



PACIFIC
ENVIRONMENTAL
GROUP, INC.

August 3, 1995
Project 325-031.01

Mr. Mark Miller
Chevron U.S.A. Products Company
P.O. Box 5004
San Ramon, California 94583

Re: Soil and Groundwater Investigation
Former Gulf Service Station G-0006
460 Grand Avenue at Bellevue Avenue
Oakland, California

Dear Mr. Miller:

This letter, prepared by Pacific Environmental Group, Inc. (PACIFIC), presents the results of soil and groundwater investigation performed at the site referenced above (Figures 1 and 2). The purpose of the investigation was to further delineate the down-gradient extent of dissolved hydrocarbons in groundwater off-site along Grand Avenue. This letter includes a discussion of site location, scope of work, and findings.

A summary of previous investigations conducted at the site is documented in PACIFIC's *Work Plan* dated October 27, 1993, and PACIFIC's February 24, 1995 *Work Plan*. Field and laboratory procedures, boring logs, and survey elevation data are presented as Attachment A. Certified analytical reports, chain-of-custody documentation, and field data sheets are presented as Attachment B. Gettler-Ryan, Inc.'s (Gettler-Ryan) Second Quarter 1995 Groundwater Monitoring Report is presented as Attachment C.

SITE LOCATION

The site is a former Gulf Oil service station located at the northeast corner of the intersection of Grand Avenue and Bellevue Avenue in Oakland, California (Figure 1). The site lies within a residential and light commercial area. A small business and apartment building are located across Bellevue Avenue to the northwest, an apartment building lies adjacent to the site to the east, and Lake Merritt lies approximately 250 feet south and downgradient of the site. Grand Avenue is a major street comprised of four to six lanes.

SCOPE OF WORK

PACIFIC performed the following scope of work: (1) attempted the installation of two temporary wells (EB-2 and EB-3) off site in Grand Avenue, (2) installed one groundwater monitoring well (C-4) off site in Grand Avenue, (3) collected a soil sample for laboratory analysis, (4) contracted Gettler-Ryan to develop and sample the newly installed well, (5) conducted a well elevation survey, and (6) prepared this letter.

Well C-4 was installed on May 5, 1995, approximately 25 feet southeast of the site in the northeast side of Grand Avenue. Well locations are shown on Figure 1. Well C-4 was developed on May 25, 1995 and sampled on June 5, 1995 by Gettler-Ryan. PACIFIC collected a soil sample at approximately 5 feet bgs from adjacent Well C-4 on June 14, 1995 for laboratory analysis. *→ where?*

PACIFIC attempted to install temporary Wells EB-2 and EB-3 on May 5, 1995 but, due to the presence of numerous underground utilities, the temporary wells could not be installed. The locations of the attempted temporary wells and underground utilities are shown on Figure 2.

FINDINGS

Subsurface Conditions

Asphalt underlain by artificial fill was encountered in Borings EB-2 and EB-3 to 5 and 5.5 feet below ground surface (bgs), respectively. Soils encountered during drilling of Well C-4 consisted of artificial fill from grade to approximately 1.5 bgs underlain by silt to the total depth explored of approximately 21.5 feet bgs. An interbedded sand unit was encountered from approximately 12-1/2 to 18 feet bgs.

Groundwater was encountered at approximately 18 feet bgs and stabilized at approximately 12 feet bgs during drilling. Groundwater elevation, flow direction, and gradient data for the newly installed well and existing site wells are presented as Attachment C.

Soil Analytical Results

One soil sample collected from adjacent Well C-4 was submitted to a California State-certified laboratory and analyzed for the presence of total petroleum hydrocarbons calculated as gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX compounds).

TPH-g and BTEX compounds were not detected in the soil sample. Soil analytical data are presented in Table 1.

August 3, 1995

Page 3


Groundwater Analytical Results

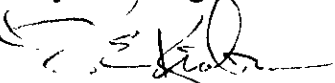
Groundwater samples from newly installed Well C-4 and other site wells were analyzed for the presence of TPH-g and BTEX compounds. Results of groundwater sampling are presented in Gettler-Ryan's Second Quarter 1995 Groundwater Monitoring Report (Attachment C).

If you have any questions regarding this letter, please do not hesitate to call.

Sincerely,

Pacific Environmental Group, Inc.


David A. Reinsma
Project Geologist


Steven E. Krcik
Senior Geologist
RG 4976



Attachments: Table 1 - Soil Analytical Data -
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)
Figure 1 - Site Map
Figure 2 - Utility Location Map
Attachment A - Field and Laboratory Procedures,
Boring Logs, and Well Elevation Survey Data
Attachment B - Certified Analytical Reports, Chain-of-
Custody Documentation, and Field Data Sheets
Attachment C - Second Quarter 1995 Groundwater Monitoring
Report

Table 1
Soil and Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

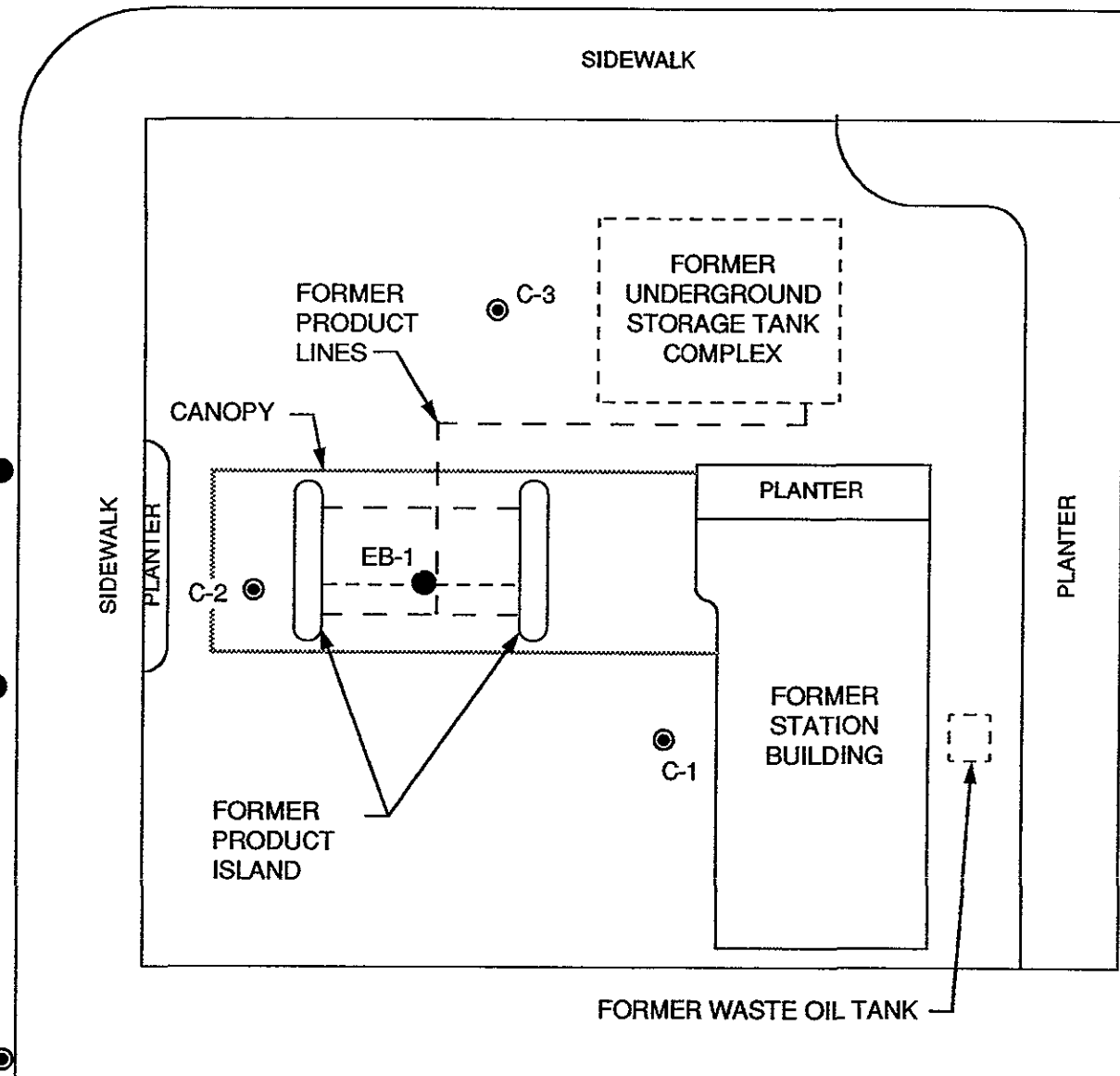
Former Gulf Service Station G-0006
 460 Grand Avenue at Bellevue Avenue
 Oakland, California

Well Number	Sample Depth (feet)	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Xylenes (ppm)
C-4 ✓	5 ✓	06/14/95 ✓	ND ✓	ND ✓	ND ✓	ND ✓	ND ✓
ppm = Parts per million ND = Not detected See certified analytical reports for detection limits.							



