GETTLER-RYAN INC.

TRANSMITTAL

JUN 18 2001

TO: Mr. Thomas Bauhs
Chevron Products Company
P.O. Box 6004
San Ramon, California 94583

DATE: June 13,, 2001
PROJ. #: DG96991C.4C01-1
SUBJECT: Chevron Station #9-9661
2920 Castro Valley Blvd.
Castro Valley, California

FROM:
Tony P. Mikacich
Project Geologist
Gettler-Ryan Inc.
3140 Gold Camp Drive, Suite 170
Rancho Cordova, California 95670

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COMMENTS:
Copies of the above referenced work plan will be distributed to the following:

Mr. Amir Gholami, Alameda County Health Care Services, Dept. of Environmental Health, 1153 Harbor Bay Parkway, Suite 250, Alameda, CA 94502-6577
Mr. Chuck Headlee, RWQCB-San Francisco Bay Region, 1515 Clay Street, Oakland, CA 94612
Mr. James Brownell, Delta Environmental Consultants, Inc., 3164 Gold Camp Drive, Suite 200, Rancho Cordova, CA 95670-6021

If you have any questions please call us in Rancho Cordova at 916.631.1300.

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WORK PLAN FOR SOIL BORINGS AND MONITORING WELL INSTALLATION

at

Chevron Service Station No. 9-9661
2920 Castro Valley Boulevard
Castro Valley, California

Report No. DG96991C.4C01-1
Delta Project No. DG96-991

JUN 18

Prepared for:

Mr. Thomas Bauhs
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P.O. Box 6004
San Ramon, California 94583

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STEPHEN J. CARTER
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STATE OF CALIFORNIA

June 13, 2001

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at

Chevron Service Station #9-6991
2920 Castro Valley Boulevard
Castro Valley, California

GR Report No. DG96991C.4C01-1
Delta Project No. DG96-991

INTRODUCTION

At the request of Chevron Products Company (Chevron), Delta Environmental Consultants, Inc. Network Associate Gettler-Ryan Inc. (GR) has prepared this Work Plan for the advancement of six soil borings to investigate the area near the utility trenches as a possible preferential pathway for plume migration of dissolved hydrocarbons, and the installation of one groundwater monitoring well to evaluate the lateral extent of hydrocarbon-impacted groundwater at the subject site. The proposed scope of work includes: obtaining the required soil boring and well installation permit and encroachment permits from the Alameda County Public Works Agency (ACPWA); updating the site safety plan; advancing soil borings; installing one off-site groundwater monitoring well; developing and sampling the newly installed groundwater monitoring well; surveying the new wellhead elevation; and preparing a report which presents the findings of the investigation. This work is being performed by Chevron to further delineate the dissolved hydrocarbon plume at the subject site. This work was requested by Alameda County Health Care Services (ACHCSA) in a letter dated June 16, 1999.

The scope of work described in this work plan 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 ACHCSA guidelines.

SITE DESCRIPTION

The subject site is an active gasoline station facility located on the northeast corner of the intersection of Castro Valley Boulevard and Anita Avenue, Castro Valley, California (Figure 1). Site facilities consist of a station building, three underground storage tanks (USTs), and two dispenser islands. The topography of the site and the immediate surrounding area is that of relatively low-lying relief with a gradual southward slope toward South Reservoir, approximately 0.7 miles from the site. The site elevation is approximately 169 feet above mean sea level (MSL). Former locations of pertinent site features are shown on Figure 2.

PREVIOUS ENVIRONMENTAL WORK

In September 1990, Chevron removed one 1,000 gallon waste-oil UST and one 6,000 gallon gasoline UST from the site and left three existing gasoline USTs in place. All product piping at the site was removed and replaced. Records indicate that approximately 700 cubic yards of soil was excavated during tank removal activities. Samples taken beneath the product lines and USTs showed only low concentrations of total petroleum hydrocarbons quantified as gasoline (TPHg) and diesel (TPHd), benzene and oil and grease (O&G) range hydrocarbons in the remaining unsaturated soil.

