



PACIFIC ENVIRONMENTAL GROUP, INC.

AN **ET** COMPANY

ENVIRONMENTAL PROTECTION

98 SEP -8 PM 4: 09

Date: September 9, 1998
Project: 320-160.1C

To: Mr. Scott Seery
Alameda County Health Care Services
Agency
1131 Harbor Bay Parkway
Alameda, California 94502-6577

We have enclosed:

| Copies | Description |
|----------|--|
| <u>1</u> | <u>Work Plan for Groundwater Investigation</u> |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

For your: Use
 Approval
 Review
 Information

Comments: Chevron has requested PEG to forward this report directly to you. Please review and comment.

Ross Tinline



PACIFIC
ENVIRONMENTAL
GROUP, INC.

AN  COMPANY

September 9, 1998
Project 320-160.1C

Mr. Phillip Briggs
Chevron Products Company
P.O. Box 5004
San Ramon, California 94583

Re: **Work Plan for Groundwater Investigation**
Former Chevron Service Station 9-0329
340 Highland Avenue at Vista Avenue
Piedmont, California

Dear Mr. Briggs:

This letter, prepared by Pacific Environmental Group, Inc. (PEG) on behalf of Chevron Products Company (Chevron), presents a work plan to determine the extent of methyl tert-butyl ether (MtBE) confirmed in groundwater at the site referenced above and to evaluate whether utility line trenches are acting as preferential pathways for the migration of MtBE. The scope of work will propose off-site groundwater sampling locations along utility line trenches and downgradient of the site. The work plan is presented in response to the August 10, 1998 letter from the Alameda County Department of Environmental Health (ACDEH).

This work plan includes a site background, discussion, proposed scope of work, and schedule.

SITE BACKGROUND

Site Description

The subject site is an operating service station located at 340 Highland Avenue, Piedmont, Alameda County, California. The site is on a hillside which slopes to the west. Site elevation is approximately 345 feet above mean sea level (MSL). 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).

Bushy Dell Creek

- ① borings in backfill or next to utility trenches?
- ② bailer vs. peristaltic pump
- ③ what are the depths of SS and storm sewers? water lines? others??

10/1

call to PEG to set up meeting

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 on-going groundwater monitoring. These data indicate that the site is underlain by unconsolidated deposits of silty gravel, silt, silty sand, and weathered sandstone bedrock. During the July 9, 1998 sampling event, groundwater was gauged at depths of approximately 0.5 to 4.25 feet below ground surface (bgs). Off-site groundwater monitoring wells south and east of the site were gauged and reported groundwater to be at 0.0 feet, or 0.2 feet below the top of casing. Historic groundwater flow direction has been generally to the southwest, however during the July 1998 event the flow was to the southeast.

Previous Investigations

In 1983, Gettler-Ryan installed four groundwater monitoring wells (C-1 through C-4) at the site. Total purgeable petroleum hydrocarbons calculated as gasoline (TPPH-g) and benzene have been found in Well C-2 (located near the used oil tank) at maximum concentrations of 56,000 and 2,500 parts per billion (ppb), respectively, and at Well C-4 at maximum concentrations of 1,300 and 5.9 ppb, respectively. At groundwater Monitoring Well C-3, TPPH-g has not been detected and benzene has sporadically been detected at a maximum concentration of 4 ppb.

In 1993, Resna Industries installed four shallow off-site borings (B-1 through B-4), installed temporary monitoring wells in the borings, and performed a 1-mile radius off-site source search. Petroleum hydrocarbons were not detected in soil samples collected from the off-site borings. Groundwater was not encountered in Borings B-1 and B-3. Petroleum hydrocarbons were not detected in groundwater collected from Borings B-2 and B-4. Piedmont City Hall was identified as an off-site source of diesel. In May 1995, Canonie drilled off-site Boring B-6 and installed Well MW-6. No petroleum hydrocarbons were detected in soil samples collected from Boring B-6. The day after Well MW-6 was installed artesian conditions were encountered. The well was not suitable for groundwater sampling and was subsequently destroyed.

In November 1996, PEG drilled two soil borings and completed them as Monitoring Wells C-5 and C-6.

