



Chevron U.S.A. Products Company

2410 Camino Ramon, San Ramon, California • Phone (510) 842-9500
Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804

92 JUN 18 11:20

Marketing Department

June 17, 1992

3812

Ms. Jennifer Eberle
Alameda County Health Care Services
80 Swan Way, Room 200
Oakland, CA 94621

Re: **Former Chevron Service Station #9-0020**
1633 Harrison, Oakland 94612

Dear Ms. Eberle:

Enclosed we are forwarding the **Soils Excavation Letter Report** dated June 2, 1992, prepared by our consultant Pacific Environmental Group, Inc. for the above referenced site. This report documents the soils remediation activities performed as outlined in the Phase I Corrective Action Work Plan submitted to Mr. Paul Smith on December 18, 1991. The soils remediation activity consisted of excavating a small localized area of hydrocarbon-affected soils in the vicinity of monitor well MW-4.

where is dec. of disposal?

not detected on site as per 12-18-91 work plan.
Approximately 150 cubic yards of soils were excavated and disposed of off-site an an approved landfill. Final excavation samples collected were analyzed for TPH-Gasoline, TPH-Diesel, and BTEX. In addition, per the request of Mr. Smith, three (3) excavation samples were analyzed for halogenated volatile organics. All the samples reported non-detectable concentrations of these constituents with the exception of a sample collected from the southern sidewall at a depth of 8-feet below grade. This sample reported concentrations of TPH-Gasoline and TPH-Diesel of 310 and 270 ppm, respectively. Benzene was not detected in this sample. Laboratory analysis reported that the TPH-Diesel chromatogram was of a non-standard diesel pattern. They highly suspect this to be a result of weathered gasoline, as diesel was never marketed at this site. Further excavation laterally to the south was precluded due to the presence of an adjacent building foundation wall. (However, no hydrocarbon contaminants were detected in the adjacent 10-foot and 5-foot depth samples collected from the southern sidewall.) The excavation extended to a depth of approximately 14-feet below grade.

what type of plume? VOCs? TPH? You already have DG wells.

We have instructed our consultant to prepare a work plan to install an additional well off-site for obtaining down-gradient plume delineation. A work plan is currently being prepared and will be forwarded to your office for your review and formal concurrence. A 1/2 mile radius well survey was performed previously and documented in the Off-Site Subsurface Investigation Report dated July, 1990. (We will pursue a record/file search to assess if these up-gradient off-site monitor wells identified are being monitored, and if so, what analyses are being performed. Based on these findings, we may request assistance from Alameda County Health Care Services in requesting these parties to sample their respective wells for VOC constituents.) (Informal data would suggest that we are on, what appears to be, the tail end of a large VOC plume.) Numerous businesses have been identified in the immediate vicinity which may use or store halocarbons (industrial inks, solvents and degreasers commonly contain halocarbons). The number of businesses in the immediate vicinity up-gradient of the site which may be potential sources of halogenated volatile organics appears to be extensive. We will further assess the distribution pattern of the solvents to



Page 2
June 17, 1992

assist in supporting an off-site solvent source.

A corrective action work plan is currently being prepared and will be submitted to your office for review and concurrence prior to implementation.

If you have any questions or comments, please do not hesitate to contact me at (510) 842-9581.

Very truly yours,
CHEVRON U.S.A. PRODUCTS COMPANY



Nancy Vukelich
Site Assessment and Remediation Engineer

Enclosure

cc: Mr. Rich Hiett, RWQCB-Bay Area
Mr. Kent O'Brien, Geraghty & Miller
Mr. B.C. Owen
File (9-0020A2)



PACIFIC
ENVIRONMENTAL
GROUP, INC.

June 2, 1992
Project 320-90.02

Ms. Nancy Vukelich
Chevron USA Products Company
P.O. Box 5004
San Ramon, California 94583

Re: Former Chevron USA Service Station 9-0020
1633 Harrison Street at 17th Street
Oakland, California

Dear Ms. Vukelich:

Pacific Environmental Group, Inc. (PACIFIC) is pleased to submit this letter which presents the results of the **soil excavation activities** performed on January 7, 8, 9 and 22, 1992, at the site referenced above. The work performed included excavating, sampling and removing hydrocarbon-impacted soil in the vicinity of Well MW-4.

Included in this report is a brief discussion of site background, scope of work, procedures for the work performed, and a discussion of findings.

BACKGROUND

Site Description

The site is a former Chevron USA service station located at 1633 Harrison Street and 17th Street in Oakland, California (Figure 1). The site is located in a mixed retail, office, residential, and light industrial region of downtown Oakland. The former service station layout, including station building, product island, and underground storage tank locations are presented on Figure 2.

According to Chevron records, the service station facilities, including underground storage tanks and lines, were removed prior to 1972. Information regarding the number or volume of underground storage tanks was not available at the time of

3209002/report

this report. The site has been occupied and operated as a parking lot since December 1, 1975.

Regional Hydrogeologic Setting

The site is located in the southwestern portion of Oakland which is underlain by Quaternary marine and non-marine deposits consisting predominantly of sand and gravel interbedded with thick lenses of clayey sand to sandy clay. Locally the site is underlain by dune sand deposits of the Merritt Sand Formation which may extend to a depth of 65 feet. Based on available boring logs, soils beneath the site consist mainly of sand and silty sand to a depth of 31.5 feet below the surface. Unconfined groundwater occurs at a depth of approximately 21 to 23 feet below the surface.

Groundwater flow direction at the site is northeastward toward Lake Merritt, a lagoon on the eastern edge of the San Francisco Bay. Lake Merritt, which is located less than 1,500 feet east of the site, and the tidal inlet connecting the lake to the Alameda Estuary are the nearest surface drainages to the site.

