GETTLER-RYAN INC.

ENVIRONMENTAL PROTECTION
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TRANSMITTAL

TO: Mr. Brett Hunter
Chevron Product Company
P.O. Box 6004
San Ramon, California 94583

DATE: March 1, 2000
PROJ. #: 346521.01
SUBJECT: Former Chevron #3-0021
5940 College Avenue
Oakland, CA

FROM:
Michael E. Mitchener
Project Geologist
Gettler-Ryan Inc.
3164 Gold Camp Drive, Suite 240
Rancho Cordova, California 95670

(916) 631-1314

Chev. still getting bonding + ank access.
Barbara Sieminski - will do work.
(925) 551-7555
Drilling scheduled for Dec 5 -

WE ARE SENDING YOU:

COPIES	DATED	DESCRIPTION
1	March 1, 2000	Work Plan For Well Installation

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COMMENTS:

As requested, we are sending the attached copy for your files. If you have any questions, please call us in our Sacramento office at (916) 631-1300.

cc: Ms. Eva Chu, Alameda County Health Care Services Agency, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502-5577.
Mr. Donald Sweet, SF. Property Management Company, 1375 Sutter, #308, San Francisco, CA 94109.

GETTLER-RYAN INC.

WORK PLAN FOR WELL INSTALLATION

at

Former Chevron Service Station #3-0021
5940 College Avenue
Oakland, California

Report No. 346521.01-1

Prepared for:

Mr. Brett Hunter
Chevron Products Company
P.O. Box 6004
San Ramon, California 94583

Prepared by:

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STATE OF CALIFORNIA

March 1, 2000

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at

Former Chevron Service Station #3-0021
5940 College Avenue
Oakland, California

Report No. 346521.01-1

Permits are issued by Alameda Co Public Works

INTRODUCTION

At the request of Chevron Products Company (Chevron), Gettler-Ryan Inc. (GR) has prepared this Work Plan for the installation of two groundwater monitoring wells to evaluate the lateral extent of hydrocarbon impacted groundwater at the subject site (Figure 1). The proposed scope of work includes: obtaining the required well installation permits from the Alameda County Health Care Services Agency (ACHCS) and an encroachment permit from the City of Oakland; preparing a site safety plan; installing two groundwater monitoring wells; developing and sampling the newly installed groundwater monitoring wells; review available files for the adjacent site from the ACHCS; surveying all wellhead elevations; and preparing a report which presents the findings of the investigation.

The scope of work described in this report is intended to comply with the State of California Water Resources Control Board's *Leaking Underground Fuel Tanks (LUFT) Manual*, the California Regional Water Quality Control Board (CRWQCB) *Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Tank Sites*, and ACHCS guidelines.

SITE DESCRIPTION

The subject site is a paved parking lot located on the southeast corner of the intersection of College Avenue and Harwood Avenue in Oakland, California. Based on information supplied by Chevron, it appears a Chevron Service Station occupied the site from 1938 until 1968. Site facilities consisted of four underground storage tanks (USTs), one dispenser island, an office building, and a separate auto service building. Former locations of pertinent site features are shown on Figure 2.

PREVIOUS ENVIRONMENTAL WORK

On August 3 and September 1, 1999, Piers Environmental Services (PES) advanced four soil borings (SB-1 through SB-4) in the vicinity of the suspected former UST pit. The boring locations are shown on Figure 2. A grab groundwater sample was collected from each boring. Measurable concentrations of Total Petroleum Hydrocarbons as gasoline, or TPHg, (maximum 190,000 parts per billion [ppb]) and benzene (maximum 890 ppb) were detected in borings SB-1, SB-3, and SB-4.). Methyl tertiary-butyl

ether ([MtBE] maximum 650 ppb by EPA Method 8020) was detected in borings SB-1 and SB-3. The sample from SB-4 was analyzed for fuel oxygenates (MtBE, tertiary-Butyl Alcohol, Di-isopropyl ether, Ethyl tertiary-Butyl Ether, tertiary-Amyl Methyl Ether) by EPA Method 8240. None of these compounds were detected. Petroleum hydrocarbons were not detected in boring SB-2.

SCOPE OF WORK

To further evaluate petroleum hydrocarbon impact to groundwater in the site vicinity, GR proposes to install two groundwater monitoring wells at the locations shown on Figure 2. GR's Field Methods and Procedures are included in Appendix A.