BELLEVUE AVENUE

GRAND AVENUE



LEGEND

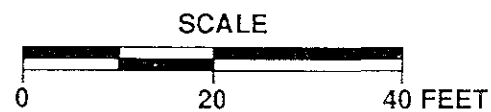
- C-1 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- EB-1 ● EXPLORATORY SOIL BORING LOCATION AND DESIGNATION

NOTE: BORINGS EB-2 AND EB-3 TERMINATED AT 5 AND 5.5 FEET, RESPECTIVELY DUE TO UNDERGROUND UTILITIES.

MAP TAKEN FROM THEADWELL & ASSOCIATES, INC



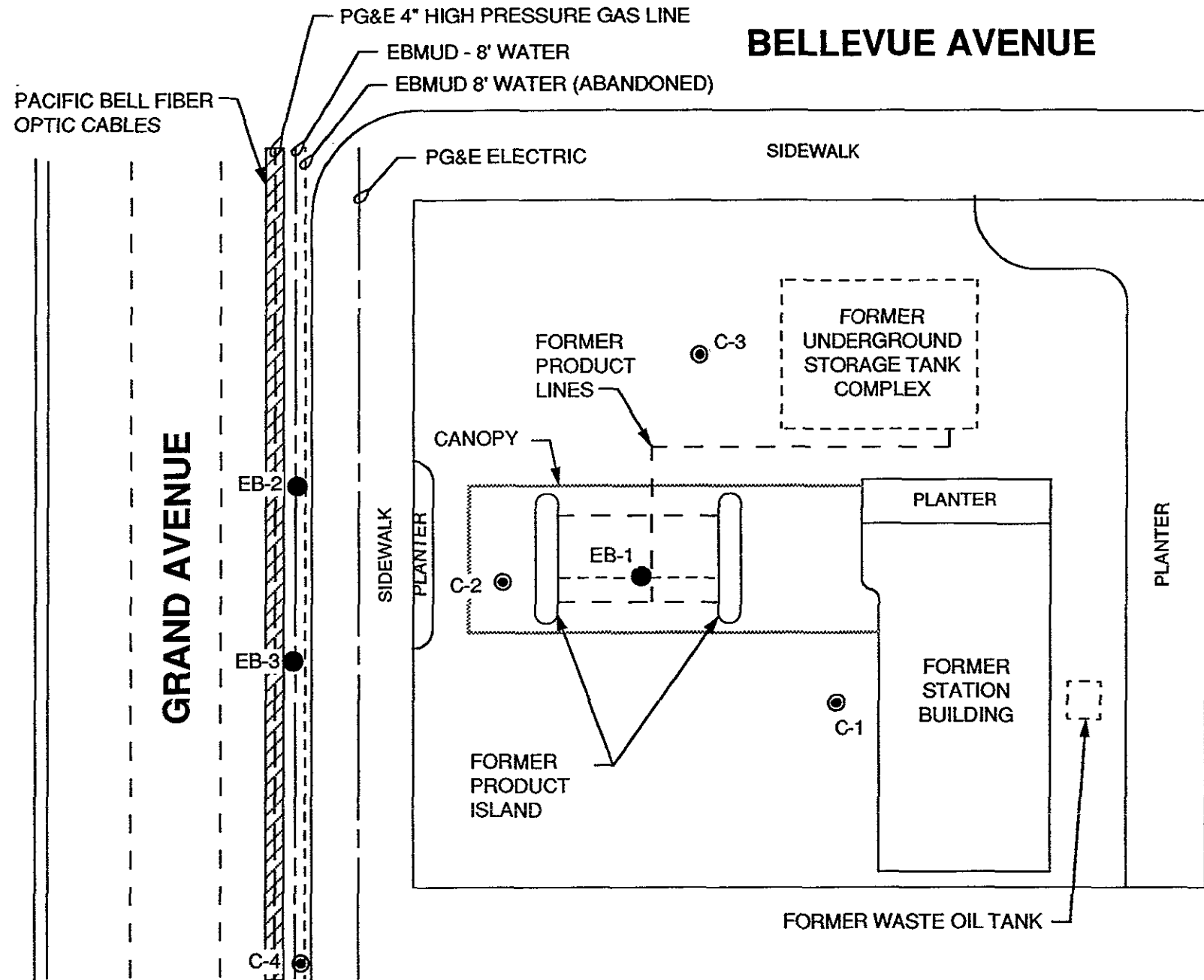
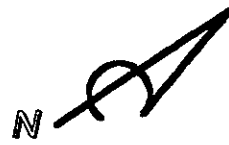
PACIFIC ENVIRONMENTAL GROUP, INC.



FORMER GULF SERVICE STATION G-0006
460 Grand Avenue at Bellevue Avenue
Oakland, California

SITE MAP

FIGURE 1
PROJECT 325-031 01



LEGEND

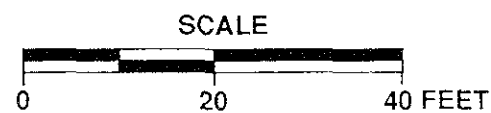
- C-1 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- EB-1 ● EXPLORATORY SOIL BORING LOCATION AND DESIGNATION

NOTE: BORINGS EB-2 AND EB-3 TERMINATED AT 5 AND 5.5 FEET, RESPECTIVELY DUE TO UNDERGROUND UTILITIES.

MAP TAKEN FROM THEADWELL & ASSOCIATES, INC



PACIFIC ENVIRONMENTAL GROUP, INC.



FORMER GULF SERVICE STATION G-0006
460 Grand Avenue at Bellevue Avenue
Oakland, California

UTILITY LOCATION MAP

FIGURE:
2
PROJECT:
325-031.01

ATTACHMENT A

**FIELD AND LABORATORY PROCEDURES, BORING LOGS,
AND WELL ELEVATION SURVEY DATA**

ATTACHMENT A

FIELD AND LABORATORY PROCEDURES

Drilling and Well Construction Procedures

The borings were drilled according to state and local regulatory guidelines. The soil borings were drilled using 8-inch diameter hollow-stem auger drilling equipment. The borings were logged by a Pacific Environmental Group, Inc. geologist using the Unified Soil Classification System and standard geologic techniques. Soil samples for logging and chemical analysis were collected at 5-foot depth intervals by advancing a California-modified split-spoon sampler with 6-inch brass liners into undisturbed soil beyond the tip of the auger. The sampler was driven a maximum of 18 inches using a 140-pound hammer with a 30-inch drop. The brass liner containing the deepest 6 inches of soil from each sample interval was retained for chemical analysis, and was capped with Teflon® tape squares and plastic end caps and then placed in a sealable plastic bag. These samples were placed on ice for transport to the laboratory accompanied by chain-of-custody documentation. All down-hole drilling equipment was steam-cleaned prior to drilling.