Summary of Previous Site Investigations

Western Geologic Resources (WGR) of San Rafael, California drilled sixteen exploratory soil borings (B-1 through B-16) and installed twelve groundwater monitoring wells (MW-1 through MW-12) during investigations that took place in October 1988, April 1989, and June 1990. Monitoring well locations are indicated on Figure 2. Groundwater was encountered at approximately 21 feet below grade. Total petroleum hydrocarbons were detected at 12 parts per million (ppm) in the soil sample collected from Well MW-2 at 19 feet below grade. Total purgeable petroleum hydrocarbons (TPPH) were detected in soil samples from Well MW-4 collected at 4.5 feet and 9.6 feet at 600 ppm, and from Well MW-7 at 680 ppm (19.25 foot sample) and 50,000 ppm (23.5 foot sample). Benzene was not detected in any of the soil samples.

Soil samples were also analyzed for volatile organic compounds.

1,1,1-Trichloroethane (TCA) was detected at 0.1 ppm in the sample from Well MW-4 (9.6 foot depth), and 0.2 ppm in the sample from Well MW-7 (23.5 foot depth). Chlorobenzene was the only other volatile organic detected in soil samples, at 0.07 ppm in the sample from Well MW-7 collected at 19.25 feet below grade.

In October 1991, PACIFIC drilled and installed two off-site monitoring wells; one well (MW-13) is located downgradient of the site and one is located upgradient (MW-14). PACIFIC also drilled four soil borings (B-A through B-D) around

Well MW-7 to evaluate the extent of hydrocarbons detected during installation of Well MW-7. No hydrocarbons were detected in soil from Wells MW-13 and MW-14. Maximum hydrocarbons detected in soil from the borings was 120 ppm gasoline at the 25 to 26.5 foot depth interval (Boring B-D).

Groundwater samples from the site have been collected, analyzed and reported quarterly since November 1988. Concentrations of benzene, toluene, ethylbenzene and xylenes (BTEX compounds) in groundwater have consistently been detected only in Wells MW-7, MW-9 and recently installed MW-13. The presence of halogenated volatile organics in groundwater has been well established since sampling began at the site. Generally, the highest concentrations of halogenated volatile organics have been detected in upgradient Wells MW-2, MW-3 and MW-4. Concentrations and sampling dates are documented in quarterly reports submitted by Chevron.

SCOPE OF WORK

The purpose of this corrective action was to remove the hydrocarbon-affected soil that had been previously detected in the vicinity of Well MW-4. PACIFIC was contracted to perform soil sampling and to provide oversight during the excavation. This project was conducted under the jurisdiction of the Alameda County Health Care Services, Division of Hazardous Materials.

PROCEDURES

Excavation

Field work was performed on January 7, 8, 9 and 22, 1992. Soil was excavated with the use of a standard backhoe. During excavation activities soils were monitored visually and with the use of a photoionization detector for evidence of hydrocarbons. Soil samples were collected from the excavation bottom and sidewalls to confirm field observations and to determine the final extent of the excavation. Over-excavation was performed as necessary. Soils were stockpiled into suspected "clean" and "dirty" piles, characterized, and removed to an appropriate landfill. Although soil was completely excavated around Well MW-4, no serious damage occurred. Minor repairs were made to the annular seal prior to backfilling.

Soil Sampling

Soil samples were collected using the following procedures: upon excavation to the desired depth a backhoe bucket of soil was brought to the surface, and approximately 3 inches of soil were scraped off and a clean brass ring was then driven into the soil. The brass ring was then capped with foil and plastic end caps and placed in labeled, sealed glass jars. Samples from the stockpiled soil were also collected in brass rings (capped with foil and plastic end caps) at a minimum depth of one foot below the soil surface in a pattern that would represent the entire spoils pile. All samples were logged onto chain-of-custody forms and immediately placed on ice for transport to a California State-certified laboratory.

FINDINGS

Excavation

Soils encountered in the excavation consisted predominantly of sand and clayey sand. Groundwater was not encountered during soil removal activities. A zone of green, discolored soil with hydrocarbon odor was observed in the southern portion and on part of the southern sidewall of the initial excavation. Maximum discoloration and hydrocarbon odors were noted along the southern sidewall at a depth of approximately 8 feet. The area of discoloration was over-excavated laterally to the southern property boundary. Further lateral excavation to the south was precluded by the presence of a foundation wall paralleling the excavation sidewall to a depth of approximately 10 feet. A narrow zone (2 feet vertical x 5 feet horizontal) of discolored soil was observed extending to the south beneath the building. A soil sample was collected to quantify the hydrocarbon concentration remaining in this area. The final dimensions of the excavation around Well MW-4 were approximately 20 feet x 12 feet x 14 feet deep (Figure 2).

Additionally, a 30-foot long trench extending five feet in depth was excavated across the area of the former underground storage tanks to confirm that the tanks had been removed from the site (Figure 2). No underground storage tanks were observed, although, construction debris, including piping and concrete slabs, was found beneath the surface in the area of the former tanks.

Approximately 150 cubic yards of soil, including an estimated 27 cubic yards of discolored soil, were excavated and removed. The excavations were backfilled with compacted Class II Road Base.

why didn't they know if USTs were removed?

Laboratory Analytical Results

A total of thirteen soil samples were collected from within the excavation around Well MW-4 and an additional 12 samples were collected from the stockpiled soil and sent to a State-certified laboratory for analysis. The stockpiled soil samples were composited in the laboratory. All soil samples were analyzed for low-boiling petroleum hydrocarbons (calculated as gasoline), high-boiling hydrocarbons (calculated as diesel) and for benzene, toluene, ethylbenzene, and total xylenes (BTEX compounds). In addition, three excavation samples and one composite stockpile sample were analyzed for halogenated volatile organics by EPA Method 8010. One composite stockpile sample was also analyzed for organic lead. Laboratory analytical methods are documented on the certified analytical reports which are included with chain-of-custody documentation in Attachment A.

Gasoline and Diesel were detected in the southern sidewall sample (ES-8C) from the discolored zone at concentrations of 310 ppm and 270 ppm, respectively, at a depth of 8 feet. No halogenated volatile organics were detected. No hydrocarbons were detected in the adjacent 10-foot (ES-10W) and 5-foot (ES-5E) depth samples from the southern sidewall.

