GETTLER-RYAN INC.

WORK PLAN FOR LIMITED SUBSURFACE INVESTIGATION

at

Can-Am Plumbing Inc.
151 Wyoming Street
Pleasanton, California

Report No. 948162.02-1

Prepared for:

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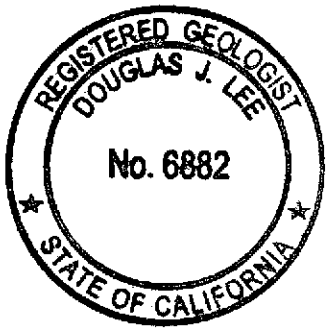

December 2, 1999

TABLE OF CONTENTS

FIGURES

APPENDICES

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INTRODUCTION

At the request of Can-Am Plumbing Inc. (Can-Am), Gettler-Ryan Inc. (GR), has prepared this Work Plan for the installation of three groundwater monitoring wells to evaluate soil and groundwater conditions at the subject site. The proposed scope of work includes: writing a site safety plan; obtaining the required permits; installing three on-site groundwater monitoring wells, collecting and submitting selected soil and groundwater samples for chemical analysis; surveying the wellhead elevations; coordinating and disposing of the waste materials; and preparing a report presenting the observations associated with the above scope of work. This work is proposed to assess the degree and extent of petroleum hydrocarbon-impacted groundwater identified during the previous underground storage tank removal (UST) investigation (GR Report No. 1113.01, dated July 6, 1999). This scope of work was developed in response to a Alameda County Environmental Health Services (ACEHS) letter dated October 5, 1999.

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

SITE DESCRIPTION

General

The subject site is located southwest of the intersection of Wyoming Street and Utah Street in Pleasanton, California (Figure 1). The immediate vicinity of the site is predominantly developed with commercial facilities. One dispenser island and two gasoline USTs have been removed from the site. One UST pit monitoring casing is located in the former UST excavation backfill. Pertinent former and existing site features are shown on Figure 2.

PREVIOUS ENVIRONMENTAL WORK

On June 10, 1999, two 1,000-gallon single-wall fiberglass gasoline USTs, one dispenser island, and related single-wall product piping were removed by GR. GR personnel performed soil and groundwater sampling activities in conjunction with the UST removal. The existing UST pit monitoring casing (W-1 on Figure 2) was allowed to remain in the UST excavation. Groundwater was encountered in the UST excavation at approximately 3.75 feet below ground surface (bgs).

Two soil samples, designated as X-1-3 and X-2-3 on Figure 2, were collected from the sidewalls of the gasoline UST excavation at a depth of 3 feet bgs. The soil samples were reported as not detected for total petroleum hydrocarbons as gasoline (TPHg) by Environmental Protection Agency (EPA) Method 8015 (Modified), gasoline constituents benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8020 and total lead by EPA Method 6010, except for 0.0050 parts per million (ppm) of benzene detected in X-1-3. Methyl tert-butyl ether (MtBE) by EPA Method 8020 was detected in X-1-3 and X-2-3 at concentrations of 3.3 and 4.1 ppm, respectively.

One soil sample, designated as D-1-3 on Figure 2, was collected beneath the dispenser islands at a depth of 3 feet bgs. The sample collected beneath the dispenser island was reported as not detected for TPHg, benzene, and lead and contained 3.6 ppm of MtBE.

One grab groundwater sample was collected from the gasoline UST excavation, utilizing the UST pit monitoring casing. The sample contained 39,000 parts per billion (ppb) of TPHg, 1,100 ppb of benzene, and 100,000 ppb of MtBE.

A total of 4,625 gallons of groundwater were removed from the former UST excavation backfill on four separate occasions between October 12 and November 8, 1999.

The groundwater was removed from UST pit monitoring casing W-1 by Nor Cal Oil Company and transported under uniform hazardous waste manifest to Americlean, Inc. in Silver Springs, Nevada for disposal.

SCOPE OF WORK

GR proposes to install three groundwater monitoring wells at the locations shown on Figure 2. Soil samples will be collected from the well borings advanced and groundwater samples will be collected from the newly installed wells to assess the degree and extent of hydrocarbon-impacted groundwater at the site. Field work will be conducted in accordance with GR Field Methods and Procedures (Appendix A). To perform this scope of work, GR proposes the following specific tasks:

Task 1. Pre-Field Activities

Prepare a site-specific safety plan and obtain the necessary permits from the Alameda County Flood Control and Water Conservation District (Zone 7). Mark the proposed monitoring well locations and notify Underground Service Alert (USA) at least 48 hours prior to initiating work. A subsurface utility locator will inspect each proposed location for buried utilities.

Task 2. Well Installation

Three groundwater monitoring wells will be installed at the locations shown on Figure 2 by Woodward Drilling Company, a California licensed driller. A GR geologist will monitor the drilling activities, collect soil samples for chemical analyses, describe the encountered soil, and prepare a log of each boring. The well borings will be drilled with eight-inch-diameter hollow-stem augers.

Groundwater monitoring wells will be constructed of 2-inch diameter Schedule 40 polyvinyl chloride (PVC) well casing and 0.02-inch machine-slotted well screen, as shown on the Proposed Well Construction Detail (Figure 3). Depth to groundwater is anticipated to be approximately 6 feet bgs. The proposed wells will be constructed with approximately thirteen feet of screen within the saturated zone and two feet extending above the anticipated groundwater level.

Soil samples for description and possible chemical analysis will be obtained from each boring at five-foot intervals, as a minimum. Soil samples will be collected with a split-spoon sampler fitted with clean brass or stainless steel sample rings. Sample

handling procedures are described in Appendix A. Although the actual number of samples submitted for chemical analysis will depend on site conditions and field screening data, we anticipate a minimum of one sample from each boring will be submitted for chemical analysis as described in Task 5.

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. Field screening procedures are described in Appendix A. Screening data will be recorded on the boring log.

Drill cuttings will be stored at the site pending receipt of chemical analytical data and disposal. Stockpiled cuttings will be placed on and covered with plastic sheeting. Four soil samples of the drill cuttings will be collected for disposal characterization as described in Appendix A. These samples will be submitted to the laboratory for compositing into one sample, and then analyzed as described in Task 6. Drill cuttings will be transported to Forward Landfill, located in Manteca, California for disposal. Steam cleaning rinsate wastewater will be stored at the site in properly labeled drums pending disposal.

Task 3. Wellhead Survey.

The elevations of the vault boxes and the top of the PVC casings of the newly installed wells will be surveyed to mean sea level by a California licensed surveyor. The surveyor will also obtain the horizontal coordinates of the newly installed wells.

Task 4. Well Development and Sampling.

The newly installed monitoring wells will be developed after being allowed to stand a minimum of 72 hours after completion. During development, the clarity of the discharged well water and selected groundwater parameters (pH, temperature, and conductivity) will be monitored. A groundwater sample will be collected when the discharge water runs clear and the groundwater parameters have stabilized. The groundwater samples will be analyzed as described in Task 5. Development and groundwater sampling procedures are described in Appendix A. Groundwater removed from the wells during development and sampling will be stored at the site in properly labeled drums pending disposal.

Task 5. Laboratory Analyses.

Soil and groundwater samples will be submitted for chemical analysis by a California state-certified Hazardous Material Testing Laboratory. Drill cutting samples, selected soil samples, and the groundwater samples from the newly installed wells will be analyzed for TPHg, BTEX, and MtBE. In addition, the soil stockpile sample will be analyzed for 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. The report will be submitted to Can-Am for their use and distribution.

PROJECT STAFF

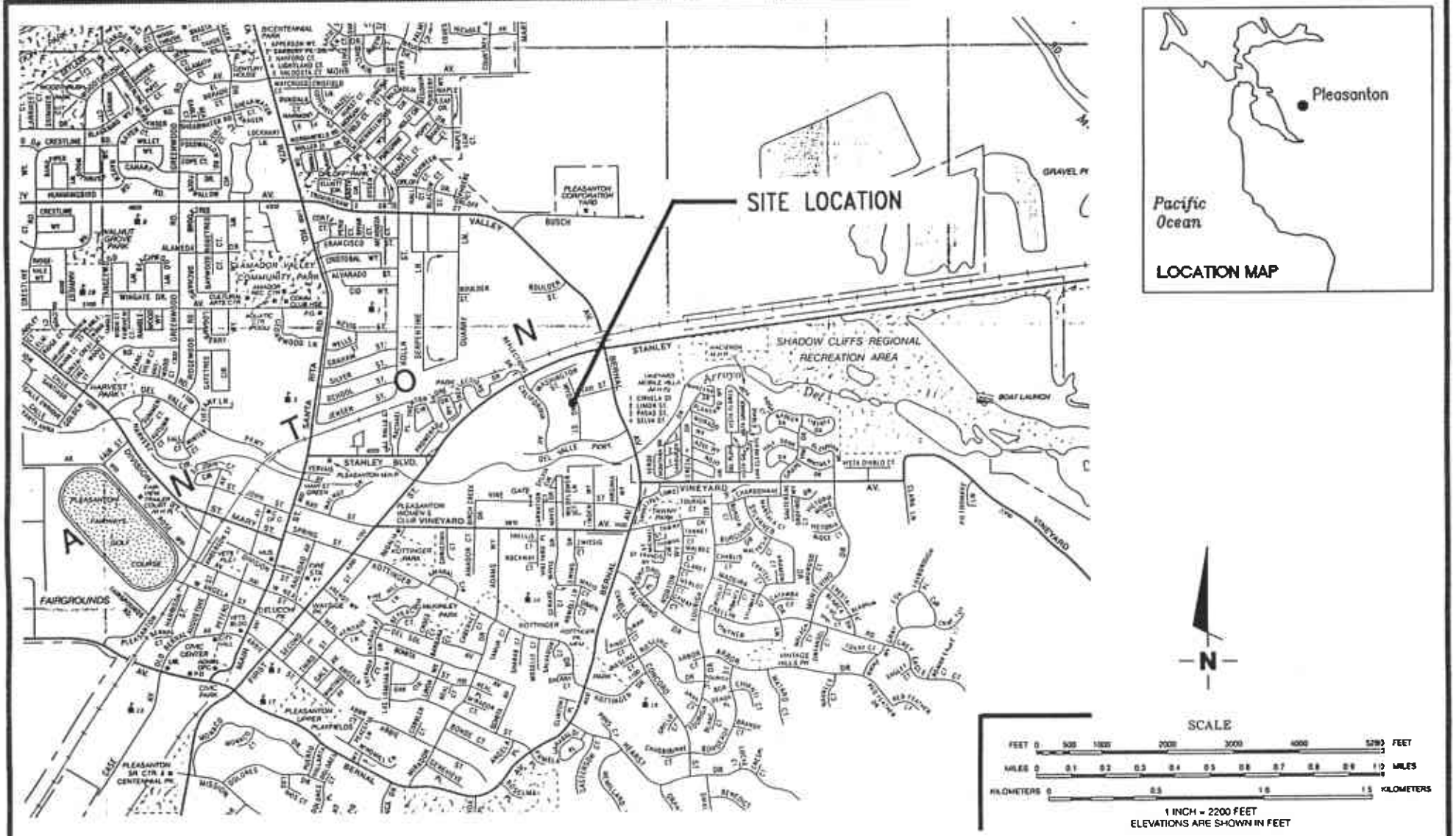
Mr. Douglas Lee, a Registered Geologist in the State of California (R.G. No. 6882) will provide technical oversight and review of the work and will supervise implementation of the field and office operations. GR employs a staff of geologists, engineers, and technicians who will assist with the project.

SCHEDULE

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

REFERENCES

Gettler-Ryan Inc., 1999, Compliance Soil Sampling Report for Can-Am Plumbing Inc. at 151 Wyoming Street, Pleasanton, California: Report No. 1113.01, dated July 6, 1999.



Base Map: AAA Map for Pleasanton, Dublin and Vicinity dated 1997

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

VICINITY MAP
Can-Am Plumbing Inc.
151 Wyoming Street
Pleasanton, California

FIGURE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
948162		12/99	

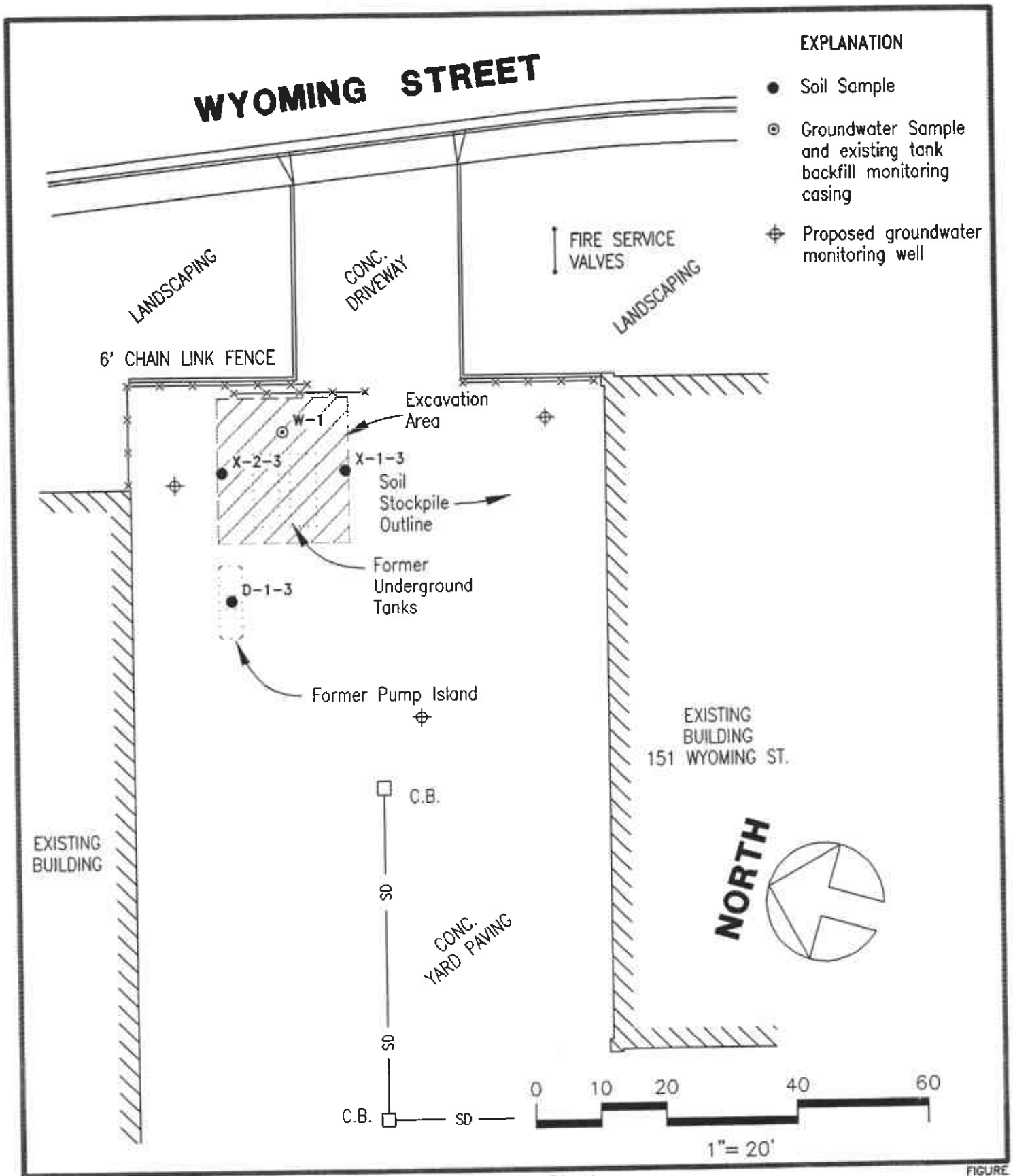


FIGURE 2

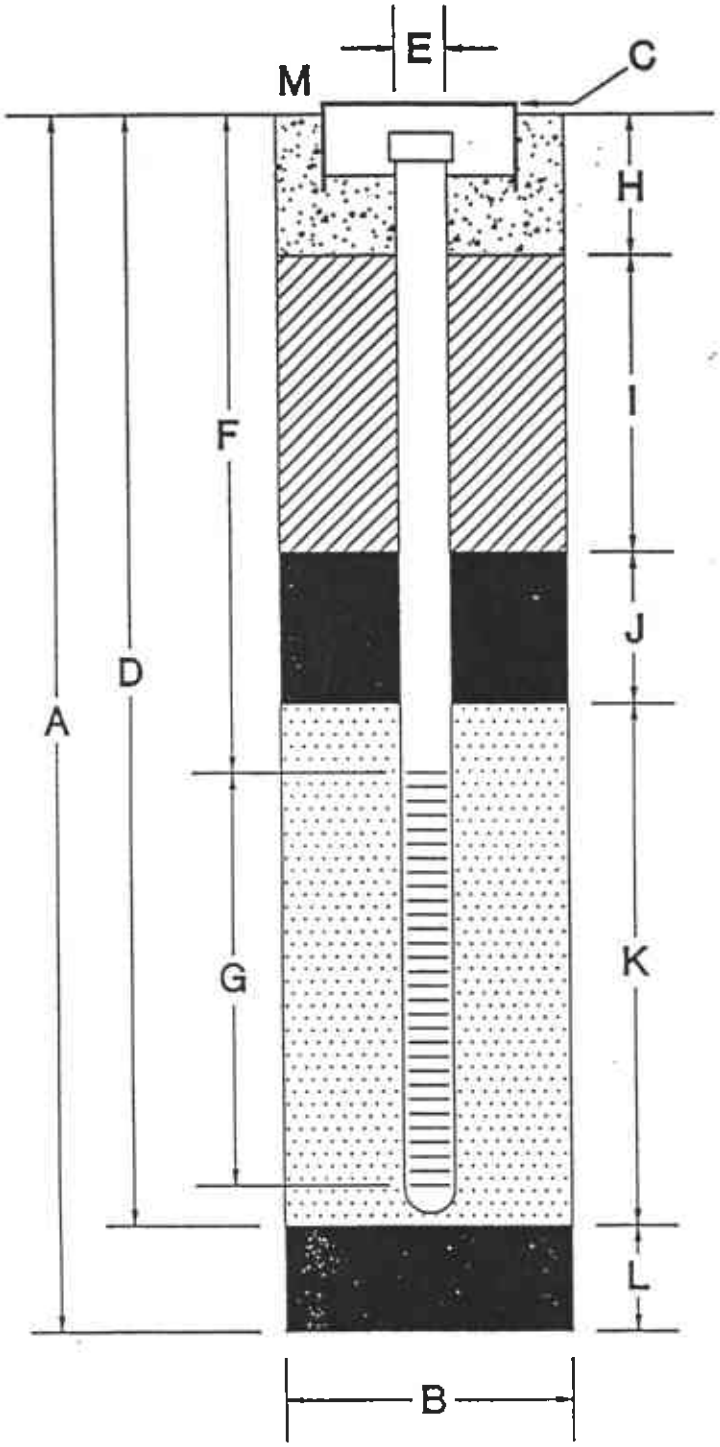
Gettler - Ryan Inc.

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

SITE PLAN
Can-Am Plumbing Inc.
151 Wyoming Street
Pleasanton, California 94566

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
948162.02		12/99	

WELL CONSTRUCTION DETAIL



A Total Depth Of Boring 19 ft.

B Diameter Of Boring 8 in.
Drilling Method Hollow Stem Auger

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

D Casing Length 19 ft.
Material SCH. 40 PVC

E Casing Diameter 2 in.

F Depth To Top Perforations 4 ft.

G Perforated Length 15 ft.
Perforated Interval From 4 to 19 ft.
Perforation Type SLOTTED SCHD. 40 PVC
Perforation Size 0.020 in.

H Surface Seal From 0 to 1 ft.
Seal Material REDI-MIX CONCRETE

I Backfill From 1 to 3 ft.
Backfill Material NEAT CEMENT

J Seal From 3 to 4 ft.
Seal Material HYDRATED BENTONITE

K Gravel Pack From 4 to 19 ft.
Pack Material Lonestar #3 Sand

L Bottom Seal NONE ft.
Seal Material _____

M _____

Note: Depths Measured From Initial Ground Surface.

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Dublin, CA 94568

PROPOSED WELL CONSTRUCTION DETAIL
Can-Am Plumbing Inc.
151 Wyoming Street
Pleasanton, California

JOB NUMBER	REVIEWED BY	DATE	REVISION DATE
948162.02		12/99	

APPENDIX A

Gettler-Ryan Inc. Field Methods And Procedures

GETTLER-RYAN INC.

FIELD METHODS AND PROCEDURES

Site Safety Plan

Field work performed by Gettler-Ryan Inc. (GR) is conducted in accordance with GR's Health and Safety Plan (revised January 16, 1995) and the Site Safety Plan. GR personnel and subcontractors who perform work at the site are briefed on the contents of these plans prior to initiating site work. The GR geologist or engineer at the site when the work is performed acts as the Site Safety Officer. GR 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 GR 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 place 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 head-space analysis in the field for the presence of organic vapors from the soil sample. This test procedure involves removing soil from the tip of the sampling device or sample liner into a clean ziplock bag and sealing the bag. After approximately twenty minutes, the bag is opened and the atmosphere within the bag tested using a PID. Head-space screening results are recorded on the boring log. Head-space screening procedures are performed and results recorded as reconnaissance data. GR 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 which generally extends from the total well depth to a point above the groundwater. An 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 GR.

Storing and Sampling of Drill Cuttings

Drill cuttings are stockpiled on plastic sheeting or stored in drums depending on site conditions and regulatory requirements. Stockpile 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.