All residual soils obtained from drilling operations were stockpiled on site and covered with plastic sheeting until laboratory analyses were completed and the results evaluated. Arrangements were then made for disposal to an appropriate landfill based on analytical results.

Groundwater Monitoring Well Installation

One boring was converted to a groundwater monitoring well (C-4) by the installation of 2-inch diameter flush-threaded Schedule 40 PVC casing with 0.020-inch factory-slotted screen from approximately 5 to 20 feet below ground surface, and Schedule 40 PVC solid casing to the ground surface. The annular space was filled with RMC 2 x 12 sand across the entire screened interval, extending approximately 1 foot above the top of the screen. The well was then sealed with approximately a 1 foot of bentonite above the top of the sand pack, and a cement seal to the ground surface. A locking watertight cap and protective vault box was installed on the well. The attached boring log show well construction details.

Organic Vapor Procedures

Soil samples collected in the field were analyzed using an HNU Model PI 101 photo-ionization detector (or equivalent) with a 10.2 eV lamp. The test procedure involved measuring approximately 30 grams from an undisturbed soil sample, placing this subsample in a clean zip-lock bag. The bag was warmed for approximately 20 minutes (in the sun), then the gasses in the bag were tested for total organic vapor measured in parts per million as benzene (ppm; volume/volume). The instrument was previously calibrated using a 100-ppm isobutylene standard (in air) and a sensitivity factor of 0.55 which relates the photo-ionization potential of benzene to that of isobutylene at 100 ppm. The results of these tests were recorded on the boring log (attached).

Well Development Procedures

Well development consisted of purging a minimum of ten casing volumes of groundwater (unless the well was dewatered) from the well. Initially, the immediate well casings were purged of sediment. After the initial removal of sediment, the well screen was surged at 2-foot intervals along the full screen length with a vented surge block. The sequence of surging and purging was repeated at least three times during the ten casing evacuation. During the purging, the well was monitored for temperature, pH, and electrical conductivity (EC). The well was considered "developed" when the temperature, pH, and EC parameters had stabilized.

Laboratory Procedures

Selected soil samples and groundwater samples were analyzed for the presence of total petroleum hydrocarbons calculated as gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes by modified EPA Method 8015/8020. All soil and groundwater analyses were performed by a California State-certified laboratory.

WELL LOG KEY TO ABBREVIATIONS

Drilling Method

HSA - Hollow stem auger
CFA - Continuous flight auger
Air - Reverse air circulation

Gravel Pack

CA - Coarse aquarium sand

Sampling Method

Cal. Mod. - California modified split-spoon sampler (2" inner diameter) driven 18" by a 140-pound hammer having a 30" drop. Where penetration resistance is designated "P", sampler was instead pushed by drill rig.
Disturbed - Sample taken from drill-return materials as they surfaced.
Shelby - Shelby Tube thin-walled sampler (3" diameter), where sampler is pushed by drill-rig.

Molsture Content

Dry - Dry
Dp - Damp
Mst - Moist
Wt - Wet
Sat - Saturated

Sorting

PS - Poorly sorted
MS - Moderately sorted
WS - Well sorted

Plasticity

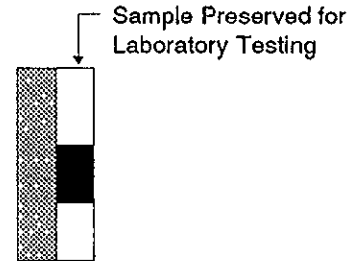
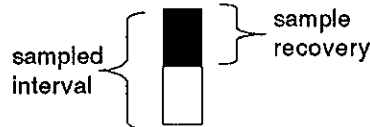
L - Low
M - Moderate
H - High

H-NU (ppm)

ND - No detection

Symbols

▽ - First encountered ground water
▼ - Static ground water level



Density (Blows/Foot - Cal Mod Sampler)

Sands and gravels

0 - 5 - Very Loose
5 - 13 - Loose
13 - 38 - Medium dense
38 - 63 - Dense
over 63 - Very dense

Silts and Clays

0 - 2 - Very Soft
2 - 4 - Soft
4 - 9 - Firm
9 - 17 - Stiff
17 - 37 - Very Stiff
37 - 72 - Hard
over 72 - Very Hard


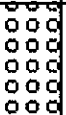



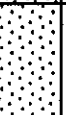









GRAIN - SIZE SCALE

GRADE LIMITS

U.S. Standard

GRADE NAME

inch	sieve size		
12.0			Boulders
3.0	3.0 in.		Cobbles
0.19	No. 4		Gravels
0.08	No. 10	coarse	
	No. 40	medium	Sand
	No. 200	fine	
			Silt
			Clay Size

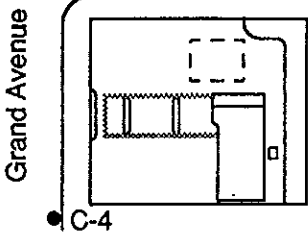
Primary Divisions		Group		Symbol/Graphic	Typical Names
COARSE GRAINED SOILS more than half is larger than #200 sieve	GRAVELS half of coarse fraction larger than #4 sieve	CLEAN GRAVELS (less than 5% fines)	GW		Well graded gravels, gravel-sand mixtures; little or no fines
			GP		Poorly graded gravels or gravel-sand mixtures; little or no fines
		GRAVEL WITH FINES	GM		Silty gravels, gravel-sand-silt mixtures
			GC		Clayey gravels, gravel-sand-clay mixtures
	SANDS half of coarse fraction smaller than #4 sieve	CLEAN SANDS (less than 5% fines)	SW		Well graded sands, gravelly sands, little or no fines
			SP		Poorly graded sands or gravelly sands; little or no fines
		SANDS WITH FINES	SM		Silty sands, sand-silt mixtures
			SC		Clayey sands, sand-clay mixtures, plastic fines
FINE GRAINED SOILS more than half is smaller than #200 sieve	SILTS AND CLAYS liquid limit less than 50%		ML		Inorganic silts and very fine sand, rock flour, silty or clayey fine sands or clayey silts, with slight plasticity
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL		Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS liquid limit more than 50%	MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	
		CH		Inorganic clays of high plasticity, fat clays	
		OH		Organic clays of medium to high plasticity, organic silts	
HIGHLY ORGANIC SOILS			Pt		Peat and other highly organic soils



PACIFIC ENVIRONMENTAL GROUP, INC.

Unified Soil Classification System

LOCATION MAP
Bellevue Avenue



PACIFIC ENVIRONMENTAL GROUP, INC.

WELL NO. C-4
PAGE 1 OF 1

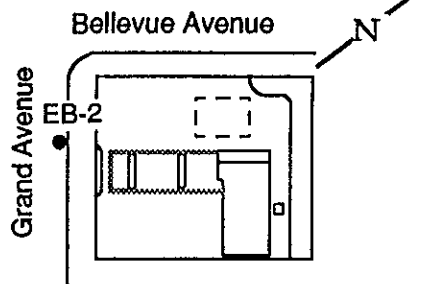
PROJECT NO. 325-031.01
 LOGGED BY: CTH
 DRILLER: V&W
 DRILLING METHOD: HSA
 SAMPLING METHOD: CALMOD
 CASING TYPE: Sch 40 PVC
 SLOT SIZE: 0.020"
 GRAVEL PACK: 2 x 12 SAND

CLIENT: CHEVRON
 DATE DRILLED: 5-4-95
 LOCATION: 460 Grand Avenue
 HOLE DIAMETER: 8"
 HOLE DEPTH: 21.5'
 WELL DIAMETER: 2"
 WELL DEPTH: 20'
 CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
	Dry	0	30	2			ML	CONCRETE: 0-6" ARTIFICIAL FILL: 6"-1.5' SILT: light yellowish brown; low plasticity; minor orange brown mottling; very stiff; no product odor.
	Mst	1.2	38	4			ML	CLAYEY SILT: light yellowish brown; low plasticity; orange brown streaks; very stiff; no product odor.
	Mst	1.3	41	6			SP	SAND: dark yellowish brown; 5% fines; orange brown; mottling; minor mica; dense; no product odor.
	Wt	0	39	10			ML	SILT: light yellowish brown; low plasticity; minor orange brown mottling; very stiff; no product odor.
					12			
				14				
				16				
				18				
				20				
				22				
				24				
				26				
				28				
				30				
				32				
				34				
				36				
				38				
				40				
				42				
				44				

BOTTOM OF BORING AT 21.5'

LOCATION MAP



PACIFIC ENVIRONMENTAL GROUP, INC.