Samples collected from the other sidewalls and bottom of the excavation did not contain detectable levels of hydrocarbons or halogenated volatile organics. Locations and analytical results of the excavation samples are shown on Figure 3. A summary of the analytical results is presented in Table 1.

Discussion

Approximately 150 cubic yards of soil, including an estimated 27 cubic yards of hydrocarbon-affected soil were excavated and removed during this project. A narrow zone (approximately 2 feet vertical x 5 feet horizontal) of hydrocarbon impacted soil was observed in the southern excavation sidewall. Further excavation could not be performed without possible structural damage to the building and foundation. A maximum hydrocarbon concentration of 310 ppm gasoline was detected in this zone. Benzene was not detected. Based on field observations and laboratory analyses, with the exception of this narrow zone observed on the southern excavation sidewall, all hydrocarbon-affected soil in the vicinity of MW-4 has been removed.

June 2, 1992

Page 6

If you have any questions or comments regarding the contents of this letter, please do not hesitate to call.

Sincerely,

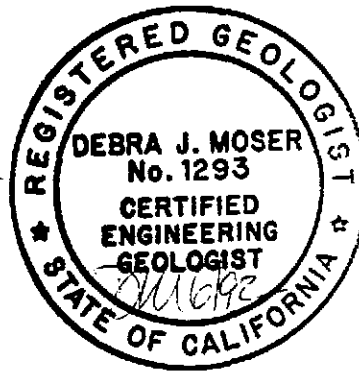
Pacific Environmental Group, Inc.



Jerry W. Mitchell
Project Geologist



Debra J. Moser
Senior Geologist
CEG 1293



Attachments: Table 1 - Soil Analytical Results - Low Boiling Hydrocarbons
Figure 1 - Site Location Map
Figure 2 - Site Map
Figure 3 - Gasoline/Diesel Concentration Map
Attachment A - Certified Analytical Reports and Chain-of-Custody Documentation

Table 1
Soil Analytical Results
Low Boiling Hydrocarbons

Former Chevron Service Station 9-0020
1633 Harrison Street at 17th Street
Oakland, California

