PACIFIC
ENVIRONMENTAL
GROUP, INC.

January 14, 1997
Project 320-160.1A

Mr. Phil Briggs
Chevron Products Company
P.O. Box 5004
San Ramon, California 94583-0804

Re: **Soil and Groundwater Investigation**
Chevron Service Station 9-0329
340 Highland Avenue at Vista Avenue
Piedmont, California

Dear Mr. Briggs:

This letter, prepared by Pacific Environmental Group, Inc. (PACIFIC) on behalf of Chevron Products Company (Chevron), presents the results of a soil and groundwater investigation conducted at the site referenced above (Figures 1 and 2). The purpose of this work was to delineate the lateral and vertical extent of petroleum hydrocarbons in soil and groundwater crossgradient and downgradient of the site.

This letter includes a brief discussion of site background, scope of work, findings, and conclusions. Field and laboratory procedures and boring logs are presented as Attachment A. Blaine Tech Service's (Blaine) well development report and groundwater sampling report are presented as Attachment B. Certified analytical reports and chain-of-custody documentation are presented as Attachment C.

SITE BACKGROUND

The subject site is an operating Chevron service station. Site elevation is approximately 95 feet above mean sea level (MSL), however topography slopes from the site towards the southwest, south, and southeast. Land use in the site vicinity is residential and commercial. The nearest surface water to the site is a small ephemeral creek located approximately 500 feet south of the site (Figure 1).

Available information indicates that the product facilities include gasoline underground storage tanks (USTs) in a common excavation, one waste oil UST, and one product island.

Hydrogeologic data were obtained from previous investigations and ongoing groundwater monitoring. These data indicate that the site is underlain by unconsolidated deposits of silty gravel, silt, and silty sand. Groundwater occurs at a depth of approximately 1 to 5 feet below ground surface (bgs). However, in May 1995, Canonie Environmental installed an off-site groundwater monitoring well southeast of the site which encountered artesian flow and was subsequently abandoned. Historic groundwater flow direction has been generally to the west.

A discussion of previous environmental investigations can be found in PACIFIC's January 14, 1996 *Work Plan.*

SCOPE OF WORK

To define the vertical and lateral extent of petroleum hydrocarbons in soil and groundwater, the following scope of work was performed.

- **Permits.** PACIFIC obtained the appropriate groundwater monitoring well installation permits from the Alameda County Flood Control and Water Conservation District, Zone 7 Water Agency, and encroachment permit from the City of Piedmont prior to initiating field work.
- **Soil Boring and Well Installation.** Two soil borings were drilled and completed as groundwater Monitoring Wells C-5 and C-6, to investigate soil and groundwater conditions crossgradient and downgradient of the USTs, product piping, and product islands (Figure 2).
- **Well Elevation Survey, Well Development, and Well Sampling.** Wells C-5 and C-6 will be surveyed to MSL by a state-certified surveyor. The wells were developed and sampled by Blaine in accordance with procedures outlined in Attachment A and presented as Attachment B.
- **Soil and Groundwater Analysis.** Selected soil samples and groundwater samples were submitted to a California State-certified laboratory and analyzed for the presence of TPPH-g, benzene, toluene, ethylbenzene, and xylenes (BTEX compounds), and methyl tert-butyl ether (MtBE) as outlined in the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites* dated October 10, 1990.

Field and laboratory procedures and boring logs are presented as Attachment A.

FINDINGS

Subsurface Conditions

Soil encountered during drilling consist of surficial sediments of sand, clayey sand, and silt to approximately 5 feet bgs. Weathered sandstone bedrock was encountered from 5 feet bgs to approximately 7-1/2 feet bgs underlain by weathered siltstone. Weathered sandstone was then encountered in Well C-5 below the siltstone from approximately 16-1/2 feet bgs to the total depth explored of 18-1/2 feet bgs.

Soil Analytical Results

TPPH-g, BTEX compounds, and MtBE were not detected in any soil sample analyzed from Wells C-5 and C-6. Soil analytical data are presented in Table 1.

Groundwater Analytical Results

TPPH-g, BTEX compounds, and MtBE were not detected in groundwater samples collected from Wells C-5 and C-6 on November 25, 1996. Groundwater analytical data are presented in Table 2.

CONCLUSIONS

The vertical and lateral extent of petroleum hydrocarbons crossgradient and downgradient of the site has been delineated to non-detectable concentrations. PACIFIC recommends inclusion of Wells C-5 and C-6 in the quarterly monitoring program for the site to ensure plume stability.

If there are any questions regarding the contents of this letter, please call.

Sincerely,

Pacific Environmental Group, Inc.

Charlie Rous
Staff Geologist

Ross Tinline
Project Geologist
RG 5860

3201601A/REPORT

Attachments:

Table 1 - Soil Analytical Data - Total Petroleum Hydrocarbons (TPPH, BTEX Compounds, and MtBE)
Table 2 - Groundwater Analytical Data - Total Petroleum Hydrocarbons (TPPH, BTEX Compounds, and MtBE)
Figure 1 - Site Location Map
Figure 2 - Site Map
Attachment A - Field and Laboratory Procedures and Boring Logs
Attachment B - Well Development Report and Groundwater Sampling Report
Attachment C - Certified Analytical Reports and Chain-of-Custody Documentation

Table 1
Soil Analytical Data
Total Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MtBE)

Chevron Service Station 9-0329
340 Highland Avenue at Vista Avenue
Piedmont, California

Well Number	Sample Depth (feet)	Date Sampled	TPPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Xylenes (ppm)	MtBE (ppm)
C-5	5	10/18/96	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
	10		<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
C-6	5	10/18/96	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025
	10		<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025