To implement the proposed scope of work, GR proposes the following six tasks:

Task 1 Pre-field Activities

GR will prepare a site safety plan. Required well installation permits will be obtained from the Alameda County Public Works Department, and an encroachment permit for the off-site well will be obtained from the City of Oakland. Prior to scheduled activities, Underground Service Alert (USA) will be notified 48 hours in advance of proposed work. A private utility locator will be contracted to clear locations prior to drilling.

Task 2 Well Installation and Soil Borings

GR will install two groundwater monitoring wells at the locations shown on Figure 2. Drilling and well construction will be performed by Bay Area Exploration (C57 #522125). A GR geologist will monitor the drilling activities and prepare a log of each boring. Soil samples for description and possible chemical analysis will be obtained from each boring at five-foot intervals, as a minimum. Selected soil samples will be submitted for chemical analysis as described in Task 5.

Groundwater monitoring wells will be constructed with 2-inch-diameter Schedule 40 polyvinyl chloride (PVC) well casing and 0.02-inch machine-slotted well screen. According to Ms. Eva Chu of the ACHCS groundwater in the vicinity of the subject varies from approximately 4 feet below ground surface (bgs) to 12 feet bgs. Therefore, the proposed wells will be constructed with 15 feet of screen as shown on the Proposed Well Construction Detail (Figure 3). However, the actual screen interval will depend on the conditions encountered during drilling.

Soil from each sampled interval will be screened in the field for the presence of volatile organic compounds using a photoionization detector (PID). These data will be collected for reconnaissance purposes only, and will not be used as verification of the presence or absence of petroleum hydrocarbons. Screening data will be recorded on the boring logs.

Drill cuttings will be stored at the site pending disposal. The drill cuttings will be stockpiled on and covered with plastic sheeting. Soil samples will be collected from the drill cuttings as described in Appendix A. The stockpile sample will be analyzed as described in Task 5. Integrated Wastestream Management, Inc. (IWM) will transport both drill cuttings and steam cleaning rinsate wastewater to an approved disposal facility.

Task 3 Well Development and Sampling

Newly installed groundwater monitoring wells will be developed after standing a minimum of 72 hours following completion. During development, the clarity of the discharged well water and selected groundwater parameters (pH, temperature, and conductivity) will be monitored. When the discharge water runs clear and the groundwater parameters have stabilized, a groundwater sample will be collected. Groundwater removed from the wells during development and sampling will be transported by IWM to McKittrick Waste Management for disposal. Groundwater samples will be analyzed as described in Task 5. Development and groundwater sampling procedures are described in Appendix A.

Task 4 Wellhead Survey

Following installation, a California licensed surveyor will survey the top of casing elevations of all wells to mean sea level. Horizontal coordinates of the wells will also be obtained by the surveyor. The wells installed at 5930 College Avenue (adjacent to the southern edge of the subject site) will be included in the survey.

Task 5 Laboratory Analyses

Soil and groundwater samples will be submitted for chemical analysis to a California state-certified Hazardous Material Testing Laboratory. The selected soil samples from the borings will be analyzed for TPHg by EPA Method 8015 (Modified), and for the gasoline constituents benzene, toluene, ethylbenzene, and xylenes (BTEX) and MtBE by DHS LUFT Methods. Groundwater samples will be analyzed for TPHg, BTEX, and MtBE, and fuel oxygenates (MtBE, TBA, ETBE, TAME, DIPE, and ethanol) and 1,2-DCA by EPA Method 8260. The soil samples from the soil stockpile will be analyzed for TPHg, BTEX, and total lead.