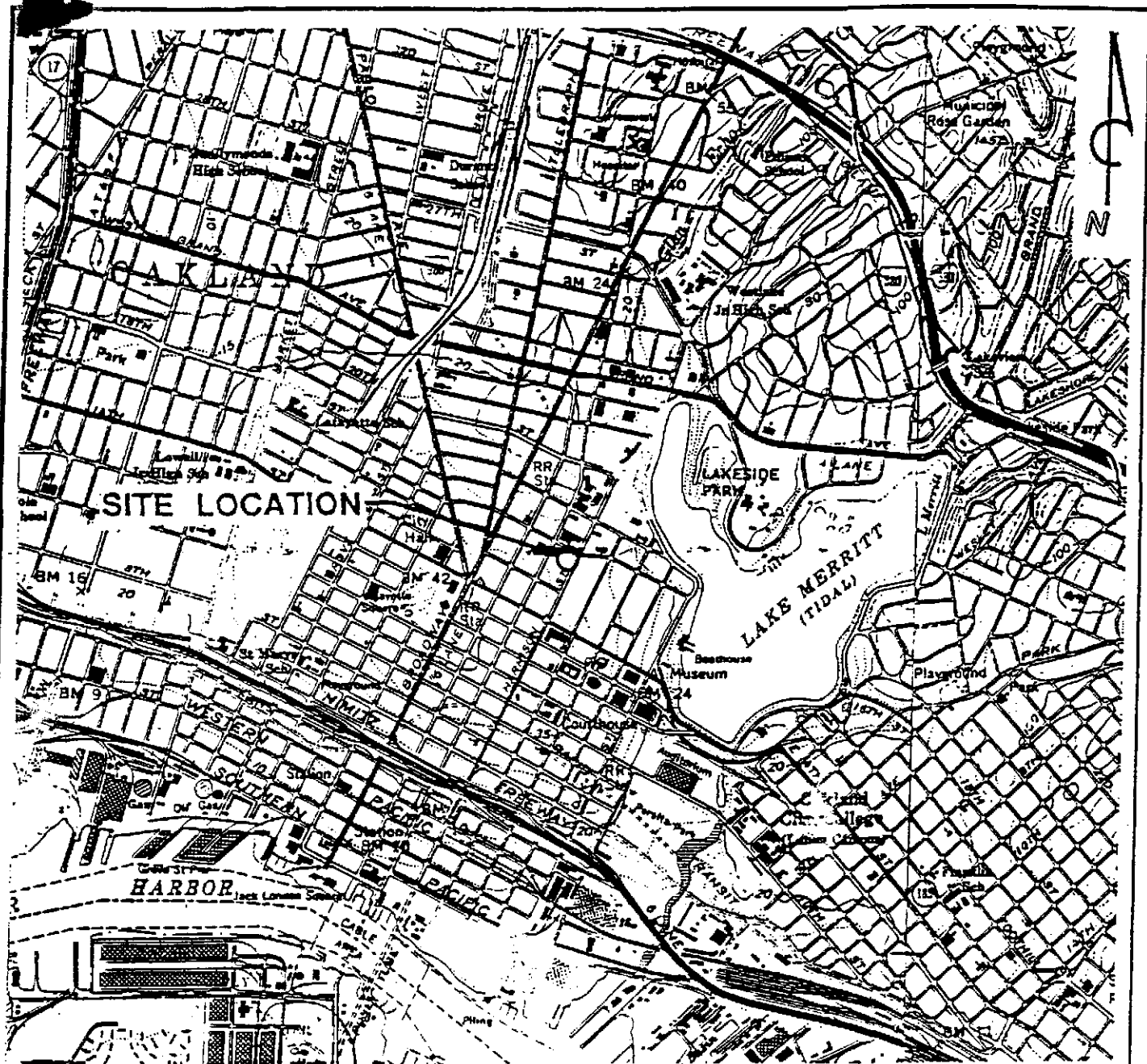
Sample Date: January 9, 1992

Sample ID	TPH-gasoline (ppm)	TPH-diesel (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)
ES-10W	ND	ND	ND	ND	ND	ND
ES-8C ✓	310 ✓	270* ✓	ND	ND	0.88	2.8
EE-5N ✓	ND	ND	ND	ND	ND	ND
EE-10S ✓	ND	ND	ND	ND	ND	ND
EN-5W ✓	ND	ND	ND	ND	ND	ND
EN-10E ✓	ND	ND	ND	ND	ND	ND
EW-5S ✓	ND	ND	ND	ND	ND	ND
EW-10N ✓	ND	ND	ND	ND	ND	ND
EB-NE ✓	ND	ND	ND	ND	ND	ND
EB-NW ✓	ND	ND	ND	ND	ND	ND
EB-SW ✓	ND	ND	ND	ND	ND	ND
E2S-5E ✓	ND	ND	ND	ND	ND	ND
E2B ✓	ND	ND	ND	ND	ND	ND
SP1 ✓	14** ✓	ND ✓	ND ✓	ND ✓	ND ✓	0.09 ✓
SP2 ✓	14** ✓	ND ✓	ND ✓	ND ✓	ND ✓	0.07 ✓
SP3 ✓	5*** ✓	ND 71 ✓	ND ✓	ND 0.014 ✓	0.025 0.019 ✓	71 0.025 ✓

* = Diesel range concentration reported. A non-standard diesel pattern was observed in chromatogram.
 ** = Gasoline range concentration reported. A non-standard gasoline pattern was observed in the chromatogram.
 *** = Gasoline range concentration reported. The majority of peaks were observed in the diesel range of the chromatogram.

ppm = parts per million

SP1, SP2 and SP3 are composite soil samples from the spoils pile (SP3 sampled on January 22, 1992).

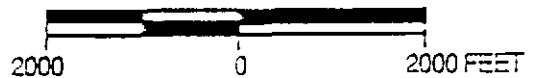


QUADRANGLE
LOCATION

REFERENCES:

USGS 7.5 MIN. TOPOGRAPHIC MAP
 TITLED: OAKLAND WEST, CALIFORNIA
 DATED: 1959 REVISED: 1980
 TITLED: OAKLAND EAST, CALIFORNIA
 DATED: 1959 REVISED: 1980

SCALE



PACIFIC
ENVIRONMENTAL
GROUP INC.

FORMER CHEVRON USA STATION 9-0020
 1633 Harrison Street at 17th Street
 Oakland, California

SITE LOCATION MAP

FIGURE:
1
PROJECT:
320-90.02



MW-11

MW-12

17th STREET

MW-13

MW-14

FORMER PUMP ISLAND

MW-8

MW-3

MW-7

FORMER STATION BUILDING

MW-9

MW-2

MW-5

MW-6

MW-10

FORMER WASTE OIL TANK

EXCAVATION LOCATION

MW-1

HARRISON STREET

MW-4

EXCAVATION LOCATION

FORMER UNDERGROUND STORAGE TANKS

LEGEND

EXPLORATORY TRENCH

MW-1
● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION



APPROXIMATE DIRECTION OF GROUNDWATER FLOW

SCALE

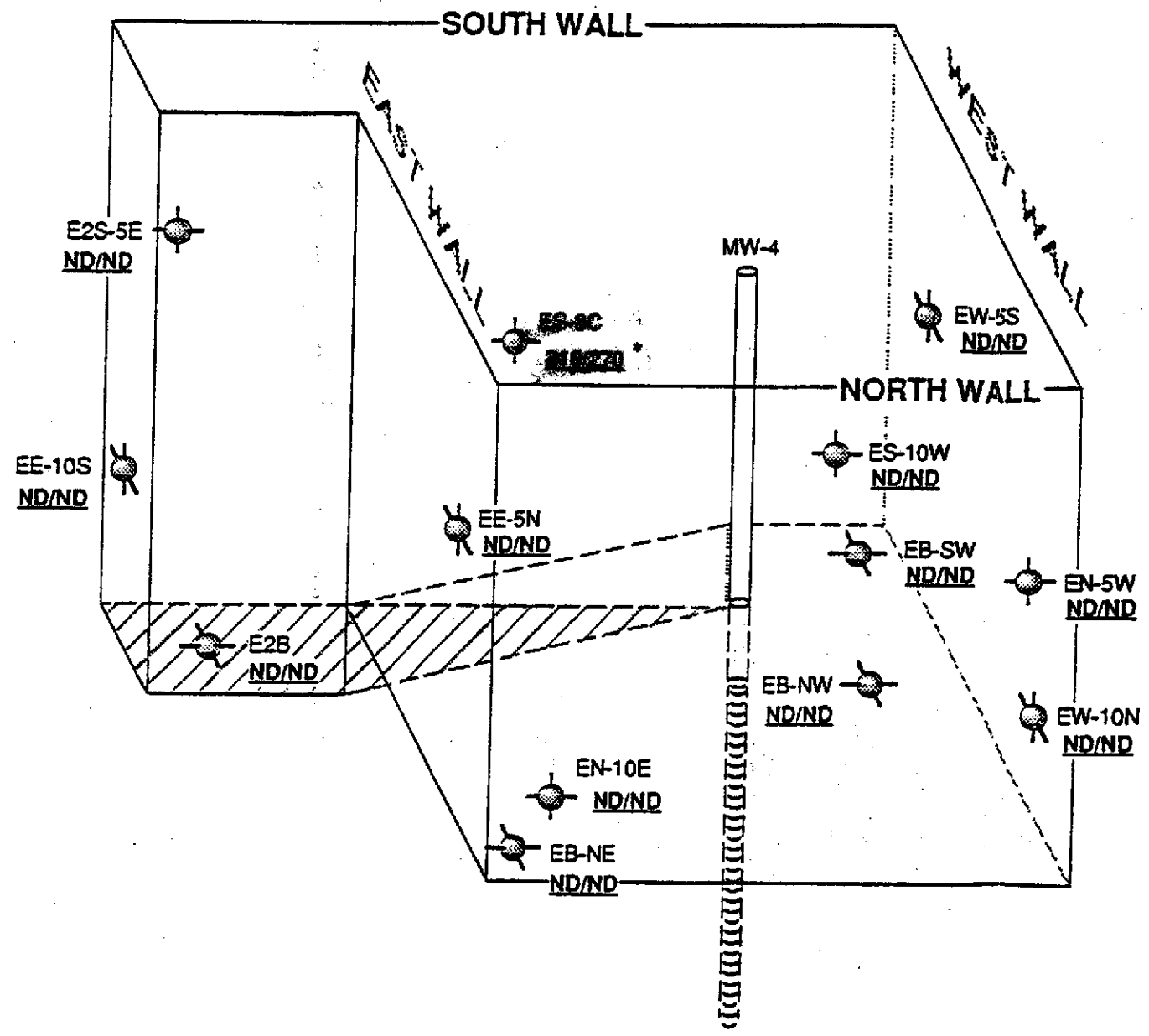
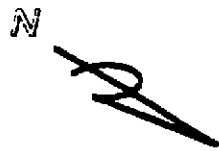