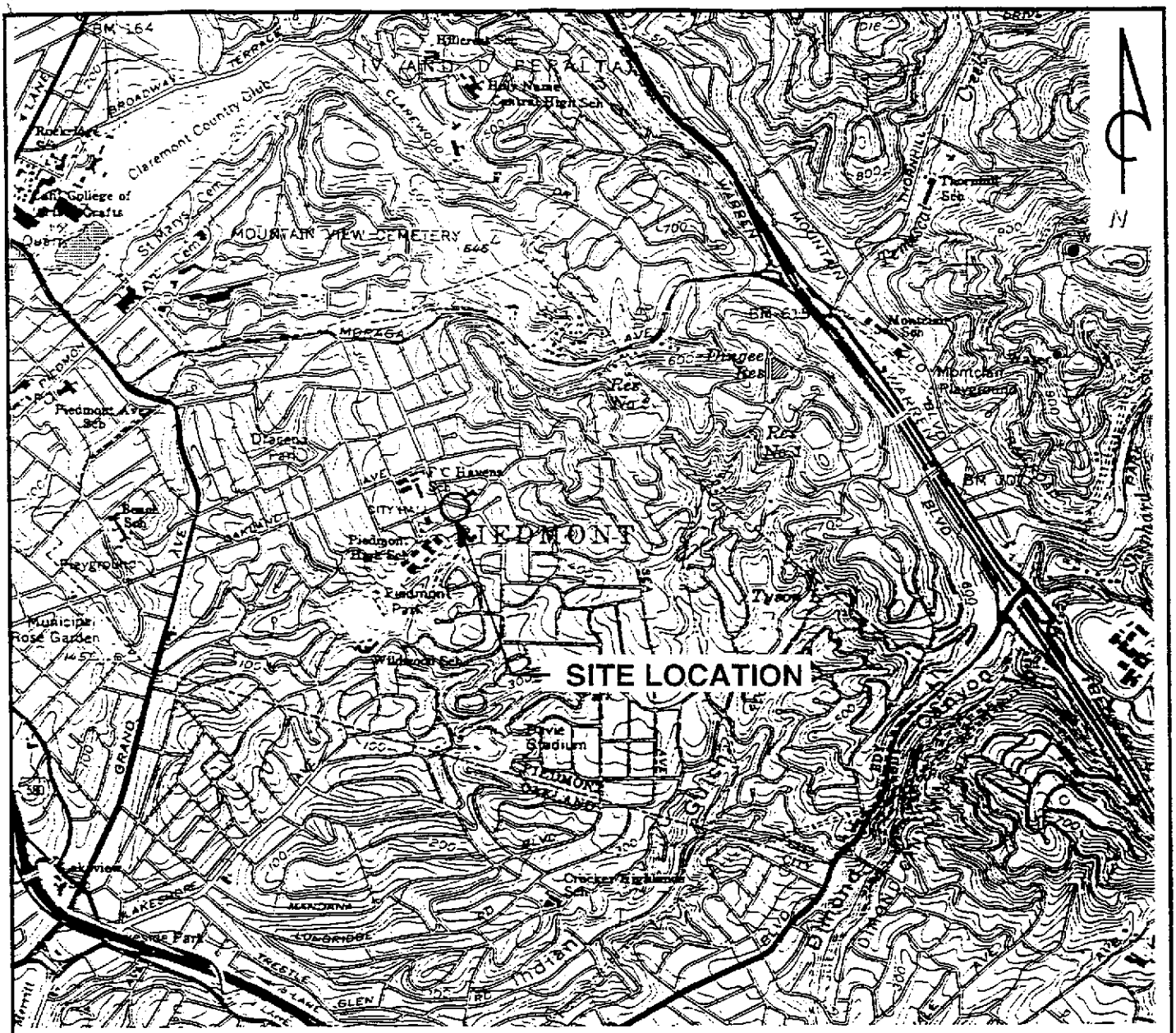
TPPH = Total purgeable petroleum hydrocarbons
MtBE = Methyl tert-butyl ether
ppm = Parts per million

Table 2
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MtBE)

Chevron Service Station 9-0329
340 Highland Avenue at Vista Avenue
Piedmont, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MtBE (ppb)
C-5	11/25/96	<50	<0.50	<0.50	<0.50	<0.50	<2.5
C-6	11/25/96	<50	<0.50	<0.50	<0.50	<0.50	<2.5

TPPH = Total purgeable petroleum hydrocarbons
MtBE = Methyl tert-butyl ether
ppb = Parts per billion



QUADRANGLE LOCATION

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

SCALE IN FEET

2000 0 2000

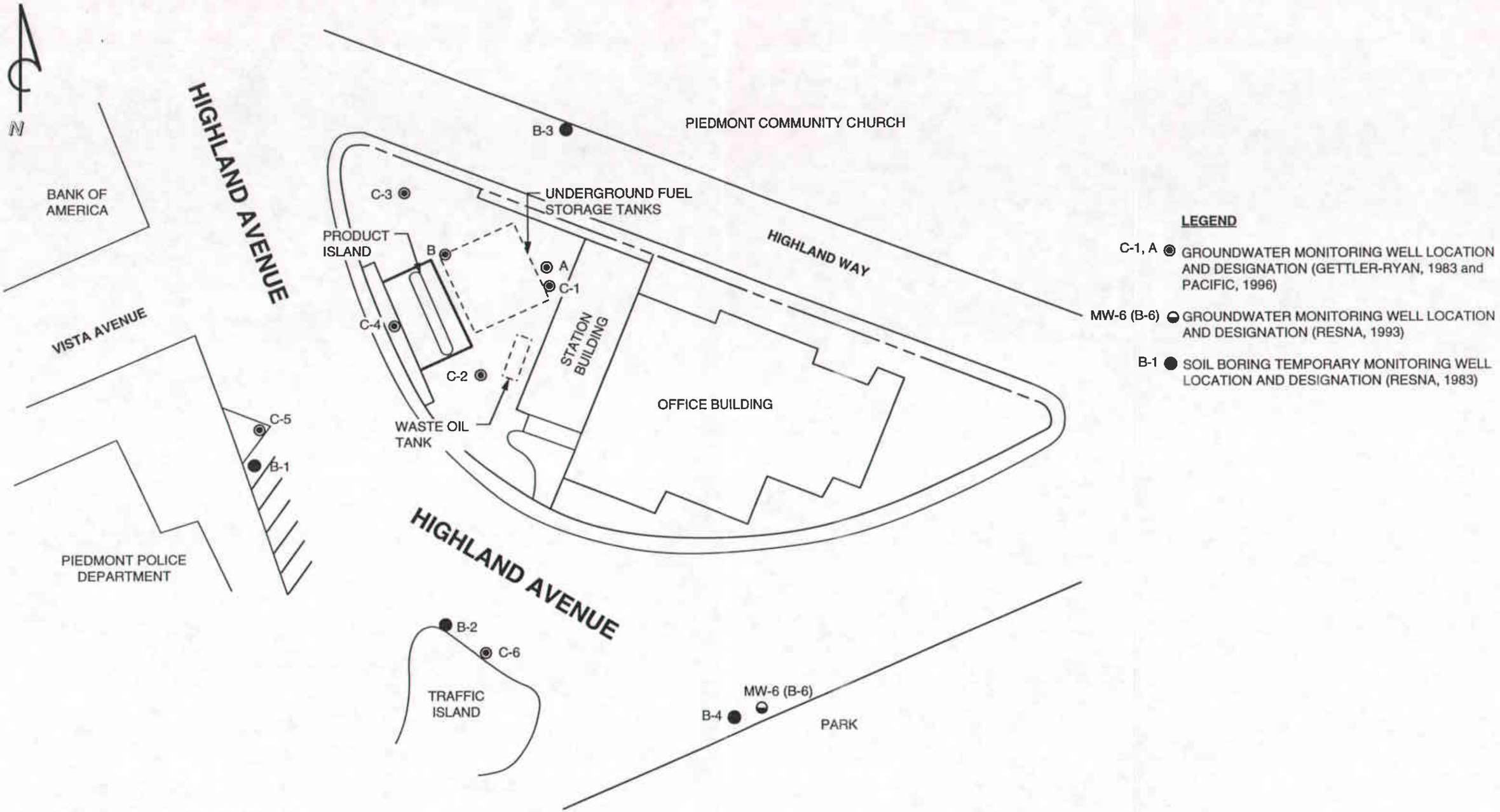
PACIFIC ENVIRONMENTAL GROUP, INC.