Task 6 Report Preparation

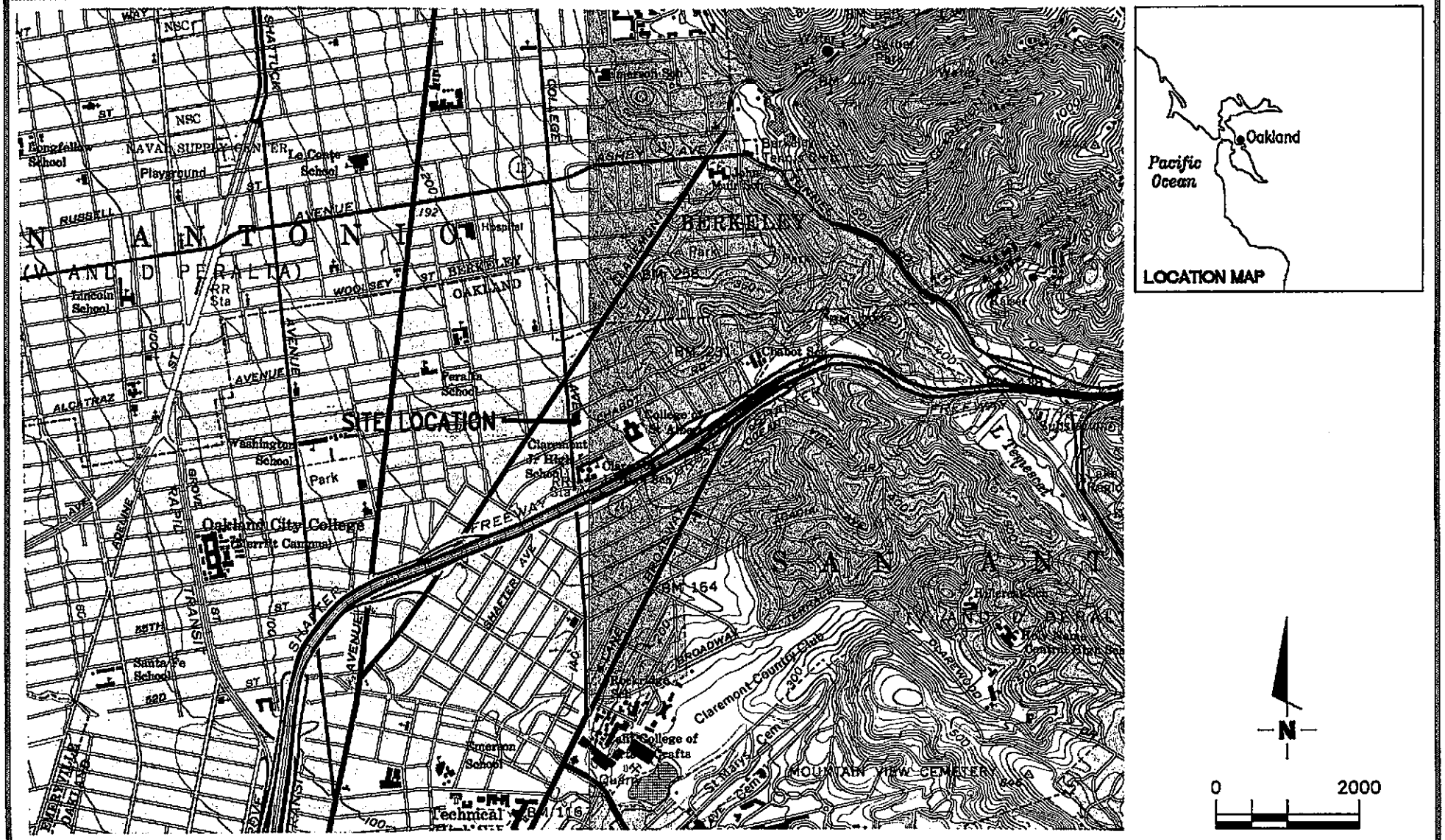
Following receipt and analysis of all data, a report will be prepared which summarizes the procedures and findings associated with this investigation. This report will be submitted to Chevron for their use and distribution.

PROJECT STAFF

Mr. Stephen J. Carter, a Registered Geologist in the State of California (R.G. No. 5577), will provide technical oversight and review of the work. Mr. Greg Gurss, Project Manager, will supervise implementation of field and office operations. GR employs a staff of geologists, engineers, and technicians who will assist with the project.

SCHEDULE

Implementation of the proposed scope of work will commence upon receipt of regulatory approval.