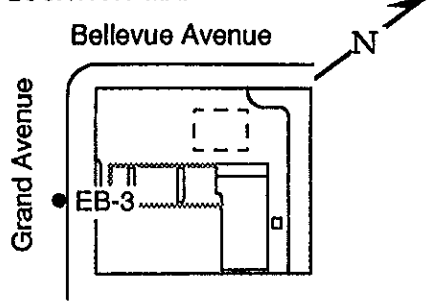
BORING NO. EB-2
PAGE 1 OF 1

PROJECT NO. 325-031.01
 LOGGED BY: CTH
 DRILLER: V&W
 DRILLING METHOD: HSA
 SAMPLING METHOD: HAND AUGER
 CASING TYPE: NA
 SLOT SIZE: NA
 GRAVEL PACK: NA

CLIENT: CHEVRON
 DATE DRILLED: 5-4-95
 LOCATION: 460 Grand Avenue
 HOLE DIAMETER: 8"
 HOLE DEPTH: 5'
 WELL DIAMETER: NA
 WELL DEPTH: NA
 CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	FID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
Backfilled With Grout				1 2 3 4 5			FL	ASPHALT: 0-6" ARTIFICIAL FILL
				6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22				@5': as above; pipe encountered at 5'. BOTTOM OF BORING AT 5' NOTE: Boring terminated due to underground utilities.

LOCATION MAP



PACIFIC ENVIRONMENTAL GROUP, INC.

BORING NO. EB-3
PAGE 1 OF 1

PROJECT NO. 325-031.01
 LOGGED BY: CTH
 DRILLER: V&W
 DRILLING METHOD: HSA
 SAMPLING METHOD: HAND AUGER
 CASING TYPE: NA
 SLOT SIZE: NA
 GRAVEL PACK: NA

CLIENT: CHEVRON
 DATE DRILLED: 5-4-95
 LOCATION: 460 Grand Avenue
 HOLE DIAMETER: 8"
 HOLE DEPTH: 5.5'
 WELL DIAMETER: NA
 WELL DEPTH: NA
 CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	FID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
Backfilled With Grout	Dry	0		1			FL	ASPHALT: 0-6" ARTIFICIAL FILL
				2				
				3			ML	CLAYEY SILT - FILL: dark gray brown; low plasticity; no product odor.
				4				
				5				@5': as above; sample obtained with hand auger; no blow counts; utilities below 5'
				6				
				7				
				8				
				9				
				10				
				11				
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				
				22				

BOTTOM OF BORING AT 5.5'

NOTE: Boring terminated due to underground utilities.

MISSION ENGINEERS, INC.
2978 SCOTT BLVD
SANTA CLARA, CALIFORNIA 95054
(408)727-8262 FAX(408)727-8285

Date: 06-09-95
Time: 8:29:14
Page: 1

Coordinate File: 95175.CRD
List of Coordinate Points
* Denotes Contouring Masspoint

Point ID	NORTH	EAST	ELEV	Descriptor
1	579.27	335.45	22.48	TOC MW C-1
2	620.43	371.56	20.49	TOC MW C-2
3	572.06	389.95	22.51	TOC MW C-3
4	668.46	334.31	18.44	TOC MW C-4
5	668.31	334.20	18.82	TOB MW C-4

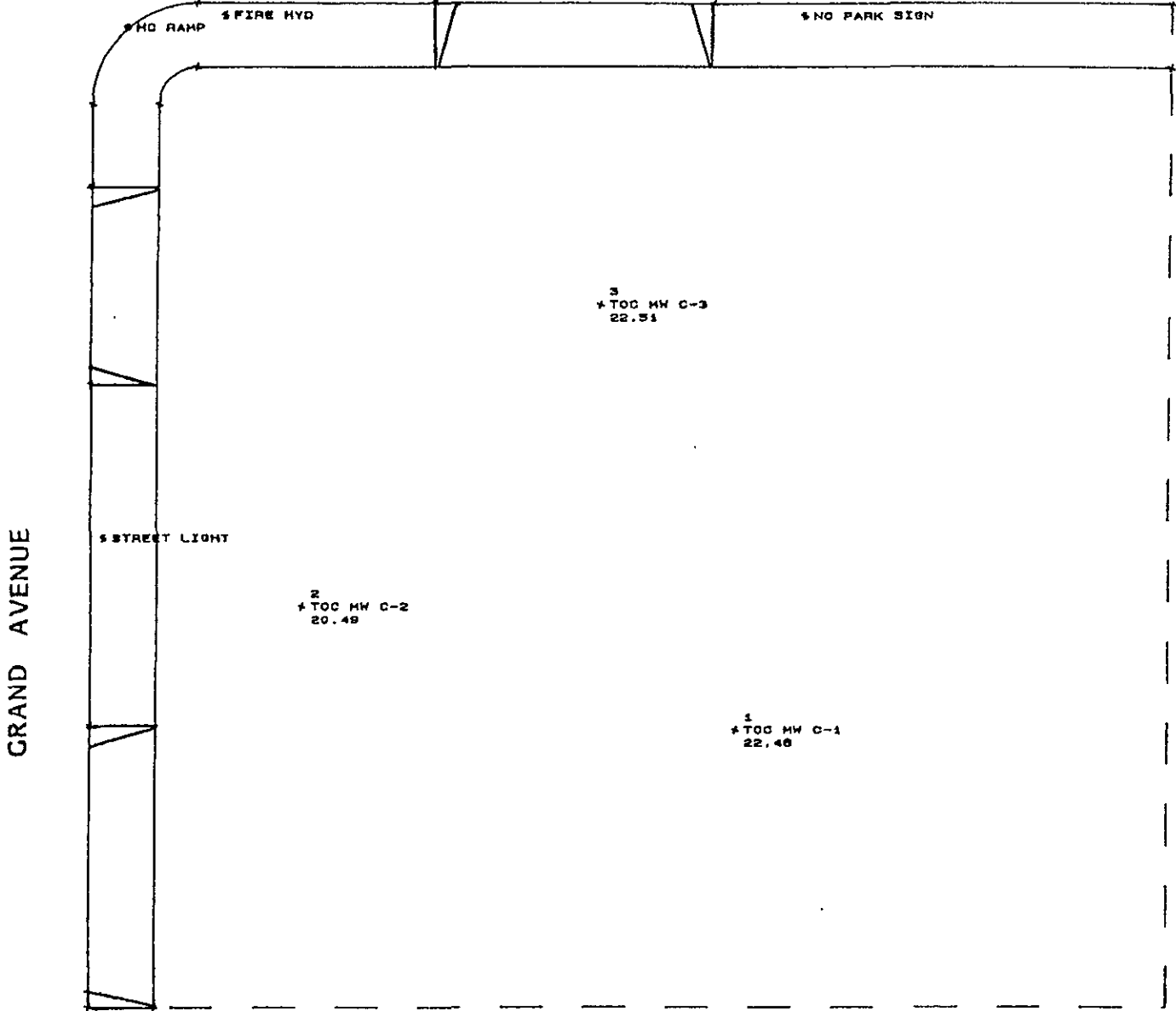
MONITORING WELLS at
460 GRAND AVENUE
OAKLAND, CALIFORNIA
PACIFIC ENVIRONMENTAL GROUP
PROJECT NO. 325-031.01

well
Survey
?