CHEVRON SERVICE STATION 9-0329
340 Highland Avenue at Vista Avenue
Piedmont, California

SITE LOCATION MAP

FIGURE: 1

PROJECT: 320-160.1A



SOURCE: MAP BY CANONIE ENVIRONMENTAL

PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 40 80 FEET

CHEVRON SERVICE STATION 9-0329
340 Highland Avenue at Vista Avenue
Piedmont, California

SITE MAP

FIGURE: 2
PROJECT: 320-160.1A

ATTACHMENT A

FIELD AND LABORATORY PROCEDURES, AND BORING LOGS

ATTACHMENT A
FIELD AND LABORATORY PROCEDURES

Groundwater Monitoring Well Installation

The soil borings were drilled using 8-inch hollow-stem auger drilling equipment and logged by a Pacific Environmental Group, Inc. geologist using the Unified Soil Classification System and standard geologic techniques. Soil samples for logging were collected at 5-foot depth intervals using a California-modified split-spoon sampler. The sampler was driven a maximum of 18 inches using a 140-pound hammer with a 30-inch drop. Soil samples for chemical analysis were retained in brass liners, capped with Teflon® squares and plastic end caps, and sealed in clean zip-lock bags. The samples were placed on ice for transport to the laboratory accompanied by chain-of-custody documentation. Down-hole drilling and sampling equipment was steam-cleaned following the completion of each soil boring. Down-hole sampling equipment was washed in a tri-sodium phosphate solution between samples.

The borings were converted to groundwater monitoring wells by installing 2-inch diameter, flush-threaded, Schedule 40 PVC casing with 0.020-inch factory-slotted screen. Approximately 15 feet of screen was placed in the bottom of each boring. A #3 sand pack was placed in the annular space across the entire screened interval extending approximately 6 inches to 1 foot above the top of the screen for each well. A bentonite and Portland cement seal extends from the sand pack to the ground surface.

Following well completion, the vault box elevation and the elevation of the top of the PVC well casing of the monitoring wells was surveyed to the nearest 0.01 foot, relative to mean sea level, by a licensed surveyor.

Organic Vapor Procedures

Soil samples collected at 5-foot depth intervals during drilling were analyzed in the field for ionizable organic compounds using the HNU Model PI-101 (or equivalent) photo-ionization detector (PID) with a 10.2 eV lamp. The test procedure involves measuring approximately 30 grams from an undisturbed soil sample and placing this subsample in a sealable plastic bag. The bag is then warmed for approximately 20 minutes (in the sun), pierced, and the head-

space within the bag tested for total organic vapor, measured in parts per million as benzene (ppm; volume/volume). The instrument was calibrated prior to drilling using a 100 ppm isobutylene standard (in air) and a sensitivity factor of 55 which relates the photo-ionization potential of benzene to that of isobutylene at 100 ppm. Due to inconsistent baseline readings, no PID measurements were reported.

Well Development and Groundwater Sampling

The groundwater monitoring wells were developed and sampled a minimum of 24 hours after completion of the wells. Well development procedures included swabbing and bailing and/or pumping. Water was removed from the well until relatively turbid free water was produced, or until a minimum of ten casing volumes had been removed. The groundwater sampling procedure consists of first measuring the water level in the well, and checking it for the presence of separate-phase hydrocarbons (SPH). If SPH are not present, the well was purged of a minimum of five casing volumes of water. During purging, temperature, pH, and electrical conductivity was monitored until stable to document that a representative sample is collected. After the water level recovers, a sample was collected from each well using a Teflon bailer and placed into appropriate EPA-approved containers. The samples were labeled, logged onto a chain-of-custody document, and transported on ice to the laboratory.

Rinsate, Purge, and Development Waters, and Soil Cuttings Storage and Disposal

Waters produced during field activities were transported via a purge trailer and disposed of at a state-certified treatment and disposal facility. When necessary, waters were temporarily stored on site in DOT-approved 55-gallon drums pending transport and disposal.

Soil cuttings generated during drilling were placed on and covered by visqueen. Samples of the cuttings were collected and sent to a state-certified laboratory for analysis. The soil cuttings were hauled by a state-certified waste hauler to a state-certified treatment and disposal facility.

Laboratory Procedures

Selected soil samples and groundwater samples were analyzed by a California State-certified laboratory for the presence of total purgeable petroleum hydrocarbons calculated as gasoline (TPPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX compounds), and methyl tert-butyl ether (MtBE) using EPA Methods 8015 (modified) and 8020.

WELL LOG
KEY TO ABBREVIATIONS

Drilling Method

HSA - Hollow stem auger
CFA - Continous 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.