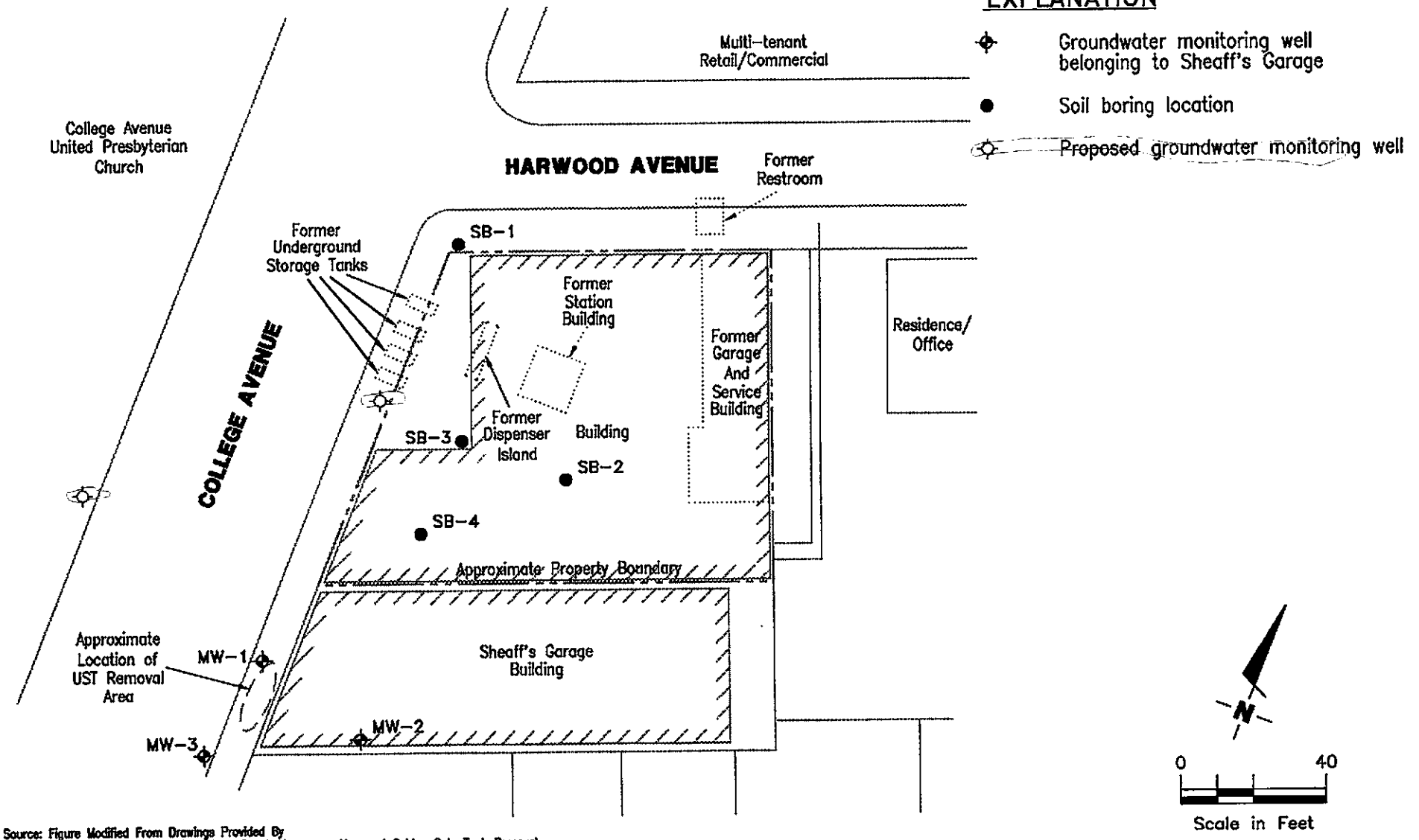
Base Map: USGS Topographic Map

Gettler - Ryan Inc.
6747 Sierra Ct., Suite J (925) 551-7555
Dublin, CA 94568

VICINITY MAP
Former Chevron Service Station No. 3-0021
5940 College Avenue
Oakland, California

FIGURE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
346521.01		02/00	



Source: Figure Modified From Drawings Provided By Piers Environmental Services, Inc., County Assessors Map and Golden Gate Tank Removal

FIGURE

Gettler - Ryan Inc.