In May 1998, PEG performed a water well and surface water survey of the site vicinity. The City of Piedmont Well #4 located 0.11 miles south and the intermittent creek in Piedmont Park, located approximately 360 feet southeast of the site are the nearest sensitive receptors.

SCOPE OF WORK

The proposed scope of work is designed to determine the extent of MtBE in groundwater and to evaluate whether the utility line trenches are acting as preferential pathways for the migration of MtBE.

- **Utilities Survey.** PEG performed a survey to locate the underground utility lines around the site (Figure 1). The survey showed that the utility lines were at depths ranging from 2 to 5 feet bgs.
- **Groundwater Investigation.** PEG proposes that groundwater samples be collected from approximately six locations (Figure 1). Sampling will be performed by advancing a hand driven probe with a retractable screen section to shallow groundwater. A peristaltic pump with nylon tubing or disposal Teflon® bailer will be used to extract the water sample. Field and laboratory procedures are presented as Attachment A.
- **Report.** A report will be prepared, which presents the findings of the above scope of work, and will make recommendations if any further investigation is required.

SCHEDULE

Upon approval of the work plan by Chevron and ACDEH, PEG will immediately pursue encroachment permit application with the City of Piedmont. Upon receipt of the encroachment permit, PEG will commence with the investigation.

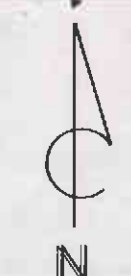
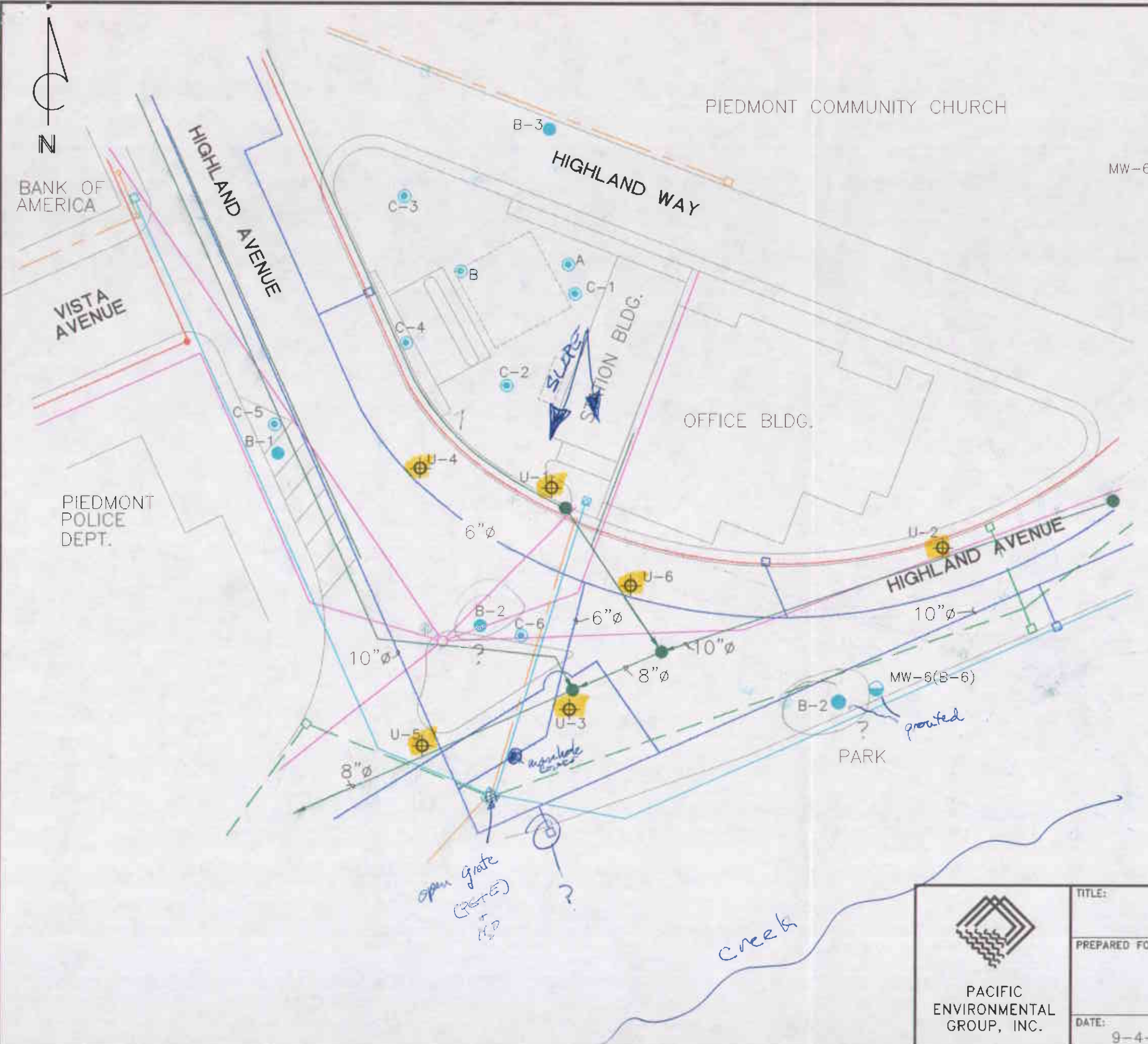
If you have any questions regarding the contents of this letter, please call.