Moisture 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

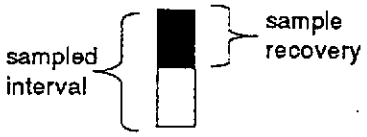
H-NU (ppm)

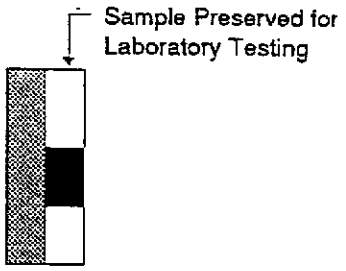
ND - No detection

Symbols

▽ - First encountered ground water

▼ - Static ground water level



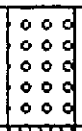
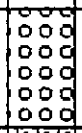
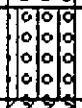
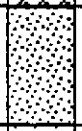
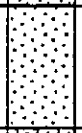
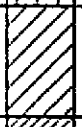


Density (Blows/Foot - Cal Mod Sampler)

Sands and gravels		Silts and Clays	
0 - 5	- Very Loose	0 - 2	- Very Soft
5 - 13	- Loose	2 - 4	- Soft
13 - 38	- Medium dense	4 - 9	- Firm
38 - 63	- Dense	9-17	- Stiff
over 63	- Very dense	17 - 37	- Very Stiff
		37 - 72	- Hard
		over 72	- Very Hard

GRAIN - SIZE SCALE

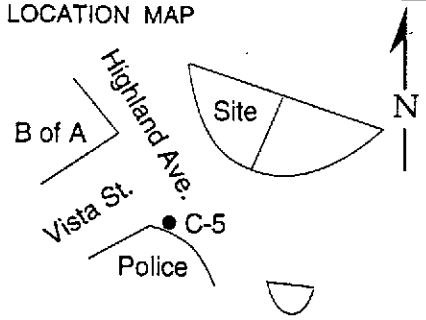
GRADE LIMITS U.S. Standard inch	sieve size	GRADE NAME
12.0		Boulders
3.0	3.0 in.	Cobbles
0.19	No. 4	Gravels
0.08	No. 10	coarse
	No. 40	medium Sand
	No. 200	fine
		Silt
		Clay Size

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

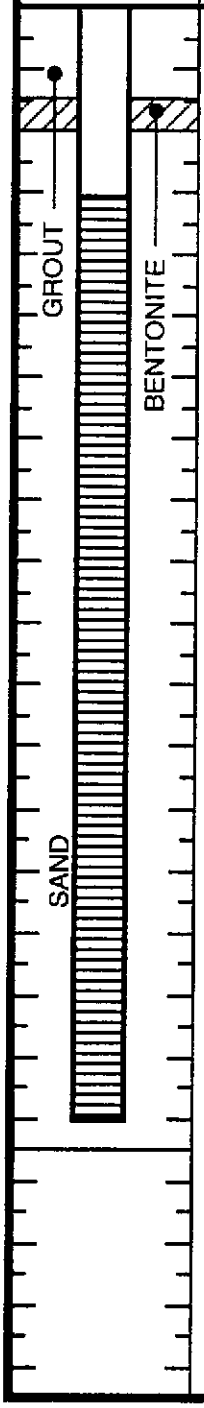


PACIFIC ENVIRONMENTAL GROUP, INC.

WELL NO. C-5
PAGE 1 OF 1

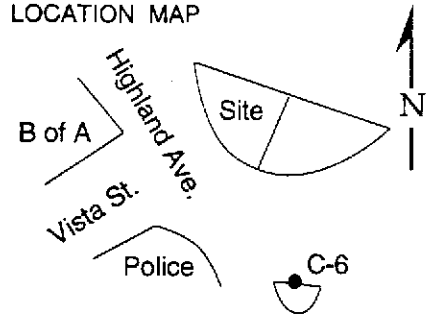
PROJECT NO. 320-160.1A
LOGGED BY: C.W.R.
DRILLER: West Hazmat
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: SCH 40 PVC
SLOT SIZE: 0.020"
WELL PACK: #3 SAND

CLIENT: CHEVRON
DATE DRILLED: 10-18-96
LOCATION: 340 Highland Ave., Piedmont
HOLE DIAMETER: 8"
HOLE DEPTH: 18.5'
WELL DIAMETER: 2"
WELL DEPTH: 18'
CASING STICKUP: NA



MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
			1				SW	ASPHALT 3" SAND: yellowish brown with minor reddish brown oxidation; 10% fines as clay and silt; 70% fine to medium sand; 20% subangular gravel up to 3" diameter; no product odor.
Dp			2					
			3				ML	SILT with sand and gravel: greenish gray; low plasticity; 60-70% silt with clay; 20% fine sand; 10-20% fine subangular gravel; hard; no product odor.
			4					
		>50	5				SS	SANDSTONE - BEDROCK - weathered: yellowish brown; fine sand with silt; poorly lithified; 1-10mm plannar laminae; friable; no product odor.
			6					
			7					
			8				SLst	SILTSTONE: pale yellow; minor sand; friable; poorly lithified; massive; no product odor.
		>50	9					
			10					
			11					
			12					
			13					
		>50	14					
			15					@15': as above; pale yellow; decreased sand content; moderate hardness; massive; no product odor.
			16					
			17				SS	SANDSTONE - weathered: yellowish brown, gray, and reddish brown; friable; poorly lithified; massive; fine sand with silt; moisture in fractures; no product odor.
Mst		>50	18					
			19					BOTTO M OF BORING 18.5'
			20					
			21					
			22					

LOCATION MAP



PACIFIC ENVIRONMENTAL GROUP, INC.

WELL NO. C-6
PAGE 1 OF 1

PROJECT NO. 320-160.1A
LOGGED BY: C.W.R.
DRILLER: West Hazmat
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: SCH 40 PVC
SLOT SIZE: 0.020"
WELL PACK: #3 SAND

CLIENT: CHEVRON
DATE DRILLED: 10-18-96
LOCATION: 340 Highland Ave., Piedmont
HOLE DIAMETER: 8"
HOLE DEPTH: 18'
WELL DIAMETER: 2"
WELL DEPTH: 17.5'
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY / SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
GROUT; BENTONITE; SAND	Dp			1			SW ML	ASPHALT 4" SAND with gravel: yellowish brown; 10% fines as silt and clay; 70% fine to medium sand; 10-20% subangular gravel up to 3" in diameter; no product odor. SILT with sand: dark gray; low plasticity; 65-75% silt with clay; 20-30% fine sand; trace coarse sand; roots; soft; no product odor.
	Mst			2				
	Mst			3			SC	
	Mst			4				
	Mst-Wt		>50	5			SS	CLAYEY SAND: dark greenish gray; 30-40% fines as clay and silt; 60-70% fine to medium sand; trace black roots; loose; no product odor. SANDSTONE - BEDROCK - weathered: yellowish brown and greenish gray; abundant silt; fine sand with silt; poorly lithified; friable; hard; no product odor.
	Dp			6				
				7				
				8			SLst	SILTSTONE - weathered: pale yellow; trace sand; friable; poorly lithified; massive; moderate hardness; no product odor.
				9				
			>50	10				
				11				
				12				
				13				
				14				
			>50	15				@15': as above; pale yellow; decreased sand content; moderate hardness; massive; no product odor.
				16				
				17				
	Dp-Mst		>50	18				@18': as above; dark yellowish brown with dark gray; and minor reddish brown; massive; moderate hardness; increased lithification; difficult drilling; no product odor.
				19				
				20				BOTTO M OF BORING 18'
				21				
				22				