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SITE PLAN
Former Chevron Service Station No. 3-0021
5940 College Avenue
Oakland, California

2

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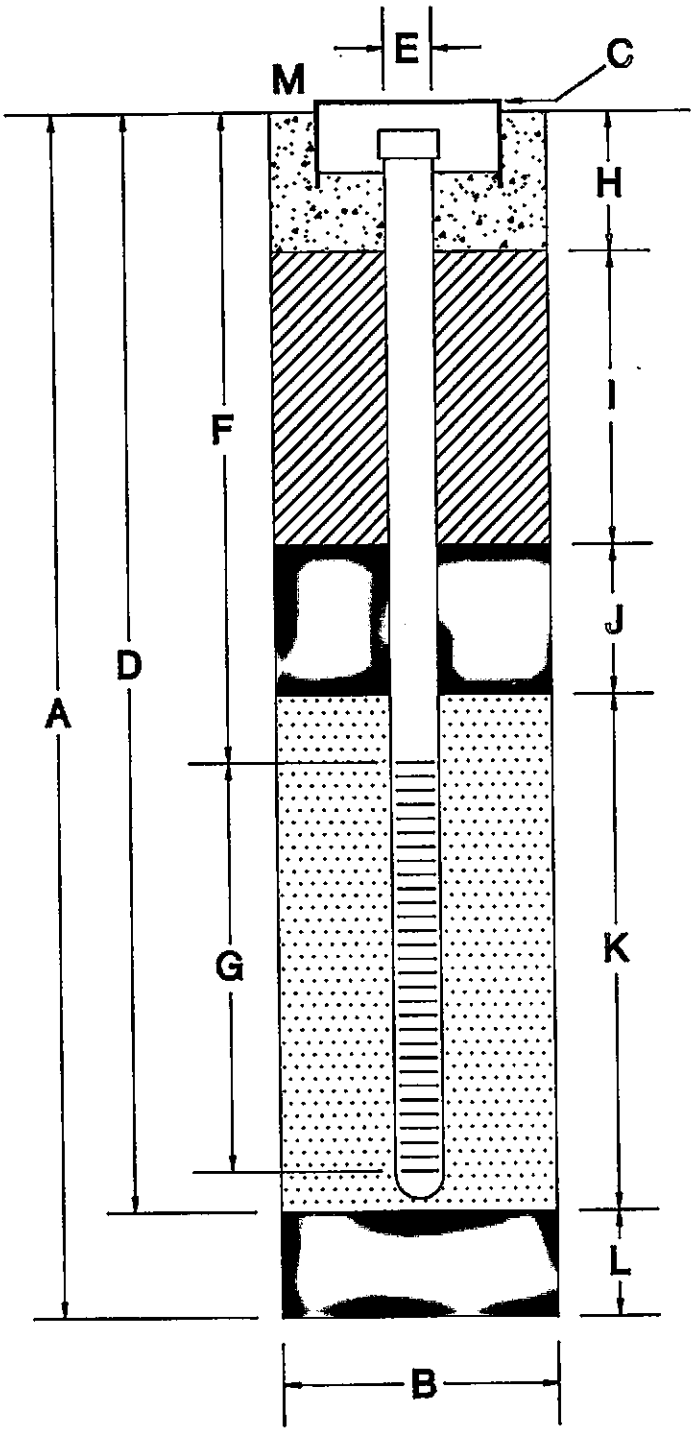
WELL CONSTRUCTION DETAIL



A Total Depth Of Boring 20 ft.

B Diameter Of Boring 8 in.
Drilling Method 4.25" I.D. HSA

C Top Of Box Elevation _____ ft.
☐ Referenced To Mean Sea Level
☐ Referenced To Project Datum

D Casing Length 20 ft.
Material Schedule 40 PVC

E Casing Diameter 2 in.

F Depth To Top Perforations 5 ft.

G Perforated Length 15 ft.
Perforated Interval From 5 to 20 ft.
Perforation Type Machine Slotted
Perforation Size 0.02 in.

H Surface Seal From _____ to _____ ft.
Seal Material _____

I Backfill From 2 to 0 ft.
Backfill Material Grout

J Seal From 3 to 2 ft.
Seal Material Bentonite

K Gravel Pack From 3 to 20 ft.
Pack Material #3 RMC Sand

L Bottom Seal _____ ft.
Seal Material _____

M _____

Figure 3

Note: Depths Measured From Initial Ground Surface.

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346521		2/24/00	

GETTLER-RYAN INC.

FIELD METHODS AND PROCEDURES

Site Safety Plan

Fieldwork performed by Gettler-Ryan Inc. (G-R) is conducted in accordance with G-R's Health and Safety Plan (revised January 16, 1995) and the Site Safety Plan. G-R personnel and subcontractors who perform work at the site are briefed on the contents of these plans prior to initiating site work. The G-R geologist or engineer at the site when the work is performed acts as the Site Safety Officer. G-R utilizes a photoionization detector (PID) to monitor ambient conditions as part of the Health and Safety Plan.

Collection of Soil Samples

Soil borings are drilled by a California-licensed well driller. A G-R geologist is present to observe the drilling, collect soil samples for description, physical testing, and chemical analysis, and prepare a log of the exploratory soil boring. Soil samples are collected from the soil boring with a split-barrel sampling device fitted with 2-inch-diameter, clean brass tube or stainless steel liners. The sampling device is driven approximately 18 inches with a 140-pound hammer falling 30 inches. The number of blows required to advance the sampler each successive 6 inches is recorded on the boring log. The encountered soils are described using the Unified Soil Classification System (ASTM 2488-84) and the Munsell Soil Color Chart.

After removal from the sampling device, soil samples for chemical analysis are covered on both ends with Teflon sheeting or aluminum foil, capped, labeled, and placed in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Samples are selected for chemical analysis based on:

a. depth relative to underground storage tanks and existing ground surface
b. depth relative to known or suspected groundwater
c. presence or absence of contaminant migration pathways
d. presence or absence of discoloration or staining
e. presence or absence of obvious gasoline hydrocarbon odors
f. presence or absence of organic vapors detected by headspace analysis

Field Screening of Soil Samples

A PID is used to perform headspace analysis in the field for the presence of organic vapors from the soil sample. A small volume of sample (20-30 cm^3) is placed in a Ziplock®-type plastic bag with headspace. After allowing the sample to warm for approximately 10 minutes, the PID sample tube is inserted into the headspace above the sample and a measurement taken. PID screening results are recorded on the boring log as reconnaissance data. G-R does not consider field-screening techniques to be verification of the presence or absence of hydrocarbons.

Construction of Monitoring Wells

Monitoring wells are constructed in the exploratory soil borings with Schedule 40 polyvinyl chloride (PVC) casing. All joints are thread-joined; no glues, cements, or solvents are used in well construction. The screened interval is constructed of machine-slotted PVC well screen that generally extends from the total well depth to a point above the groundwater. Appropriately sized sorted sand is placed in the annular adjacent to the entire screened interval. A bentonite seal is placed in the annular space above the sand, and the remaining annular space is sealed with neat cement or cement grout.

Wellheads are protected with water-resistant traffic-rated vault boxes placed flush with the ground surface. The top of the well casing is sealed with a locking waterproof cap. A lock is placed on the well cap to prevent vandalism and unintentional introduction of materials into the well.

Measurement of Water Levels

The top of the newly installed well casing is surveyed by a California-licensed Land Surveyor to mean sea level (MSL). Depth-to-groundwater in the well is measured from the top of the well casing with an electronic water-level indicator. Depth-to-groundwater is measured to the nearest 0.01-foot, and referenced to MSL.

Well Development and Sampling

The purpose of well development is to improve hydraulic communication between the well and the surrounding aquifer. Prior to development, each well is monitored for the presence of floating product and the depth-to-water is recorded. Wells are then developed by alternately surging the well with a vented surge block, then purging the well with a pump or bailer to remove accumulated sediments and draw groundwater into the well. Development continues until the groundwater parameters (temperature, pH, and conductivity) have stabilized. After the wells have been developed, groundwater samples are collected. Well development and sampling is performed by Gettler-Ryan Inc. of Dublin, California.

Storing and Sampling of Drill Cuttings

Drill cuttings are stockpiled on plastic sheeting and samples are collected and analyzed on the basis of one composite sample per 100 cubic yards of soil. Stockpile samples are composed of four discrete soil samples, each collected from an arbitrary location on the stockpile. The four discrete samples are then composited in the laboratory prior to analysis.

Each discrete stockpile sample is collected by removing the upper 3 to 6 inches of soil, and them driving the stainless steel or brass sample tube into the stockpiled material with a hand, mallet, or drive sampler. The sample tubes are then covered on both ends with Teflon sheeting or aluminum foil, capped, labeled, and placed in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Stockpiled soils are covered with plastic sheeting after completion of sampling.