Sincerely,

Pacific Environmental Group, Inc.

Ross W.N. Tinline
Project Geologist
RG 5860

Attachments: Figure 1 - Site Map
Attachment A - Field and Laboratory Procedures



LEGEND:

- C-1,A ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION (GETTLER-RYAN, 1983, AND PACIFIC, 1996)
- MW-6(B-6) ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION (RESNA, 1993)
- B-1 ● SOIL BORING LOCATION AND DESIGNATION LOCATION (RESNA, 1983)
- PADMOUNT TRANSFORMER
- GAS LINE (24"–36" DEPTH)
- GAS VALVE
- PRIMARY ELECTIRC LINE (36"–42" DEPTH)
- SECONDARY ELECTRIC LINE (24"–36" DEPTH)
- PRIMARY SPLICEBOX EQUIPMENT CLOSURE
- SECONDARY SPLICEBOX
- STORMDRAIN SEWER
- SANITARY SEWER (W/ DIRECTION OF FLOW AND DIAMETER)
- MANHOLE COVER
- STORMDRAIN
- TELEPHONE LINES (DEPTHS UNKNOWN)
- WATER LINES (W/ DEPTH AND DIAMETER)
- U-1 ● PROPOSED HAND AUGER BORING LOCATION AND DESIGNATION

| | | | |
|---------------------------------------|--|---------------------|--------------|
| PACIFIC ENVIRONMENTAL GROUP, INC. | TITLE: SITE MAP | | |
| | PREPARED FOR: FORMER CHEVRON SERVICE STATION 9-0329 340 Highland Avenue at Vista Avenue Piedmont, California | | |
| DATE: 9-4-98 | PROJECT: 320-160.1C | SCALE: 1"=40'-0" | FIGURE: 1 |

ATTACHMENT A
FIELD AND LABORATORY PROCEDURES

ATTACHMENT A

FIELD AND LABORATORY PROCEDURES

Groundwater Sampling

The AMS Retract-A-Tip Gas Vapor Probe System along with a peristaltic pump will be utilized to collect shallow groundwater samples. The 1-inch diameter probe will be driven to just below first encountered water, and pulled up a few inches to open the Retract-A-Tip. "Grab" groundwater samples will then be collected via a peristaltic pump and plastic tubing, or by retrieving the bailer.

These samples will be placed in a cooler with ice for transport to the laboratory under chain-of-custody protocol. The temperature of the cooler will be recorded upon delivery to the laboratory.

Laboratory Procedures

The analytical methods for determining the presence of total purgeable petroleum hydrocarbons calculated as gasoline, benzene, toluene, ethylbenzene, xylenes, and methyl tert-butyl ether will be taken from EPA Methods 5030 and 8015/8020. Confirmation of MtBE will be performed by EPA Method 8260. The above analytical methods utilize the purge-and-trap technique, with final detection by gas chromatography using a flame-ionization detector and a PID. All analyses will be performed by a California State-certified laboratory.