PACIFIC ENVIRONMENTAL GROUP, INC.

FORMER CHEVRON USA STATION 9-0020
1633 Harrison Street at 17th Street
Oakland, California

SITE MAP

FIGURE:
2
PROJECT:
320-90.02



LEGEND

MW-4 GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

EN-10E SOIL SAMPLE LOCATION AND DESIGNATION

<u>North Wall</u>	<u>South Wall</u>	<u>East Wall</u>
EN-5W	E2S-5E	EE-5N
EN-10E	ES-8C	EE-10S
	ES-10W	

<u>West Wall</u>	<u>Bottom of Excavation</u>
EW-5S	EB-NE
EW-10N	EB-NW
	EB-SW
	E2B

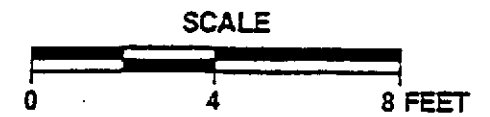
310/270 GASOLINE/DIESEL CONCENTRATION IN SOIL, IN PARTS PER MILLION, 1-9-92

ND NON-DETECTABLE LEVELS

* NON-TYPICAL DIESEL CHROMATOGRAPH PATTERN WAS OBSERVED



PACIFIC ENVIRONMENTAL GROUP, INC.



FORMER CHEVRON USA STATION 9-0020
1633 Harrison Street at 17th Street
Oakland, California

GASOLINE/DIESEL CONCENTRATION MAP

FIGURE: 3
PROJECT: 320-90.02

ATTACHMENT A
CERTIFIED ANALYTICAL REPORTS
AND
CHAIN-OF-CUSTODY DOCUMENTATION



Superior Precision Analytical, Inc.

1555 Burke Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 331-0122
PACIFIC ENVIRONMENTAL GROUP, INC.
PERMIT # 911

JAN 22 1992

RECEIVED

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

LABORATORY NO.: 12682
CLIENT: Pacific Environmental Group
CLIENT JOB NO.: 320-90.02

DATE RECEIVED: 01/09/92
DATE REPORTED: 01/13/92
DATE REVISED: 01/14/92

Page 1 of 3

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
12682- 1	ES-10W	01/09/92	01/09/92
12682- 2	ES-8C	01/09/92	01/10/92
12682- 3	EE-5N	01/09/92	01/10/92
12682- 4	EE-10S	01/09/92	01/09/92
12682- 5	EN-5W	01/09/92	01/09/92
12682- 6	EN-10E	01/09/92	01/09/92
12682- 7	EW-5S	01/09/92	01/09/92
12682- 8	EW-10N	01/09/92	01/09/92
12682- 9	EB-NE	01/09/92	01/09/92
12682-10	EB-SW	01/09/92	01/09/92

Laboratory Number:	12682	12682	12682	12682	12682
	1	2	3	4	5

ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<1	310	ND<1	ND<1	ND<1
TPH/DIESEL RANGE:	ND<10	*270	ND<10	ND<10	ND<10
BENZENE:	ND<.005	ND<0.05	ND<.005	ND<.005	ND<.005
TOLUENE:	ND<.005	ND<0.05	ND<.005	ND<.005	ND<.005
ETHYL BENZENE:	ND<.005	0.88	ND<.005	ND<.005	ND<.005
XYLENES:	ND<.005	2.8	ND<.005	ND<.005	ND<.005

Laboratory Number:	12682	12682	12682	12682	12682
	6	7	8	9	10

ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<1	ND<1	ND<1	ND<1	ND<1
TPH/DIESEL RANGE:	ND<10	ND<10	ND<10	ND<10	ND<10
BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
TOLUENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
ETHYL BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
XYLENES:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005



Superior Precision Analytical, Inc.

1555 Burke, Unit 1 • San Francisco, California 94124 • (415) 647-2081 / Fax (415) 321-7123

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

LABORATORY NO.: 12682
CLIENT: Pacific Environmental Group
CLIENT JOB NO.: 320-90.02

DATE RECEIVED: 01/09/92
DATE REPORTED: 01/13/92
DATE REVISED : 01/14/92

Page 2 of 3

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
12682-11	EB-NW	01/09/92	01/09/92
12682-12	E2S-5E	01/09/92	01/09/92
12682-13	E2B	01/09/92	01/09/92

Laboratory Number:	12682	12682	12682
	11	12	13

ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)		
OIL AND GREASE:	NA	NA	NA
TPH/GASOLINE RANGE:	ND<1	ND<1	ND<1
TPH/DIESEL RANGE:	ND<10	ND<10	ND<10
BENZENE:	ND<.005	ND<.005	ND<.005
TOLUENE:	ND<.005	ND<.005	ND<.005
ETHYL BENZENE:	ND<.005	ND<.005	ND<.005
XYLENES:	ND<.005	ND<.005	ND<.005



Superior Precision Analytical, Inc.