ATTACHMENT B

WELL DEVELOPMENT REPORT AND GROUNDWATER SAMPLING REPORT

BLAINE
TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773

December 11, 1996

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

Attention: Charlie Rous

SITE:
Chevron Service Station Number 9-0329
340 Highland Ave.
Piedmont, California

PROJECT:
Well Development

PROJECT INITIATED ON:
November 25, 1996

WELL DEVELOPMENT REPORT 961125-J-2

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. does not participate in the interpretation of analytical results or become involved with the marketing or installation of remedial systems. The interpretation of results should be performed by representatives of the interested regulatory agencies and those certified professionals who are engaged as paid consultants in the business of providing professional opinions along with recommendations and proposals for further investigative or remedial activities.

As an independent third party, Blaine Tech Services, Inc. routinely performs evacuation and sampling of groundwater wells. In addition, we are frequently asked to provide specialized personnel, instruments and equipment for well development work. Similar standards of care and cleanliness are required in all these activities and our personnel are accustomed to the safety measures that must be taken.

Scope of Requested Services

Blaine Tech Services, Inc. was asked to provide specialized equipment, instruments and personnel for a well development project being overseen by Pacific Environmental Group, Inc.

Execution of Recent Work

Our personnel arrived at the site on Monday, November 25, 1996 and developed two wells in accordance with our client's specifications communicated to us by Mr. Charlie Rous. A summary of the well development actions is presented in the table of field data at the end of this report.

STANDARD PROCEDURES

Overview

Because formations vary in their geologic composition, transmissivity and water production capability, well development cannot be reduced to a set of fixed procedures that will always produce a complete and satisfactory result if just repeated for a predetermined period of time. Instead, well development is accomplished by selecting procedures that (a.) repair that portion of the native formation that was disrupted by the cutting action of the well drilling tool, and (b.) promote the flow of water out of the formation into the newly installed well (through the granular filter pack and well screen). Execution of development actions that are not appropriate to the native formation will be inefficient and in some cases deleterious.

Time constraints usually prevent a precise classification of the saturated zone materials by analysis of soil samples for physical characteristics at a laboratory equipped to do physical testing. Physical tests cannot usually be completed during the brief timespan of a project that combines exploration, design, and well installation into a one day effort. Instead, the subjective judgments of the field geologist are recorded in the boring log and well installation log. The field geologist must quickly evaluate soil types by their appearance and observable characteristics and record his or her estimation of the material in the log according to the categorical judgments provided by the Unified Soil Classification System. These categorical judgments are also the basis for determining the final construction specifications of the well.

The well's total depth, the length of the screened interval, the slot size, and the size of the sand used in the filter pack are all decided on the *appearance* of the soil cuttings and whatever quick tests the field geologist can perform. Because the physical specifications for the well are set at that moment and cannot be corrected later, any misclassification of soil that results in a

mismatching of the well to the native formation will have to be addressed and corrected (to whatever extent is possible) with well development actions, alone.

Well development work can be directed in two ways:

> First, specific well development actions can be called for by the geologist who installed the wells or by another professional reviewing that installation work. Typically, consultants specify the use of certain equipment and techniques.
>
> Second, the consultant or client can define the goal which is being sought and place limits on the amount of effort which should be taken to achieve the goal.

Of the two types of direction, the second is far more common and also more important. Defining the extent of effort which can be expended is vital to controlling costs on a project and scheduling personnel and equipment to complete the work. Moreover, it is possible to undertake and complete work without the added and frequently unnecessary effort of working out very detailed specification which may be impractical or unwarranted. This does not mean that our personnel cannot make use of well installation logs when they are available or are not receptive to very specific directions from the consultant. It does, however, mean that when very detailed directions are given, rapid communication between our personnel and the geologist become very important. This is especially true of sites where multiple wells have been installed, because wells even a short distance apart may demonstrate quite different characteristics which may require a rapid reevaluation of what well development procedures are appropriate in light of the hydrologic condition presented by the native formation at that location on the site.

In most cases, tightly controlled action sequences are less productive than more general directions combined with plain statements of what evaluation criteria should be used for judging the progress and completeness of the well development work. The most common standards are volumetric (removal of set volumes of water), recharge rate, and water clarity (measured as nephelometric turbidity units). Given these goals and limitations, our personnel can proceed with the work without supervision or direction by relying on empirical information obtained directly from the water in the well

Selection of Development Equipment

Each Blaine Tech Services, Inc. vehicle provided for a well development project will have a wide assortment of development tools including stainless steel surgeblocks and swabs, several types of pumps and complete instrumentation for determining standard parameters. Special equipment which included certain types of winches, jetting heads, and drop surging pumps can be provided.

General Policy

Truly difficult conditions which can only be resolved by the application of massive force or large volumes of high pressure air should be addressed by a drilling or pump installation contractor. Blaine Tech Services, Inc. is not in the heavy salvage business and has a general policy against the use of tools or techniques which provide enough mechanical advantage to pose a serious risk of damaging a well. The same policy prohibits introducing foreign materials into a well which could carry contaminants into the groundwater. In keeping with this policy, our personnel avoid surging with slugs of effluent water, or jetting with unfiltered air unless these actions are specifically requested by a registered professional who is cognizant of the problems and hazards that accompany the action. In a similar vein, our personnel will, whenever possible, avoid development actions that are likely to seal clay formations or promote bridging, and make every attempt to call obvious indication of such conditions to the attention of the project geologist so that a different regimen can be selected.

Effluent Materials

Groundwater well sampling protocols call for the evacuation of a sufficient volume of water from the well to insure that the sample is collected from the water that has been newly drawn into the well from the surrounding geologic formation.