1" = 20'

BELLEVUE AVENUE

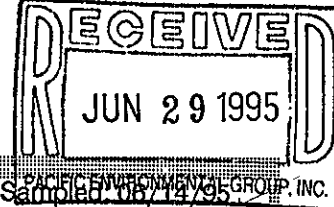


4
* TOC MW C-4
18.44

MONITORING WELLS at
 460 GRAND AVENUE
 OAKLAND, CALIFORNIA
 PACIFIC ENVIRONMENTAL GROUP
 PROJECT NO. 325-031.01

ATTACHMENT B

**CERTIFIED ANALYTICAL REPORTS, CHAIN-OF-CUSTODY
DOCUMENTATION, AND FIELD DATA SHEETS**



Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Client Proj. ID: 325-031.01/9-0006, Oakland
Sample Descript: C-4 5'
Matrix: SOLID
Analysis Method: 8015Mod/8020
Lab Number: 9506A71-01

PACIFIC ENVIRONMENTAL GROUP, INC.
Sample: 06/14/95
Received: 06/16/95
Extracted: 06/19/95
Analyzed: 06/20/95
Reported: 06/27/95

Attention: Maree Doden

QC Batch Number: GC061995BTEXEXB
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D. ✓
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D. ✓
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	85

analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Marcie Fletcher
Marcie Fletcher
Project Manager



Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Maree Doden

Client Project ID: 325-031.01/9-0006, Oakland
Matrix: SOLID

Work Order #: 9506A71 01

Reported: Jun 28, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC061995BTEXEXB	GC061995BTEXEXB	GC061995BTEXEXB	GC061995BTEXEXB
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	E. Cunanan	E. Cunanan	E. Cunanan	E. Cunanan
MS/MSD #:	950654402	950654402	950654402	950654402
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/19/95	6/19/95	6/19/95	6/19/95
Analyzed Date:	6/19/95	6/19/95	6/19/95	6/19/95
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg

Result:	0.19	0.20	0.20	0.60
MS % Recovery:	95	100	100	100

Dup. Result:	0.19	0.20	0.20	0.60
MSD % Recov.:	95	100	100	100

RPD:	0.0	0.0	0.0	0.0
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:

Prepared Date:
Analyzed Date:
Instrument I.D.#:
Conc. Spiked:

LCS Result:
LCS % Recov.:

MS/MSD LCS Control Limits	55-145	47-149	47-155	56-140
---------------------------------	--------	--------	--------	--------

Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Brucie Fletcher
Brucie Fletcher
Project Manager

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: PEG
 REC. BY (PRINT): M. Young

WORKORDER: 9506A71
 DATE OF LOG-IN: 6/17/95

CIRCLE THE APPROPRIATE RESPONSE		LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION(ETC.)
1. Custody Seal(s)	Present <input checked="" type="checkbox"/> Absent	001	A	C-4 (5')	CORE (1)	S	6/14/95	
	Intact / Broken*							
2. Custody Seal Nos.:	Put in Remarks Section							
3. Chain-of-Custody Records:	Present / Absent*							
4. Traffic Reports or Packing List:	Present / Absent							
5. Airbill:	Airbill / Sticker Present <input checked="" type="checkbox"/> Absent							
6. Airbill No.:								
7. Sample Tags:	Present / Absent*							
Sample Tag Nos.:	Listed / Not Listed on Chain-of-Custody							
8. Sample Condition:	Intact / Broken* / Leaking*							
9. Does information on custody reports, traffic reports and sample tags agree?	Yes / No*							
10. Proper preservatives used:	Yes / No*							
11. Date Rec. at Lab:	<u>6/16/95</u>							
12. Temp. Rec. at Lab:	<u>10°C</u>							
13. Time Rec. at Lab:	<u>1300</u>							

* if Circled, contact Project manager and attach record of resolution

325-031.01

WELL DEVELOPMENT FORM

Page _____ of _____

(to be filled out in office) [G-S]

Client Chevron # SS# 0006 Job# 5208
Name Ficline Location 460 Grand Ave / Bellevue
Well# C-4 Screened Interval 8-20' Depth 20'

Aquifer Material _____ Installation Date _____

Drilling Method _____ Borehole Diameter: _____

Comments regarding well installation: _____

(to be filled out in the field) [G-R] Name Ficline

Date 5-25-95 Development Method Surge & Purge

Total Depth 19.87 - Depth to liquid 6.93 = Water Column 12.94

Product thickness _____

12.94 : 0.17 \times 2.2 \times 0.666 = 22 gals
Water Column Diameter (in.) #Vol

Purge Start 17:40 Stop _____ Rate _____ gpm

Gallons	Time	Clarity	Temp.	pH	Conductivity
0	17:45	cloudy	67.6	8.100	854
5	17:58	Muddy	67.7	7.94	897
10	18:14	Muddy	67.7	7.80	852
15	18:22	Muddy	67.8	7.70	753
20	18:35	cloudy	67.7	7.30	687
25	19:00	Muddy	67.8	7.32	690
30	19:30	cloudy	67.7	7.33	686
35	19:55	clearing	67.8	7.38	681
40	20:15	clearing	67.4	7.35	689
45	20:30	clearing	67.5	7.36	686
45	20:45	clearing	67.4	7.37	683

Total gallons removed 45 gals. Development stop time _____

Depth to liquid 8.43 at 21:00 (time)

Odor of water None Water discharged to Tank

Comments _____

ATTACHMENT C
SECOND QUARTER 1995 GROUNDWATER MONITORING REPORT



GETTLER-RYAN INC.

July 14, 1995

Mark Miller
Chevron USA Products Company
P.O. Box 5004
San Ramon, CA 94583

Re: Former Chevron Service Station #9-0006
460 Grand Avenue
Oakland, CA
Job #5208.80

Dear Mr. Miller:



This report documents the quarterly groundwater sampling event performed by Gettler-Ryan, Inc. (G-R). On June 5, 1995, field personnel were on-site to gauge and sample four wells (C-1 through C-4) at Former Chevron Service Station #9-0006 located at 460 Grand Avenue in Oakland, California.

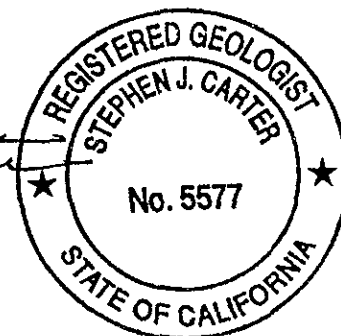
Static groundwater levels were measured on June 5, 1995. All wells were checked for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were not present in any of the site wells. Static water level data and groundwater elevations are presented in Table 1. A potentiometric map is included as Figure 1.

Groundwater samples were collected from the monitoring wells as specified by G-R Standard Operating Procedure - Quarterly Groundwater Sampling (attached). The field data sheets for this event are also attached. The samples were analyzed by Superior Precision Analytical, Inc. Analytic results are presented in Table 1. The chain of custody document and laboratory analytic report are attached. G-R is not responsible for laboratory omissions or errors.

Thank you for allowing Gettler-Ryan to provide environmental services to Chevron. Please call if you have any questions or comments regarding this report.