In September 1991, Groundwater Technology Inc. (GTI) installed three ¾-inch wells, MW-1, MW-2 and MW-3.

In September and October 1992, GTI installed three 2-inch diameter wells, MW-4, MW-5 and MW-6 to further define the extent of hydrocarbons in soil and groundwater beneath the site.

In March 1993, GTI reviewed public project files of the RWQCB and Alameda County Department of Health Services (ACDEH) and reviewed Castro Valley Sanitary District and East Bay Municipal Utilities District maps in an attempt to determine possible sources of hydrocarbons detected in well MW-6 on the south side of Castro Valley Boulevard. The former service station site at 2896 Castro Valley Boulevard was determined to be a possible source, as was the 36-inch diameter storm drain line located adjacent to MW-6.

In August 1995 well MW-7 was installed to further assess soil and groundwater conditions in the vicinity of the pump islands and existing USTs.

The groundwater flow direction beneath the site has varied from northwest to southeast at an approximate depth between 8 feet to 12 feet below ground surface (bgs). Lateral extent of petroleum hydrocarbon impact to groundwater has not been delineated off-site. TPHg, TPHd and benzene were detected in groundwater samples collected from MW-7 on September 30, 2000, at concentrations as high as 1,700 ppb, 1,600 ppb and 750 ppb, respectively. Methyl tertiary-butyl ether (MtBE) was detected in samples collected from MW-2, MW-7, and MW-3 in concentrations of 2,800 ppb, 7,300 ppb, and 8,200 ppb, respectively.

SCOPE OF WORK

To further evaluate petroleum hydrocarbon impact to groundwater in the site vicinity, GR proposes to advance six soil borings utilizing hand auger and install one groundwater monitoring well utilizing a truck-mounted drill rig equipped with hollow stem auger at the locations shown on Figure 2.

Based on information provided to GR it appears that utilities (storm drain sewer and sanitary sewer) and or the trenches are at depths comparable to historic groundwater depths determined from site data collected from on- and off-site wells. GR has proposed the soil borings to investigate the likelihood that utility trenches in the area of the site may influence the migration of hydrocarbon-impacted groundwater away from the site. Approximate utility locations and depths are presented 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 seven tasks:

Task 1 Pre-field Activities

GR will update the site safety plan. The required soil boring, well installation and encroachment permits will be obtained from the Alameda County Public Works Department for the off-site well and borings. Underground Service Alert (USA) will be notified at least 48 hours prior to beginning drilling.

Task 2 Soil Borings and Grab Groundwater Sampling

GR will advance six soil borings (Figure 2) in an effort to determine if utility trenches immediately south and east of the site are creating a preferential pathway for the migration of dissolved hydrocarbons and MtBE away from the site. Soil borings will be advanced by using 2.5-inch diameter hand auger. All borings will be cleared to 5 feet by hand auger. A soil sample will then be collected from the next possible interval using a sampling slide-hammer fitted with a new sample sleeve. A GR geologist will monitor the boring activities and prepare a log of each boring. Soil samples for description and possible chemical analysis will be obtained from each boring at 5-foot intervals, as a minimum. Selected soil samples will be submitted for chemical analysis as described in Task 6.

Grab groundwater samples will be collected from borings B-1 through B-6 for laboratory analysis. Samples will be collected by advancing the auger into saturated soil. The auger will then be removed from the boring to allow groundwater to flow into the borehole. New disposable bailers will be utilized to collect grab groundwater samples that will then be decanted into laboratory-supplied 40-ml VOA vials prepared with the appropriate amount of preservative by the laboratory and non-preservative 1-liter glass amber containers. Upon collection of groundwater samples, the borings will be backfilled with neat cement and finished flush with the ground surface as required by the encroachment permit.