Well development routinely generates as much or more effluent water as does routine evacuation prior to monitoring. In some cases very large amounts of water must be removed from the well before a satisfactory level of development has been achieved. The effluent water from these development actions must be contained. Blaine Tech Services, Inc. will place this water in appropriate containers of the client's choice or bring new DOT 17 E drums to the site which are appropriate for the containment of the effluent materials. The determination of how to properly dispose of the effluent water must await the results of laboratory analyses of subsequent samples collected from each individual groundwater well. If those individual samples do not establish whether or not the effluent water is contaminated, or if the effluent from more than one source has been combined in the same container, it may be necessary to conduct additional analyses on the effluent material.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment will be decontaminated after use in each well and before leaving the site. Decontamination consists of complete disassembly of the device to a point where a jet of stem cleaner water can be directed onto all internal surfaces. Blaine Tech Services, Inc. frequently modifies apparatus to allow complete disassembly and proper cleaning.

Personnel

All Blaine Tech Services, Inc. personnel receive 29 CFR 1910.120 training as soon after being hired as practical. In addition, many of our personnel have additional certifications that include specialized training in level B supplied air apparatus and the supervision of employees working on hazardous materials sites. Employees are not sent to a site and unless we know that they can follow the written provisions of an SSP and the verbal directions of an SSO.

In general, employees sent to a site to perform well sampling will assume an OSHA level D (wet) environment exists unless otherwise informed. The use of gloves and double glove protocols protects both our employees and the integrity of the samples being collected. Additional protective gear and procedures for higher OSHA levels of protection are available.

Please call if we can be of any further assistance.

Richard C. Blaine

RCB/mc

C-5 WELL DEVELOPMENT LOG

Well Designation	Well Diameter (inches)	Well Depth (feet)	Initial Depth to Water (feet)	Volume of single case (gallons)
C-5	2.0	17.64	3.30	2.3

Equipment Used: Middleburg

Data collection during well development:

Date	Time	Gallons Removed	Temp. (F)	pH	EC (micromhos)	Turbidity (NTU)	Notes
11/25/96	12:35	2.5	69.2	7.1	1000	>200	
	12:39	5.0	68.6	7.4	780	148	DTW = 8.10'.
	12:43	7.0	68.2	7.6	700	139	
	12:50	9.5	67.6	7.7	720	186	
	12:55	12.0	67.8	7.7	710	>200	DTW = 12.00'.
							Swabbed well for 5 mins.
	13:07	14.0	67.4	7.8	670	>200	
	13:12	16.5	67.6	7.7	680	>200	DTW = 14.10'.
							Dewatered @ 16.5 gals.
	14:20	--	--	--	--	--	DTW = 9.65'.
	14:26	19.0	67.2	7.7	610	>200	
	14:30	21.0	67.6	7.7	620	>200	
	14:35	23.0	67.4	7.6	640	>200	DTW = 13.78'.
	14:35	End log.	Depth to Water @ 13.78'.				
			Depth to Bottom @ 17.66'.				

C-6 WELL DEVELOPMENT LOG

Well Designation	Well Diameter (inches)	Well Depth (feet)	Initial Depth to Water (feet)	Volume of single case (gallons)
C-6	2.0	17.62	2.13	2.5

Equipment Used: Middleburg

Data collection during well development:

Date	Time	Gallons Removed	Temp. (F)	pH	EC (micromhos)	Turbidity (NTU)	Notes
11/25/96	13:25	2.5	68.8	7.5	520	>200	
	13:29	5.0	68.4	7.7	520	102	DTW = 5.42'.
	13:34	7.5	67.8	7.6	520	73.3	
	13:39	10.0	67.4	7.5	530	52.4	
	13:45	12.5	67.2	7.5	540	48.6	DTW = 8.58'. Swabbed well for 5 mins.
	13:56	15.0	67.6	7.5	580	>200	DTW = 10.65'.
	14:03	17.5	67.4	7.6	580	>200	
	14:10	20.0	67.2	7.6	580	>200	DTW = 14.21'. Dewatered @ 20 gals.
	14:53	--	--	--	--	--	DTW = 10.90'.
	14:59	22.5	--	7.4	580	>200	DTW = 14.18'.
	15:04	25.0	--	7.5	580	>200	
	15:04	End log. Depth to Bottom @ 17.62'.					

BLAINE
TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 9513
(408) 995-553
FAX (408) 293-877

December 11, 1996

Pacific Environmental Group, Inc.
2025 Gateway Place, Suite 440
San Jose, Ca 95110

ATTN: Charlie Rous

Site:
Chevron Service Station Number 9-0329
340 Highland Ave.
Piedmont, California

Date:
November 25, 1996

GROUNDWATER SAMPLING REPORT 961125-J-2

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. does not participate in the interpretation of analytical results, or become involved with the marketing or installation of remedial systems.

This report deals with the groundwater well sampling performed by our firm in response to your request. Data collected in the course of our work at the site are presented in the TABLE OF WELL MONITORING DATA. This information was collected during our inspection, well evacuation and sample collection. Measurements include the total depth of the well and the depth to water. Water surfaces were further inspected for the presence of immiscibles. A series of electrical conductivity, pH, and temperature readings were obtained during well evacuation and at the time of sample collection.

STANDARD PRACTICES

Evacuation and Sampling Equipment

As shown in the TABLE OF WELL MONITORING DATA, the wells at this site were evacuated according to a protocol requirement for the removal of three case volumes of water, before sampling. The wells were evacuated using bailers.

Samples were collected using bailers.

Bailers: A bailer, in its simplest form, is a hollow tube which has been fitted with a check valve at the lower end. The device can be lowered into a well by means of a cord. When the bailer enters the water, the check valve opens and liquid flows into the interior of the bailer. The bottom check valve prevents water from escaping when the bailer is drawn up and out of the well.

Two types of bailers are used in groundwater wells at sites where fuel hydrocarbons are of concern. The first type of bailer is made of a clear material such as acrylic plastic and is used to obtain a sample of the surface and the near surface liquids, in order to detect the presence of visible or measurable fuel hydrocarbon floating on the surface. The second type of bailer is made of Teflon or stainless steel, and is used as an evacuation and/or sampling device.

Bailers are inexpensive and relatively easy to clean. Because they are manually operated, variations in operator technique may have a greater influence than would be found with more automated sampling equipment. Also, where fuel hydrocarbons are involved, the bailer may include near surface contaminants that are not representative of water deeper in the well.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site.