Sincerely,


Argy Leyton
Environmental Project Manager

Stephen J. Carter
Senior Geologist, R.G. 5577

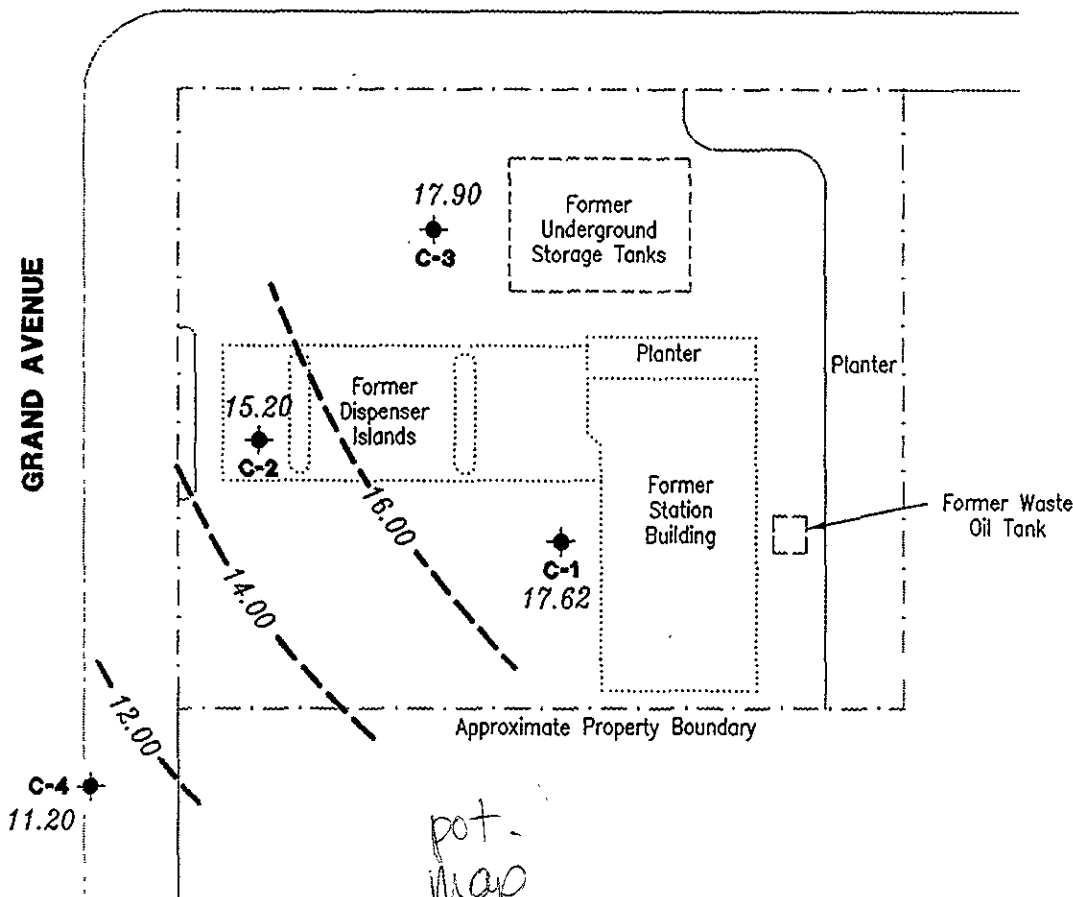


AML/SJC/rjb
5208.QML

Figure 1: Potentiometric Map
Table 1: Water Level Data and Groundwater Analytic Results
Attachments: Standard Operating Procedure - Quarterly Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytic Report

BELLEVUE AVENUE

GRAND AVENUE



EXPLANATION:

- ◆ Groundwater monitoring well
- 99.99 Groundwater elevation in feet referenced to Mean Sea Level (MSL)
- - - 99.99 - - - Groundwater elevation contour, dashed where inferred.



Approximate groundwater flow direction at a gradient of 0.08 Ft./Ft.



Gertler - Ryan Inc.

6747 Sierra Ct., Suite J (510) 581-7555
Dublin, CA 94568

POTENTIOMETRIC MAP
Former Gulf Service Station No. 0006
460 Grand Avenue
Oakland, California

FIGURE

1

JOB NUMBER
5208.85

REVIEWER

DATE
June 5, 1995

REVISED DATE



Table 1. Water Level Data and Groundwater Analytic Results - Former Gulf Service Station #0006, 460 Grand Avenue, Oakland, California

Well ID/ TOC (ft)	Date	DTW (ft)	GWE (msl)	Product Thickness* (ft)	Analytic Method	TPPH(G) ←	←-----ppb----->				X →
							B	T	E		
C-1/ 22.48'	12/16/92	5.68	16.80	0	8015/8020 ^{2,3,4,5}	<50	<0.5	<0.3	<0.3	<0.4	
	6/22/94	5.55	16.93	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	
	9/26/94	6.07	16.41	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	
	12/12/94	5.28	17.20	0	8015/8020	<50	2.9	3.8	<0.5	<0.5	
	3/22/95	2.86	19.62	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	
	6/5/95	4.86	17.62 ↓	0	8015/8020	<50 ✓	<0.5 ✓	<0.5 ✓	<0.5 ✓	<0.5 ✓	
C-2/ 20.49'	12/16/92	7.49	13.00	0	8015/8020 ^{2,3,4,5}	640	63	83	37	90	
	6/22/94	5.48	15.01	0	8015/8020	200	2.8	4.5	1.5	15	
	9/26/94	6.02	14.47	0	8015/8020	<50	1.1	1.1	<0.5	0.5	
	12/12/94	5.17	15.32	0	8015/8020	77	2.8	4.6	3.4	15	
	3/22/95	2.60	17.89	0	8015/8020	590	<0.5	<0.5	38	130	
	6/5/95	5.29	15.20 ↓	0	8015/8020	<50 ↓ ✓	<0.5 ✓	<0.5 ✓	1.9 ✓	4.9 ✓	
C-3/ 22.51'	12/16/92	5.17	17.34	0	8015/8020 ^{2,3,4,5}	<50	<0.4	<0.3	<0.3	<0.4	
	6/22/94	5.10	17.41	0	8015/8020	140	5.6	3	4.2	4.4	
	9/26/94	5.66	16.85	0	8015/8020	51	4.2	4.2	0.7	1.5	
	12/12/94	4.60	17.91	0	8015/8020	<50	2.6	3.6	1.1	4.2	
	3/22/95	2.31	20.20	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	
	06/5/95	4.61	17.90 ↓	0	8015/8020	<50 ✓	0.6 ✓	<0.5 ✓	<0.5 ✓	<0.5 ✓	
C-4/ 18.44'	06/5/95	7.24	11.20	0	8015/8020	<50 ✓	<0.5 ✓	<0.5 ✓	<0.5 ✓	<0.5 ✓	
Trip Blank TB-LB	6/22/94	---	---	---	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	
	9/26/94	---	---	---	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	
	12/12/94	---	---	---	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	
	3/22/95	---	---	---	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	
	6/5/95	---	---	---	8015/8020	<50 ✓	<0.5 ✓	<0.5 ✓	<0.5 ✓	<0.5 ✓	



Table 1. Water Level Data and Groundwater Analytic Results - Former Gulf Service Station #0006, 460 Grand Avenue, Oakland, California
(continued)

EXPLANATION:

DTW = Depth to water
TOC = Top of casing elevation
GWE = Groundwater elevation
TPPH(G) = Total Purgeable Petroleum Hydrocarbons as Gasoline
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes
ppb = Parts per billion
-- = Not analyzed/not applicable

ANALYTIC METHODS:

8015 = EPA Method 8015/5030 for TPPH(G)
8020 = EPA Method 8020 for BTEX

NOTES:

Water level elevation data and laboratory analytic results prior to March 22, 1995 were compiled from Quarterly Monitoring Reports prepared for Chevron by Sierra Environmental Services.

NOTES: (continued)

- * Product thickness was measured with an MMC flexi-dip interface probe on and after June 22, 1994.
- ¹ TOC elevation is actually top of box elevation.
- ² TPH(D) was also analyzed but not detected at detection limits of 50 ppb.
- ³ Motor oil was also analyzed but not detected at detection limits of 200 ppb.
- ⁴ Cadmium, chromium, lead, nickel and zinc were also analyzed but not detected at detection limits of 0.005, 0.01, 0.05, 0.02, and 0.01 ppm, respectively.
- ⁵ Analysis by EPA method 8010 for Halogenated Volatile Organic Compounds (HVOCs) was also performed. HVOCs were not detected at detection limits of 0.2 to 4.0 ppb.
- ⁶ Cadmium, chromium, lead, nickel and zinc were also analyzed. Chromium, Nickel and zinc were detected at 0.05, 0.08 and 0.08 ppm, respectively. Other metals not detected.
- ⁷ Analysis by EPA method 8010 for HVOCs was also performed. 1,2-Dichloroethane was detected at 3.5 ppb. Other HVOCs were not detected at detection limits of 0.2 to 4.0 ppb.
- ⁸ Cadmium, chromium, lead, nickel and zinc were also analyzed. Chromium, lead, nickel and zinc were detected at 0.19, 0.07, 0.36 and 0.38 ppm, respectively. Cadmium was not detected at detection limits of 0.005 ppm.
- ⁹ TOC for well C-4 was surveyed June 9, 1995 by Mission Engineers of Santa Clara, California.