Task 3 Well Installation

The soil boring will be advanced by a California-licensed driller using 8-inch diameter hollow-stem auger. The boring will be cleared to 5 feet by hand auger. A GR geologist will monitor the drilling activities and prepare a log of the boring. Soil samples for description and possible chemical analysis will be obtained from the boring at 5-foot intervals, as a minimum. Selected soil samples will be submitted for chemical analysis as described in Task 6. The groundwater monitoring well will be installed to a depth of approximately 20 feet below ground surface (bgs) and will be constructed with 2-inch-diameter Schedule 40 polyvinyl chloride (PVC) well casing and 0.02-inch machine-slotted well screen. The proposed well 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). This 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. Stockpile samples will be analyzed as described in Task 6. Drill cuttings and steam cleaning rinsate wastewater will be stored at the site in properly labeled drums pending transport to McKittrick for disposal.

Task 4 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 samples will be analyzed as described in Task 6. Groundwater removed from the wells during development and sampling will be transported by Chevron's contractor Integrated Wastestream Management (IWM) to McKittrick for disposal. Development and groundwater sampling procedures are described in Appendix A.

Task 5 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.

Task 6 Laboratory Analyses

Soil and groundwater samples will be submitted for chemical analysis to a California state-certified Hazardous Material Testing Laboratory. Selected soil samples from the borings will be analyzed for TPHg and TPHd 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, TPHd, BTEX, and MtBE by EPA LUFT Methods and fuel oxygenates (MtBE, TBA, EtBE, TAME, DIPE) by EPA Method 8260. The soil samples from the soil stockpile will be analyzed for TPHg, TPHd, BTEX and total lead.

Task 7 Report Preparation

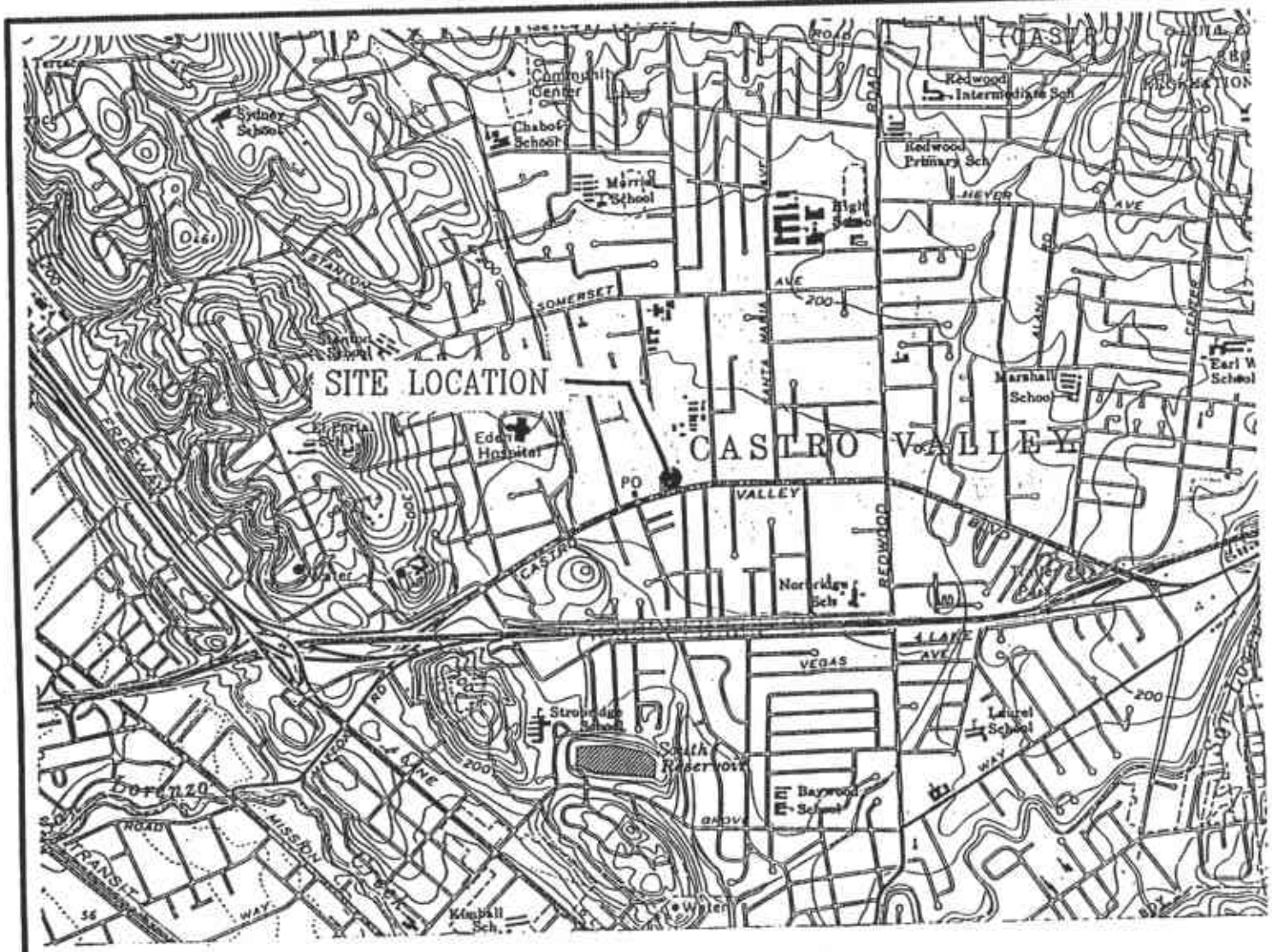
Following receipt and analysis of all data, a report will be prepared which summarizes the procedures and findings associated with this investigation. This report will be submitted to Chevron for their use and distribution.