Effluent Materials

The evacuation process creates a volume of effluent water which must be contained. Blaine Tech Services, Inc. will place this water in appropriate containers of the client's choice or bring new 55 gallon DOT 17 E drums to the site, which are appropriate for the containment of the effluent materials. The determination of how to properly dispose of the effluent water must usually await the results of laboratory analyses of the sample collected from the groundwater

well. If that sample does not establish whether or not the effluent water is contaminated, or if effluent from more than one source has been combined in the same container, it may be necessary to conduct additional analyses on the effluent material.

Sampling Methodology

Samples were obtained by standardized sampling procedures that follow an evacuation and sample collection protocol. The sampling methodology conforms to both State and Regional Water Quality Control Board standards and specifically adheres to EPA requirements for apparatus, sample containers and sample handling as specified in publication SW 846 and T.E.G.D. which is published separately.

Sample Containers

Sample containers are supplied by the laboratory performing the analyses.

Sample Handling Procedures

Following collection, samples are promptly placed in an ice chest containing deionized ice or an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with both a sampling event number and a discrete sample identification number. Please note that the sampling event number is the number that appears on our chain of custody. It is roughly equivalent to a job number, but applies only to work done on a particular day of the year rather than spanning several days, as jobs and projects often do.

Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under our standard chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date and signature of person accepting custody of the samples).

Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to Sequoia Analytical in Redwood City, California. Sequoia is certified by the California Department of Health Services as a Hazardous Materials Testing Laboratory, and is listed as DOHS HMTL #1210.

Personnel

All Blaine Tech Services, Inc. personnel receive 29 CFR 1910.120(e)(2) training as soon after being hired as is practical. In addition, many of our personnel have additional certifications that include specialized training in level B supplied air apparatus and the supervision of employees working on hazardous materials sites. Employees are not sent to a site unless we are confident they can adhere to any site safety provisions in force at the site and unless we know that they can follow the written provisions of an SSP and the verbal directions of an SSO.

In general, employees sent to a site to perform groundwater well sampling will assume an OSHA level D (wet) environment exists unless otherwise informed. The use of gloves and double glove protocols protects both our employees and the integrity of the samples being collected. Additional protective gear and procedures for higher OSHA levels of protection are available.

Reportage

Submission to the Regional Water Quality Control Board and the local implementing agency should include copies of the sampling report, the chain of custody and the certified analytical report issued by the Hazardous Materials Testing Laboratory.

Please call if we can be of any further assistance.

Richard C. Blaine

RCB/mc

attachments: table of well monitoring data
certified analytical report
chain of custody

TABLE OF WELL MONITORING DATA

Well I.D.	C-5			C-6		
Date Sampled	11/25/96			11/25/96		
Well Diameter (in.)	2			2		
Total Well Depth (ft.)	17.66			17.62		
Depth To Water (ft.)	3.30			2.13		
Free Product (in.)	NONE			NONE		
Reason If Not Sampled	--			--		
1 Case Volume (gal.)	2.3			2.5		
Did Well Dewater?	NO			NO		
Gallons Actually Evacuated	7.0			7.5		
Purging Device	BAILER			BAILER		
Sampling Device	BAILER			BAILER		
Time	15:15	15:20	15:25	15:45	15:50	15:55
Temperature (Fahrenheit)	67.4	67.0	67.0	67.4	67.2	67.4
pH	7.7	7.7	7.6	7.5	7.5	7.5
Conductivity (micromhos/cm)	650	640	640	570	560	560
Nephelometric Turbidity Units	2.5	5.0	7.0	2.5	5.0	7.5
BTS Chain of Custody	961125-J-2			961125-J-2		
BTS Sample I.D.	C-5			C-6		
DOHS HMTL Laboratory	SEQUOIA			SEQUOIA		
Analysis	TPH-GAS, BTEX & MTBE			TPH-GAS, BTEX & MTBE		

S U M M A R Y O F C A R R E S U L T S in parts per billion unless otherwise noted		
DOHS HMTL Laboratory	SEQUOIA	SEQUOIA
Laboratory Sample I.D.	C-5	C-6
TPH Gasoline	<50	<50
Benzene	<0.5	<0.5
Toluene	<0.5	<0.5
Ethyl Benzene	<0.5	<0.5
Xylene Isomers	<0.5	<0.5
MTBE	<2.5	<2.5

In the interest of clarity, an addendum has been added to the **TABLE** which lists analytical results in such a way that our field observations are presented together with the analytical results. This addendum is entitled a **SUMMARY OF CAR RESULTS**. As indicated by the title, the source documents for these numbers are the laboratory's certified analytical reports. These **certified analytical reports (CARs)** are generated by the laboratory as the sole official documents in which they issue their findings. Any discrepancy between the CAR and a tabular or text presentation of analytical values must be decided in favor of the CAR on the grounds that the CAR is the authoritative legal document.

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Technical Services
985 Timothy Drive
San Jose, CA 95133

Attention: Jim Keller

Client Proj. ID: Chevron 9-0329/ 961125-J2
Sample Descript: C-5
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9611H10-01

Sampled: 11/25/96
Received: 11/26/96

Analyzed: 12/03/96
Reported: 12/04/96

QC Batch Number: GC120396BTEX22A
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	76

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Technical Services	Client Proj. ID: Chevron 9-0329/ 961125-J2	Sampled: 11/25/96
985 Timothy Drive	Sample Descript: C-6	Received: 11/26/96
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 12/03/96
Attention: Jim Keller	Lab Number: 9611H10-02	Reported: 12/04/96

QC Batch Number: GC120396BTEX22A
Instrument ID: GCHP06

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	76

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Technical Services
985 Timothy Drive
San Jose, CA 95133

Attention: Jim Keller

Client Proj. ID: Chevron 9-0329/ 961125-J2
Sample Descript: TB
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9611H10-03

Sampled: 11/25/96
Received: 11/26/96

Analyzed: 12/03/96
Reported: 12/04/96

QC Batch Number: GC120396BTEX22A
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	74