STANDARD OPERATING PROCEDURE QUARTERLY GROUNDWATER SAMPLING

Gettler-Ryan field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. Prior to sample collection, the type of analysis to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analysis is maintained.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using a MMC flexi-dip interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, static water level measurements are collected with the interface probe and are also recorded in the field notes.

After water levels are collected and prior to sampling, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or polyvinyl chloride bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during purging. Purging continues until these parameters stabilize.

Groundwater samples are collected using Chevron-designated disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytic laboratories, are used when possible. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservative (if any), and the sample collector's initials. The water samples are placed in cooler maintained at 4 C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivery to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory-supplied trip blank accompanies each sampling set. For sampling sets greater than 20 samples, 5% trip blanks are included. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

As requested by Chevron USA Products Company, the purge and decontamination water generated during sampling activities is taken to Chevron's Richmond Refinery for disposal.



WELL SAMPLING FIELD DATA SHEET

SAMPLER F. Cline DATE 6-5-95
 ADDRESS 460 Grand Ave JOB # 5208
 CITY Oakland CA SS# 0006

Well ID C-1 Well Condition okay
 Well Location Description okay North half of site ~ 30' from property line
 Well Diameter 2" in Hydrocarbon Thickness 0

Total Depth 14.96 ft
 Depth to Liquid 4.86 ft

Volume	2" = 0.17	6" = 1.50	12" = 5.80
Factor	3" = 0.38		
(VF)	4" = 0.66		

of casing 3 x 10.10 x 0.117 ~~(VF)~~ 0.172 Estimated 6.1 gal. purge Volume

Purge Equipment Suction Sampling Equipment Bailer

Did well dewater NO If yes, Time _____ Volume _____

Starting Time 16:32 Purging Flow Rate _____ gpm.
 Sampling Time 16:40

Time	pH	Conductivity	Temperature	Volume
<u>16:33</u>	<u>7.76</u>	<u>288</u>	<u>67.9</u>	<u>1.8</u>
<u>16:34</u>	<u>7.65</u>	<u>616</u>	<u>67.1</u>	<u>3.6</u>
<u>16:35</u>	<u>7.63</u>	<u>606</u>	<u>67.0</u>	<u>5.4</u>
<u>16:40</u>	<u>7.68</u>	<u>616</u>	<u>67.1</u>	<u>6.0</u>

Weather Conditions Sunny clear
 Water Color: Brown Odor: None
 Sediment Description Light silt

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
<u>C-1</u>	<u>3x40ml UCA</u>	<u>Y</u>	<u>HCL</u>	<u>Superior</u>	<u>Gas BTEX</u>

Comments _____



WELL SAMPLING FIELD DATA SHEET

SAMPLER F. Cline DATE 6-5-95
 ADDRESS 460 Grand Ave JOB # 5208
 CITY Oakland CA SS# 0006

Well ID C-2 Well Condition okay
 Well Location Description Southern Border ≈ 15' No of sidewalk

Well Diameter 2" in Hydrocarbon Thickness 0
 Total Depth 24.48 ft
 Depth to Liquid 5.29 ft

Volume	2" = 0.17	6" = 1.50	12" = 5.80
Factor	3" = 0.38		
(VFI)	4" = 0.66		

of casing 3 x 49.19 x 0.17 x 1.6 # Estimated 4.8 gal.
 Volume
 Purge Equipment Suction Sampling Equipment Bailer
 Did well dewater NC If yes, Time _____ Volume _____

Starting Time 16:55 Purging Flow Rate _____ gpm.
 Sampling Time 17:03

Time	pH	Conductivity	Temperature	Volume
<u>16:56</u>	<u>8.13</u>	<u>694</u>	<u>73.2</u>	<u>3.3</u> 1.6
<u>16:57</u>	<u>7.63</u>	<u>658</u>	<u>20.2</u>	<u>6.6</u> 3.2
<u>16:58</u>	<u>7.67</u>	<u>654</u>	<u>20.3</u>	<u>4.4</u> 4.8
<u>17:03</u>	<u>7.64</u>	<u>650</u>	<u>20.2</u>	<u>10.5</u> 5.5

Weather Conditions Sunny clear
 Water Color: Brown Odor: MW
 Sediment Description Light silt

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
<u>C-2</u>	<u>3x40ml VOA</u>	<u>Y</u>	<u>HLL</u>	<u>Superior</u>	<u>Gas BTX5</u>

Comments _____



WELL SAMPLING FIELD DATA SHEET

SAMPLER F. Cline DATE 6-5-95
 ADDRESS 460 Grand Ave JOB # 5208
 CITY Oakland CA SS# 0006

Well ID C-3 Well Condition okay
 Well Location Description Western edge of property ≈ 15' from fence

Well Diameter 2" in Hydrocarbon Thickness 0
 Total Depth 14.80 ft
 Depth to Liquid 4.61 ft

Volume	2" = 0.17	6" = 1.50	12" = 5.80
Factor	3" = 0.38		
(VF)	4" = 0.66		

of casing 3 x (1 1/2" ID) x 0.117 ~~X(VF)~~ 1.73 # Estimated 512 gal. purge Volume

Purge Equipment Suction Sampling Equipment Boiler

Did well dewater No If yes, Time _____ Volume _____

Starting Time 17:07 Purging Flow Rate 1.8 gpm.
 Sampling Time 17:14

Time	pH	Conductivity	Temperature	Volume
<u>17:08</u>	<u>7.50</u>	<u>722</u>	<u>71.6</u>	<u>1.8</u>
<u>17:09</u>	<u>7.55</u>	<u>712</u>	<u>69.6</u>	<u>3.6</u>
<u>17:10</u>	<u>7.56</u>	<u>711</u>	<u>69.7</u>	<u>5.4</u>
<u>17:14</u>	<u>7.58</u>	<u>715</u>	<u>69.7</u>	<u>6.0</u>

Weather Conditions Sunny clear
 Water Color: Grey Odor: Mild
 Sediment Description light silty

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
<u>C-3</u>	<u>3x40ml UCA</u>	<u>Y</u>	<u>HCL</u>	<u>Superior</u>	<u>Gas BTX</u>

Comments _____



WELL SAMPLING FIELD DATA SHEET

SAMPLER F. Cline DATE 6-5-95
 ADDRESS 460 Grand Ave JOB # 5208
 CITY Oakland CA SS# 0006

Well ID C-9 Well Condition okay
 Well Location Description offsite SR corner in parking Area S/E of site
 Well Diameter 2" in Hydrocarbon Thickness 0
 Total Depth 19.80 ft
 Depth to Liquid 7.24 ft

Volume	2" = 0.17	6" = 1.50	12" = 5.80
Factor	3" = 0.38		
(VF)	4" = 0.66		

of casing 3 x 12.56 x 0.17 ~~x(VF)~~ 2.1 # Estimated 6.9 gal. purge Volume
 Purge Equipment Suction Sampling Equipment Bailer
 Did well dewater No If yes, Time _____ Volume _____

Starting Time 4:18 Purging Flow Rate _____ gpm.
 Sampling Time 16:25

Time	pH	Conductivity	Temperature	Volume
<u>4:19</u>	<u>8.40</u>	<u>874</u>	<u>69.1</u>	<u>2.2</u>
<u>4:20</u>	<u>8.37</u>	<u>858</u>	<u>69.6</u>	<u>4.4</u>
<u>4:21</u>	<u>8.32</u>	<u>857</u>	<u>69.5</u>	<u>6.6</u>
<u>4:25</u>	<u>8.34</u>	<u>855</u>	<u>69.6</u>	<u>7.0</u>

Weather Conditions Sunny clear
 Water Color: Clear Odor: None
 Sediment Description None

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
<u>C-9</u>	<u>3x40ml VOA</u>	<u>Y</u>	<u>HLL</u>	<u>Superior</u>	<u>Gas BIX</u>

Comments _____

11.86 14.86 5.29 24.48 11.61 14.80

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

Chevron Facility Number 0006
Facility Address 460 Grand Ave Oakland CA
Consultant Project Number 5208185
Consultant Name Gettler-Ryan
Address 6747 Sierra Ct, Ste J, Dublin 94568
Project Contact (Name) Argy Leyton
510
(Phone) 551-7555 (Fax Number) 551-7888

Chevron Contact (Name) Mark Miller
(Phone) 842-8134
Laboratory Name Superior
Laboratory Release Number 2719070
Samples Collected by (Name) Frank Cline
Collection Date 6-5-95
Signature [Signature]

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil 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)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd, Cr, Pb, Zn, Ni (ICAP or AA)				
TB-63		2	W	FB	-	HCL	Y	X											Analyze
C-4		3		G	1625														
C-1					1640														
C-3					1714														
C-2					1703														

DO NOT BILL
TB-LB ANALYSIS

Relinquished By (Signature) <u>[Signature]</u>	Organization <u>CEL</u>	Date/Time <u>6-6-95</u>	Received By (Signature) <u>[Signature]</u>	Organization <u>601</u>	Date/Time <u>6-6-95</u>
Relinquished By (Signature) <u>[Signature]</u>	Organization <u>601</u>	Date/Time <u>6-6-95</u>	Received By (Signature) <u>[Signature]</u>	Organization <u>AERO</u>	Date/Time <u>10:03 AM</u>
Relinquished By (Signature) <u>[Signature]</u>	Organization <u>AERO</u>	Date/Time <u>6/6/95</u>	Received For Laboratory By (Signature) <u>[Signature]</u>	Organization <u>AERO</u>	Date/Time <u>6/6/95</u>
Relinquished By (Signature) <u>[Signature]</u>	Organization <u>AERO</u>	Date/Time <u>6/6/95</u>			Date/Time <u>6/6/95</u>

Turn Around Time (Circle Choice)

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

6/6/95



Superior Precision Analytical, Inc.

A member of ESSCON Environmental Support Service Consortium

GETTLER RYAN INC.
6747 SIERRA CT, SUITE G
DUBLIN, CA 94568

Date: June 20, 1995

Attn: ARGY LEYTON

Laboratory Number : 81814

Project Number/Name : 5208.85

This report has been reviewed and
approved for release.

CAHOM for.
Senior Chemist
Account Manager

Certified Laboratories

825 Arnold Dr., Suite 114
Martinez, California 94553
(510) 779-1512 / fax (510) 779-1526

1555 Burke St., Unit 1
San Francisco, California 94124
(415) 647-7081 / fax (415) 821-7123

309 S. Cloverdale St., Suite B-24
Seattle, Washington 98108
(206) 763-2997 / fax (206) 763-8479



Superior Precision Analytical, Inc.

A member of ESSCON Environmental Support Service Consortium

GETTLER RYAN INC.
Attn: ARGY LEYTON

Project 5208.85
Reported on June 20, 1995

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Chronology

Laboratory Number 81814

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
TB-LB	06/05/95	06/06/95	06/12/95	06/12/95	BF121.04	01
C-4	06/05/95	06/06/95	06/12/95	06/12/95	BF121.04	02
C-1	06/05/95	06/06/95	06/12/95	06/12/95	BF121.04	03
C-3	06/05/95	06/06/95	06/12/95	06/12/95	BF121.04	04
C-2	06/05/95	06/06/95	06/12/95	06/12/95	BF121.04	05

QC Samples

QC Batch #	QC Sample ID	Type	Ref.	Matrix	Extract.	Analyzed
BF121.04-01	Method Blank	MB		Water	06/12/95	06/12/95
BF121.04-02	EW-03	MS	81764-07	Water	06/12/95	06/12/95
BF121.04-03	EW-03	MSD	81764-07	Water	06/12/95	06/12/95

Certified Laboratories

825 Arnold Dr., Suite 114
Martinez, California 94553
(510) 729-1512 / fax (510) 729-1526

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

309 S. Cloverdale St., Suite B-24
Seattle, Washington 98108
(206) 763-2992 / fax (206) 763-8429



Superior Precision Analytical, Inc.

A member of ESSCON Environmental Support Service Consortium

GETTLER RYAN INC.
Attn: ARGY LEYTON

Project 5208.85
Reported on June 20, 1995

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

LAB ID	Sample ID	Matrix	Dil. Factor	Moisture
81814-01	TB-LB	Water	1.0	-
81814-02	C-4	Water	1.0	-
81814-03	C-1	Water	1.0	-
81814-04	C-3	Water	1.0	-

RESULTS OF ANALYSIS

Compound	81814-01		81814-02		81814-03		81814-04	
	Conc.	RL	Conc.	RL	Conc.	RL	Conc.	RL
	ug/L		ug/L		ug/L		ug/L	
Gasoline_Range	ND	50	ND	50	ND	50	ND	50
Benzene	ND	0.5	ND	0.5	ND	0.5	0.6	0.5
Toluene	ND	0.5	ND	0.5	ND	0.5	ND	0.5
Ethyl Benzene	ND	0.5	ND	0.5	ND	0.5	ND	0.5
Total Xylenes	ND	0.5	ND	0.5	ND	0.5	ND	0.5

>> Surrogate Recoveries (%) <<

Trifluorotoluene (SS)	107	105	104	104
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Superior Precision Analytical, Inc.

A member of ESSCON Environmental Support Service Consortium

SETTLER RYAN INC.
attn: ARGY LEYTON

Project 5208.85
Reported on June 20, 1995

Gasoline Range Petroleum Hydrocarbons and BTXE

by EPA SW-846 5030/8015M/8020

Gasoline Range quantitated as all compounds from C6-C10

LAB ID	Sample ID	Matrix	Dil.Factor	Moisture
81814-05	C-2	Water	1.0	-

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

Compound 81814-05
 Conc. RL
 ug/L

Gasoline_Range	ND	50
Benzene	ND	0.5
Toluene	ND	0.5
Ethyl Benzene	1.9	0.5
Total Xylenes	4.9	0.5

>> Surrogate Recoveries (%) <<
 Trifluorotoluene (SS) 103



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Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 81814
Method Blank(s)

BF121.04-01
Conc. RL
ug/L

Gasoline_Range	ND	50
Benzene	ND	0.5
Toluene	ND	0.5
Ethyl Benzene	ND	0.5
Total Xylenes	ND	0.5

>> Surrogate Recoveries (%) <<
Trifluorotoluene (SS) 103



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Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 81814

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L)						
BF121.04 02 / 03 - Sample Spiked: 81764 - 07						
Gasoline_Range	ND	320	350/350	109/109	65-135	0
Benzene	ND	20	22/22	110/110	65-135	0
Toluene	ND	20	21/21	105/105	65-135	0
Ethyl Benzene	ND	20	21/21	105/105	65-135	0
Total Xylenes	ND	60	63/63	105/105	65-135	0
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)				104/103	50-150	

Definitions:

ND = Not Detected

RL = Reporting Limit

NA = Not Analysed

RPD = Relative Percent Difference

ug/L = parts per billion (ppb)

mg/L = parts per million (ppm)

ug/kg = parts per billion (ppb)

mg/kg = parts per million (ppm)

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