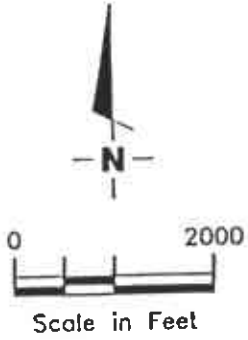
PROJECT STAFF

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

FIGURE 1

Gettler - Ryan Inc.
6747 Sierra Ct., Suite J (510) 551-7555
Dublin, CA 94568

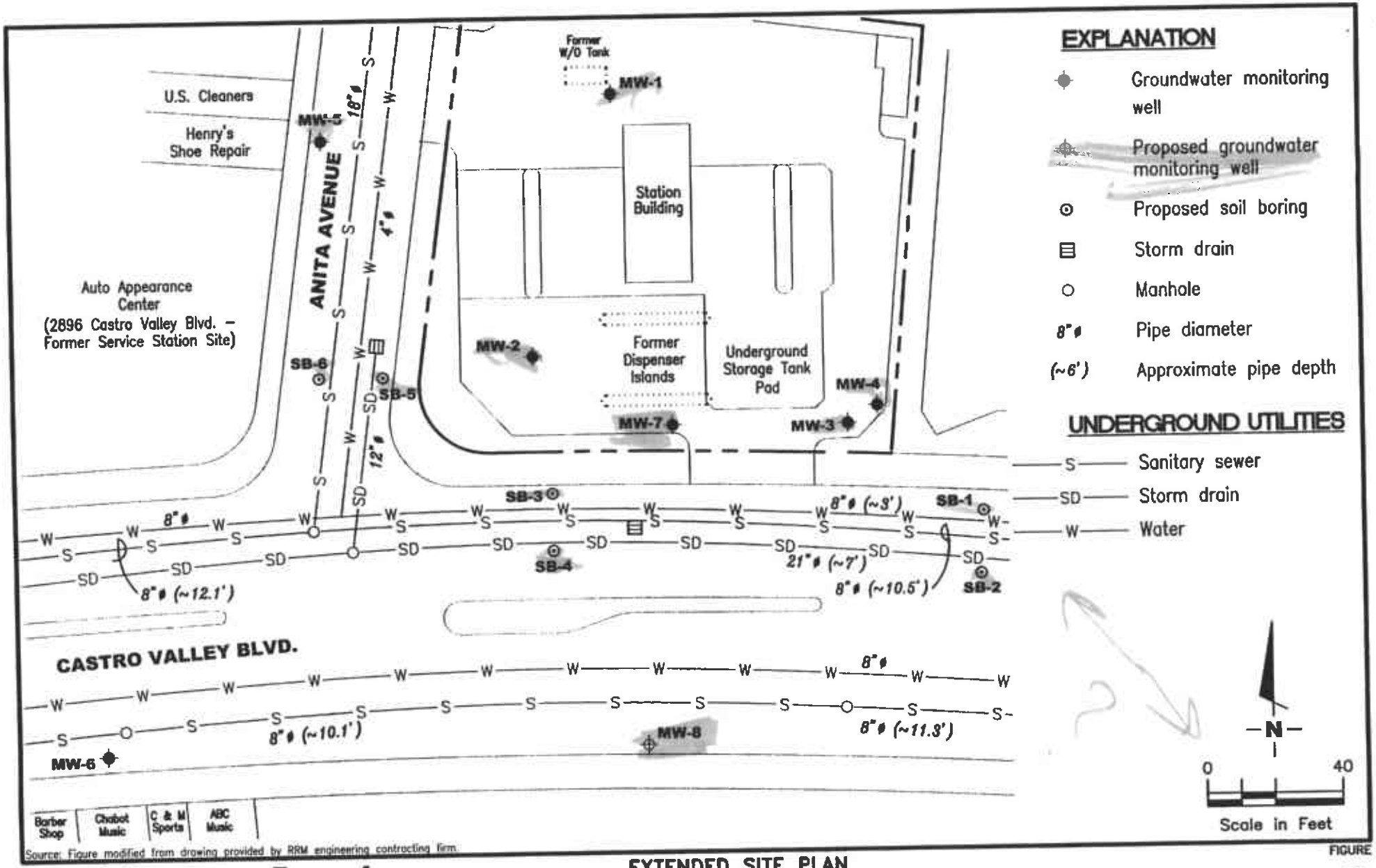
VICINITY MAP
Chevron Service Station No. 9-6991
2920 Castro Valley Boulevard
Castro Valley, California

JOB NUMBER 5296

REVIEWED BY

DATE July, 1995

REVISED DATE



Source: Figure modified from drawing provided by RRM engineering contracting firm