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: Chevron, 9-0329 / 961125-J2
Matrix: Liquid
Work Order #: 9611H10 01-03
Reported: Dec 4, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC120396BTEX22A	GC120396BTEX22A	GC120396BTEX22A	GC120396BTEX22A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Porter	A. Porter	A. Porter	A. Porter
MS/MSD #:	9611E4801	9611E4801	9611E4801	9611E4801
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	12/3/96	12/3/96	12/3/96	12/3/96
Analyzed Date:	12/3/96	12/3/96	12/3/96	12/3/96
Instrument I.D.#:	GCHP22	GCHP22	GCHP22	GCHP22
Conc. Spiked:	10 ug/L	10 ug/L	10 ug/L	30 ug/L
Result:	8.6	8.6	8.5	26
MS % Recovery:	86	86	85	87
Dup. Result:	9.0	8.9	8.8	27
MSD % Recov.:	90	89	88	90
RPD:	4.5	3.4	3.5	3.8
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	BLK120396	BLK120396	BLK120396	BLK120396
Prepared Date:	12/3/96	12/3/96	12/3/96	12/3/96
Analyzed Date:	12/3/96	12/3/96	12/3/96	12/3/96
Instrument I.D.#:	GCHP22	GCHP22	GCHP22	GCHP22
Conc. Spiked:	10 ug/L	10 ug/L	10 ug/L	30 ug/L
LCS Result:	9.0	8.9	8.8	27
LCS % Recov.:	90	89	88	90
MS/MSD Control Limits	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

for Peggy Penner
Project Manager

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.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Technical Services	Client Proj. ID: Chevron 9-0329/ 961125-J2	Received: 11/26/96
985 Timothy Drive		
San Jose, CA 95133	Lab Proj. ID: 9611H10	Reported: 12/04/96
Attention: Jim Keller		

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 6 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

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

Chain-of-Custody-Record

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

Chevron Facility Number 9-0329
Facility Address 340 Highland Ave., Piedmont, CA
Consultant Project Number 961125-J2
Consultant Name Blaine Tech Services, Inc.
Address 985 Timothy Dr., San Jose, CA 95133
Project Contact (Name) Jim Keller
(Phone) (408) 995-5535 (Fax Number) 293-8773

Chevron Contact (Name) Phil Briggs
(Phone) (510) 842-9136
Laboratory Name Sequoia
Laboratory Release Number 2768231
Samples Collected by (Name) Matt James
Collection Date 11/25/96
Signature

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed: 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)	MTBE				
C-5	1	3	W	D	1530	HCl	Y	X								X				
C-6	2	3	↓	↓	1600	↓	↓	X								X				
TB	3	2	↓	↓		↓	↓	X												

DO NOT BILL FOR TB-LB.

9611H10

Remarks

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	BTS	11/26/96 1085		SEQ	11/26/96 1035
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	SEQ	11/26/96 1210			
By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
					11-26-96 12:54

Turn Around Time (Circle Choice)

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

ATTACHMENT C

CERTIFIED ANALYTICAL REPORTS AND CHAIN OF CUSTODY DOCUMENTATION

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

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

Attention: Ross Tinline

Client Proj. ID: 320-160.1/9-0329, Piedmont
Sample Descript: C-5 @ 5'
Matrix: SOLID
Analysis Method: 8015Mod/8020
Lab Number: 9610C68-01

Sampled: 10/18/96
Received: 10/21/96
Extracted: 10/22/96
Analyzed: 10/23/96
Reported: 10/31/96

QC Batch Number: GC102296BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	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	107

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

SEQUOIA ANALYTICAL - ELAP #1210

Tod Granicher
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Proj. ID: 320-160.1/9-0329, Piedmont	Sampled: 10/18/96
2025 Gateway Place, Suite 440	Sample Descript: C-5 @ 10'	Received: 10/21/96
San Jose, CA 95110	Matrix: SOLID	Extracted: 10/22/96
	Analysis Method: 8015Mod/8020	Analyzed: 10/23/96
Attention: Ross Tinline	Lab Number: 9610C68-02	Reported: 10/31/96

QC Batch Number: GC102296BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	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	111

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

SEQUOIA ANALYTICAL - ELAP #1210

Tod Granicher
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Proj. ID: 320-160.1/9-0329, Piedmont	Sampled: 10/18/96
2025 Gateway Place, Suite 440	Sample Descript: C-6 @ 5'	Received: 10/21/96
San Jose, CA 95110	Matrix: SOLID	Extracted: 10/22/96
	Analysis Method: 8015Mod/8020	Analyzed: 10/23/96
Attention: Ross Tinline	Lab Number: 9610C68-03	Reported: 10/31/96

QC Batch Number: GC102296BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	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	102

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

SEQUOIA ANALYTICAL - ELAP #1210

Tod Granicher
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Proj. ID: 320-160.1/9-0329, Piedmont	Sampled: 10/18/96
2025 Gateway Place, Suite 440	Sample Descript: C-6 @ 10'	Received: 10/21/96
San Jose, CA 95110	Matrix: SOLID	Extracted: 10/22/96
	Analysis Method: 8015Mod/8020	Analyzed: 10/23/96
Attention: Ross Tinline	Lab Number: 9610C68-04	Reported: 10/31/96

QC Batch Number: GC102296BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	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	102

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

SEQUOIA ANALYTICAL - ELAP #1210

Tod Granicher
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Project ID:	320-160.1 / 9-0329, Piedmont	
2025 Gateway Place, Suite 440	Matrix:	SOLID	
San Jose, CA 95110			
Attention: Ross Tinline	Work Order #:	9610C68 01-04	Reported: Oct 31, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC102296BTEXEXA	GC102296BTEXEXA	GC102296BTEXEXA	GC102296BTEXEXA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	Porter	Porter	Porter	Porter
MS/MSD #:	9610A7408	9610A7408	9610A7408	9610A7408
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/22/96	10/22/96	10/22/96	10/22/96
Analyzed Date:	10/23/96	10/23/96	10/23/96	10/23/96
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg
Result:	0.18	0.15	0.15	0.44
MS % Recovery:	90	75	75	73
Dup. Result:	0.21	0.18	0.17	0.49
MSD % Recov.:	105	90	85	82
RPD:	15	18	13	11
RPD Limit:	0-25	0-25	0-25	0-25
LCS #:	BLK102296	BLK102296	BLK102296	BLK102296
Prepared Date:	10/22/96	10/22/96	10/22/96	10/22/96
Analyzed Date:	10/23/96	10/23/96	10/23/96	10/23/96
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	0.20 mg/Kg	0.20 mg/Kg	0.20 mg/Kg	0.60 mg/Kg
LCS Result:	0.22	0.19	0.18	0.53
LCS % Recov.:	110	95	90	88
MS/MSD Control Limits	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Tod Granicher
Project Manager

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.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference