[1]
Oil and Grease	5.3	4.9	92	80 - 120
Continuing Calibration Verification Standard				
Analyte	Expected Result, mg/L	Observed Result, mg/L	Recovery, %	Acceptability Limits, %[1]
Oil and Grease	5.3	5.3	100	80 - 120

1 = Acceptability limits are derived from the 99% confidence interval of all samples during the previous quarter.

Table 4a

INITIAL AND CONTINUING CALIBRATION
VERIFICATION STANDARDS SOURCE

Total Recoverable Oil and Grease in Soil by Infrared
MODIFIED EPA Method 413.2

Initial Calibration Verification Standard		
Analyte	Lot Number	Source
Oil and Grease	R07/STK12	GTEL
Continuing Calibration Verification Standard		
Analyte	Lot Number	Source
Oil and Grease	R06/STK7	GTEL

GTEL ENVIRONMENTAL LABORATORIES, INC.

Project Number: SFB-175-0204.72
Consultant Project Number: 1-045.47
Contract Number: N46CWC0244-9-X
Facility Number: NA
Work Order Number: C009606
Report Issue Date: October 3, 1990

Table 5

MATRIX SPIKE (MS) RECOVERY REPORT

Total Recoverable Oil and Grease in Soil by Infrared
MODIFIED EPA Method 413.2

Date of Analysis: 09/27/90
Sample Spiked: Sand(EM Science Lot #9236) Units: mg/Kg

Analyte	MS Result	Sample Result	Amount Recovered	Amount Added	MS, % Recovery	Acceptability Limits, %[1]
Oil and Grease	47.4	<5	47.4	50.4	94	70 - 130

Table 6

LABORATORY DUPLICATE SAMPLE RESULTS
AND RELATIVE PERCENT DIFFERENCE (RPD) REPORT

Total Recoverable Oil and Grease in Soil by Infrared
MODIFIED EPA Method 413.2

Date of Analysis: 09/27/90 Client ID: 4
Sample Used: C009606-04 Units: mg/Kg

Analyte	Sample Result	Duplicate Result	RPD, %	Maximum RPD, %
Oil and Grease	7240	7370	1.8	20

GTEL ENVIRONMENTAL LABORATORIES, INC.