FIGURE 2

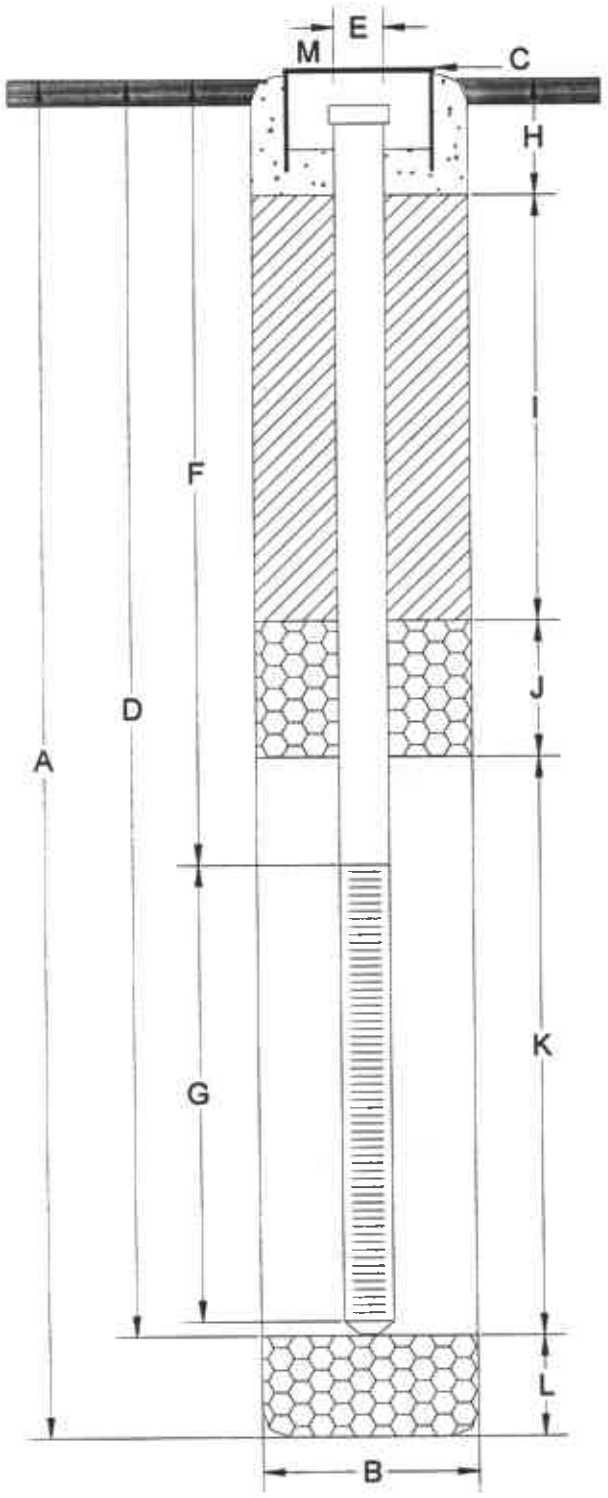
EXTENDED SITE PLAN
Chevron Service Station No. 9-6991
2920 Castro Valley Boulevard
Castro Valley, California

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

PROJECT NUMBER DG96991C.4C01
REVIEWED BY
DATE 6/01
REVISED DATE

FILE NAME: P:\ENVIRO\CHEVRON\9-6991\A01-9-6991.DWG | Layout Tab: Boring Rpt 6-01

PROPOSED WELL CONSTRUCTION DETAIL



A Total Depth of Boring 20 ft.

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

C Top of Casing Elevation NA ft.
[X] 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 Size 0.02 in.

H Surface Seal from 0 to 1 ft.
Seal Material Concrete

I Backfill from 1 to 3 ft.
Backfill Material Neat Cement

J Seal from 3 to 4 ft.
Seal Material Bentonite

K Gravel Pack from 4 to 20 ft.
Pack Material Lonestar Sand #3

L Bottom Seal NA ft.
Seal Material NA

M Vault box, locking well cap, and lock.

Note: Depths measured from initial ground surface. Wells installed in City of Castro Valley Right-of-Way will be completed at surface as required by encroachment permit conditions.

FIGURE
3

GETTLER - RYAN, INC.
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Rancho Cordova, CA 95670
voice; 916.631.1300 fax: 916.631.1317

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
DG96991C. 4C01		05/01/01		

APPENDIX A

GR FIELD METHODS AND PROCEDURES

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.

STID 651

reviewed & responded to 6/13/01 AG

Delta Environmental Consultants, Inc.

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WORK PLAN FOR SOIL BORINGS AND MONITORING WELL INSTALLATION

GETTLER-RYAN INC.

FACSIMILE COVER SHEET

TO: MR. Gholami DATE: 06/13/01

COMPANY: ACHCSA

FAX NUMBER: (510) 337-9335

FROM: Tony Mikacich

SUBJECT: Chevron #9-6991, 2920 Castro Valley Blvd., Castro Valley

COMMENTS: I have attached a site plan for your review.

Thank you,

Tony

* Additionally, a faxed copy of the Work Plan. A hard copy will follow in the mail.

Total Pages Including Cover Sheet: ~~2~~ 14

If there are any problems with this transmission, please call 916.631.1300.