1555 Burke, Unit 1 • San Francisco, California 94124 • (415) 647-3031 / fax (415) 321-7123

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

Page 3 of 3
QA/QC INFORMATION
SET: 12682

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
mg/kg = part per million (ppm)

OIL AND GREASE ANALYSIS By Standard Methods Method 503E:
Minimum Detection Limit in Soil: 50mg/kg

Modified EPA-SW846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Soil: 10mg/kg
Standard Reference: 06/25/91

EPA-SW846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Soil: 1mg/kg
Standard Reference: 07/23/91

SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Soil: 0.005mg/kg
Standard Reference: 06/13/91

ANALYTE	REFERENCE	SPIKE LEVEL	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Oil & Grease	NA	NA	NA	NA	NA
Diesel	06/25/91	1000ug	113/95	18	75-125
Gasoline	07/23/91	200ng	95/85	10.9	59-121
Benzene	06/13/91	200ng	87/79	9.1	70-125
Toluene	06/13/91	200ng	94/86	8.9	74-116
Ethyl Benzene	06/13/91	200ng	103/94	9.1	75-120
Total Xylene	06/13/91	600ng	102/93	9.2	75-119

* Diesel Range concentration reported. A non-standard diesel pattern was observed in the chromatogram.

Richard Srna, Ph.D.
[Signature]
Laboratory Director



Superior Precision Analytical, Inc.

1555 Burke, Unit 1 • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

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

LABORATORY NO.: 12682-2
CLIENT: Pacific Environmental
Group
JOB NO.: 320-90.02

DATE SAMPLED: 01/09/92
DATE RECEIVED: 01/09/92
DATE ANALYZED: 01/10/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: ES-8C

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
✓ 1,1,1-Trichloroethane ✓	5	ND ✓
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane —	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 124 % :MS/MSD RPD = < 4.6 %

Richard Srna, Ph.D.

Richard Srna
Laboratory Director



Superior Precision Analytical, Inc.

1555 Burke Unit • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

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

LABORATORY NO.: 12682-6
CLIENT: Pacific Environmental
Group
JOB NO.: 320-90.02

DATE SAMPLED: 01/09/92
DATE RECEIVED: 01/09/92
DATE ANALYZED: 01/10/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: EN-10E

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
✓ 1,1,1-Trichloroethane ✓	5	ND ✓
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 124 % :MS/MSD RPD =< 4.6 %

Richard Srna, Ph.D.

Richard G. Srna (for)
Laboratory Director



Superior Precision Analytical, Inc.

1555 Burke, Unit 1 • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

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

LABORATORY NO.: 12682-11
CLIENT: Pacific Environmental
Group
JOB NO.: 320-90.02

DATE SAMPLED: 01/09/92
DATE RECEIVED: 01/09/92
DATE ANALYZED: 01/10/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: EB-NW

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
✓1,1,1-Trichloroethane ✓	5	ND ✓
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 124 % :MS/MSD RPD = < 4.6 %

Richard Srna, Ph.D.


Laboratory Director

12682

Chain-of-Custody-Record

Chevron U.S.A. Inc.
 P.O. BOX 5004
 Richmond, CA 94583
 X (415)842-9591

Chevron Facility Number 9-0020
 Facility Address 1533 Harrison St. Oakland
 Consultant Project Number 320-90.02
 Consultant Name Pacific Environmental Group
 Address 1801 Civic Center Dr. Suite 202, Sola (Knox) St
 Project Contact (Name) Maureen Mitchell
 (Phone) (415) 825-0855 (Fax Number) (510) 825-1582

Chevron Contact (Name) Maureen Mitchell
 (Phone) _____
 Laboratory Name Superior Precision Analytical
 Laboratory Release Number 4368860
 Samples Collected by (Name) Madeline Fulsford
 Collection Date 1-9-92
 Signature Madeline Fulsford

Sample Number	Number of Containers	Media S = Soil A = Air W = Water C = Charcoal	Type C = Crude C = Composite D = Diesel	Time DATE	Sample Preservation	Leak (Yes or No)	Analyses To Be Performed										Remarks					
							BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Chlorinated HC (8010)	Non Chlorinated HC (8020)	Total Lead (AA)	Mercury Cd, Cr, Pb, Zn, Ni (ICAP or AA)	VOX 8010								
10W	1	S	D	1/4/92		Yes	X	X														
8C	1																					
5N	1																					
10S	1																					
15W	1																					
10E	1																					
5S	1																					
10N	1																					
15E	1																					
15W	1																					
15N	1																					
15E	1																					
15B	1																					

RUSH

RUSH

RUSH

RUSH

Please Initial: rk
 Samples Stored in ice
 Appropriate containers
 Samples preserved
 VOX's without
 Comments: _____

Relinquished By (Signature) <u>Maureen Mitchell</u>	Organization <u>Pacific</u>	Date/Time <u>1-9-92 16:20</u>	Received By (Signature) <u>Maureen Mitchell</u>	Organization <u>EXPRESS-IT</u>	Date/Time <u>1-9-92</u>	Turn Around Time (Circle Choice) 24 Hrs. <u>48 Hrs.</u> 5 Days 10 Days As Contracted
Relinquished By (Signature) <u>Maureen Mitchell</u>	Organization <u>EXP-IT</u>	Date/Time <u>1-9-92 11:30</u>	Received By (Signature) <u>Maureen Mitchell</u>	Organization <u>EXPRESS-IT</u>	Date/Time <u>1-9-92 16:30</u>	
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature) <u>Maureen Mitchell</u>		Date/Time <u>6:30P</u>	



Superior Precision Analytical, Inc.

1555 Burke, Unit 1 • San Francisco, California 94124 • (415) 647-2081 FAX (415) 321-7123

PACIFIC ENVIRONMENTAL GROUP, INC.

Jan 21 1992

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

LABORATORY NO.: 12721
CLIENT: Pacific Environmental Group
CLIENT JOB NO.: 320-90.02

DATE RECEIVED: 01/22/92
DATE REPORTED: 01/24/92

Page 1 of 2

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
12721- 1	SP-3A, B, C, D COMPOSITE	01/22/92	01/23/92

Laboratory Number: 12721
1

ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)
OIL AND GREASE:	NA
TPH/GASOLINE RANGE:	5*
TPH/DIESEL RANGE:	71
BENZENE:	ND<.005
TOLUENE:	ND<.005
ETHYL BENZENE:	0.014
XYLENES:	0.025



Superior Precision Analytical, Inc.

1555 Burke, Unit 1 • San Francisco, California 94124 • (415) 647-2081 / fax (415) 321-7123

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

Page 2 of 2
QA/QC INFORMATION
SET: 12721

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
mg/kg = part per million (ppm)

OIL AND GREASE ANALYSIS By Standard Methods Method 503E:
Minimum Detection Limit in Soil: 50mg/kg

Modified EPA-SW846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Soil: 10mg/kg
Standard Reference: 06/25/91

EPA-SW846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Soil: 1mg/kg
Standard Reference: 07/23/91

SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Soil: 0.005mg/kg
Standard Reference: 06/13/91

ANALYTE	REFERENCE	SPIKE LEVEL	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Oil & Grease	NA	NA	NA	NA	NA
Diesel	06/25/91	1000ug	77/78	0.4	75-125
Gasoline	07/23/91	200ng	93/78	18	59-121
Benzene	06/13/91	200ng	96/101	5.1	70-125
Toluene	06/13/91	200ng	98/103	5.0	74-116
Ethyl Benzene	06/13/91	200ng	99/104	5.0	75-120
Total Xylene	06/13/91	600ng	93/98	5.2	75-119

* Gasoline range concentration. The majority of peaks were observed in the diesel range of the chromatogram.

Richard Srna, Ph.D.

Glenn A. Nason
Laboratory Director

12721

Chain-of-Custody Record

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

Chevron Facility Number 9-0020
Facility Address 1633 Harrison St, Oakland
Consultant Project Number 300-90.02
Consultant Name Pacific Environmental Group
Address 680 Contra Costa Blvd, Pleasant Hill 94523
Project Contact (Name) Serry Mitchell / Madeleine Fulford
(Phone) (510) 895-0855 (Fax Number) (510) 895-0862

Chevron Contact (Name) Libby Kuchelich
(Phone) _____
Laboratory Name Superior Precision Analytical
Laboratory Release Number _____
Samples Collected by (Name) Madeleine Fulford
Collection Date 1-22-92
Signature Madeleine Fulford

Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Chemical	Type C = Grab E = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed										Remarks		
							BTX - TPH GAS (8020 + 8015)	TPH (8015)	Oil and Grease (5527)	Chlorinated HC (8010)	Non Chlorinated HC (8020)	Total Lead (AA)	Metals Cd, Cr, Pb, Zn, Ni (ICAP or AA)						
SP-3a	1	S				yes	X	X											
SP-3b	1	S																	
SP-3c	1	S																	
SP-3d	1	S																	

RUSH

Relinquished By (Signature)
Madeleine Fulford
Relinquished By (Signature)
Charlotte Prater
Relinquished By (Signature)

Organization
PACIFIC
Organization
EXPRESS 11
Organization

Date/Time
1/22/92 16:50
Date/Time
1/22/92 17:30
Date/Time
1/22/92

Received By (Signature)
Charlotte Prater
Received By (Signature)

Received For Laboratory By (Signature)
Michael Miller

Organization
EXPRESS IT
Organization

Date/Time
1/22/92 16:50
Date/Time

Date/Time
1/22/92 4:00 P

Turn Around Time (Circle Choice)

- 24 Hrs.
- 48 Hrs.
- 5 Days
- 10 Days
- As Contracted



Superior Precision Analytical, Inc.

1555 Burke, Unit 1 • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

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

LABORATORY NO.: 12683
CLIENT: Pacific Environmental Group
CLIENT JOB NO.: 320-90.02

DATE RECEIVED: 01/09/92
DATE REPORTED: 01/13/92
DATE REVISED : 01/16/92

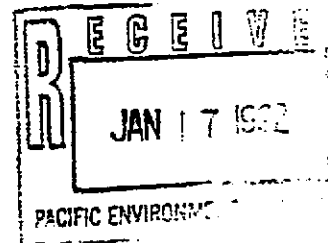
Page 1 of 2

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
12683- 1	SP-1a,b,c,d	01/09/92	01/15/92
12683- 2	SP-2a,b,c,d	01/09/92	01/15/92

Laboratory Number:	12683	12683
	1	2

ANALYTE LIST : Amounts/Quantitation Limits (mg/kg)

OIL AND GREASE:	NA	NA
TPH/GASOLINE RANGE:	**14	**14
TPH/DIESEL RANGE:	ND<10	ND<10
BENZENE:	ND<0.05	ND<0.05
TOLUENE:	ND<0.05	ND<0.05
ETHYL BENZENE:	ND<0.05	ND<0.05
XYLENES:	0.09	0.07





Superior Precision Analytical, Inc.

1555 Burke. Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

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

Page 2 of 2
QA/QC INFORMATION
SET: 12683

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
mg/kg = part per million (ppm)

OIL AND GREASE ANALYSIS By Standard Methods Method 503E:
Minimum Detection Limit in Soil: 50mg/kg

Modified EPA-SW846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Soil: 1mg/kg
Standard Reference: 06/25/91

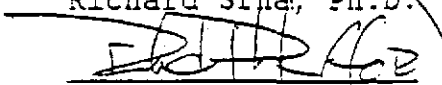
EPA-SW846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Soil: 1mg/kg
Standard Reference: 07/23/91

SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Soil: 0.005mg/kg
Standard Reference: 06/13/91

ANALYTE	REFERENCE	SPIKE LEVEL	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Oil & Grease	NA	NA	NA	NA	NA
Diesel	06/25/91	1000ug	111/119	7.0	75-125
Gasoline	07/23/91	200ng	95/85	10.9	59-121
Benzene	06/13/91	200ng	87/79	9.1	70-125
Toluene	06/13/91	200ng	94/86	8.9	74-116
Ethyl Benzene	06/13/91	200ng	103/94	9.1	75-120
Total Xylene	06/13/91	600ng	102/93	9.2	75-119

** Gasoline range concentration reported. A non-standard gasoline pattern was observed in the chromatogram.

Richard Srna, Ph.D.


Laboratory Director



Superior Precision Analytical, Inc.

1555 Burke, Unit 1 • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

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

LABORATORY NO.: 12683-1
CLIENT: Pacific Environmental
Group
JOB NO.: 320-90.02

DATE SAMPLED: 01/09/92
DATE RECEIVED: 01/09/92
DATE ANALYZED: 01/10/92

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: SP-1a, b, c, d

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND

MDL = Method Detection Limit

ug/kg = parts per billion (ppb)

QA/QC Summary: Daily Standard RPD = <15

MS/MSD average recovery = 124 % :MS/MSD RPD =< 4.6 %

Richard Srna, Ph.D.


Laboratory Director

12183

Chain-of-Custody-Record

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

Chevron Facility Number 9-0020
 Facility Address 1633 Harrison St., Oakland
 Consultant Project Number 320 90.02
 Consultant Name Pacific Environmental Group
 Address 1600 Cicero Drive, Santa Clara
 Project Contact (Name) RUSH
 (Phone) 408-255-8885 (Fax Number) 510 825-0882

Chevron Contact (Name) Nancy Vokelich
 (Phone) _____
 Laboratory Name Superior Precision Analytical
 Laboratory Release Number 436 8460
 Samples Collected by (Name) Madeleine Wolford
 Collection Date 1-9-92
 Signature Madeleine Wolford

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)	Analyses To Be Performed										Remarks
							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)	VOC (8010)	Organic Lead		
SP-1-a	1	S	C	1/9/92		X	X	X					X	X			
SP-1-b	1	S	C														
SP-1-c	1	S	C														
SP-1-d	1	S	C														
SP-2-a	1	S	C	1/9/92		X	X	X					X	X			
SP-2-b	1	S	C														
SP-2-c	1	S	C														
SP-2-d	1	S	C														

RUSH

RUSH

RUSH

RUSH

Relinquished By (Signature) Madeleine Wolford
 Organization PACIFIC
 Date/Time 1/9/92 16:20

Relinquished By (Signature) Janet Whithers
 Organization Express IT
 Date/Time 1-9-92 16:30

Relinquished By (Signature) Janet Whithers
 Organization Express IT
 Date/Time 1-9-92 17:30

Received By (Signature) Janet Whithers
 Organization Express IT
 Date/Time 1-9-92 16:30

Received By (Signature) Janet Whithers
 Organization Express IT
 Date/Time 1-9-92 16:30

Received For Laboratory By (Signature) Janet Whithers
 Organization Express IT
 Date/Time 1/9/92 16:30

Turn Around Time (Circle Choice)

24 Hrs.
 48 Hrs.
 5 Days
 10 Days
 As Contracted



Superior Precision Analytical, Inc.

825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax: (510) 229-1513

JAN 11 1992

PACIFIC ENVIRONMENTAL GROUP

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 84784
CLIENT: Pacific Environmental Group
CLIENT JOB NO.: 320-90.02

DATE RECEIVED: 01/09/92
DATE REPORTED: 01/10/92
DATE SAMPLED : 01/09/92

ANALYSIS FOR TOTAL ORGANIC LEAD
by DHS METHOD (LUFT MANUAL)

LAB #	Sample Identification	Concentration (mg/kg)
1	SP-1-(A-D)	ND<2

mg/kg - parts per million (ppm)

Method Detection Limit for Organic Lead in Soil: 2 mg/kg

QAQC Summary: MS/MSD Average Recovery :98/101%
Duplicate RPD : 3

Richard Srna, Ph.D.


Laboratory Director

12183

Chain-of-Custody-Record

Chevron Facility Number 9-0020
 Facility Address 1633 Harrison St., Oakland
 Consultant Project Number 320 90.02
 Consultant Name Pacific Environmental Group
 Address 1600 Winchester Drive, Santa Clara
 Project Contact (Name) RUSH
 (Phone) 510 825-2345 (Fax Number) 510 825-0882

Chevron Contact (Name) Nancy Votelich
 (Phone) _____
 Laboratory Name Superior Precision Analytical
 Laboratory Release Number 436 8660
 Samples Collected by (Name) Madeleine Fulford
 Collection Date 1-9-92
 Signature Madeleine Fulford

Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type C = Grab C = Composite D = Discrete	Time	Sample Preservation	Lead (Yes or No)	Analysis To Be Performed										Remarks
							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)	VOC (8010)	Organic Lead		
P-1-a	1	S	C	1/9/92		X	X	X						X	X		
P-1-b	1	S	C														
P-1-c	1	S	C														
P-1-d	1	S	C														
P-2-a	1	S	C	1/9/92		X	X	X									
P-2-b	1	S	C														
P-2-c	1	S	C														
P-2-d	1	S	C														

Relinquished By (Signature) <u>Madeleine Fulford</u>	Organization <u>PACIFIC</u>	Date/Time <u>1/9/92 16:20</u>	Received By (Signature) <u>Janet Whitehouse</u>	Organization <u>Express IT</u>	Date/Time <u>1-9-92 16:20</u>	Turn Around Time (Circle Choice) <input type="checkbox"/> 24 Hrs. <input checked="" type="checkbox"/> 48 Hrs. <input type="checkbox"/> 5 Days <input type="checkbox"/> 10 Days <input type="checkbox"/> As Contracted
Relinquished By (Signature) <u>Janet Whitehouse</u>	Organization <u>Express IT</u>	Date/Time <u>1-9-92 16:30</u>	Received By (Signature) <u>Rush</u>	Organization <u>Express IT</u>	Date/Time <u>1-9-92 16:30</u>	
Relinquished By (Signature) _____	Organization _____	Date/Time <u>1-9-92 17:30</u>	Received For Laboratory By (Signature) <u>Rush</u>	Organization _____	Date/Time _____	

* ①
Chevron must notify adj. prop. owner
of contam.

② determine extent of soil contam, ie w/ an
UG well.

③ " " " " " "
not was in the area of MW 4?
no UST, eh?